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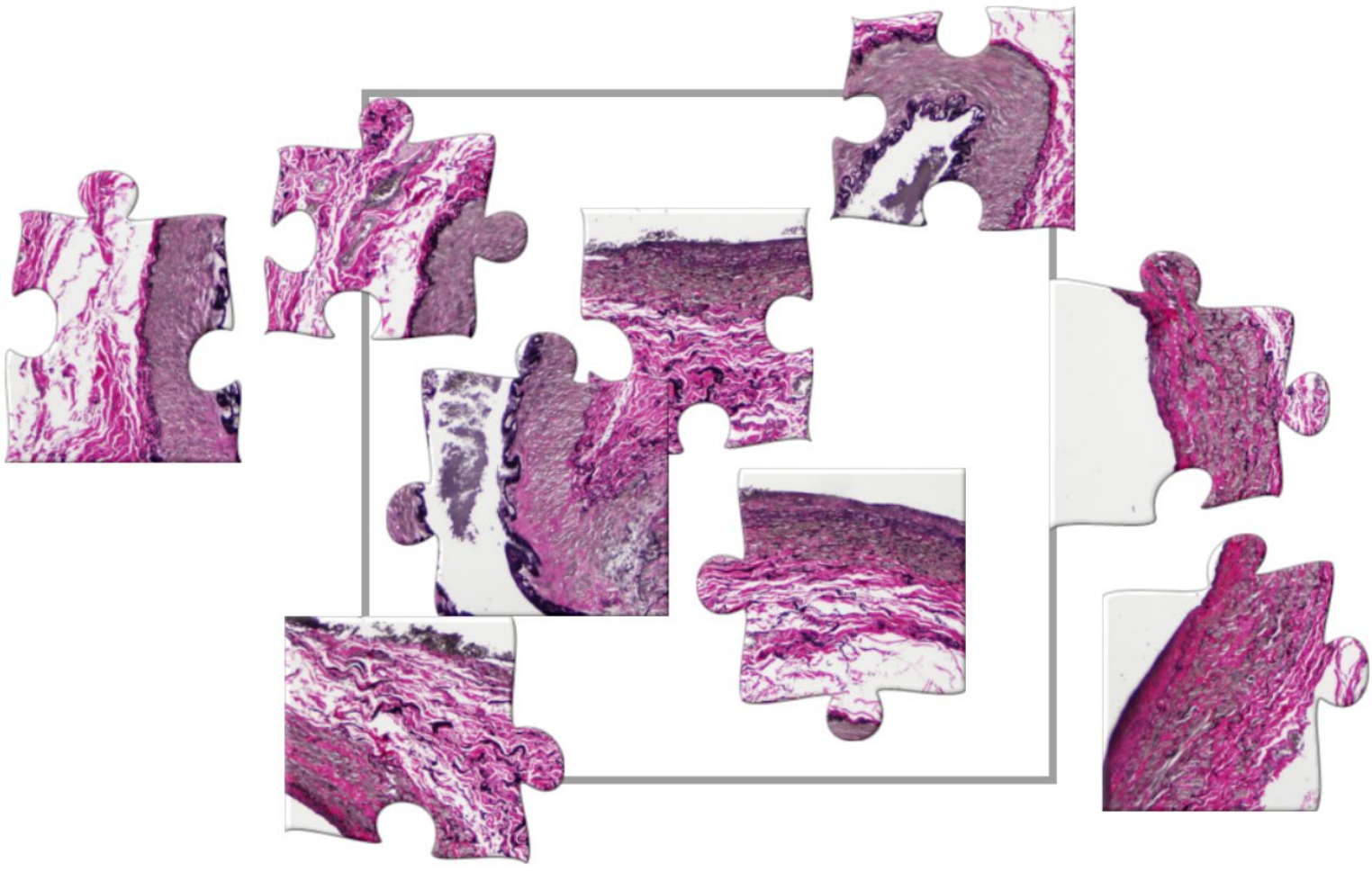
HISTOGRAPH



Newsletter No.2 2022

September

Table of Contents

Histograph Sponsors

Organisation	Page
Bio-strategy	3
Leica Biosystems	5
TekEquipment	7
Dako	10
Roche	12
Abacus dx	16
Trajan	19

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Chairperson's Report

Can you believe it is September?

A lot has happened since our last edition.

Recent events

A huge shout out to Abacus dx, Bio-strategy, Leica Biosystems, RCPAQAP, Roche and POCD for sponsoring our April Doltone House event. The 99 people who attended enjoyed unforgettable presentations by NSW Health Pathology Forensic Pathologists Dr Kendall Bailey and Dr Sascha Maistry. Amazing food and the almost forgotten feeling of networking with real people was uplifting. We had the pleasure of hosting 8 lucky students to attend the event thanks to sponsorship from Leica, TekEquipment, POCD and the Histotechnology Society of NSW.

It was a hard act to follow but thanks to NSW Health Pathology Dissection Technician Carlee Hill, referred to by Pathologists as the 'Jimmy Hendrix of cut-up', we were not disappointed. Carlee presented an epic session on Surgical cut-up in May that received rave reviews from the 87 people attending. A big thank you to our webinar sponsor Trajan.

It did not stop there thanks to RCPAQAP Senior Scientist Zenobia Haffajee and Scientist Neeta Lal who teamed up to give two presentations in July on Quality Control for Accurate Pathological Diagnosis and Keeping ABREAST of your EQA results: Immunohistochemistry Breast Markers Review. Thank you so much to Abacus dx for sponsoring this webinar.

Upcoming events

Register now for our upcoming webinars.

- 24th Sept Molar Pregnancies
- 28th Oct Immunohistochemistry
- 26th Nov Artificial Intelligence (AI) & Deep Learning in Anatomical Pathology

Progress on our 2022 goals

- ✓ Reintroduction of face-to-face events
- ✓ Streamline membership management and realign to financial year
- ✓ Digitally transforming committee administrative operations - 50% complete
- ✓ Increase engagement with members and encourage new members - planning underway
- ✓ Help us review our website - complete this survey

National Surgical Cut-up Competency Standards

The draft national benchmarks for triage and allocation, simple transfers and non-complex surgical cut-up were recently released for public consultation. To receive updates on development, reach out to Chairperson@histonsw.org.au.

I am extremely proud of what our committee have achieved in 2022 and we are only just getting started! Watch this space :-)

Warm regards, **Leah Simmons**

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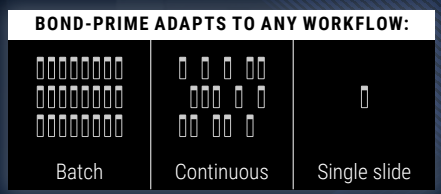

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Review: Body Farm and Forensic Histology Educational Dinner

In March 2022, I attended an educational evening at Doltone House, Hyde Park Sydney, hosted by The Histotechnology Society of NSW. This education evening contained presentations from forensic pathologists, Dr. Kendall Bailey, and Dr. Sairita Sascha Maistry. This educational evening initially appealed to me for Dr. Bailey's talk on 'The Body Farm' located at the University of Tennessee, U.S.A. During her presentation, Dr. Bailey showed numerous photos of human remains which focused on body decomposition and the effects of environmental factors. As both a biomedical honours student at the University of Newcastle and a police officer within the NSW Police Force, I found this part of the talk fascinating. Over the course of my employment, I have attended a number of deceased persons who have been found in significant stages of decomposition. I have always been curious about the processes that occur during decomposition, but such a topic was not developed in my undergraduate Biomedical Science degree nor police recruitment training. For this reason, I found Dr. Bailey's presentation very informative and relevant to my experiences and knowledge.

In addition to 'The Body Farm' presentation, Dr. Maistry presented a talk on histological specimens with a number of pathologies. Dr. Maistry created the presentation in such a way that it contained several mock case studies which was thoroughly engaging for the audience. Dr. Maistry engaged members of the audience, myself included, to assist in providing knowledge toward identifying the pathologies of the histological samples she presented. These samples provided examples of the effects of poisoning, electrocution, and viruses at the tissue/cellular level. This provided me with great insight into the information which can be extracted from such histological samples and really highlights the crucial role that histological analysis plays in forensic medicine and the preparation of coronial findings. Once again, I found this extremely relevant to my employment and it provided me a newfound appreciation for histological analysis within pathophysiology. As part of my Biomedical Science Honours project, I am processing central nervous system (CNS) tissue from animals for immunohistochemical analysis of cellular responses to inflammation. Since Dr. Maistry's talk I have become increasingly alert to subtle changes in tissue samples which may indicate pathological significance outside of my main focus of research.

I thoroughly enjoyed the educational evening hosted by the Histotechnology Society of NSW

and I would recommend it to anyone who has an interest in histology, pathophysiology, or forensic medicine. I am grateful for my industry sponsored ticket to attend this evening and I enjoyed the networking conversations I later had with industry sponsors and members of the Histotechnology Society of NSW.

Sincerely grateful,

Beaudine Hancock | Honours student

School of Biomedical Sciences and Pharmacy

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The Sage

Tonsils in the Bum

Tony Henwood, Principal Scientist, Histopathology, The Children's Hospital at Westmead. Images by Momoko Sakaki.

We are all familiar with tonsils and their importance in immunohistochemistry. Tonsil would probably be the most utilised positive [and negative] control used for most antibodies (see Torlakovic et al., 2015). We learnt that there are four types of tonsils: palatine, pharyngeal [commonly referred to as the adenoid], lingual and tubal. The surface of tonsils is composed of squamous epithelium containing crypts [extension of surface mucosa into underlying lymphoid stroma]. The lymphoid tissue is composed of B-cell-rich follicles, many with germinal centres and T-cell-rich inter-follicular zones [figure 1 and 2]. Pharyngeal tonsils have respiratory-type epithelium [ciliated columnar cells]. Tonsils are classified as mucosa-associated lymphoid tissue [MALT]. Enlarged tonsils [lymphoid reactive hyperplasia] often occur during infections and appear to be due to an increase in lymphoid cells.

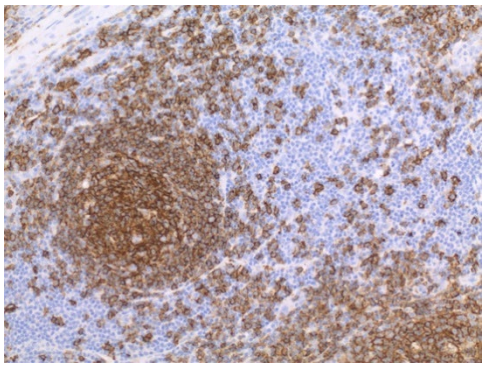

Figure 1 shows tonsil immunolabelled for CD20 (a B cell marker) showing positive B cells in the follicles whilst

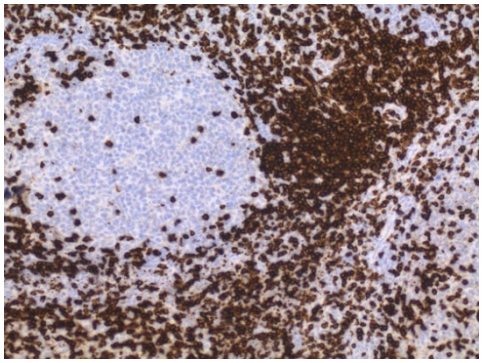

Figure 2, immunolabelled for CD3, shows the positive T cells in the areas surrounding the follicles (the inter-follicular zones).

I was surprised to learn that there are structures known as "Rectal Tonsils" that may cause clinical issues. The rectal tonsil is a term originally coined to describe a structure composed of dense lymphoid tissue primarily in rodents. Subsequently, this term is applied to prominent lymphoid tissue located in the rectum in human beings as well. When the lymphoid proliferation becomes exuberant, differentiation from a lymphoma can be a problem (Goh et al., 2012).

Rectal tonsils are an abnormal reactive proliferation of lymphoid tissue in the rectum. Typical lymphoid tissue of the colon and rectum can proliferate with an increased number of germinal centres in response to exposure to an antigen in the gastro-intestinal tract. This response, in rare cases, escalates to the proliferation of a lymphoid mass known as a rectal tonsil. Rectal tonsil has been associated with several underlying infections from Epstein Barr Virus [EBV], Chlamydia trachomatis, syphilis, Human Papilloma Virus [HPV], and tuberculosis (Cain et al., 2022).

The histology is characterized by nodular lymphoid aggregates or follicles with active germinal centres and a narrow surrounding mantle and marginal zone, predominantly located in the submucosa mimicking tonsillar tissue. The rectal tonsil is composed solely of submucosal lymphoid tissue. In sharp contrast to the pharyngeal tonsil, the rectal tonsil lacks true squamous crypt epithelium (Desai et al., 2022). Immunohistology demonstrates typical lymphoid follicles with positive B cells markers [Cluster of Differentiation (CD)20, CD10 and B-cell lymphoma (Bcl)-6] and CD3 positive intraepithelial T-lymphocytes [T cells] (Eire et al., 2011, Hong et al., 2015).

Tonsils in the Bum Continued

The differential diagnostic problem lies in the distinction between florid reactive hyperplasia of gastrointestinal lymphoid tissue [rectal tonsil] and primary gastrointestinal lymphoma, in particular extra-nodal marginal zone [MZ] B-cell lymphoma of mucosa-associated lymphoid tissue. The diagnosis of extra-nodal MALT lymphoma is usually based on morphology and anomalous antigen expression [e.g. CD43 and Bcl-2 oncoprotein] and/or immunoglobulin light chain restriction (Kojima et al., 2005).

Rectal tonsils often cause intermittent rectal bleeding but rarely any abdominal pain (Homan & Volavšek 2012).

References

Cain, D. D., Martin, K., & Gibson, B. (2022). Rectal tonsil in a patient with positive syphilis serology. Cureus, 14(4): e23812, doi:10.7759/cureus.23812.

Desai, K., Baskovich, B., Alkhasawneh, A., Mohamed, K., Omman, R., & Gopinath, A. (2022). HPV associated squamous cell carcinoma in the rectal tonsil. International Journal of Surgical Pathology, doi:10.1177/10668969221101870.

Eire, P. F., Victoria, R. F., Castañón, A. I., Arias, M. P., Carril, A. L., & Burriel, J. I. G. (2011). The rectal tonsil in children: a reactive lymphoid proliferation that may mimic a lymphoma. Indian Journal of Gastroenterology, 30(6), 282-283, doi:10.1007/s12664-011-0140-6.

Goh, S. G. H., Ho, Y. H., Chau, C. Y. P., Yap, W. M., & Chuah, K. L. (2012). The rectal tonsil in rectal adenocarcinoma: a fortuitous association? Pathology, 44, S78, doi:10.1015/S0031-3025(16)32812-4

Homan, M., & Volavšek, M. (2012). Rectal tonsil. Journal of Pediatric Gastroenterology & Nutrition, 54(5), 575, doi: 10.1097/MPG.0b013e3182432187.

Hong, J. B., Kim, H. W., Kang, D. H., Choi, C. W., Park, S. B., Kim, D. J., Ji, B. H., & Koh, K. W. (2015). Rectal tonsil: a case report and literature review. World Journal of Gastroenterology, 21(8), 2563-67, doi:10.3748/wjg.v21.i8.2563.

Kojima, M., Itoh, H., Motegi, A., Sakata, N., & Masawa, N. (2005). Localized lymphoid hyperplasia of the rectum resembling polypoid mucosa-associated lymphoid tissue lymphoma: a report of three cases. Pathology-Research and Practice, 201(11), 757-761, doi:10.1016/j.prp.2005.07.007.

Torlakovic, E. E., Nielsen, S., Francis, G., Garratt, J., Gilks, B., Goldsmith, J. D., Hornick, Jason L., Hyjek, E., Ibrahim, M., Miller, K., Petcu, E., Swanson, P. E., Zhou, X., Taylor, C. R., Vyberg, M. (2015). Standardization of positive controls in diagnostic immunohistochemistry: recommendations from the International Ad Hoc Expert Committee. Applied Immunohistochemistry & Molecular Morphology, 23(1), 1-18, doi:10.1097/PAI.0000000000000163.

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Reviews: May Surgical Cut-up Webinar

"I just wanted to say how much I enjoyed Carlee Hill's presentation on cut up last Saturday. It was so interesting, well organised and I was glued to my seat the whole time. I found it to be very relevant to my role and she was an excellent speaker. I look forward to attending more seminars like Carlee's presentation in the future."

Clare, Senior Research Assistant

"I had the opportunity to attend the histopathology surgical cut up conference that was recommended to me by my lab manager. Just wanted to reach out and say how amazing and educational it was as a student and I look forward to future opportunities!"

Vicky, UTS Student

"This presentation is definitely a great standard for being informative and accessible across many stages of education which is a tricky balance."

Andrew, Histology Technician Garvan Institute of Medical Research

"I attended the Histotechnology Society of NSW May Webinar this morning, it was a wonderful presentation and I've learnt so much about histology preparation and formalin safety today!"

Mabel, UTS Student

"I would like to congratulate you and your team and especially Carlee Hill's presentation, on the surgical cut-up, on a fabulous performance. Was truly outstanding. Thank you so much for allowing me the opportunity to experience it."

Sambath, NSW Health Pathology Technical Officer

Upcoming Events

Click on the links to register

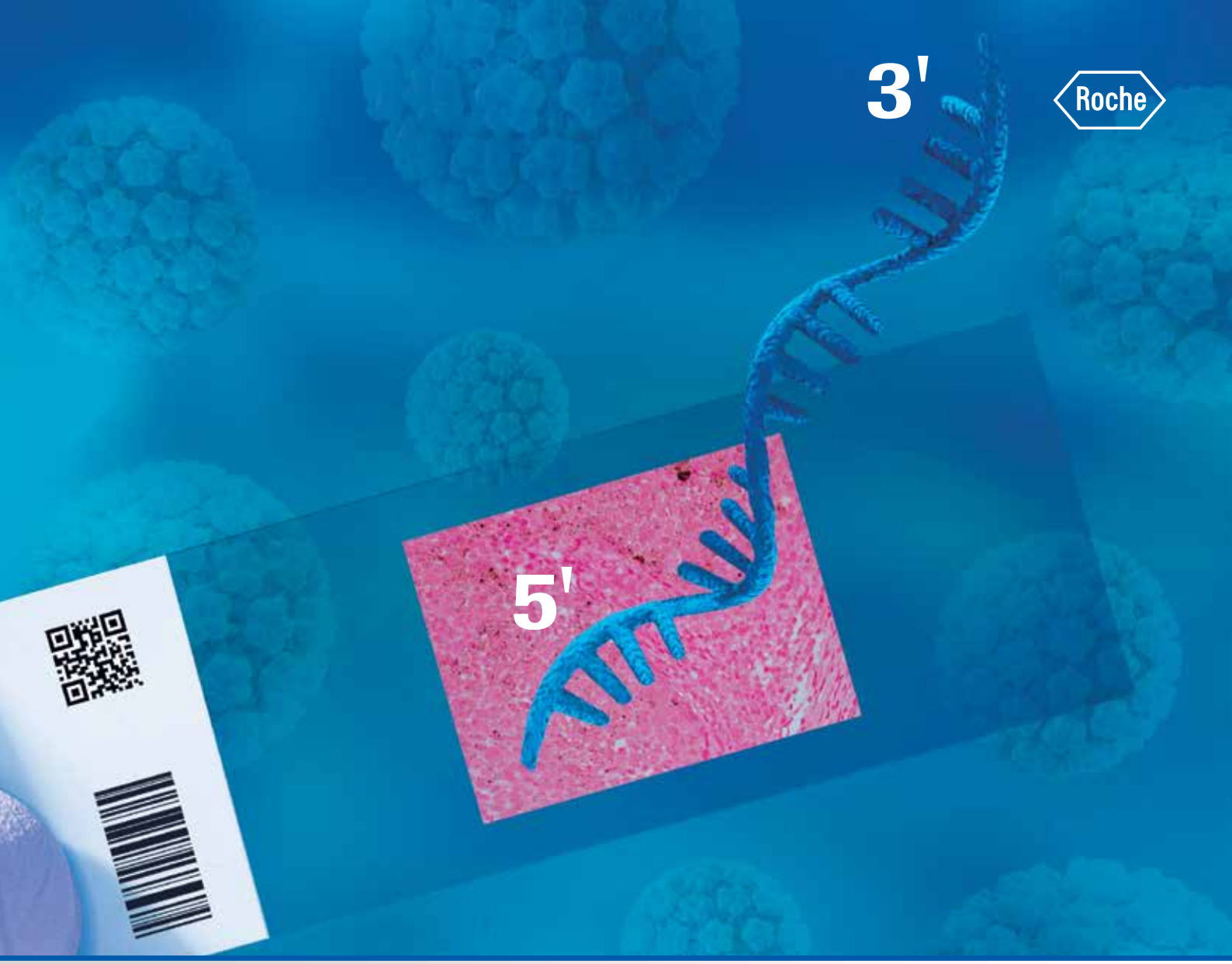
Sat 24th Sept Webinar Molar Pregnancies

Fri 28th Oct Annual General Meeting + Webinar Immunohistochemistry

Sat 26th Nov Webinar Artificial Intelligence & Deep Learning in Anatomical Pathology

For full detail see this link https://histonsw.org.au/2021-webinars/

*Dates, type of event, and topics subject to change



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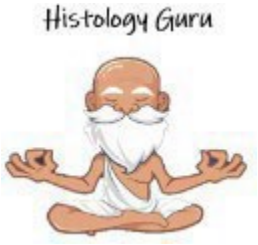


Test and Teach

Warthin-Starry [WS] Stain – a Review

Tony Henwood,

Histopathology, the Children's Hospital at Westmead, Sydney

What stain is this?

Warthin-Starry Stain [in particular, the Garvey-modified, Steiner modification].

What is the tissue?

From this single picture, it is difficult to be certain, but an educated guess would be stomach since these days, the WS is commonly used on gastric biopsies to show *Helicobacter pylori.*

What elements are being demonstrated?

The WS stain demonstrated a range of substances [see below] and in this picture, helicobacter and argyrophilic cells. These cells secrete such hormones as gastrin, ghrelin and somatostatin. Velez-Hoyos & Jimenez-Tobon (2022) report that silver-based stains have fallen out of favour in many pathology departments as they are expensive and technically complicated but according to Google Scholar there have been over 550 scientific articles mentioning or using the Warthin-Starry stain since 2021. We would like to review the history of the WS stain and look at some of the latest applications.

Aldred Scott Warthin, MD, PhD was born in America in 1866 and died 1931. In 1931, he described what are now known as Warthin-Finkeldey giant cells in measles (note, W. Finkeldey described them in the German literature 1 year later). Warthin is particularly remembered for describing a relatively common, parotid tumour, papillary cystadenoma lymphomatosum (now called Warthin tumour), although he was not the first to describe it (Wright 2021). In 1920 Warthin along with Allen Chronister Starry, MD (1890–1973), published their influential, argyrophilic, silver stain for spirochetes (Warthin, & Starry 1920).

The WS stain can detect bacteria that stain weakly or do not stain with the Gram stain, such as Legionella spp., Bartonella spp., and spirochetes. It can be used to evaluate parasites such as Microsporidium spp. The WS stain is also used to detect *H. pylori*, although it has several problems, the most important being that it produces a silver precipitate in the mucus layer that can interfere with interpretation (Field et al., 1993, Slavik & Lauwers 2018, Velez-Hoyos & Jimenez-Tobon 2022). A review on WS staining was presented earlier (Henwood 2021).

Unfortunately, the non-specific nature of the WS stain can cause difficulties. As shown in the picture [last Histograph edition], the argyrophilic nature of neuroendocrine cells allows them to be WS positive. Paneth cell granules and eosinophil granules can be confused with microsporium (Lamps et al., 1998, Slavik & Lauwers 2018). Elias & Green (1970) have also noted that mast cell granules will appear brown following WS staining.

Test and Teach 1 - Warthin-Starry [WS] Stain Continued

The histological visualization of melanin has most commonly been performed using the Fontana-Masson procedure, originally developed over 100 years ago. By contrast, the WS stain, developed in 1920 for the identification of spirochaetes, was reported in 1980 to be more sensitive and specific for detecting cutaneous melanin than the Fontana-Masson procedure (Warkel et al., 1980, Lai & Healy 2016). Warkel et al., (1980) found that *p*H variations of the reaction had profound effects on the stainability of spirochetes as well as melanin. Spirochetes were best visualized at *p*H 4.0, whereas they found that melanin was best observed at *p*H 3.2.

Joly-Tonetti et al., (2016) also found that the WS stain was more sensitive and more specific for melanin than the Fontana-Masson stain. Indeed, the WS stain did not produce the "melanin dust" artifact seen in the stratum corneum with the Fontana-Masson stain and was more able to detect epidermal basal layer melanin in very pale skin. In addition, the WS stain picked-up higher numbers of melanin granules in suprabasal keratinocytes compared with the Fontana-Masson and Von Kossa stains (Joly-Tonetti et al., 2016, Lai & Healy 2016). More recently, Castellano-Pellicena et al., (2021) used the WS stain to study melanin in basal keratinocytes and the influence of cytoskeletal, polarity, and centrosome-related machinery on its distribution and localization.

There has recently been interest in utilizing the WS stain to demonstrate dust particles in lung macrophages. Epidemiologic investigations have shown that dust particles, especially those with diameters less than 2.5µm, were associated not only with respiratory system diseases but also contribute to increased risk of cardiovascular diseases (Liu 2008). Liu showed that WS staining was better than H&E in showing the location of these smaller dust particles within macrophages. He et al., (2022) recently studied silica in sections of lung in patients and mouse models of silicosis using the WS stain.

So, despite the mistaken belief that the WS stain is so *passé*, it continues to be useful in particular microbiological diseases as well as melanin demonstration and assessing dust particles in macrophages.

References

Castellano-Pellicena, I., Morrison, C. G., Bell, M., O'Connor, C., & Tobin, D. J. (2021). Melanin distribution in human skin: Influence of cytoskeletal, polarity, and centrosome-related machinery of stratum basale keratinocytes. International Journal of Molecular Sciences, 22(6), 3143, doi:10.3390/ijms22063143.

Elias, J. M., & Greene, C. (1979). Modified Steiner method for the demonstration of spirochetes in tissue. American Journal of Clinical Pathology, 71(1), doi:109-111, 10.1093/ajcp/71.1.109.

Field, A. S., Marriott, D. J., & Hing, M. C. (1993). The Warthin-Starry stain in the diagnosis of small intestinal microsporidiosis in HIV-infected patients. Folia Parasitologica (Praha), 40(4), 261-266.

He, R., Yuan, X., Lv, X., Liu, Q., Tao, L., & Meng, J. (2022). Caveolin-1 negatively regulates inflammation and fibrosis in silicosis. Journal of Cellular and Molecular Medicine, 26(1), 99-107, doi:10.1111/jcmm.17045.

Henwood, A., (2021). An update on syphilis histochemistry. Histograph April Issue 1, 6-11.

Test and Teach 1 - Warthin-Starry [WS] Stain References Continued

Joly-Tonetti, N., Wibawa, J. I., Bell, M., & Tobin, D. (2016). Melanin fate in the human epidermis: a reassessment of how best to detect and analyse histologically. Experimental Dermatology, 25(7), 501-504, doi: 10.1111/exd.13016.

Lai, C., & Healy, E. (2016). Commentary from the Editorial Board. The Warthin-Starry stain for detection of cutaneous melanin: more than a historical curiosity. Experimental Dermatology, 25(10), 763-764, doi:10.1111/exd.13101.

Lamps, L. W., Bronner, M. P., Vnencak-Jones, C. L., Tham, K. T., Mertz, H. R., & Scott, M. A. (1998). Optimal screening and diagnosis of microsporida in tissue sections: a comparison of polarization, special stains, and molecular techniques. American Journal of Clinical Pathology, 109(4), 404-410, doi:10.1093/ajcp/109.4.404.

Liu, H-G., (2008). Warthin-Starry silver method showing particulate matter in macrophage. Biomedical and Environmental Sciences, 21(1), 85-89, doi:10.1016/S0895-3988(08)60011-2.

Slavik, T., & Lauwers, G. Y. (2018). Navigating the jungles of tropical infectious gastrointestinal pathology: a pattern-based approach to the endoscopic biopsy. Virchows Archiv, 472(1), 135-147.

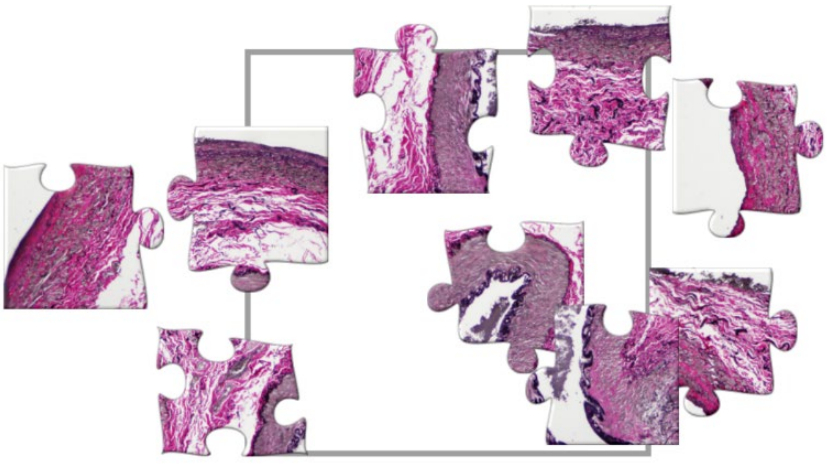
Velez-Hoyos, A., & Jimenez-Tobon, G. A. (2022). Highlights of infectious agents in tissue. Pathology, 54(2):217-224, doi:10.1016/j.pathol.2021.10.004.

Warkel, R. L., Luna, L. G., & Helwig, E. B. (1980). A Modified Warthin-Starry Procedure at Low pH for Melanin. American Journal of Clinical Pathology, 73(6), 812-815, doi:10.1093/ajcp/73.6.812.

Whartin, A. S., & Starry, A. C. (1920). A more rapid and improved method for demonstrating spirochetes in tissue. American Journal of Syphilis Gonorrhea and Venereal Diseases, 4, 97-102.

Wright, J. R. (2021). Aldred Scott Warthin: Ann Arbor's Erudite, Outspoken, and Academically Transformative Early 20th Century Pathologist. Archives of Pathology & Laboratory Medicine, 145(10), 1297-1306, doi:10.5858/arpa.2020-0474-HP.

Puzzle: Piece it together



https://im-a-puzzle.com/share/69ede95081dee1d.jpg

Click the puzzle or link to attempt the digital puzzle.

How many pieces need to be in place before you can identify the stain and the tissue?

Answers in next edition.

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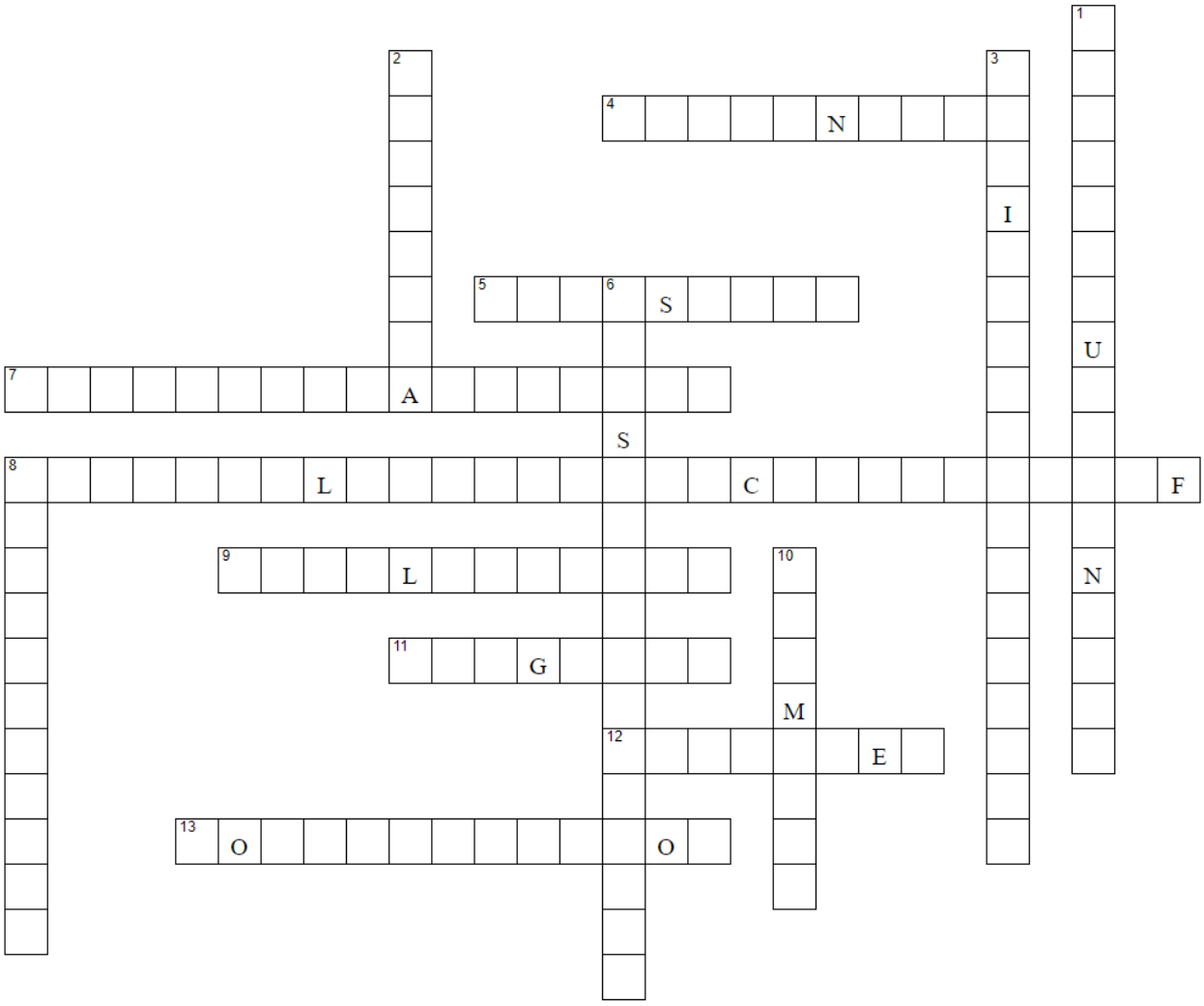


Across:

4. Stain for acid mucopolysaccharides
5. Differential microorganism stain
7. Stain for elastic
8. Stain for acid and neutral mucopolysaccharides
9. Stain for acid fast bacteria
11. Stain for amyloid
12. Stain for amyloid
13. Stain for acid mucopolysaccharides

Down:

1. Stain for ferric iron
2. Calcium technique
3. Technique for glycogen
6. Stain for collagen and muscle
8. Stain for calcium
10. Stain for melanin14. Stain for amyloid

Student Poster: Non-alcoholic Fatty Liver Disease

Prepared by Alana Gent, 2021 for Anatomical Pathology at the University of Newcastle

Non-alcoholic fatty liver disease

What is it?

Non-alcoholic fatty liver disease, or NAFLD, is a leading cause of chronic liver disease. It can affect anyone, but more often it affects people with certain risk factors.

It happens when at least 5% of hepatocytes – the cells that make up the liver – have abnormal accumulation of fat.

The liver plays a vital role in the body, with many functions such as

- *Metabolising drugs*
- *Producing bile to break down fats*
- *Regulating chemicals in the blood*
- *Filtering out harmful products from food we eat and waste products from body processes*
- *Storing iron*

RISK FACTORS

- *Obesity*
- *Diabetes*
- *High-fat diet*
- *Metabolic disease*

BUT – people without these risk factors can still have the disease!
If you fall into a risk category, your doctor may want you to be screened.

How it's diagnosed

Initially it's usually picked up in blood tests which show some abnormal liver function.

You might be sent for imaging like a CT, MRI or ultrasound.

The only way to diagnose for sure is to take a biopsy – a small tissue sample – to be checked under a microscope. Liver biopsies are taken with a long needle.

How it feels

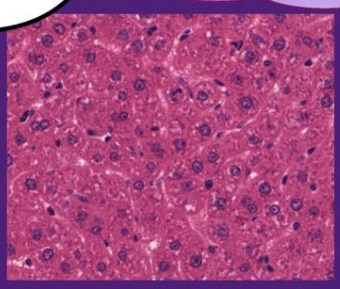
Unfortunately, NAFLD often has no signs and symptoms; you can't tell you have it. If it becomes steatohepatitis – fatty deposits with inflammation – you may feel tired, or feel some discomfort in your right upper abdomen.

If it progresses to cirrhosis, you might have these symptoms:

- Fluid build-up (oedema)
- Jaundice (skin appears yellow)
- Constipation (due to the liver not producing enough bile)

This is because your liver cells are no longer filtering the blood and clearing harmful or waste materials the way they're supposed to.

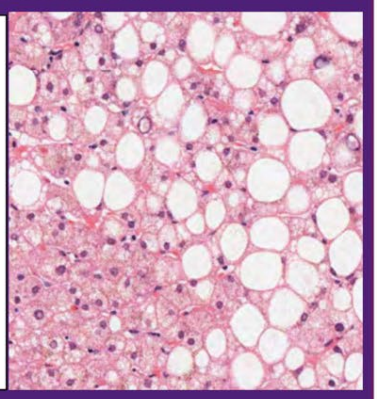
Under the microscope

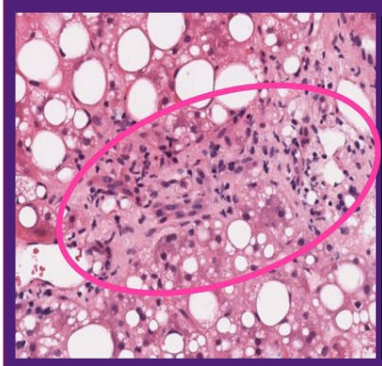


Normal healthy liver cells look like this, nice and uniform throughout the tissue.

In NAFLD, there are fatty deposits throughout the liver tissue. Under the microscope they appear as round white spaces.

If the deposits cause inflammation, this can lead to scarring and decrease in liver function.





Inflammatory cells have infiltrated the liver.

Bands of fibrous scar tissue are visible; they stop blood flowing smoothly and the liver can't function properly.

What you can do

- *Exercise regularly*
- *Eat a healthy diet, high in fruits and vegetables and good sources of protein like oily fish and nuts*
- *Avoid alcohol (this will make fatty liver worse, even if it's not the original cause of it)*
- *If you're overweight, lose weight slowly and safely *Rapid weight loss can make the situation worse. Speak to your doctor or see a dietician for help.*

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HELPING PATIENTS

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The Histotechnology Society of NSW aims to support the education and passion of histology scientists, technicians, and students by facilitating educational events, producing publications and providing networking opportunities.

Membership Factsheet: Member

Eligibility

Membership is open to anyone interested in Histotechnology or Histology who supports the objectives of the Histotechnology Society of NSW.

Cost

$38.50/financial year

Duration

Membership fees cover membership from the date of joining to the end of the current financial year. Memberships require renewal on the 1st July each following year.

Benefits

- Networking & communication with experts
- Learning best practices and access to technical advice
- Discounted or free continuing professional development (CPD)
  - Live education sessions and scientific talks
  - Practical workshops
  - Conferences
  - Recorded presentations
- Certificate of attendance after participation in CPD events
- 3 Free e-Newsletters per year and other relevant information
- Access to members only educational content via the website
- Significantly reduced rate off Australasian Professional Acknowledgement of Continuing Education (APACE) participation fees
- Advocate for histology and histotechnology in nationally recognised training and education
- Full voting rights

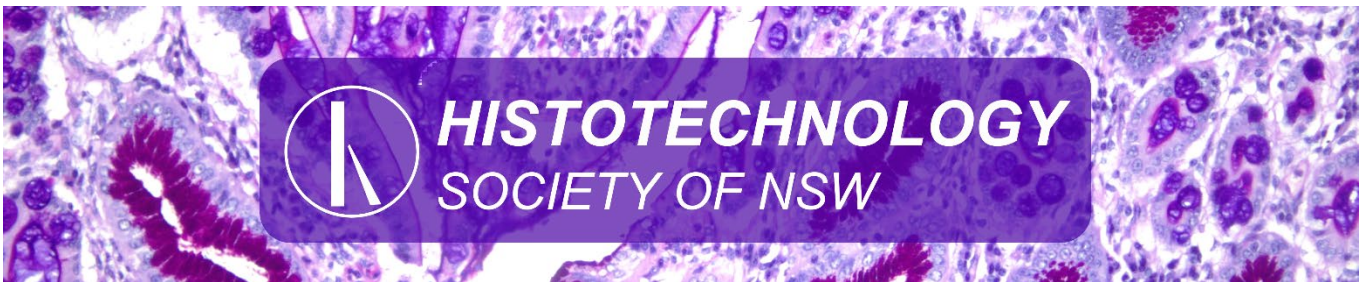
Scan to Join!

Have questions or need assistance?

Email Elena Petrovska, Histotechnology Society of NSW Membership Officer

Email: memberships@histonsw.org.au

https://histonsw.org.au/event/1-july-2022-to-30-june-2022-memberships/



The Histotechnology Society of NSW aims to support the education and passion of histology scientists, technicians, and students by facilitating educational events, producing publications and providing networking opportunities.

Membership Factsheet: Non-voting Student Affiliate

Eligibility

1) Anyone interested in Histotechnology or Histology who supports the objectives of the Histotechnology Society of NSW
2) Must be currently enrolled in an undergraduate tertiary qualification or Vocational Education and Training Certificate or Diploma (i.e. TAFE or private registered training organisation.)

Cost

Free for the duration of study*

Free* membership!

Duration

*Initial sign-up cover membership from the date of joining to the end of the second consecutive financial year. After this time, evidence of current enrolment in an undergraduate tertiary qualification or Vocational Education and Training Certificate or Diploma (i.e. TAFE or private registered training organisation or full financial membership fees will apply.)

Benefits

- Networking & communication with experts
- Learning best practices and access to technical advice
- Discounted or free continuing professional development (CPD)
  - Live education sessions and scientific talks
  - Practical workshops
  - Conferences
  - Recorded presentations
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Email: memberships@histonsw.org.au

https://histonsw.org.au/event/1-july-2022-to-30-june-2022-memberships/

**If a certificate of attendance is required for free events, a $9.90 administration fee per certificate, per event applys.

HISTOTECHNOLOGY SOCIETY OF NSW

Membership Factsheet: Corporate

Eligibility

Corporate membership is open to any organisation interested in Histotechnology or Histology who supports the objectives of the Histotechnology Society of NSW.

Cost: $110/financial year

Duration

Corporate membership fees cover the membership of two (2) representatives from the date of joining to the end of the current financial year. Memberships require renewal on the 1st July each following year. If more than two (2) representatives are required, additional membership fees apply.

Standard benefits

- Networking & communication with experts
- Learning best practices and access to technical advice
- Discounted or free continuing professional development (CPD) opportunities
  - Live education sessions and scientific talks
  - Practical workshops
  - Conferences
  - Recorded
- Certificate of attendance after participation in CPD events
- 3 Free e-Newsletters per year and other relevant information
- Access to members only educational content via the website
- HTS NSW members will be eligible for a significantly reduced rate off Australasian Professional Acknowledgement of Continuing Education (APACE) participation fees
- Advocate for histology and histotechnology in nationally recognised training and education
- Full voting rights

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Additional benefits

- Notifications of marketing/sponsorship opportunities e.g. workshops, conferences, newsletter*
- Opportunity to contribute educational content and/or scientific content to the 'Histograph' newsletter**
- Potential to promote educational content to members via the committee***

Have questions or need assistance?

Email Elena Petrovska, Histotechnology Society of NSW Membership Officer

Email: memberships@histonsw.org.au

https://histonsw.org.au/event/1-july-2022-to-30-june-2022-memberships/

*Marketing/sponsorship opportunities have additional fees/charges, **Acceptance of educational/scientific content for the Histograph is at the discretion of the editor. Accepted submissions will not attract a fee. ***At least 2-week notice is required for requests to distribute information to members. HTS NSW reserves full rights to withhold distribution.

Committee Members

Executive

Leah Simmons	Chairperson
Trevor Hinwood	Vice Chairperson
Kathy Wells-Reed	Secretary
Bharathi Cheerala	Assistant Secretary
Fred Reader	Treasurer

Members (alphabetical by surname)

Madison Colbert	Student Representative
Andrew Da Silva	
Richard Farquharson	
Mark Mullin	Industry Representative
Elena Petrovska	Membership Officer
Noelia Roman	
Bill Sinai	
Ewen Sutherland	
Adrian Ureta	
Alfred White	Student Representative

Sub-committee Member

Momoko Sakaki	Social Media Coordinator

Committee Meetings

Meetings are scheduled for the first Monday of each month starting at 6 pm – although this may change occasionally.

If you wish to contact the committee, make suggestions, or ask questions please feel free to contact the society's secretary secretary@histonsw.org.au

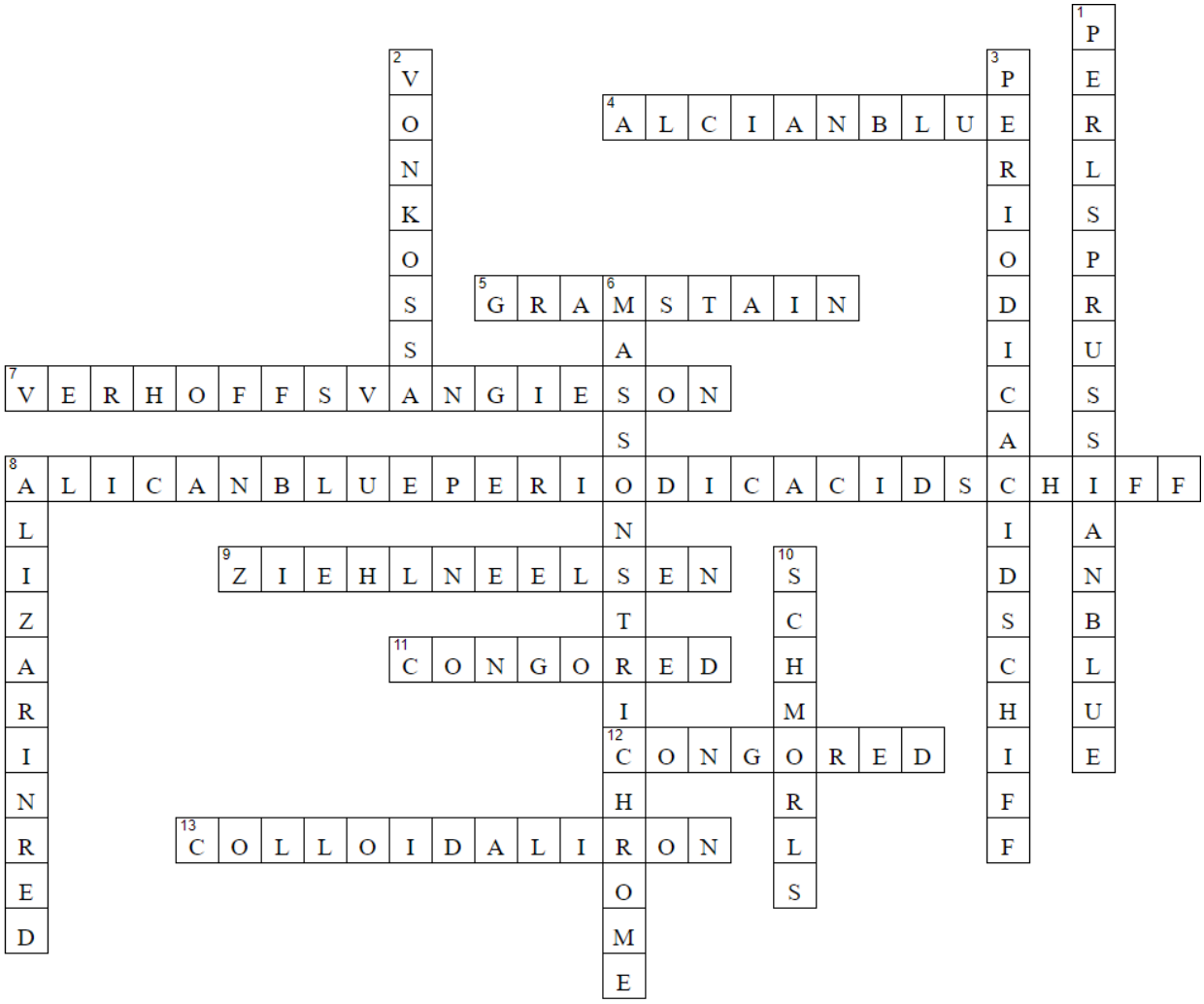
Sep 5, 2022

Oct 3, 2022

Nov 7, 2022

Dec 5, 2022

Crossword Answer Key



Thanks for reading! :-)