

PARAFFINALIA NEWSLETTER

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September 2022

The HGVT aims to provide a dynamic continuing education program in which all persons with an interest in Histology and Histotechnology are freely invited to participate.

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The members of the Histology Group of Victoria and Tasmania 2020 are:

Name	Institution
Kerrie Scott-Dowell	Dorevitch Pathology/Leica
Adrian Warmington	Dorevitch Pathology (Ballarat)
Mark Bromley	Sullivan Nicolaides Pathology
Elizabeth Baranyai	Cabrini Health
Alison Boyd	Northern Health
Kellie Vukovic	Melbourne Pathology
Yvette Beaber	Monash Health
Samantha Arandelovic	Mater Hospital Brisbane
Snejana Ursache	Alfred Hospital
Imogen Campbell	Alfred Hospital
Sukwinder Sohal(Romy)	University of Tasmania
Meghan Leo	Histolab
Bindi Bates	Leica Biosystems
Kitty Feng	VCS
Yashi Xie	St. Vincent's Hospital
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President's Report – Behind the Bench

Welcome to Spring Histo-lovers,

It is the dawn of a new era in the Commonwealth with King Charles III reigning over us. I can't say I am a big fan of the King , but the Queen's 70 years was certainly celebrated in our street. The longevity of her service makes my 30 years at Dorevitch pale into insignificance, although I am pretty sure she never did the early shift, covered herself in wax, found she has a pink 'Schiff's' finger because of a hole in her glove, although she did once have an aching arm from waving too much.

How we can keep ourselves and our environment safe is the subject of our next meeting, so I urge everyone to check out the options, safety measures and tips. This will hopefully be our last virtual meeting, so our October scientific meeting and AGM will, fingers- crossed, be held at St Vincent Hospital.

Meanwhile in early October the Queensland Histo Group is holding a weekend conference. I am looking forward to some sunshine, participating in a face-to-face conference again and then perhaps a little holiday.

With the spring histology workload surge upon us keep safe and keep cutting.



Kerrie Scott
(Leica/ Dorevitch
Pathology)
HGVT President

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Mick van Werkhoven

Territory Manager- VIC & TAS

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A BRIEF LOOK STRUCTURE OF AVIAN EYES

While our feathered friends can be seen everywhere, from owls, chickens and even the humble pigeon it's easy to assume that the way they see the world would be quite similar to our own. However, you may be surprised to learn that there are indeed distinct structural differences to how human eyes function compared to avian species.

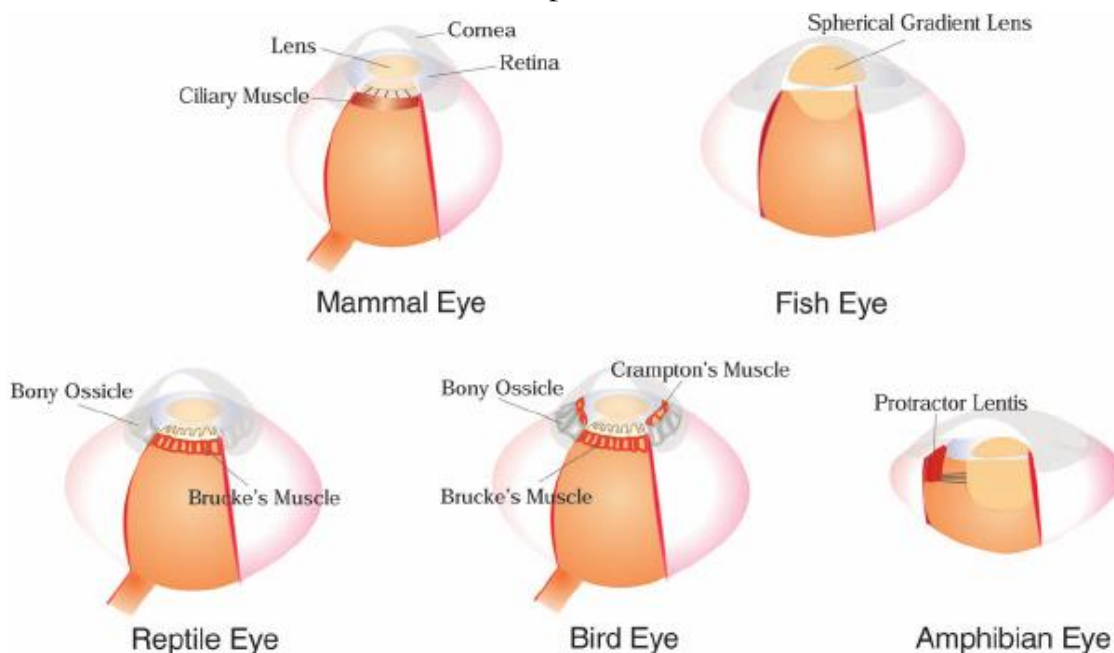
For a start, the eyes occupy a larger proportion of weight in the head of birds (approx. 15% for a common starling) compared to humans (1%) ^[1] partly due to the relative size of bird's eyes to its skull but also the lack of a larger jaw and teeth found in humans.

Moreover, unlike humans, the species of bird can determine the placement of eyes on the head which can offer different vision parameters, especially in regards to binocular vision, below is a table comparing different birds vision capabilities to our own.

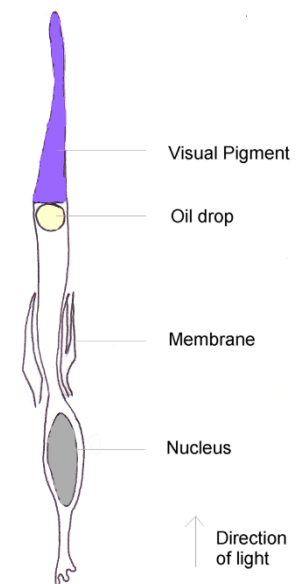
	Total field of vision	Binocular Vision
Most birds (eyes side of head)	300 – 340 degrees	20 - 30 degrees
Raptors and Owls	Around 110 degrees	Around 70 degrees
Humans	About 180 degrees	About 140 degrees

Structure of bird eyes

Comparing mammals with birds, we can see in the mammal eye we have a ciliary muscle which acts to provide passive changes in the lens. In birds, (and also reptiles) there is an additional Brucke's muscle attached to bony ossicles which can be used to actively adjust the lens thickness. In addition, birds also have Crampton's muscle which functions to alter the shape of the cornea.



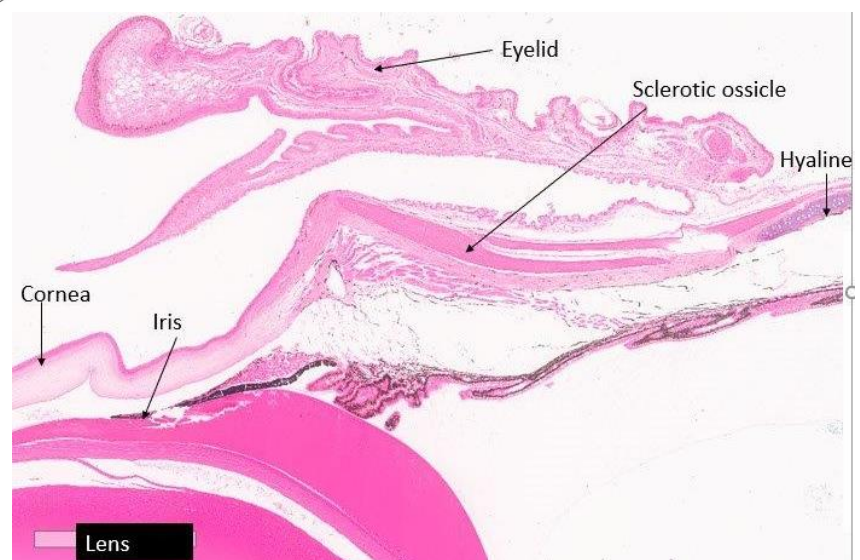
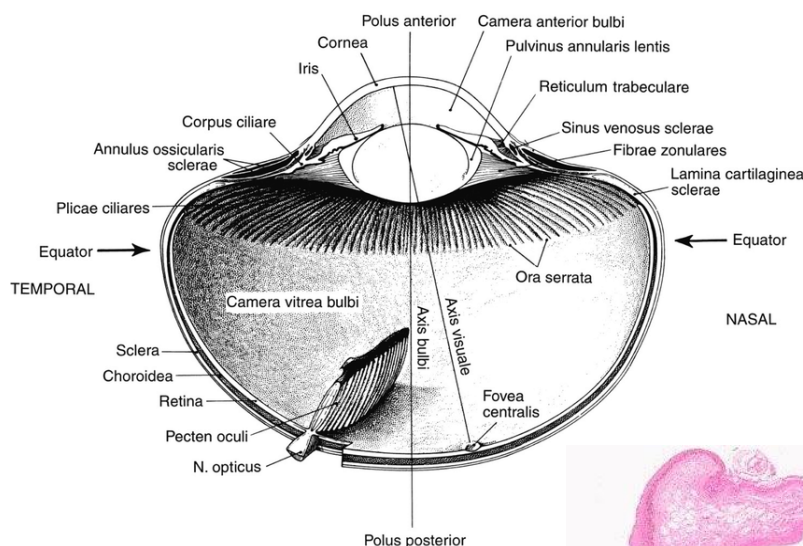
Comparing the retinas of birds and humans is also an intriguing topic. Within the retinas is a small depression called the fovea centralis, where visual acuity is the highest. The more receptors present in this area determines an animal's ability to see things in the distance. What is interesting is that in humans there are approximately 200,000 receptors per mm² but in a bird like the Buzzard, they have 1,000,000 receptors per mm²! Like humans, the retina of birds consists of rods and cones. Cones, used during daylight, come in three pigment varieties for humans: red, blue and green. However birds have an additional cone type for use with ultraviolet light, making them tetrachromatic. Even more fascinating is that the cones of birds contain a coloured oil droplet which allows them to distinguish shades of colours even further.



The final structure, unique to avian eyes (and some reptiles) is the pecten, a comb-like structure of tightly knit blood vessels. This reduces the vascularization of the retina, aiding the sharp eyesight of birds. In mammals blood vessels in front of the retina can partially obscure the image.

In addition, it is thought that the pecten functions to provide the retina with the nutrients it requires. One last point of interest is that the structure is pigmented which is believed to offer some protection from ultraviolet light.

While a short summary, this has hopefully opened your eyes (wink) a little more to the fascinating structure of eyes and the potential for the, to vary between different species based on their evolutionary requirements.



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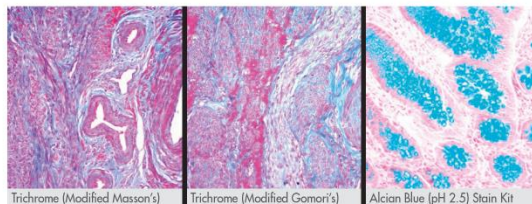


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UNDER THE MICROSCOPE WITH ALEX

JOHNSTON

What is your current job?

Global applications support for Leica Biosystems.

How long have you been working in Histology?

Will be 7 years in December. I began with a placement in a mid sized diagnostic laboratory in Geelong but have also worked in forensic and medical research laboratories since.

What piece of advice would you give to people starting in Histology?

Look out for opportunities to learn new things! If there is a chance to try something new out of your comfort zone, I wholeheartedly recommend it.

It may be tricky at first, but you can come away from the experience with more skills and confidence in your role.



What's a goal you have for this year?

I would love to get back into guitar, I bought a new bumblebee yellow guitar in June and haven't given it the attention it deserves.

What music is on your playlist at the moment?

A bit of pop and hardstyle, some John Mayer and a bit of Lorna Shore (deathcore band) to pair with coffees in the morning.

Other than histology, what is another scientific topic that interests you?

I find space amazing. The scale and mystery of it fascinates me and I hope its something we continue to learn a lot more about during my lifetime.

What movie or TV show do you think everyone should watch?

I would highly recommend 'Dark', a Netflix show. It's a thriller, drama, mystery that's only 3 seasons so not too big but certainly keeps you guessing the whole time!

If you could live anywhere in the world for a year, where would you pick?

I would probably pick somewhere in Europe like Germany. I haven't seen any of Europe really so would be great to country hop around.

If you could choose two famous people, past or present, to have dinner with, who would it be?

Jimi Hendrix and Shigeru Miyamoto. They both achieved a lot in their fields so would love to have a laugh and pick their brains.

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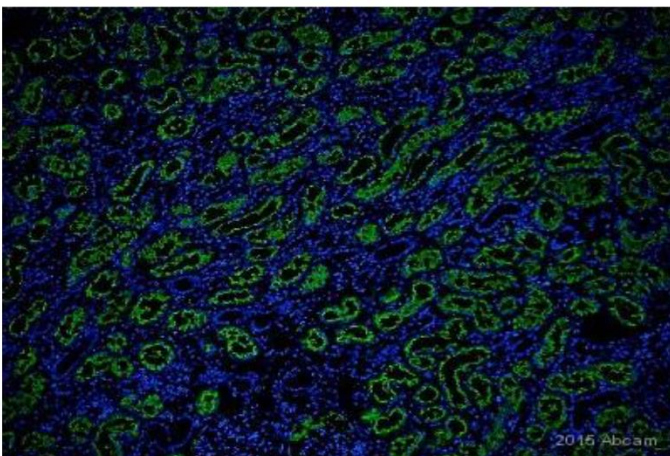
Authorized Agent:

IHC ANTIBODY SPOTLIGHT: CD13

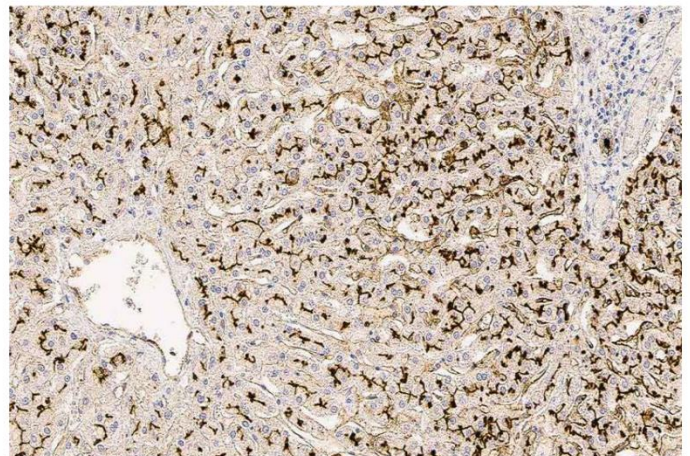
CD13 antigen is a widely expressed ectoenzyme with multiple functions, including as a receptor for the coronaviruses which cause respiratory disease in humans and several animal species. Also known as aminopeptidase N, it is part of the type II integral membrane metalloproteases, including leukocyte antigens CD10, CD26, CD73 and BP-1. [1]

CD13 plays a role in cell surface antigen presentation by trimming the N-terminal amino acids from MHC class II-bound peptides. The antigen has reported expression on granulocytes, monocytes and their precursors, most acute myeloid leukemias and a smaller proportion of acute lymphoid leukemias. There are also a number of non-hematopoietic cells that express CD13 antigen include epithelial cells, renal proximal tubules, intestinal brush border, endothelial cells, fibroblasts, brain cells, bone marrow, osteoclasts and cells lining the bile canaliculi.

CD13 not only modulates development and activities of immune-related cells, but also regulates functions of inflammatory mediators. Therefore, CD13 is important in the pathogenesis of various inflammatory disorders. Inhibitors of CD13 have shown impressive anti-inflammatory effects, but none of them has yet been used for clinical therapy of human inflammatory diseases with one paper suggesting that CD13 could be a potential therapeutic target for inflammatory disorders.[2]



CD13 in human kidney tissue sections by Immunohistochemistry. An Alexa Fluor® 488-conjugated donkey anti-rabbit IgG polyclonal (1/1200) was used as the secondary antibody. [3]



Human liver: immunohistochemical staining for CD13. Note the staining of the bile canaliculi. CD13: clone

References

1. CD13 - IHC Primary Antibodies [Internet]. Shop.leicabiosystems.com. 2022 [cited 14 September 2022]. Available from: <https://shop.leicabiosystems.com/en-au/ihc-ish/ihc-primary-antibodies/pid-cd13>
2. Lu C, Amin M, Fox D. CD13/Aminopeptidase N Is a Potential Therapeutic Target for Inflammatory Disorders [Internet]. PubMed.gov. 2020 [cited 14 September 2022]. Available from: <https://pubmed.ncbi.nlm.nih.gov/31848300/>
3. (ab108382) R. Recombinant Anti-CD13 antibody [EPR4059] KO Tested (ab108382) | Abcam [Internet]. Abcam.com. 2022 [cited 14 September 2022]. Available from: <https://www.abcam.com/cd13-antibody-epr4059-ab108382.html#lb>



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“Virtual Meeting”

‘ You, me, and The Earth makes three’

Speakers: **Kerrie Scott-Dowell (Dorevitch Pathology)**
 Samantha Arandelovic (Mater Pathology)

Date: **Thursday 15th September 2022**

Time: **6:45- 7:00 – Joining the meeting**
 7:00 – 8:15 - Presentation

Link: **Zoom Meeting**

Join Zoom Meeting

<https://us06web.zoom.us/j/84088664406?pwd=N01FdDBQNndFVUFUdUVnbINPSFQrZz09>

Meeting ID: 840 8866 4406
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Friday 7 - Sunday 9 October 2022
Pullman Reef Hotel Casino, Cairns

On behalf of the Histotechnology Group of Queensland (HGQ) Committee, I welcome you to join us in Cairns for the Queensland State Histology Conference and HGQ Annual General Meeting. The conference will be held in Cairns – the gateway to the tropics.

Join us in Cairns where you can feel grounded and connect with nature in a place unlike anywhere else – fringed by reef and enveloped by rainforest, with the Great Barrier Reef at our doorstep. Visiting Tropical North Queensland feels like a world away from the rest of Australia. From ancient culture and modern marvels, larrikin characters and must-see creatures to reef and rainforest, peaks and palm trees, it's the perfect place for this year's conference.

The conference will be filled with technical presentations, learning of new products and services from our sponsors and exhibitors, as well as the all-important networking activities.

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SR1IOemtTdHRONlI0UzBESDR6QT09](https://us06web.zoom.us/j/81048311976?pwd=NVB SR1IOemtTdHRONlI0UzBESDR6QT09)

Please put Friday 7 – Sunday
9 October 2022 in your diary

so you can attend what will be a sensational conference. The Pullman Cairns Reef Hotel Casino is Conference Headquarters.

We look forward to seeing you in Cairns.

Mr Jerres Alcober
President



Future Events: 2022

Org. No. A0035235F

Date: 15th September, 2022

Scientific Meeting

Topic: TBA

Venue: Zoom Meeting (streamed and recorded)

Date: 27th October, 2022

HGVT AGM

Topic: TBA

Venue: Zoom Meeting (streamed and recorded)