THE GLOBE

Newsletter of the International Society of Veterinary Ophthalmology
Spring 2007

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Editorial

Shearing non professional interests

Ophthalmology is our common scientific interest, this is why sometimes we meet on the occasion of International Congresses, but human relationships also develop in the setting of the meetings and may become an important reason to be present and see friends every year.
To favour the social content of our meetings is a priority, we must consider to better organize them and make easy cooperation and mutual support particularly important for people from Countries where Veterinary Ophthalmology is less developed.
It is extraordinary to perceive how much interest exist in shearing common non professional interests among people living in different parts of the world, with different cultures, traditions languages and customs.
There are photo lovers in South and North America, Europe, Australia, Africa, they all take pictures of the same sun when rises or sets, they all read the same articles on digital progress and computer retouching.
There are sailors who look forward to the next chance to have a crew of close friends to feel the emotion of a strong wind.
Well, there is a long list of non professional interests where everybody can add his name and there will be more and more occasions to develop personal relationships based on that.
Please, e.mail information concerning your personal interests to my address (peruccio@whitereadv.com) and you'll be kept updated on how this venture develops.
In Genova, Italy, at the ECVO-ESVO -ISVO –SOVI Congress we'll start new interesting social initiatives, like a photo contest for the best pictures (details included in this issue). I hope to meet you soon or at least to have an exchange of information on this matter.

Claudio Peruccio

Letter from the ISVO President

As a President I would like to thank all those who helped me during the two past years I was in charge. I cannot forget some people who gave me and ISVO tremendous support like Drs. Claudio Peruccio, Ellen Bjerkaas, Kristina Narsfstrom, Lloyd Helper, Maurice Roze, David Maggs and Masanobu Fukui. Forgive me if I forgot someone. I would like to congratulate all people involved in the organization of the next Meeting to be held in Genova. I'm sure it will be a fantastic and productive congress.
I want to end expressing my grief for the sudden death of Dr. Duncan, the Speaker of the Magrane Memorial Lecture at the ISVO Congress in Genova. He passed away leaving a great lack in the scientific community.

Jose Luiz Laus

Breaking News

A tribute to George Duncan

George Duncan, cell physiologist at the core of research into eye conditions, the **ISVO speaker** for the **Magrane Memorial Lecture** at the next ECVO-ESVO-ISVO-SOVI meeting in Genova (Italy) May 30th – June 3rd **suddenly died** the 17th January 2007.

When he accepted we felt so lucky to have him with us in Genova, now we are so sad not to have the opportunity to hear his voice, to listen to his impressive lecture on "*Molecular mechanisms for human cataract and posterior capsule opacification : lens cell signalling and calcium transport*".

This issue of The Globe is partly dedicated to him, to give our members the opportunity to understand the level of his contribution to the progress of research in comparative ophthalmology.

Obituary

George Duncan, who has died aged 64, was professor of biomedicine at the University of East Anglia from 1998, and a pioneer of the use of human models to understand human disease. His collaboration with Norfolk and Norwich University Hospital was vital to the establishment of the East Anglian Eye Bank, permitting groundbreaking research on human eye tissue.

For most of his career, George's research was focused on the causes and treatments of cataracts. His work identified failure of handling calcium ions as a major cause of cataracts. Later, he and his research group widened their interests to investigate the control of growth and development of the cells of the lens, and George's laboratory became a world centre for study of this problem. The work related to identifying the factors involved in aberrant cell growth, which frequently complicate the success of cataract surgery. The results of this work are now being developed to establish new treatments.

George was an inspiring and enthusiastic teacher. With a background in physics, he made it a mission to teach the subject to biologists and wrote Physics in the Life Sciences (1990) to achieve this aim. Another passion was to instil undergraduates with the importance of fundamental biological understanding as a basis for medicine. His lectures and teaching were always received enthusiastically - even when they were about physics.

George was born in Peterhead, Aberdeenshire, the son of a fish merchant, and educated at Peterhead academy. He graduated in 1965 with a physics degree from Aberdeen University and then took an Msc in biophysics - a then novel integration of physical methods into biology - at UEA. This movement from physics towards a more biological perspective continued in his PhD programme on ion transport in the lens of the eye. This was to be the start of his lifelong passion, to understand the physiological basis of the function and maintenance of the lens.

After obtaining his PhD in 1968, there followed brief sojourns at the University of Nijmegen and Stazione Zoologica in Naples before he returned in 1969 to UEA to take up a lectureship in the school of biological sciences, where he remained for the rest of his career. He was elected to the chair of biomedicine 29 years later.

In 2005 he received the Monica Lumsden Award from the Humane Research Trust, with which he had a long and successful association, and in 1992 the Ida Mann Medal for work in ophthalmology. In 1990 he was elected to the council of International Society for Eye Research and in 2006 he became fellow of the Royal Society of Medicine. He also held an honorary research chair at Harbin University Medical School in China.

Despite his self-imposed exile in Norfolk, George remained a proud Scot and would appear in highland regalia on any remotely appropriate occasion. He had a passion for tennis and Scottish country dancing. The latter was pursued later in life, almost becoming an obsession. It also spilled over into his scientific work; at many a meeting a "Scottish country dance model" of some aspect of lens behaviour would be explained with great clarity.

George married his soulmate Maggie in 1967, the start of a long and happy marriage, and he was a consummate family man, immensely proud of their children and grandchildren. He conducted his life with such brio and infectious enthusiasm that his passing leaves a massive gap for his family, his friends and colleagues, the international research community and the countless students that he has influenced.
He is survived by Maggie, their children Hamish and Anna and their grandchildren Henry, Toby, Archie and Jamie.
(From The Guardian, Saturday January 27, 2007)

Highlights on George Duncan's C.V.

DR. George Duncan, BSc, MSc, PhD, Professor of Biomedicine, School of Biological Sciences, University of East Anglia, Norwich, UK, had an intense Editorial activity:

1979-1990	Executive Editor, Experimental Eye Research
1990-1995	Lens Section Editor, Experimental Eye Research
1993-2000	Executive Editor, European Journal of Cell Biology
1995	Served on Editor-in-Chief nominating Committee of Investigative & Ophthalmology and Visual Science
2000-2007	Lens Section Editor, Experimental Eye Research

Research lecturer at many International Symposia, author of several books and more than 100 peer-reviewed articles since 1969.
Books:

- DUNCAN, G. (1975). Physics for Biologists. Blackwells Scientific (Oxford)
- DUNCAN, G. (Editor) (1981).The Mechanisms of Cataract Formation in the Human Lens. Academic Press (New York).
- DUNCAN, G. (Editor) (1986). The Lens: Transparency and Cataract. EURAGE Rijswick, The Netherlands.
- DUNCAN, G. (1990). Physics in the Life Sciences. Blackwells Scientific (Oxford).
- DUNCAN, G. (1994). Fisica per Scienze Biomediche. Ambrosiana (Milan). Italian translation of Physics in the Life Sciences.

Examples of recent articles are listed below:

- The aging human lens: structure, growth, and physiological behaviour Br J Ophthalmol 1997;81, 818-823 (Oct.)
- TGF-ß2–Induced Matrix Modification and Cell Transdifferentiation in the Human Lens Capsular Bag. Investigative Ophthalmology and Visual Science. 2002;43:2301-2308
- Focus on molecules: The Sigma-1 receptor. Experimental Eye Research, 2005; 121-122
- Growth factor receptor signalling in human lens cells: role of the calcium store. Experimental Eye Research, 2005; 46, 925-932
- Potentiation of ATP-induced Ca(2+) mobilisation in human retinal pigment epithelial cells. Experimental Eye Research, 2005; 80, 465-475
- Sigma receptor antagonists inhibit human lens cell growth and induce pigmentation. Investigative Ophthalmology and Visual Science, 2005; 46, 1403 – 1408
- Characterization and functional activity of thrombin receptors in the human lens. Investigative Ophthalmology and Visual Science, 2005; 46, 925 – 932
- Silencing of sigma-1 receptor induces cell death in human len cells. Experimental Cell Research 2006; 312, 1439- 1446

Coming Events

2007 ECVO-ESVO-ISVO-SOVI CONGRESS
Genova (Italy) May 30th – June 3rd

SOCIAL PROGRAM

Non Professional Interests Groups

The organization of the Social Program of the Genova Meeting is progressing and we are now filling the lists of people shearing the same non professional interests.
According to our perception the top ten topics are:

1. Photography
2. Travelling
3. Dancing
4. Sailing
5. Skiing
6. Fishing
7. Diving
8. Riding
9. Biking
10. Golfing

But there is also great interest for sculpture and painting, for cooking, collectioning old fashion cars and someone is an expert of syncronized swimming.

Well, we need your contribution to make this information a way to expand our relationships, to better know each other and have an attractive social program. Please let us know which are your interests and in case mail photos of your production or while performing your main interest to peruccio@whiteready.com or Claudio Peruccio – Corso Laghi 81/97 – 10090 Buttigliera Alta (TO) – Italy .

Photo contest and awards to the best pictures

Considering that photography is the main non professional interest, on occasion of a Social Event during the Genova Congress the prizes for the best photos will be awarded.

The photo contest will be focused on two main matters:

- professional: the eye
- non professional: any subject

People interested are invited to mail a maximum of 3 shots for each subject to: peruccio@whiteready.com

(Hotel reservation & travel information: segreteria@bccongressi.it)

(More information available at: www.esvo.org)

SCIENTIFIC PROGRAM

Due to the sudden death of George Duncan, there are little changes in the Scientific Programme:

- Kristina Narfstrom is the new speaker for the ISVO Magrane Memorial Lecture on Saturday June **2nd** and the title of her talk is: ***"Light at the end of the tunnel: advancement in treatment modalities for retinal degenerative disease"***
- Ellen Bjerkas is the new speaker for the State of the Art lecture of Friday June **1st** and the title of her talk is**: " *Fish ophthamlogy* "**
- on Thursday May 31st at 06:30 pm Claudia Gili, DVM, General Curator & Chief Veterinarian of the Genova Aquarium, will make a short presentation on the Aquarium just before a visit and get together under the fish tanks.

PROGRAM

Continuing Education Day

Wednesday May 30th

- 3:00 pm – 6:30 pm **Uvea, Stefano Pizzirani, Italy**

Thursday May 31st

- 9:00am – 12:30am **Retina, Kristina Narfstrom, Sweden**

Main Conference Program

Thursday May 31st

- 3:00 pm –6:00 pm **General Session** (Basic and clinical research, retrospective studies, case reports)
- 6:30 pm – 7:00 pm **Veterinary lifetime in a large aquarium setting. Claudia Gili, Italy**
- 8:00 pm – 11:30 pm **Visit to the Genova Aquarium and Social Program**

Friday June 1st

- 9:00 am – 11:00 am **General Session** (Basic and clinical research, retrospective studies, case reports)
- 11:30 am – 12:30 am **State of the Art Lecture: Fish Ophthalmology - Ellen Bjerkas, Norway**
- 2:00 pm – 2:45 pm **Clinical case presentation: How to fill the ECVO certificate - Frans Stades, The Netherlands, Ellen Bjerkas, Norway**
- 2:45 pm – 03:30 pm **Round table: Feasibility, validity and interpretation of genetic tests in veterinary clinical practice. Panel: Catherine André (CNRS), Jeanette Felix (Optigen), Anne Thomas (Antagene), Gustavo Aguirre (ACVO), Gilles Chaudieu (ECVO), Simon Petersen-Jones (ECVO)** Moderators: **Serge G Rosolen** (ESVO), **Mike Woods** (ESVO)
- 4:00 pm – 5:00 pm **Poster session**
- 4:00 pm – 6:00 pm **ECVO business meeting**
- 8. 00 pm **Bus transfer to Villa Spinola, Social Program & Gala dinner**

Saturday June 2nd

- 9:30 am – 11:00 am **General Session** (Basic and clinical research, retrospective studies, case reports)
- 11:30 am – 12:30 am **ISVO Magrane Memorial Lecture : Light at the end of the tunnel: advancement in treatment modalities for retinal degenerative disease – Kristina Narfstrom (Sweden)**
- 03:00 pm – 05:450 pm **General Session** (Basic and clinical research, retrospective studies, case reports)
- 5:45 pm – 6:30 pm **Announcement of the ECVO-ESVO awards 2006, election of the 2009 meeting location, invitation to the 2008 meeting in France and closure of the scientific meeting**

Seminars

Sunday June 3rd 9:00 am – 12:00 am

- **Seminar 1: Glaucoma Gill McLellan, USA**
- **Seminar 2: Hereditary Eye Diseases Simon M. Petersen-Jones, USA**

ORAL PRESENTATIONS

Basic and clinical research, retrospective studies, case reports

- Primary hyperaldosteronism associated to secondary hyperparathyroidism in a cat **Eva Abarca, R.Obrador, JM Closa and A.Font, Spain**
- Bestrophin gene mutations cause canine multifocal retinopathy (cmr), a novel animal model for Best disease **Gustavo D. Aguirre, B Zangerl, SJ Lindauer, RF Mullins, LS Sandmeyer, BH Grahn, EM Stone, GM Acland and KE Guziewicz USA & Canada**
- Progressive Retinal Atrophy in the Miniature Dachshund: a clinical and genetic study **Keith C Barnett, CS Mellersh, NG Holmes, C Busse, K Miyadera and DR Sargan United Kingdom**
- Functional evaluation of the neuroprotective effect of glatiramer-acetate (Copaxone) on the rat inner retina during maturation and aging **Gil Ben-Shlomo and R Ofri, Israel**
- Morphological assessment of ocular vascular structures in normal dogs by multidetector computed tomography: Preliminary data **Giovanna Bertolini ,C Stefanello,CG Pirie and S Pizzirani Italy & USA**
- A genealogic survey of superficial puntate keratitis in the population of Danish Longhaired Dachshunds **Claus Bundgaard Nielsen, Denmark**
- Visual improvement in raptors with head and ocular trauma **Maria Dolores Torres Caballero, Marta Leiva1, Rafa Molina and Teresa Peña, Spain**
- Canine retinal macrophages immunophenotype: a comparative study in glaucomatous eyes **Andrea RR Carvalho,MD Torres,M Leiva,D Fondevila,P Martinez, A Iborra & T Peña, Spain**
- Inheritance of a Progressive Retinal Atrophy (PRA) in the Border Collie: a novel X-linked PRA **Gilles Chaudieu,T Vilboux, C Hitte, P Jeannin, C Bourgain, G Queney, A Thomas and C André, France**
- Congenital Stationary Night Blindness (CSNB) in the Danish Knabstrupper horse **Michala de Linde Henriksen, K Blaabjerg, KE Baptiste, A Flagstad and PH Andersen, Denmark**
- High frequencies (20 Mhz) in ocular ultrasonography in dogs and cats **Eric Dean, France**
- Effects of Vasointestinal Peptide and Neuropeptide Y in rabbit ocular vasculature **Esmeralda Delgado, C Marques-Neves, I Rocha, J Sales-Luís and L Silva-Carvalho, Portugal**
- Comparing the effect of thyroid hormone on the ERG in dogs **Philippe Durieux, F Rigaudière, J-F LeGargasson and SG Rosolen, France**
- Cone inputs and anaesthesia affect synchronous oscillations in murine visual cortex **Björn Ekesten and Peter Gouras, Sweden & USA**
- Orbital fat prolapse as a complication after perpalpebral injection in a cow: re-evaluation of a treatment method **Corinna Eule, A Starke, O von Ahn and J Rehage, Germany**
- Is the long-term management of dogs with UV blocking contact lenses possible in practice? A field Study **Jens Fritsche, N Denk, C Kafarnik and K Leuzinger, Germany**
- Reconstruction an superior eyelid defetc with free eyelid margin grafts **Jens Fritsche, Germany**
- Canine uveal melanoma with brain extension in a dog **Alba Galán, J Martín de las Mulas, EM Martín-Suárez, A Raya, J Gómez-Laguna and JM Molleda, Spain**
- Effects of topical administration of 1% brinzolamide on intraocular pressure in clinically normal horses **Stephanie E Germann, F Wahl, D Burger, M Roos and BM Spiess, Switzerland**
- Bacteria in Eyes with Chronic Recurrent Uveitis in Horses from Southeastern United States of America **Brian C Gilger, JH Salmon, CA Barden, HL Chandler, J Wendt and CMH Colitz, USA**
- Altered glutamine synthetase, glial fibrillary acidic protein and glutamate levels in the retinas of dogs with primary glaucoma **Chu-Te Chen, Juliet R Gionfriddo, R Dubielzig, and JE. Madl, USA**
- Retinoscopy, keratometry und ultrasound biometry in the horse eye **Petra Grinninger, M Skalicky and B Nell, Austria**
- A comparative study of fibrillar collagen arrangement in mammalian cornea **Sally Hayes, C Boote, M Abahussin, J Sheppard and KM Meek, UK**

- Cataract in the Dutch Labrador Retriever population **Ingrid MG Huver, EJ Gubbels, J Scholten and MH Boevé, The Netherlands**
- The equine cone ERG – separation of cone classes and on- and off-responses **Ülle Kell and Björn Ekesten, Sweden**
- Measuring refractive errors in dogs and horses: a new approach using a hand-held autorefractometer **Nadja Knörnschild and IC Hoffmann, Germany**
- Acid-Fast Bacilli conjunctivo-corneal mass in a cat **Barbara Lamagna, M Ragozzino, O Paciello, S Papparella and F Lamagna, Italy**
- Systemic histiocytosis with ocular adnexal involvement in a Collie dog **Federica Maggio, NMA Parry and W Greentree, USA**
- Drug dissection of the electroretinogram of the RGE Chicken **Simon M Petersen-Jones, G Shaw1 and F Montiani-Ferreira, USA & Brazil**
- Limbal Mast cell tumor in a horse **Stefano Pizzirani and NMA Parry, USA**
- Intraocular penetration of intravenously administered marbofloxacin in a model of endotoxin-induced endophthalmitis **Alain Regnier, M Schneider, D Concordet and PL Toutain, France**
- Does melanin modulate age-related increase in retinal autofluorescence in dog and cat? **Serge G Rosolen, S Picaud, E Dubus, G Bourg Heckly, J-A Sahel and J-F LeGargasson, France**
- Repair of Deep Corneal Ulcers Associated with Primary Keratoconjunctivitis Sicca (KCS) in Dogs: Technique, Follow Up and Outcome of 3 Cases Treated with Corneolimbalconjunctival Transposition (CLCT) and Cyclosporin 0.2% (Optimmune®, Schering Plough, England) **Rick F Sanchez, England**
- Ocular findings in 46 dogs with anemia and/or thrombocytopenia. A prospective study **Michal Shelah, Y Bruchim, I Aroch and R Ofri, Israel**
- Expression of Cyclo-oxygenase -2 by Ocular Squamous Cell Carcinomas in Horses in the UK **Kerry Smith, T Scase, J Miller and J Sansom ,UK**
- Prevalence and characterization of nuclear cataracts in slaughter calves in Switzerland **F Jud, J Kupper, KDC Stärk, G Dürrenberger, J Fröhlich, M Hässig & Bernhard M. Spiess Switzerland**

SHORT PRESENTATION CASES (SPC)

- Conjunctival lymphomata in 4 dogs and a cat **Christina McCowan, Australia**
- Progressive retinal atrophy in the Jämthund, a Swedish national breed **Eva Hertil, Sweden**
- Intraocular metastasis of a canine transmissible venereal tumor **MV Jose Ignacio Sanabria Souchon, Venezuela**
- Use of the superficial temporal axial pattern flap and nictitating membrane to reconstruct medial eyelids and canthus following major tumor resection in a dog **Bryden Stanley, USA**

LIST OF POSTERS

- The use of dexamethasone and dimethyl sulfoxide for chronic superficial keratitis treatment in dogs **Ireneusz Balicki , Poland**
- Treatment of deep corneal lesions in dogs with the use of renal capsule **Ireneusz Balicki and A Trbolova, Poland & Slovak Republic**
- Pyogranulomatous nodular keratitis in a domestic long-haired cat **Laura Barachetti, C Peruccio and S Pizzirani Italy & USA**
- Molecular and functional changes in the eye and retina from control to advanced experimental glaucoma: minipig model **Alejandro Bayon, E Vecino, M Hernandez, RM Almela, A Cozz and D Rodriguez, Spain**
- 5-FU vs 5-CU, delivered by a slow release drug delivery system, as a complementary treatment of trabeculectomy in the rabbit **Marianne Berdugo Polak, F Valamanesh, O Felt, P Rat, C Jolly, A Saied, G Renard, R Gurny and F Behar-Cohen, France & Switzerland**
- Distribution of dexamethasone in the feline and canine eye after topical administration **J. Bessonova, T. Kaiser, AnkeWerner, W. Bäumer, M. Kietzmann, Germany**
- Distribution of dexamethasone in the feline and canine eye after topical administration **J. Bessonova, T. Kaiser, AnkeWerner, W. Bäumer, M. Kietzmann, Germany**
- Intravitreal versus subconjunctival triamcinolone in intraocular lens implantation **André Bigelbach, Germany**
- Apoptosis of photoreceptors in a model of light-induced retinal degeneration in

albino rats **Sabine Chahory, L Padron, C Daniel, N Keller and A Torriglia, France**

- Corneal ulcer complicated with a keratomycosis **Thomas Conde, J Fondevila and A Fernández, Spain**
- A case of canine ulcerative keratitis with an aspergillus glaucus infection **Georges de Geyer, P Bourdeau and I Raymond-Letron, France**
- Use of a prednisolone ophthalmic ointment in a refractory KCS case **Esmeralda Delgado and J Sales-Luís, Portugal**
- A case of an amelanotic iris cyst in a dog **Esmeralda Delgado and J Sales-Luís, Portugal**
- Use of a commercially available bioactive membrane as a scleral prothesis in a dog **Esmeralda Delgado, R. Oliveira and J. Sales-Luís, Portugal**
- Secondary glaucoma to anterior chamber lipoma and uveitis in a Pekingese **Hamidreza R Fattahian, H Molookpour, H Mohyeddin, B Baradaran and F Sasani, Iran**
- One case of a pigmented corneal cyst in a dog **Cristina Giordano, Alberto Crotti, Italy**
- Preliminary observations on retinal vasculopathy in cats with chronic renal failure **Chiara Giudice, MC Muscolo, M Rondena and V Grieco, Italy**
- Anterior lens luxation in a sea lion **Adolfo Guandalini, N D'Anna, E Mantratzi, E Guglielmi, G Lacave and C Giudice, Italy**
- Use of Ketamine and Xylazine anesthesia along with retro bulbar block for successful phacoemulsification in the dog **Sarbani Hazra, B Roy, SK Nandi and AK Bose, India**
- Ultrasonographic imaging of the Harder's gland in the rabbit **KM Hittmair and Barbara Nell, Austria**
- Cryosurgical treatment of canine eye tumors: a retrospective study of 246 cases **Christiane Kafarnik, Germany**
- Magnetic Resonance Imaging Features of Orbital Inflammation with Intracranial Extension in Four Dogs **S Kneissl, M Konar, A Fuchs-Baumgartinger and Barbara Nell, Austria & Switzerland**
- Normal Conjunctival flora in the Ferret **Maria del Mar López-Murcia, AM Hernández-Guerra, A García-Muñoz and MT Pérez-Gracia, Spain**
- Clinical findings and evolution of 10 cases of equine keratomycosis diagnosed in the South of Spain (Córdoba) **Eva Maria Martín-Suárez, A Galán, R Tardón and JM Molleda, Spain & Chile**
- Ocular toxoplasmosis in a juvenile common wombat (Vombatus ursinus) **Christina I McCowan, K Bodley and T.Ross, Australia**
- Effects of topical levobunol, compared with the fixed combination of timolol-dorzolamide and levobunol-dorzolamide on IOP, pupil size, and heart rate in clinically healthy cats **AP Ribeiro, DPJ Paulino, T Champion, José Luis Laus, AP Camacho and MA Brunetto, Brazil**
- Intraocular pressure evaluation in caracaras (Polyborus plancus) anesthetized with isofluorane or sevofluorane **AP Ribeiro,JP Duque Ortiz,SN Vitaliano,R Thiesen,A Escobar,EA Belmonte, José Luiz Laus and K. Werther Brazil**
- Acute onset Sjögren`s –like syndrome responsive to steroids in a dog **Elina M Rusanen, P Syrjä, C Eule and BM Spiess, Finland & Switzerland**
- High resolution imaging in a case of osseous choristoma of the ciliary body of a Guinea pig **Werner Schmidt, S Hertslet, U Hetzel, D Haddad, M Obert and HD Litzlbauer, Germany & Great Britain**
- Capsular tension ring effect on canine lens epithelial cell proliferation and migration ex vivo and in vivo **Sarah G Stone, DA Wilkie, CMH Colitz, AG Metzler, USA**
- A case of uveodermatologic syndrome in a Burmese mountain dog **Olivier Thomas, B Clerc and S Chahory , France**
- Does Hypercapnia modify the electroretinogram in dogs ? **Oscar Varela Lopez, JC Alvarez Vasquez,A Gonzalez Cantalapiedra,P Lachapelle and SG Rosolen Spain, Canada & France**
- Orbital fibrosarcoma arising from a pseudotumor in a cat **S Volopich, Petra Stummer, A Fuchs-Baumgartinger and B Nell Austria**
- Comparison of results after phacoemulsification in diabetic dogs treated topically with non-steroids or steroids **Franziska Wahl, M Roos, BM Spiess and M Richter Switzerland**
- Isolation and cultivation of canine corneal cells for the construction of a three-dimensional cornea equivalent **Anke Werner, M. Braun, M. Kietzmann Germany**

From the Congresses

From the 2006 ACVO Annual Conference
October 31-November 4, 2006
San Antonio, TX, USA

The annual ACVO meeting in San Antonio was very successful and well attended. A few selected abstracts from the Proceedings Book have been included in this issue of The Globe.

CHRONIC COMPLETE RETINAL DETACHMENTS IN DOGS: OUTCOME COMPARISON OF NO TREATMENT, TOPICAL MEDICAL THERAPY, AND RETINAL REATTACHMENT AFTER VITRECTOMY. (Grahn BH, Barnes LD, Breaux CB, Sandmeyer LS). Department of Small Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan.

Purpose: To compare the outcome of eyes with complete retinal detachment without any therapy to those with topical medical therapy versus retinal reattachment in dogs. **Methods**: This was a retrospective study of chronic (>1 month) rhegmatogenous retinal detachments confirmed by a veterinary ophthalmologist and followed for at least one year or until uveitis and glaucoma prompted enucleation or evisceration and intrascleral prosthesis implantation. All eyes that were removed or eviscerated were examined with light microscopy The topical therapy consisted of topical steroids (1% prednisolone acetate) or non steroidal (flurbiprofen sodium 0.03%) and, if required, topical anti-glaucoma medication (dorzolamide). **Results**: Nine of twelve eyes that were not treated were enucleated or eviscerated within 12 months due to uveitis and glaucoma. Fourteen of seventeen eyes that were treated topically were enucleated or eviscerated within 12 months due to uveitis and glaucoma. Four of six eyes that received a vitrectomy and perfluorocarbon gas retinal reattachment remain comfortable at 3 years post-reattachment and three of these have regained some functional vision. **Conclusions**: Most eyes in dogs with chronic rhegmatogenous retinal detachments with or without topical medical therapy will develop uveitis, cataracts, secondary glaucoma, and pre-iridal fibrovascular membranes. Surgical reattachment of chronic retinal detachments was successful and approximately 50% of these dogs regained some vision and these globes are stable for up to three years post surgery. **None**

IMMUNOHISTOCHEMICAL EVIDENCE OF UPREGULATED CYCLOOXYGENASE IN EQUINE CORNEAL SQUAMOUS CELL CARCINOMA (Carey L. Mclnnis,1 Elizabeth A. Giuliano,1 Philip J. Johnson,1 James R. Turk2) Department of Veterinary Medicine and Surgery, College of Veterinary Medicine, University of Missouri-Columbia;! Department of Biomedicai Sciences, College of Veterinary Medicine, University of Missouri-Columbia. 2

Purpose: Equine squamous cell carcinoma (SCC) is the most common ocular tumor in horses and frequently results in blindness when the globe or adnexa is involved. Elevated expression of cyclooxygenase-2 (COX-2), a potentially effective pharmacological target, has been demonstrated in various types of cancer. The expression of COX-1 and COX-2 in healthy and SCC-affected equine cornea, eyelid, and third eyelid was examined using immunohistochemical techniques. **Methods**: SCC-affected tissues were acquired from the cornea (n=5), eyelid (n=5), and third eyelid (n=5). Site-matched control tissues were obtained from healthy horses. Tissue sections of affected and control equine corneal, eyelid, and third eyelid SCC were immunohistochemically stained for COX-1 and COX-2 using standard techniques. Positive staining was quantified using computer-assisted image analysis of digital photomicrographs with commercially available computer software. **Results**: Immunoreactive COX-1 and COX-2 proteins were significantly greater in equine corneal SCC than control corneas. There were non-significant trends for increased immunoreactivity for COX-1 and COX-2 in eyelid SCC compared to control eyelids. There were no significant differences for COX-1 and COX-2 immunoreactivity in third eyelid SCC and controls. **Conclusions**. Immunoreactive COX-1 and COX-2 proteins are increased in equine corneal SCC potentially indicating that COX plays a role in the oncogenesis of this tumor type at this location. Pharmacological inhibition of COX may represent a useful adjunct to the treatment of corneal SCC in horses. Supported by Phi Zeta Research Committee Grant, University of Missouri-Columbia, College of Veterinary Medicine. **None**.

PATHOGENIC PHENOTYPE AND GENOTYPE OF CANINE OCULAR PSEUDOMONAS AERUGINOSA ISOLATES (EC Ledbetter, 1 TJ Kern, 1 RC Riis, 1 NL Irby, 1 JM Scarlett, 2 FW Wallace-Gadsden, 3 and SMJ Fleiszig 3) Cornell University, College of Veterinary Medicine, Department of Clinical Sciences; 1

Cornell University, College of Veterinary Medicine, Department of Population Medicine and Diagnostic Sciences; 2 University of California at Berkeley, School of Optometry, Division of Infectious Diseases.3

Purpose. To determine the frequency of invasive and cytotoxic Pseudomonas aeruginosa strains among isolates from the normal extraocular flora and ocular infections in dogs. **Methods**. Pseudomonas aeruginosa isolates were collected from conjunctival swabs of 200 eyes (100 dogs) without evidence of extraocular disease and dogs with ocular infections. Conjunctival swabs were also collected from Pseudomonas aeruginosa ulcerative keratitis eyes 2-3 months following ulcer resolution. Phenotype was determined *in vitro* with corneal epithelial cell gentamicin survival, LDH release, and trypan blue exclusion assays. Genotyping was performed to determine the presence or absence of the exoS and exoU genes. **Results**. All Pseudomonas aeruginosa isolates from the conjunctival flora of dogs without extraocular disease were invasive (n=6). Ulcerative keratitis strains were invasive (n=5), cytotoxic (n=2), and displaying neither invasiveness nor cytotoxicity (n=2). A single isolate from a dog with traumatic endophthalmitis was invasive. Pseudomonas aeruginosa was isolated from the conjunctival flora of 4 of 6 dogs available for repeat culture post-resolution of ulcerative keratitis (all 4 invasive), but only 2 of these isolates shared the same phenotype as the original isolate. **Conclusions**. The invasive phenotype of Pseudomonas aeruginosa predominates in dogs with and without ocular disease, suggesting that antimicrobials that achieve high intracellular concentrations may be preferable for treatment of these infections in dogs. Pseudomonas aeruginosa persists within the extraocular flora of dogs following resolution of ulcerative keratitis. Supported by grants from the Cornell University Dean's Fund for Clinical Excellence, ACVO Vision for Animals Foundation, and ASVO Dr. Howard Garvin Research Fund. **None**.

SAFETY AND EFFICACY OF FAMCICLOVIR IN CATS INFECTED WITH FELINE HERPESVIRUS 1 (SM Thomasy,1 DJ Maggs,2 CC Lim,2 Lappin MR,3 and SD Stanley) 1. KL Maddy Equine Analytical Chemistry Laboratory, 1 Department of Surgical and Radiological Sciences, School of Veterinary Medicine, University of California, Davis, CA; Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, C0.3

Purpose. To investigate safety and efficacy of orally administered famciclovir (Famvir®, Novartis Pharmaceuticals Corporation, East Hanover, NJ) in cats with primary FHV-1 infection. **Methods**. Sixteen specific-pathogen-free cats (mean ± SD weight: 3.3 ± 0.6 kg and age 0.47 ± 0.04 yrs) were infected with FHV-1 on Day O and treated orally three times per day (8 am, 2 and 8 pm) with lactose (n=6) or 90 mg/kg famciclovir (n=10) from Day O to 21. FHV-1 serology was performed on Days O and 21. Ocular and respiratory signs were scored once daily by a masked observer according to a semiquantitative scale. CBC and serum biochemistry analysis were performed approximately every three days. Blood samples were intermittently collected for measurement of trough (2 pm) and approximate peak (5 pm) plasma penciclovir concentration. Data are presented as mean ± SD. **Results**. All cats developed detectable FHV-1 antibodies after infection. However, famciclovir-treated cats had significantly (P= 0.001) less circulating FHV-1 antibodies (1.2 ± 0.5 absorbance units) than did control cats (2.8 ± 1.1 absorbance units). All cats developed acute conjunctivitis and rhinitis typical of FHV-1 infection. However, famciclovir-treated cats had significantly ($P < 0.003$) lower total median disease scores than placebo-treated cats on days 6 through 20. No clinically important physical, hematological or biochemical changes were associated with famciclovir administration. Trough and approximate peak plasma penciclovir concentrations were 1400 ± 400 and 2100 ± 800 ng/ml, respectively. **Conclusions**. Famciclovir is a safe and effective treatment in cats with primary FHV-1 infection. Supported by UC Davis Center for Companion Animal Health grant. **None**

ANALYSIS—FUNCTIONAL IMPLICATIONS FOR SARD (*Grozdanic SD1, Betts DM1, and Kardon RH2) *Dept of Veterinary Clinical Sciences, College of Veterinary Medicine, Iowa State University, Ames, IA; 2Dept of Ophthalmology and Visual Sciences, University of Iowa, Iowa City, IA. (* corresponding author)

Purpose: To develop a fast and reproducible diagnostic tests for the SARD, optic neuritis, retinal degeneration and retinal detachment based on the evaluation of spectral properties of the melanopsin driven pupil light reflex activity. **Methods**: Evaluation of melanopsin and non-melanopsin driven PLR activity was performed in

7 SARD patients, 8 patients with optic neuritis, 4 patients with progressive retinal degeneration and 4 patients with retinal detachment. Evaluation of the pupil light reflex was performed with an fiber-optic illuminator equipped with 480 nm (blue) and 530 nm (red) filters with equal output illumination of 190 cd/m2. **Results**: Previous studies demonstrated that melanopsin is a RGC based photosensitive pigment with a peak wave-length light sensitivity between 420 and 490 nm. We demonstrated that canine melanopsin activation requires light intensity of 30 kcd/m2 at 480 nm (blue light) and between 800-1000 kcd/m2 at 520 nm (red light) in order to efficiently activate non-photoreceptor, melanopsin-mediated PLR activity. Diagnosis of SARD was confirmed by performing ophthalmic examination (relatively normal fundus appearance) and scotopic ERG recordings (complete absence of the electrical activity). All SARD patients had completely absent PLR when 520 nm (red) filter was used (rod and cone mediated PLR), and had slow but very good PLRs when 480 nm (blue) filter was used (melanopsin mediated response). The initial average pupil diameter in mesopic conditions was equal to the average pupil diameter after stimulation with 520 nm filter (9.6+0.6 mm - no pupil constriction), while the average pupil diameter after stimulation with 520 nm filter was 3.8±0.34 mm. Difference was statistically significant (Paired t-test, $p<0.001$). All optic neuritis patients had complete absence of the rod and cone (520 nm) and melanopsin (480 nm) mediated pupil responses. Patients with progressive retinal atrophy had weak to absent 520 nm pupil responses, while melanopsin-mediated PLR were present, but were characterized with a pupillary escape. Patients with retinal detachment had weak (or absent) 520 nm responses and present melanopsin-mediated responses. We observed 2 patients with a history of sudden onset of blindness, which had typical SARD responses (no PLR at 520 nm, good PLR at 420 nm), however had near normal ERG amplitudes bilaterally. In these two patients observed presence of the melanopsin mediated PLRs and ERG amplitudes in the absence of vision and photoreceptor mediated PLRs is potentially suggestive of a new type of disease, which exclusively affects synaptic transmission between inner retinal neurons and retinal ganglion cells. **Conclusions**: Detailed PLR analysis in canine patients is an excellent test for the differentiation of the photoreceptor versus optic nerve disease. Combined PLR and ERG testing can provide very important information about the precise localization of pathological changes. Grant support: Veterans Administration. **None**.

News in Short

CLOVE

CLOVE is the abbreviation for "Colegio Latinoamericano de Oftalmólogos Veterinarios" (Latin American College of Veterinary Ophthalmologists). It is a young college that was created in 2001, aiming to organize Veterinary Ophthalmologists of Latin America and Spain, maintain professional communication, establish and keep excellence standards, and also diffuse information to general practitioners about the function and skills of Veterinary Ophthalmologists in Latin America.

It must be highlighted that, one of the main goals of the College, is to organize courses for the continuing education of members, and also of veterinary professionals in Latin America and Spain; also basic science or highly specialized seminars are scheduled.

At present, CLOVE has 31 members. They live along the American Continent and Spain (9 members are in Argentina, 9 in Brazil, 2 in Uruguay, 5 in Spain, 3 in Mexico, 2 in the United States and 1 in Guatemala).

The board of directors is formed by: Dr. Felipe Wouk (President), Dr. Orestes Leites (Vice president, nowadays exercising the presidency) and Dr. Ma. Carmen Tovar (Secretary).

Within its scientific activities, CLOVE performs a Congress every two years in one of the countries where there are members. This year - the 4th congress - will take place in Madrid, Spain.

As this is the first meeting to be performed in Europe, it's a good opportunity for the European Ophthalmologists to know about the scientific level that exists in Latin America. The convention will take place at the Veterinary College of Complutense University - on October the 4th, 5th and 6th - where distinguished colleagues will be the speakers.

The deadline to present abstracts - for oral presentations and/or posters - is April 1st 2007. To submit abstracts or have information please contact Dr. Ma. Carmen Tovar (mctovar@um.es) or Dr. Pablo Sande (p_sande@yahoo.com)

From Japan

The Japanese Society of Comparative and Veterinary Ophthalmology is an important and productive Ophthalmology Society in Asia.

It has over 350 members and the Japanese College has over 30 diplomats.
The website of the Japanese College of Veterinary Ophthalmologists is: www.jscvo.jp

The Use of B-scan Ultrasound in Ophthalmology
By Daniel Lindgren

Diagnostic imaging using ultrasound has been universally accepted as a safe, reliable, and informative modality. Ultrasound imaging provides information that cannot be otherwise obtained when light transmission into the eye is obstructed or when anatomy around the globe needs to be assessed. A quality, easy to use ultrasound system should be readily available for veterinary ophthalmologists to utilize in diagnosis and determining course of treatment. Also, all treatments and subsequent follow up visits can be recorded using ultrasound images or as "cine" movies with newer ultrasound systems.
As a review, the general indications for examination of the posterior segment using ultrasound imaging are summarized below.
The B-scan (B stands for brightness) ultrasound can be advantageous in cases where the view into the eye is obstructed. One classic indication for using ultrasound is vitreous hemorrhage. The examiner cannot view the fundus using an ophthalmoscope due to blood floating in the vitreous. Ultrasound is particularly helpful to assess retinal and posterior segment integrity since the ultrasound energy can penetrate the blood cells.
Similarly, a dense cataract can severely limit visualizing the posterior segment. In this case, confirming the retinal integrity and general posterior segment health can be easily assessed with ultrasound. The cataract can obstruct light transmission from the ophthalmoscope, however the ultrasound energy is not affected and does not distort the image. Therefore, in all dense cataract patients, an ultrasound examination should be routine prior to cataract extraction.

It is also useful when the eye is clear and the practitioner wants to evaluate the surrounding extra-ocular muscles and orbit that cannot be appreciated using ophthalmoscopy. An example of ultrasound imaging being useful in clear eyes is when the patient presents with bulging or proptosis-like conditions. With an ultrasound examination, the cause can be identified specifically (ie: masses around the globe, enlarged muscles). Additionally, tumorous masses in or around the globe can be imaged so that more helpful information is provided to the ophthalmologist in diagnosis and prognosis. Finally, an ultrasound examination can provide critical information to eye trauma patients. The ultrasound can quickly provide images that give the doctor an understanding of the extent of damage and the anatomical structures that are involved. With new portable ultrasound technology available (see Figure), it is now easier to take the ultrasound to the patient in the field and conduct examinations that give a more complete view and information of the extent of trauma. The same benefit applies to finding foreign bodies in the eye or globe.

Case Report

Ophthalmic findings in Dachshund CLN
031307 Kristina Narfstrom

Four littermates with both parents heterozygous for Ceroid Lipofuscinosis (CLN) www.caninegeneticdiseases.net , were born spring of 2006 (dog A, B, C, D). Clinical ophthalmic studies were performed on 3 or 4 occasions in all dogs; at age 3, 7 and 8 months and for two of the dogs also at age 10 months. Ophthalmic exams included examination of the pupillary light reflexes (PLRs) using light emitted by a Kowa handheld slitlamp in mesopic conditions. Thereafter the pupils were dilated with short acting mydriatics, and each dog was subjected to examination of the anterior and posterior segments of the eyes using a slitlamp and an indirect ophthalmolscope, respectively. A unilateral electroretinographic (ERG) study was thereafter performed under deep sedation (Medetomidine and Ketamine IM). A portable ERG unit was used (HMsERG, RetVetCorp, Columbia, MO) with a mini-Ganzfeld and an automated protocol for the study of the process of dark adaptation and scotopic and photopic ERG recordings (Narfstrom et al, 2002). Visual evoked

potentials (VEPs) were also recorded at the end of each ERG session using the same instrument. ERGs and results of other ophthalmic examinations were normal in the 4 littermates at age 3 months. Starting at age 7 months, however, while the external and funduscopic exams were normal, scotopic ERG a- and especially b-wave responses were reduced in one of the littermates (dog A, see Table). At age 8 months, slight funduscopic changes were observed: patches of minor color changes were documented in the central and mid peripheral fundus and there was a generalized slight vascular attenuation. ERGs showed further changes with severe reduction mainly of b-, but also of a-wave amplitudes. Pure rod responses were barely recordable while cone responses were less affected. During the ERG procedures electrical noise was observed as spikes on the ERG recording, correlating to muscle twitching (Fig. a, b, dog A). ERGs recorded at 10 months, at the age when the dog was clearly mentally disturbed, ataxic and visually impaired, scotopic ERG b-waves were non-recordable and only low amplitude photopic responses were obtained. Spikes on the ERG recordings were more prevalent at this time.

VEP recordings were reduced in dog A, compared to those of the littermates already at the first examination, at age 3 months. The reduced VEP responses were noted on every test occasion in the dog, when compared to results of normal appearing littermates.

External ocular findings were normal until age 8 months. At this time, study of the PLRs showed that the miosis obtained upon light stimulation, was observed to be slower than normally and that the miotic pupils failed to dilate within normal time limits.

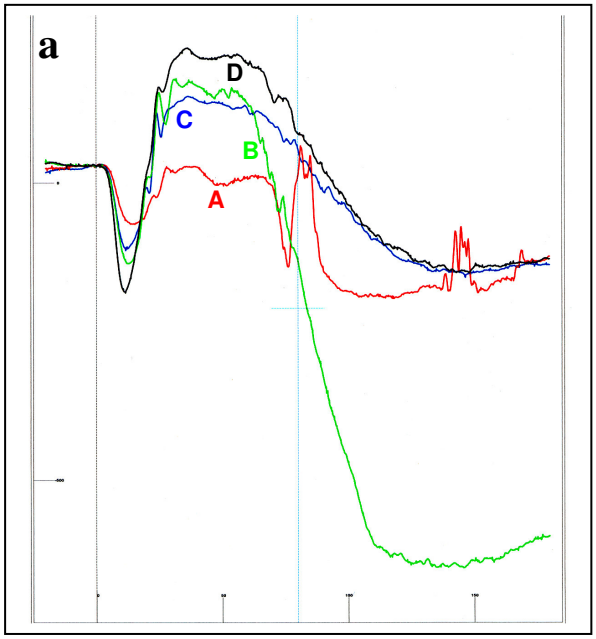
Comments:

The spikes that appeared on the ERG recordings seemed related to the neurological disease. The VEP tracings obtained showed changes in the affected dog already at age 3 months, and ERGs changes were diagnostic at age 7 months, just before definite systemic neurological signs of disease were observed. The rod photoreceptors and inner retina appeared to be affected functionally most severely by the early stage disease.

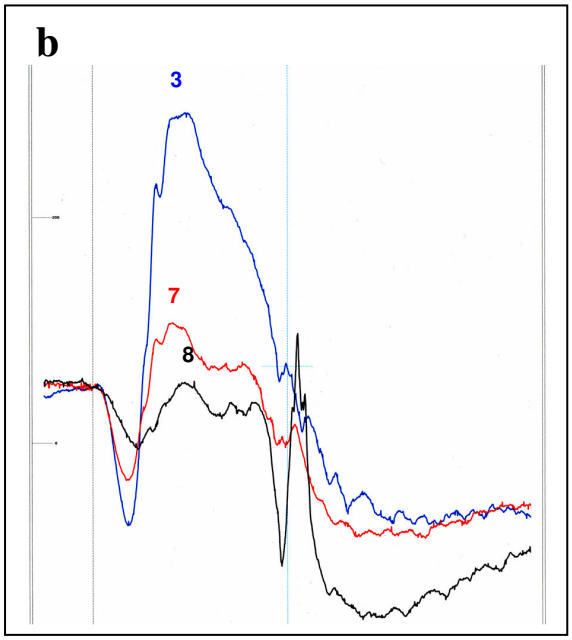
Reference: **Narfström, K**., Ekesten, B., Rosolen, S.G, Spiess, B.M., Percicot, C.L., Ofri, R.: Guidelines for clinical electrophysiology in the dog. *Doc Ophthalmol* 105:83-92, 2002.

Dogs	3 months			7 months			8 months		
	a-wave	b-wave	ratio	a-wave	b-wave	ratio	a-wave	b-wave	ratio
A	167	421	1.5	102	143	1.4	95	95	1:0
B	172	380	2.2	179	333	1.9	162	307	1:9
C	155	356	2.3	92	229	2.5	138	255	1.6
D	186	420	2.3	206	393	1.9	210	409	2.0

Amplitudes of ERG a- and b-waves of scotopic white light stimuli (3 cd.s/m2) and b/a wave ratios of dogs A-D.



a) ERG recordings from dogs A-D for scotopic high intensity white light stimuli (3 cd.s/m²) at age 8 months



b) Results from dog A at age 3, 7 and 8 months shown for scotopic high intensity white light stimuli (3 cd.s/m²)

Useful Addresses

American College of Veterinary Ophthalmologists (ACVO): **www.acvo.org**

American Society of Veterinary Ophthalmology (ASVO): **www.asvo.org**

European College of Veterinary Ophthalmologists (ECVO): **www.ecvo.org**

European Society of Veterinary Opthalmology (ESVO): **www.esvo.org**

British Association of Veterinary Ophthalmologists (BrAVO): **www.bravo.org.uk**

Japanese College of Veterinary Ophthalmologists: **www.jscvo.jp**

European School for Advanced Veterinary Studies: **www.esavs.net**

Continuing Education Courses in the United Kingdom: **www.bsava.com**

International Veterinary Information Service (IVIS): **www.ivis.org**

LatinoAmerican College of Veterinary Opthalmologists: **www.clov.org**

Nice home page in German: **www.augentierarzt.at**

ISVO will continue to e.mail TheGlobe for free twice - three times a year. If you don't want to receive it, if you like to change e.mail address or add more addresses, please e.mail a note to info@retvetcorp.com