

FROM THE EDITOR

This is the fourth issue of the Fish Health Section newsletter, and the first for 2009. Hopefully I can get out another at the end of the year, or early in 2010.

Of course it all depends on items of interest from members! It's hard to produce a newsletter without any news!

Brian Jones

brian.jones@agric.wa.gov.au

PUZZLE

Fujimura's triangle puzzle

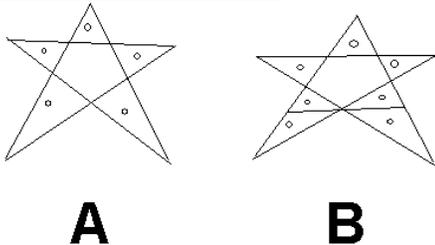


Figure A shows how to make as many non-overlapping triangles as possible with five straight lines. The maximum is five triangles. With six straight lines you can create seven triangles as shown in Figure "B"

How many non-overlapping triangles can you make with seven lines?

CONFERENCES

14-19th September 2009. 14th European Association of Fish Pathologists conference. Prague, Czech Republic.
See: <http://www.eafp.org/>

13-15 October, 2009. "Integrated Technologies for Advanced Shrimp Production," will be held in Hawaii. This

symposium is organized by Oceanic Institute.

Why should you attend?

- Come to Hawaii, "the home of SPF shrimp"
- Hear international experts' keynote addresses on major issues
- Reconnect with shrimp researchers from around the world
- Keep up with the latest developments in shrimp culture technology
- Meet new shrimp researchers and producers and exchange ideas
 - Give a presentation—abstract submission deadline is June 24, 2009

For further information, please link to the web site at <http://www.oceanicinstitute.org>

8-11 November, 2009. 'International Symposium on Aquaculture, Biology and Management of Commercially Important Crabs (ISABMC-2009)' to be held at Shanghai Ocean University, China. Please visit <http://2009.crablab.org>

Conference Chairmen: Prof. Yongxu Cheng, Shanghai Ocean University, China, and Prof. Patrick Sorgeloos, Ghent University, Belgium

Co-Chairmen: Dr. Chaoshu Zeng, James Cook University, Australia, and Dr. Lewis Le Vay, University of Wales, Bangor, UK.

This congress will concentrate on applied aspects such as aquaculture and fisheries but will also cover basic crab biology. As a metropolitan city, Shanghai is conveniently located within a short distance to several major crab aquaculture regions in China, including both freshwater mitten crab, saltwater mud crab and swimming crab farms. Field trips to crab farms will be organized to give participants a first hand experience on crab farming in China.

The official website is <http://www.crabconference2009.org> The institutional website is <http://2009.crablab.org>

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9-12 May 2010. 8th International Sea Lice Conference, Sea Lice 2010, will be held in Victoria, British Columbia Canada. The conference website can be found at www.sealice2010.com. The Sea Lice 2010 website contains details about the conference, program, registration, abstract submission and more!
For regular email updates and news about the conference sign up for the conference email list via the website.

9-12 June 2010 Global Conference on Aquaculture 2010

The FAO Fisheries and Aquaculture Department, the Network of Aquaculture Centres in Asia and the Pacific (NACA) and the Department of Fisheries of the Royal Thai Government will co-sponsor the "Global Conference on Aquaculture 2010". It will be held from 9-12 June 2010 in Bangkok, Thailand and back-to-back with the 5th Session of the FAO Committee on Fisheries, Sub-Committee on Aquaculture to take place from 14-18 June 2010.

If you wish to be included in the Conference mailing list and receive regular updates, please contact the Conference Secretariat at:
Aqua-Conference2010@fao.org
<mailto:Aqua-Conference2010@fao.org>

The first announcement brochure can be downloaded at:
<http://www.fao.org/fishery/aquaculture/en>

It is expected that one of the thematic areas will be Gender in Aquaculture.

July 2010. International Association of Astacology's (IAA) 18 international symposium to be held in Columbia, Missouri, USA. IAA is the international organization dedicated to freshwater

crayfish, including ecology/biology, conservation/management, culture, taxonomy and systematics, genetics, **disease and parasites**, behavior, physiology, toxicology, etc. We hold symposiums biennially, generally rotating among the continents of Australia, Europe and North America.
<http://muconf.missouri.edu/IAA18/index.html>.

USEFUL INTERNET STUFF

SLIDE OF THE QUARTER

The Australian National Aquatic Animal Health Technical Working Group organise a "slide of the quarter" showing common aquatic animal pathologies. This is circulated four times a year among animal health laboratories in Australia.

These are intended to be good examples of aquatic diseases (some are exotic to Australia), which are of interest but should not include examples that are difficult to interpret.

While it is not possible for more laboratories to receive the glass slides (because of cost and logistics issues), images and case notes are posted on the Western Australian Department of Fisheries web. See
<http://www.fish.wa.gov.au/docs/pub/FHSlideofQuarter/index.php?0408>

For those who rely only on PCR for diagnostic purposes, the following journal articles may be of interest:

Burreson, E.M. 2008. Misuse of PCR assay for diagnosis of mollusc protistan infections. *Disease of Aquatic Organisms* 80:81-83.

Ford, S.E., Allam, B., Zhe Xu 2009. Using bivalves as particle collectors with PCR detection to investigate the environmental distribution of *Haplosporidium nelsoni* *Diseases of Aquatic organisms* 83:159-168. (Basically, non-susceptable molluscs acquire particulate pathogens from the water column. You will get PCR positive results in such cases!)

The ***Aquatic Animal Diseases Significant to Australia: Identification Field Guide*** is an integral part of the awareness resources within Australia's Aquatic Veterinary Emergency Plan, AQUAVETPLAN. The third, revised edition of the field guide comprehensively updates information on diseases listed in the second edition, and includes new information on diseases that have been added to *Australia's National List of Reportable Diseases of Aquatic Animals* since publication of the second edition in 2004. The field guide also provides information on exotic diseases with potential to damage Australia's fisheries and/or aquaculture.

The field guide aims to improve the ability to identify diseases of significance to aquaculture and fisheries in Australia. It provides fisheries and aquaculture managers, recreational fishers, border protection staff, environmentalists, and students of aquatic animal health with a reference guide to develop knowledge and support decisions on diseases that may impact on aquatic animal health. The field guide is produced in an interactive CD-ROM format and includes print friendly fact sheets. Copies of the CD can be obtained by contacting DAFF's Office of the Chief Veterinary Officer at aah@daff.gov.au. The field guide is now also available on the DAFF website at http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/aquatic_animal_diseases_significant_to_australia_identification_field_guide

A new Marine Parasite Website <http://www.marineparasites.com> is being established by the **Marine Parasitology Laboratory, South Australia** that aims to provide scientists, students, recreational and commercial fishers, and fish farmers with information on parasites of recreational, commercial and farmed fish species in southern Australian waters. It includes downloadable posters with details on the identity, appearance, microhabitat and pathology of common and/or



potentially pathogenic parasites that infect important fish species. The website forms part of a communication plan of a research project funded by Australian Biological Resources Study (ABRS) and FRDC.
By Kate Hutson

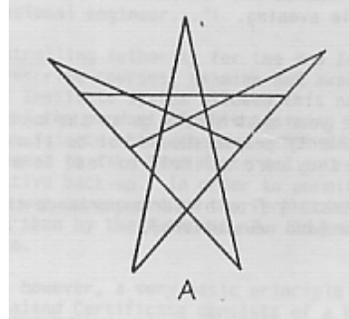
Biosecurity Australia have two current fish related risk assessments. The documents contain much information about diseases and the risks they pose

Prawns and prawn products:
<http://www.daff.gov.au/ba/ira/current-animal/prawns>

Ornamental finfish with respect to iridoviruses
http://www.daff.gov.au/ba/ira/current-animal/ornamental_finfish

ANSWER TO PUZZLE

For many years it was thought that non more than ten non-overlapping triangles could be made with seven straight lines, but it is possible to make eleven.



THE 2009 SHRIMP PATHOLOGY SHORT COURSE

By Celia Pitogo

Aquaculture in the desert? Must be puzzling to many, but shrimp aquaculture has been going on in Arizona for years. Shrimp disease research and diagnostics in the midst of sand and rocks? Even better, with no worry about contaminating waterways, farms, and culture facilities. For the past two decades, shrimp pathology enthusiasts have trooped to the Sonoran desert with one mission – to be at the Shrimp Pathology Short at the University of Arizona in Tucson. The 21st session was held on June 1-12, 2009 with 17 participants, eight from Asia - 3 from South Korea, and one each from Taiwan, China, Saudi Arabia, Bangladesh, and Vietnam.



The 21st Shrimp Pathology Short Course participants and instructors

With Dr. Don Lightner at the helm of the teaching staff, the Short Course is the longest-running training in shrimp pathology and has been vital in the development of expertise in the field having trained more than 500 participants from 50 countries since its first offering in 1989. The training staff have decades of experience in collaborative shrimp health research with 285 collective publications mainly in peer-reviewed journals. Their scientific outputs have contributed information for book chapters, and have been compiled into instructional manuals, CDs and histopathological slide collections – a wealth of learning materials on which every

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dedicated student or trainee can learn from. The details of activities in the 2-week short course are in <http://microvet.arizona.edu/research/aquapath/index.htm>

This year's course has been a sort of homecoming for me having been in its first offering in 1989. My participation in the Course is the highlight of my 5-month stint at the OIE Reference Laboratory for Crustacean Diseases on a Fulbright scholarship. After two decades, the course has retained the same warmth and fun that not only includes serious classroom and lab stuff, but also with a visit to the Arizona-Sonora Desert Museum highlighted by dinner at Pinnacle Peak – a tradition that holds one of the Short Course's best-kept-secrets. The course coverage, however, has changed a lot since its first offering.

When the 1989 course that I attended was held, Taura syndrome virus, NHP, IMNV, and the most dreaded WSSV were unheard of. PCR and *in situ* hybridization techniques were not yet applied to shrimp. Advances in projection technology to facilitate teaching of histopathology have added a lighter and more visual dimension into this very intensive and technical course. Because of this course, it has become easier to visualize what every sick and dying shrimp goes through, and how its organelles bloat or break into pieces as a result of infection. We have come a long way since lab diagnostics became a must in shrimp aquaculture, but a lot of diseases have too. The combination of basic histopathology and molecular techniques are the strengths of the Shrimp Pathology Short Course. It is truly an excellent way to discover infection sites, tissue responses, colour and organelle reactions, cell disintegration – or how not to let them happen.



Insights from the participants:

Dr. KC Han-Ching Wang

Associate Professor, Institute of Biotechnology
National Cheng Kung University, Taiwan



KC hugging a Saguaro at the Arizona-Sonora Desert Museum

Professor Donald Lightner leads a spectacular annual 12-day whirlwind hands-on course covering most known shrimp diseases. In Taiwan, shrimp culture is our traditional economic activity and, internationally shrimp trade is highly developed. This year, through the kind support of my university, I was fortunate to be one of the 17 participants. My own research is focused on shrimp white spot syndrome but now I know more! In this course, we learned to identify and diagnose the full spectrum of shrimp maladies. Anyone taking this course would be prepared to contribute to surveillance and biosecurity in the shrimp industry. For me, this knowledge is helpful when faced with queries by shrimp farmers in Taiwan or abroad. I was particularly impressed with the extremely detailed information about managing an OIE Reference Laboratory for Crustacean Diseases. I recommend that anyone who studies any aspect of shrimp disease or who is engaged in the shrimp industry, take this course. Be prepared to accept a lot of knowledge and handle hundreds of microscope slides. After just 12 days, your brain will be crammed with new knowledge and skills and you will know how powerful this knowledge is for the shrimp industry!

Dr. Dang Thi Hoang Oanh
Department of Aquatic Biology and Pathology
College of Aquaculture and Fisheries
Can Tho University, Vietnam



Dang Thi Hoang Oanh with a participant from Belize

It was indeed a good opportunity to be in Arizona to attend the shrimp pathology short course at Dr. Lightner's laboratory. The lectures were very informative and updated. The course provided us with excellent training materials, especially the histopathology syllabus. All trainers were very enthusiastic and I have met lot of nice friends who come from many places to attend the course.

Dr. K. Habeeb Rahaman
Shrimp Pathology Lab Supervisor
Arabin Shrimp Company Ltd.
Jizan. KSA



Dr. Habeeb Rahaman (left) and other participants listening to Dr. Carlos Pantoja's instructions

The Shrimp Pathology workshop conducted by Dr. Lightner was extremely informative and useful. I learned a lot of things in relation to histopathology and viral diseases and the course has improved my knowledge about the principle of PCR and working with primers. Most especially, it gave detailed information about the development of bacterial, viral, fungal, protozoan and other diseases of shrimps. I thank Dr. Lightner and the entire training team for sharing their valuable ideas with me and the rest of the participants.

Mr. Sheikh Aftab Uddin
Institute of Marine Science
Chittagong University, Bangladesh



Aftab (right) and other participants doing DNA extraction

This course is very much helpful to identify the shrimp viral, bacterial, fungal, and other diseases and their control measures. It is really nice and helpful regarding shrimp pathology. In this course, we did a lot of practical exercises. We learned how to handle sophisticated diagnostic equipment. The course is very helpful for both shrimp farm owner and hatchery operator to establish better management practices. I enjoyed the course and learned so much!!

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Dr. Zhao Yang
Arizona State University
Tempe, Arizona, USA



Zhao (center) and Han-Ching (right) with other course participants from the USA and Venezuela

It's my first time learn something about shrimp pathogens. Now I believe I know many things about them such as how to make histological slides, the histopathological differences shown by various shrimp diseases, how to diagnose the diseases, and what are the current developments in shrimp aquaculture. This shrimp short course is really very useful to me and it was really worthy to take part in it.

FHS Enewsletter editor B. Jones
brian.jones@agric.wa.gov.au

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