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Aquatic Vet News

World Aquatic Veterinary
Medical Association

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What I Did on My Summer Vacation!

Usually essays with the above title are written in the fall about past events from the previous summer. In this case, it is written about events to unfold this summer at the WAVMA Annual General Meeting in Athens, Greece. Should you be planning your summer Holiday around the WAVMA Meeting in Greece this July, you will get a chance to see much more than an Ancient Civilization (see page 19).

Although the farming of aquatic animals has been present in Greece since ancient times, the main farmed species that make up this sector today, that is seabass (*Dicentrarchus labrax*) and seabream (*Sparus aurata*), have only been farmed since the beginning of the 1980s. Strong research and development in universities and institutes in France, Italy and Spain during the 1970s led to breakthroughs in the control of the life-cycle of these species.

In the late 1970s the first fish hatcheries appeared in France, Italy, Spain, and then in the early 1980s in Portugal and Greece. The adoption of cage farming technologies from the salmon industry, an increasing market demand for these species, and the natural conditions offered by Greece's climate and extensive shoreline made it the country of choice for the development of the aquaculture industry.

Major European Union (EU) funding programs and a few entrepreneurial individuals that have undertaken the challenge have led to a rapid increase in production and to Greece becoming the largest producer of these species in the world.

There are a number of central fish markets in Greece, the biggest being the *Ichthyoskala* near Athens; large aquaculture companies will sell a part of their production through it, mainly to Greek-based customers. Be sure to make your way to the fish market one day during the trip to Greece for the WAVMA Meeting.

http://www.fao.org/fishery/countrysector/naso_greece/en

Ionian fish mariculture pens



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Editor's Note

"Greece" is the Word!

You will notice the topic of Greece comes up often in this issue of the *Aquatic Vet News*. That is because our Annual General Meeting is scheduled for July 12-14 in Athens, Greece (see page 19). What a great way to get continuing education on aquatic veterinary medicine and see what other parts of the world are doing with aquaculture at the same time. I am taking advantage of this opportunity to bring my wife and three daughters along on a European Summer Vacation! [Hopefully we will fare better than the Griswolds did in the movie.]

Along with the Aquatic Veterinary Conference and the Annual General Meeting, there is an additional cruise scheduled after the conference to visit several of the Mediterranean isles and ports. This will give additional opportunity for CE credit, but mostly for socialization with fellow fish vets and their families. Cruising is one of the best ways to see the world, as you don't have to pack and unpack each day, and you sleep in the same bed each night, even though you see different locales every day. And the food on the cruise ships is fabulous! You get on as a passenger but you get off as cargo.

I hope to see many WAVMA members there!

Nick Saint-Erne, DVM

Aquatic Veterinary News Editor

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Aquatic Veterinary News

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Executive Reports

President's Report

Over the last few months several topics have been discussed and decided on by the Executive Board. These varied from administration issues to the preparation and organization of the 2010 AGM and conference.

First of all we have refined the goals outlined in the 2010 membership dues renewal letter and discussed these in detail during the Board meetings. These goals are briefly described here:

1. We will continue to develop the website according to the plans previously decided, in which there will also be a database of information and cases of either national interest or species interest. We are also looking at various other options (e.g., VIN) from where dissemination of information might be easily achieved.

2. We shall work towards defining the aquatic veterinary practice role: how to make it happen? maybe produce a white paper on WAVMA's views towards aquatic veterinary practice and education. In relation to education, we should concentrate first on undergraduate training and find answers to the following questions:

- Should aquatic veterinary medicine be a standard part of the core curriculum of veterinary schools or concentrated in those schools noted for being strong in this specialty?
- What is the justification for such a stance?
- How many hours minimum should be required for a core curriculum?
- What should comprise this core curriculum of aquatic animal medicine?

In relation to postgraduate specialization, we should work either through an existing committee (credentialing) or a new committee (education committee) to set up a framework of educational programs of this specialization and set up minimal standards. To this direction we should take into consideration firstly aquatic GP credentials, then short training courses and the more formal MSc courses. We should relate to other established aquatic organizations that work towards similar issues.

We should acquire information around the globe on existing MSc programmes within vet schools, identify centers of excellence for vets to train and try and establish a mechanism for WAVMA certification of such courses.

3. We should work harder to publicize WAVMA to other organizations such as WVA, AVMA and its Aquat-

ic Veterinary Medicine Committee, FECAVA, etc. The list of our achievements should be made known to various fish & trade magazines, websites and societies. We should also make an effort to increase membership this way. To this effect, we are already participating in various events worldwide and will make our presence known: Aquaculture 2010, SAVMA Symposium (Madison WI, March 2010), IAAAM (Vancouver, May 2010), AVMA convention (Atlanta, Aug. 2010).

4. The Annual General Conference was decided to be a major event this year, accompanied by a scientific conference and a cruise event where a further education programme will be offered. This is our priority now as time flies and I have personally joined efforts with the organizing committee so that this event will be a success. Everything is progressing well so far and I urge you to read the related announcements on our web site and note your interest as early as possible. I am very proud that this will take place in Greece, my home country, as the place is very inviting and full of culture and ancient wisdom. I really invite you to join us in Greece this summer and I am sure you will feel this energy everywhere around you. I promise you this will be both an unforgettable and a useful experience as this trip will combine pleasure, history, culture and education at the same time.

Besides these goals, the Executive Board has had a lot of discussions concerning the role and effectiveness of various standing committees that exist within WAVMA. These committees are the heart and core of the organization and thus, we thought we had to identify their members and chairs and clarify their tasks. Reports have now been produced from most of these committees and the need for a new Education Committee was identified and created. This committee will create a means of achieving most of our goals above. But a lot more needs to be done still.

As I am a naturally optimistic person, I feel confident that if we organize our efforts well and concentrate on these goals we can achieve a lot during the rest of the year. Therefore, I ask for everybody's help and enthusiasm in the days/months to come.

Hoping to see you all in Greece at the Annual General Meeting in July.

Fotini Athanassopoulou
DVM, PhD, MRCVS

WAVMA President 2010



Secretary's Report

Once again I would like to remind members that WAVMA membership runs for a **calendar year** and that membership dues for 2010 should have been paid in January. For the first time, if member dues are not paid by Wednesday 31st March, then your name will be removed from any WAVMA listserves and once the new website is running you will not have access to the current issues of the Aquatic Veterinary News. Information on payment for 2010 can be found on the website (www.wavma.org) or by contacting the Treasurer, Dr Dusan Palic.

A lot of work this quarter has been arranging a conference and AGM to be held in Greece, July 12 -14 followed by a further 3 days of CEPD whilst cruising in the Greek islands. This is an exciting opportunity to learn more about aquatic veterinary medicine whilst enjoying sun, sea and sand. The conference will be family friendly with activities available for those who do not want to sit through a lecture, so keep your partner and kids happy by bringing them along. Please support WAVMA in this endeavour as if it is successful it will set a precedent for future years. Further details can be found on the website and will be circulated around the listserv within the next couple of weeks.

In the previous newsletter I asked for contributions for the new website that met with a "deafening" silence. Appreciating everyone is busy I would like to ask for material again. The member's listserv has demonstrated the willingness of many members to help/advise on diverse topics. To me, for WAVMA to be successful requires that we develop a community of aquatic veterinarians helping each other and WAVMA to develop. All the effort and success achieved by numerous folk to date is much appreciated, but for the website to be the member's resource envisioned requires more content input than can be achieved by the handful of people who are currently involved and the content so far provided. So, please submit to the Secretary any pictures, presentations, information, education material, website addresses you feel would be useful?

A few weeks ago I was provided with another one of those learning curves when I was contacted by a client who is a fish importer but also dabbles in what used to be called exotic species. The problem this time was with an importation of tortoises that had been seized under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulations at the port of entry into the UK. The client wanted my help in getting the tortoises released, which about all I knew was it is fairly unlikely if they had been seized under CITES. Clearly the first thing was to find out what had gone wrong with what appeared to be a perfectly legitimate importation. I got a rather garbled version of

events from the client and when I contacted the CITES officer I was pretty much stonewalled with a point blank refusal to talk to me although I sympathised with the reasons why. So with nothing else to do until the importer received the report on why the tortoises were seized I decided to find out more about CITES.

The first port of call was www.cites.org for general information and in particular information on Article VIII (www.cites.org/eng/disc/text.shtml#VIII) detailing what action countries can take when animals are seized. The information on the website was impressive but overall confusing, including the free download "The Evolution of CITES" (www.cites.org/eng/resources/publications.shtml) which "presents the provisions of the Convention and relevant Resolutions and Decisions in an accessible way as well as provides explanations and comments to facilitate an understanding of the Convention and of how it should be implemented" – I found it worse than the website. The next step was CITES implementation in the European Union (EU) http://ec.europa.eu/environment/cites/legis_wildlife_en.htm and a look at [Council Regulation \(EC\) No 338/1997](#) and [Commission Regulation \(EC\) No 407/2009](#) which informed me that the EU took a tougher line than CITES itself. Finally a look at CITES implementation in the UK www.defra.gov.uk/animalhealth/CITES/index.htm with the most useful information being the 20 or so guidance notes available (www.defra.gov.uk/animalhealth/CITES/guidance/pdf/GN1.pdf) with the easiest way to obtain them all being to change the GN1 part sequentially. All this effort took me no further forward except that Article VIII implied any action taken on seizure should consider the best interests of the species concerned.

One week later the importer received the officer's report. The issue was that nine out of forty boxes had been packed with 11 tortoises rather than the maximum of 10. Except for the amazement felt that the exporter and more particularly the exporting countries veterinary authorities could not count up to 10 it was clearly a breach of CITES and an illegal import.

I have no knowledge of the ultimate fate of these 99 tortoises although the rest of the shipment was released to my client which might be considered a positive result. I am certain that the best interests of all these tortoises was not served or that the actions taken were in the spirit of CITES intentions. An awful lot of trouble and expense for a simple arithmetical mistake.

Chris Walster

WAVMA Secretary

chris.walster@onlinevets.co.uk

WAVMA Committee Reports

Meetings Committee

The Meetings Committee has been working continuously behind the scenes to help set up two very exciting meetings scheduled for 2010.

For those of us based in North America, plan to attend the IAAAM (International Association for Aquatic Animal Medicine) Conference to be held in Vancouver, Canada this May. Thanks to the cooperative efforts of the Meetings Committee, IAAAM President (and WAVMA member) Judy St. Leger and Conference host Marty Haulena of the Vancouver Aquarium, we will have a full day Fish Health Workshop wet lab on Saturday, May 8, 2010 featuring a morning of nonlethal diagnostics and an afternoon of post mortem diagnostics and proper sampling for histopathology. This will be an excellent opportunity for both the novice aquatic vet and the seasoned practitioner to hear about and see the latest techniques and equipment being used by experts in the field.

The following day, Sunday May 9, 2010 we have an evening meeting planned after the regular lectures have concluded for the day. WAVMA will be providing catered sandwiches and refreshments for a joint WAVMA-IAAAM roundtable discussion on the "Opportunities and Difficulties Facing the Aquatic Practitioner". This discussion will provide a forum for the practitioner to learn about new problems and solutions facing our profession and to help assist others. Plan to attend and enjoy this post-Olympic venue. To register, go to the IAAAM website at www.iaaam.org and be sure to opt for the wet lab also.

Aquatic Veterinary Education Committee

After several preliminary talks between Dr. Julius Tepper and Dr. Paul Pion, the President and Co-founder of the Veterinary Information Network (VIN), Dr. Scott Weber, Science and Education Committee Chair, met with Dr. Pion on Friday October 23, 2009 to discuss using VIN as a potential platform for message board exchange for WAVMA.

VIN is an online veterinary community and has worked with several other professional groups in a similar fashion, such as the Association of Avian Veterinarians (AAV). They discussed concerns such as restricting non-vet access to VIN if these members are included in the organization, and remediation using an isolated message board and isolated folders for both non-vet members and veterinary members.

Still in the planning stages, but sure to be one of the most memorable conferences yet, will be our 2010 WAVMA Conference and Annual General Meeting to be held in Athens, Greece in mid-July 2010. The Meetings Committee has been working for several months with our President Fotini Athanassopoulou to help choose the most interesting and economical venues for a host hotel, as well as dining and cultural activities for both the conference attendee and his/her family. Keep an eye out for regular updates as plans are finalized for this first-ever WAVMA conference in Europe and plan now to attend! (See page for more information).

Dr Julius Tepper

You could be here (Santorini, Greece), July 2010:



VIN already has an aquatic area of the message board and several WAVMA members answer questions for veterinary members of VIN daily. Because of this relationship there is expected to be some sharing across the boards so as not to neglect this established community, and to prevent all the message traffic going in one direction. Other capabilities already available on the VIN platform are video and on-line libraries, listserve information, Aquatic CE course materials, Newsletters and Updates, and a search function. Ownership of all materials is retained by the creator for CE materials. The WAVMA Executive Board received free trial access to use what is available to see if this will meet our goals. Discussion is continuing on this effort.

Dr Scott Weber

E-mail: fishdoc@charter.net

Listserve Letters

Dear WAVMA Members,

Has anyone worked with systems using ultrasonic algae and biofilm control? See AALSO.org presentation at <http://aalso.org/2009presentations/HutchinsonUltrasoundControlAlgae.pdf>

If so did you see any problems with animals in the system? It sounds like a great way to reduce chemical use.

Thanks for any information.

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Literature Review

Essential veterinary education in fish health and disease: a global perspective.

Rev. sci. tech. Off. int. Epiz., 28(2): 551-558.

Weber, ES, G Blanc & RP Hedrick (2009).

Abstract - Fish are the largest class of vertebrates, with over 25,000 estimated species and subspecies. Fish have evolved unique anatomical and physiological adaptations, when compared to terrestrial vertebrates, for life in a range of aquatic environments. Interest in aquatic animal health has been recorded in Eastern and Western cultures for more than 2,000 years. In recent times, there has been an increase in the numbers of aquatic animals being used as companion animals or pets, for food and in laboratories, as well as in restoration and conservation programmes.

Dear fellow WAVMA members;

The Executive Board would very much like to have a continued presence each year at the annual AVMA Convention. As our own Annual Conference will take place in Athens, Greece in July, I will be unable to attend the AVMA Convention this year, planned for July 31-August 3 in Atlanta. If any WAVMA member is planning to go and would be willing to assemble and man the booth, please let me know ASAP.

Thanks for your help,

Julius M. Tepper, DVM

cypcarpio@aol.com

Julius Tepper and Hugh Mitchell manning the WAVMA booth at last year's AVMA convention.



There has also been a corresponding increase in concern for their health and welfare. Moral and ethical considerations require the optimisation of husbandry practices and advances in aquatic animal health for these animals. As with other vertebrates, veterinarians are best equipped to meet the challenges for aquatic animal health from clinical, scientific and legal perspectives.

To accomplish this goal, veterinary education must incorporate aquatic animal health throughout graduate curricula, create advanced post-graduate training opportunities, and support a continuum of professional development opportunities for all levels of aquatic animal health expertise.

[Access the full publication at www.oie.int/boutique/.]

Colleague's Connection

2010 John L. Pitts Veterinary Student-Recent Graduate Scholarship Program

The WAVMA Executive Board is pleased to announce the establishment of the "John L. Pitts Veterinary Student-Recent Graduate Scholarship Program" to honor the contributions of John Leland Pitts DVM (1941-2009). During his lifetime, Dr. Pitts contributed significantly to advancing the discipline of aquatic veterinary medicine and the involvement of veterinary students.

To initiate this program, the Board and an anonymous donor have contributed \$1,400. We hope this seed money may stimulate others to make charitable (tax-deductible) contributions that will be dedicated to supporting veterinary students' and new veterinary graduates' education and involvement in aquatic veterinary medicine. WAVMA members and others who wish to support by making a charitable donation to this Program are encouraged to contact the Treasurer, Dr. Dušan Palić (dulep@iastate.edu).

The Scholarship Committee established to administer the Program is comprised of: an Executive Board representative (Dr. Julius Tepper), two WAVMA Full Members who are or have been in private practice (Drs. David Scarfe and Chris Walster), a Student Member (Kirstin Kamps, currently at Western University, California) and Madelyn Pitts, John's widow, who represents the Pitts family. Dr. Scarfe will Chair the Committee for 2010.

For 2010 the Committee will award scholarships of up to \$500 each (or more depending on availability of funds) on a semiannual basis from applications received by April 15 or September 15, 2010; awards will be announced approximately 30 days after these application deadlines. Awards will be made to WAVMA Members in good standing based on academic merit, past involvement in aquatic veterinary medicine, and the likelihood that the applicant will continue a career in private veterinary practice and provide aquatic veterinary services to clients. Awards are intended to support involvement and aquatic veterinary education of:

- Students enrolled in a recognized academic program leading to a veterinary degree;
- Graduate veterinarians enrolled in recognized post-graduate veterinary education programs; or,
- Veterinarians who have graduated within the previous 24 months and are in private practice.

Scholarships may be used to offset personal costs for:

Travel, accommodation or registration at aquatic veterinary conferences, symposia and other continuing education and professional development (CEPD) meetings including on-line aquatic CEPD;

Travel, accommodation and other activities directly associated with externships that expose veterinary students to clinical aquatic veterinary medicine;

Equipment and supplies needed for aquatic veterinary research projects not funded by other financial sources.

Individuals awarded a scholarship will provide a written report for possible publication in the WAVMA Newsletter within 30 days after completion of the meeting or project and, when possible, awardees are expected to give a presentation about their scholarship experience to veterinary students.

Additional information will be available at www.WAVMA.org and application forms and supporting materials should be submitted to dscarfe@ameritech.net by the appropriate deadlines.

Drs. John Pitts (left), Jennifer Strasser, Roxanne Smolowitz and Lester Khoo in serious discussion about the texture of wood paneling at the September 2009 AVMA Aquatic Veterinary Committee meeting.



Clinical Reports

Fish Egg Disinfectant Shown to Prevent Transmission of Devastating Fish Disease: Viral Hemorrhagic Septicemia Virus Eliminated in Treated Eggs

Released: 2/2/2010

A disinfection solution presently used for salmon eggs also prevents transmission of the virus that causes viral hemorrhagic septicemia or VHS -- one of the most dangerous viral diseases of fish -- in other hatchery-reared fish eggs, according to new U.S. Geological Survey-led research.

VHS has caused large fish kills in wild fish in the U.S., especially in the Great Lakes region, where thousands of fish have died from the virus over the last few years. The disease causes internal bleeding in fish, and although in the family of viruses that includes rabies, is not harmful to humans. Thus far, the virus has been found in more than 25 species of fish in Lakes Michigan, Huron, Erie, St. Clair, Superior and Ontario, as well as the Saint Lawrence River and inland lakes in New York, Michigan and Wisconsin.

Effective disinfection methods are critically important to natural resource agencies that collect eggs from wild fish stocks and private aquaculture because the spread of the virus to a fish hatchery could be devastating, said Mark Gaikowski, a USGS researcher who led the USGS and U.S. Fish and Wildlife Service research team.

"If VHS virus is introduced into the aquaculture industry, it could lead to trade restrictions, as well as direct economic losses from the disease," Gaikowski noted.

USGS and USFWS researchers tested the effectiveness of using iodophore disinfection in walleye and northern pike eggs and found that it eliminated active virus from fertilized eggs. Iodophore disinfectant solutions contain iodine formulated for use on fish eggs. The researchers also found that although some of the disinfection treatments reduced hatch, iodophore treatment at 90 minutes after fertilization occurred did not alter egg hatch or fry development.

Experts fear the disease could potentially spread from the Great Lakes into new populations of native fish in the 31 states of the Mississippi River basin. Regulatory agencies in the United States and Canada have already placed restrictions on the movement of fish or fish products that could pose a risk for the spread of VHS virus to regions outside of the known geographic

range.

For more information about this subject, as well as recommendations on the disinfection process, see the new USGS Fact Sheet online. Funding for this research was provided by the USGS and the North Central Regional Aquaculture Center from the U.S. Department of Agriculture Cooperative State, Research, Education and Extension Service. The iodine used during egg disinfection was donated by Western Chemical Inc, Ferndale, Washington.

Contact Information:

U.S. Department of the Interior,
U.S. Geological Survey Office of Communication
119 National Center
Reston, VA 20192
Mark Gaikowski
Phone: 608-781-6284
Catherine Puckett
Phone: 352-264-3532

Source:

<http://www.usgs.gov/newsroom/article.asp?ID=2402>

The Fact Sheet is available from
<http://pubs.usgs.gov/fs/2009/3107/>

USGS microbiologist Maren Tuttle counts hatched northern pike fry.

Photographer: ,
U.S. Geological Survey



Dispensing turtle-loving care: New England Aquarium workers help ailing reptiles heal

The Boston Globe (Excerpt)

By Brian MacQuarrie

Globe Staff / February 1, 2010

See Full article at:

http://www.boston.com/news/local/massachusetts/articles/2010/02/01/dispensing_turtle_loving_care/

A ventilator tube in its beak and an incision in its ear, an ailing sea turtle lay splayed before a medical team that surrounded the operating table in aqua-colored scrubs and collective, concentrated focus.

"Is he dosed?" asked **Dr. Charles Innis**, director of animal health at the New England Aquarium in Boston.

"He is," answered Dr. Julie Cavin, who had just injected a powerful anesthetic into the reptile's neck.

The small turtle, found half-dead on a Cape Cod beach in November, had come to the right place. Here, in the close quarters of the aquarium's medical center, the Kemp's Ridley turtle had already received two months of state-of-the-art care. Now, traces of urine had been found in its body cavity, and Innis wanted to investigate.

Such critical care is a somewhat hidden mission of the New England Aquarium, whose 30,000 marine animals garner nearly all the wide-eyed attention of the visitors who circle its imposing four-story fish tank. But with the cold weather that killed and sickened hordes of turtles in Florida this winter, the center's expertise has taken on a national dimension.

Aquarium staff have been dispatched to Florida, where veterinarians generally do not have the experience or facilities to care for turtles crippled by the cold. In Boston, those life-saving skills have been earned through years of work on hundreds of exhausted and emaciated turtles that are thrown from the surf in Cape Cod Bay.

This past Thanksgiving, the aquarium accepted 85 barely living turtles that had washed up between Dennis and Wellfleet, trapped inside the Cape's arm as they tried vainly to migrate south. Twelve of them died within 48 hours. Seventeen more died afterward, many of them ravaged by pneumonia contracted in 50-degree waters that immobilized the cold-blooded reptiles.

"We're really playing beat the clock," said Tony LaCasse, spokesman for the aquarium. "It's not dissimilar from a military casualty situation."

KHV Vaccination Assessment

[Adapted from *Finfish News* 7, Winter/Spring 2009, with permission; Crown copyright, 2009. "An Assessment of the Impact of Importing Carp Vaccinated Against KHV on the Site Level Prevalence of Koi Herpes Virus in England and Wales" by *Ed Peeler, Keith Way and Birgit Oidtmann*. CEFAS Weymouth Laboratory, Barrack Road, The Nothe, Weymouth, Dorset, DT4 8UB. ADS-Associated Editor.]

Koi Herpes Virus (KHV) causes a severe disease and mass mortalities in populations of cultured common carp (*Cyprinus carpio carpio*) and Koi carp (*Cyprinus carpio koi*). KHV was made a notifiable disease in the UK in April 2007, and DEFRA published measures to combat its introduction and spread in May 2007. A question-mark remained on the potential for KHV-vaccinated carp imported from Israel to contribute to the spread of KHV within England and Wales. The epidemiology team at CEFAS Weymouth therefore conducted a risk assessment to support policy on KHV control and published a report.

The conclusion reached was that imported vaccinated carp may introduce wild-type (wt) KHV. A summary of the report explained: A qualitative risk assessment was undertaken to investigate the likelihood that importing carp, vaccinated with an attenuated vaccine against koi herpes virus (KHV), will increase the fishery and farm level prevalence of KHV infection in England and Wales at the current level of trade.

Currently all imports of vaccinated carp into the England and Wales originate from Israel. The guidelines for import risk analysis produced by the World Organization for Animal Health (OIE) were followed. Scenario trees to illustrate routes of introduction and establishment were developed. The steps necessary for the introduction and establishment of KHV via the importation of vaccinated carp were identified and individually assessed. Data on fish imports from Israel were analyzed to assess current trade patterns. The large majority of imported carp are koi, destined for the ornamental trade. In comparison, significantly smaller numbers of common carp have been imported for release into fisheries.

The conclusion reached in the risk assessment is that imported vaccinated carp may introduce wt-KHV. Well documented pathways (analyzed in the risk assessment) exist which may result in exposure of carp in farms or fisheries to imported carp and, therefore, introduction of wt-KHV. The risk is exacerbated if vaccinated fish are marketed as, or perceived to be, 'safe' and therefore purchased by sites wishing to protect uninfected stocks.

The full report is available on the e-fishbusiness website or directly from <http://www.efishbusiness.co.uk/news/081024.pdf>.

Aquatic Vet News

Quarterly Newsletter

Instructions for Authors and Contributors

Do you want to make an impact and a contribution to aquatic veterinary medicine? If so, consider becoming a regular or periodic contributor to the quarterly *Aquatic Vet News*.

Really excel by volunteering to be an Associate Editor to collate information and edit select *Aquatic Vet News* columns.

Help make the *Aquatic Vet News* the source for pertinent and important news. If you would like to be an Associate Editor or have material published in AVN, contact or submit it today to Nick Saint-Erne (Saint-Erne@Q.com).

Submission Deadlines:

Issue 1 – February 15 (published early March)

Issue 2 – May 15 (published early June)

Issue 3 – August 15 (published early September)

Issue 4 – November 15 (published early December)

While any information directly relevant to aquatic veterinary medicine might be published, we particularly invite contributions for (and Associate Editors to assist with) the following regular columns:

(Submissions may be edited to fit the space available. One page is ~1,000 words).

Aquatic Vet Q&A

Short description of a problem and solution to an issue – if you don't have the solution, ask the questions and let readers submit solutions for the next issue (½ to 1 page).

Clinical Cases

Clear description of a distinct clinical case or situation and how those were resolved (1-3 pages)

Book Reviews

Brief review of a published book, including an overview and critique of the contents and where to obtain the book (½ to 1 page).

News & Views

Brief synopsis or information about news published elsewhere (½ to 1 page).

Publication Abstracts

Abstracts of published veterinary and scientific journals with full citation/reference (authors, date, title, and journal volume and page numbers – ½-1 page).

Legislative & Regulatory Issues

Synopsis or description of emerging legislation or regulations with information on how to access further detailed information (½ to 1 page).

Externships, Internships & Residencies

Description with specific contact information for veterinary student externships and post-graduate internships or residencies at private practices, institutions, universities or organizations (½ to 1 page).

Meetings & CEPD Opportunities

Description or synopsis of upcoming aquatic veterinary or (veterinarian-relevant) non-veterinary in-person or on-line educational meetings noting the meeting title, dates, location, and contact person or website (½ to 1 page).

Jobs Available

Description of available full or part-time employment for aquatic veterinarians (½ to 1 page).

Pictures

Pictures & Photographs

Contributors of original photographs illustrating aquatic veterinary practices or procedures will be credited.

Emerging Issues

Barley Examined as Source for Potential Fish Feed

Millions of tons of menhaden and other small fish are removed from the oceans each year to feed fish, poultry, and swine. The total amount of fish harvested for fishmeal has not changed in the last 20 years, but the demand has increased sharply. This pressure is thought by some to presage ecological problems and higher feed costs. So the search is on for alternative feed ingredients.

Agriculture Research Services (ARS) scientists, led by fish physiologist Rick Barrows, are attacking the problem from many angles, one of which is to use barley protein as a main ingredient in feeds. Researchers at the Small Grains and Potato Germplasm Research Unit in Aberdeen, Idaho, are examining barley's genes to improve the grain's protein yield and nutritional composition and developing ways to concentrate the protein. At the research unit, which is co-located at the University of Idaho's Hagerman Fish Culture Experiment Station, geneticist Ken Overturf is identifying genes in trout that may allow the fish to better utilize fishmeal-free diets.

The research team is pursuing several approaches to enhance the use of barley protein in aquafeeds. One is to produce a highly valuable co-product, beta-glucan, for the human nutraceutical industry while also producing barley protein for fish. Geneticist Gongshe Hu has selected varieties that will yield high levels of beta-glucan as well as protein.

Another approach is to concentrate the protein in standard field barley into a form usable in aquaculture feeds. Keshun Liu, a chemist at Aberdeen, is evaluating both wet and dry fractionation methods of concentrating the protein. Barrows and researchers with cooperative research and development agreement partner Montana Microbial Products (MMP) of Butte, Montana, applied for a patent on a new enzymatic method that concentrates barley protein and produces raw material for another valuable commodity—ethanol.

"This process has provided a high-protein ingredient that may replace other, more expensive protein sources," says Barrows.

"We conducted feeding trials to determine the digestibility of macronutrients and amino acids in the barley protein concentrate. The data from these trials allowed us to formulate trout feeds with varying levels of barley protein concentrate, and we successfully replaced both fishmeal and soy protein concentrate.

"There is no current commercialization of barley protein concentrate in place, but MMP is producing pilot quantities for feeding studies in trout, salmon, and other species. MMP projects that the concentrate will sell for \$700 to \$1,200 per ton," says Barrows. Since fishmeal costs about \$1,200 per ton, and fish oil costs about \$2,200 per ton, the projected costs of barley protein concentrate compare favorably.

"Feed is part of a complex interplay of genetics, nutrition, and economics," says Barrows. "We believe barley protein concentrate can completely replace fishmeal if other essential nutrients are supplemented. We will also examine oats as another fish-feed alternative."

Article by [Sharon Durham](#), Agricultural Research Service Information Staff.

This research is part of Aquaculture, an ARS national program (#106) described at: <http://www.nps.ars.usda.gov/>.

[Rick Barrows](#) is in the USDA-ARS [Small Grains and Potato Germplasm Research Unit](#), 3059 F National Fish Hatchery Rd., Hagerman, ID 83332; (406) 994-9909.

"Barley Examined as Source for Potential Fish Feed" was published in the [February 2010](#) issue of Agricultural Research magazine.

<http://www.ars.usda.gov/is/AR/archive/feb10/fish0210.htm>

Fish physiologists Rick Barrows (left) and Gibson Gaylord (right) inspect pellets made of barley protein as technician Jason Frost (background) loads an extruder with raw materials.

Photo by

Stephen Ausmus.



Ornamental Fish Keeping Brochure

05 February 2010

The BVA Animal Welfare Foundation (BVA AWF) is pleased to launch a new leaflet on **Ornamental Fish Keeping**; the latest in a series of information leaflets designed to assist pet owners.

Ornamental Fish Keeping aims to provide most of the information needed before purchasing your first fish, deciding which fish will suit you best and gives crucial advice in order to keep your fish healthy.

The leaflet outlines welfare needs, gives guidance on whether to choose freshwater or marine fish, and stresses the importance of purchasing fish from a reputable source. It also gives advice on the facilities required and how to maintain an aquarium or pond (with particular reference to water quality and plants) as well as highlighting the importance of correct diet and how to spot signs of disease or environmental deficiencies.

Speaking on behalf of the charity, BVA AWF Chairman and veterinary surgeon, Carl Padgett, said: "Whether you're thinking of buying a couple of goldfish or a variety of tropical fish, ornamental fish keeping is a fun and interesting hobby but it is vitally important to understand the needs of these fish and to maintain an environment in which they will flourish and remain healthy.

"I am delighted that the BVA Animal Welfare Foundation has produced this leaflet which gives valuable guidance on purchasing one's first fish as well as sound, practical advice on looking after these beautiful creatures and ensuring they are kept in a healthy living environment."

Ornamental Fish Keeping is now available for download from the BVA AWF website at www.bva-awf.org.uk.

Veterinary practices can obtain batches of leaflets for the waiting room by emailing the BVA AWF at bva-awf@bva.co.uk.

Members of the public can also request individual copies. All BVA AWF literature can be downloaded at www.bva-awf.org.uk



Assessing the Welfare of Farmed Fish – the Opinions of EFSA

[Adapter from "EFSA in focus – ANIMALS" (a publication of the European Food Safety Authority) and the EFSA website. ADS-Associate Editor.]

EFSA's activities in the area of fish welfare are carried out in the wider context of animal health and welfare by the Panel on Animal Health and Welfare (AHAW). The Panel provides independent scientific advice to risk managers on all aspects of animal diseases and animal welfare. Its work chiefly concerns food-producing animals, including fish. The opinions also took into account the results of the discussions of stakeholders' meetings organized by EFSA.

In 2009, the AHAW Panel adopted an opinion on the general approach to fish welfare. This provides an overall approach regarding the welfare, biology and physiology of fish. It addresses and satisfies all the issues outlined in the minority opinions recorded in rela-

tion to AHAW Panel opinions previously adopted on the welfare of individual fish species.

The AHAW Panel also adopted 7 species-specific opinions on the welfare aspects of stunning and killing methods for farmed fish. The individual scientific opinions concern bluefin tuna, common carp, European eel, Atlantic salmon, rainbow trout, European turbot, European seabass and gilthead sea bream. This work updates the previous conclusion, recommendations and opinions on the welfare aspects of stunning and killing for the main animal species subject to commercial and farm slaughtering practices, adopted in 2004 (accessible at <http://www.efsa.europa.eu/en/scdocs/scdoc/45.htm>). Other EFSA's 2008-2009 opinions on finfish sentience and the welfare or humane killing of Atlantic salmon, European eel, trout, seabass, gilthead sea bream, common carp, and tuna is accessible at <http://www.efsa.europa.eu/en/ahawtopics/topic/fishwelfare.htm>.

Legislative & Regulatory Issues

The Distribution of KHV in England and Wales 2007 to 2008

[Adapted from *Finfish News* 7, Winter/Spring 2009, with permission; Crown copyright, 2009. *Nick Taylor, Keith Way, Peter Dixon, Edmund Peeler, Keith Jeffery & Kevin Denham*. CEFAS Weymouth Laboratory, Barrack Road, The Nothe, Weymouth, Dorset, DT4 8UB. ADS-Associate Editor]

Koi Herpes Virus (KHV) causes a highly virulent disease affecting carp (*Cyprinus carpio*) and poses a serious socio-economic threat to the UK carp industry. From analysis of archive histological material, CEFAS has putative evidence for the presence of KHV in England since 1996. However, until 2003, KHV had only been detected and isolated from sites in the UK holding ornamental carp imported from Israel, Malaysia, USA and Japan. In 2003 CEFAS detected KHV in common carp during investigations into large mortalities in angling waters. Further detections of KHV were subsequently made at a small number of angling waters in 2004 and 2005.

In 2006 KHV disease outbreaks were reported and confirmed at 23 sites in southern England. KHV disease has been made an OIE listed disease and became a notifiable disease in England and Wales in April 2007. KHV is also listed under Council Directive 2006/88/EC, thus subjecting the disease to community controls. All EU member states had to submit their health status with regard to KHV by 1st August 2008.

EU-FEFAC Revised Hygiene Provisions for the Manufacturing and Delivery of Medicated Feed

Following a suggestion by the EU Standing Committee, FEFAC introduced in its European Feed Manufacturers' Guide (EFMC) further hygiene provisions for the manufacturing and delivery of medicated feed for food producing animals.

The new section essentially deals with the role of veterinarians in the prescription and supervision of the manufacturing of medicated feed, as well as measures to minimise the carry-over from medicated feed to non-target feed.

The new chapter providing detailed guidance on HACCP implementation takes into account conclusions of the joint FEFAC/COPA-CEGECA feed safety workshop conducted with the support of the European Com-

As a result the geographic distribution and prevalence of KHV in England and Wales needed to be assessed in order to determine the UK's status and the practicality of different statutory control options under consideration by DEFRA. This DEFRA-funded study aimed to assess:

The types of fish that have been exposed to KHV – ornamental, fishery and farmed.

The geographic distribution and prevalence of the infection within each sector.

To summarize the report: The study aimed to determine the geographic distribution and prevalence of KHV in England and Wales in order to determine the practicality of different statutory control options under consideration by DEFRA. Carp were tested for the presence of KHV antibodies in their blood using an Elisa method. The study examined carp from 82 farm sites, 71 fisheries and 12 consignments of ornamental carp imported from seven different S.E. Asian countries. Three of the farms sampled produced positive results. These results suggest that UK fish farms are a relatively safe source from which to obtain fish. Fish farms do, however, have the potential to spread the virus rapidly due to the number of contacts they make. Consequently it is of great importance that infected farms are detected early and steps taken to prevent spread.

The full report of this assessment that includes "Questions and Answers" is available on the e-fishbusiness website or directly from (<http://www.efishbusiness.co.uk/news/080902a.pdf>).

mission and the EP in February 2009. This updated version of the EFMC received the final positive assessment of the EU Standing Committee on the Food Chain and Animal Health at its meeting on 23-24 November 2009.

The EFMC has become the cornerstone of any modern, risk-based feed safety assurance system implemented at company level. More than 20 national member associations have adopted the EFMC as a key reference for the national feed safety assurance system.

See full information at:

<http://www.aquafeed.com/read-article.php?id=3118§ionid=1>

[USA - Aquaculture made safe](#)

A House bill aims to set standards to ensure that ocean fish farming is environmentally friendly.

Opinion, February 15, 2010

By Rosamond L. Naylor and George H. Leonard

While Americans' appetite for seafood continues to grow, most of us know little about where our fish comes from or how it was produced. In California, more than half of our seafood comes from aquaculture, often imported from fish farms in other countries. Just as most chickens, pigs and cows are raised in intensive operations, so too are many farm-raised fish.

But raising fish in tight quarters carries some serious risks. Disease and parasites can be transmitted from farmed to wild fish. Effluents, antibiotics and other chemicals can be discharged into surrounding waters. Nonnative farmed fish can escape into wild fish habitat. And a reliance on wild-caught fish in aquaculture feed can deplete food supplies for other marine life.

These environmental impacts have been evident in many other countries with intensive marine fish farming. In Chile, where industry expansion was prioritized over environmental protection, salmon aquaculture has collapsed, causing a major blow to what had been one of Chile's leading exports. Tens of thousands of people are now jobless in southern Chile, where the salmon farming industry once boomed.

If aquaculture is to play a responsible role in the future of seafood here at home, we must ensure that the "blue revolution" in ocean fish farming does not cause harm to the oceans and the marine life they support.

In December, Rep. Lois Capps (D-Santa Barbara) introduced in the House the National Sustainable Offshore Aquaculture Act, a bill that addresses the potential threats of poorly regulated fish farming in U.S. ocean waters. Her bill shares many of the features of a California state law, the Sustainable Oceans Act, which was written by state Sen. Joe Simitian (D-Palo Alto) and signed by Gov. Arnold Schwarzenegger in 2006. That legislation regulates fish farming in state waters, which extend three miles off the California

coast. At present, all aquaculture operations in California and the U.S. are located just a few miles offshore.

If the U.S. and other states follow California's lead, we may be able to reward innovation and responsibility in aquaculture and at the same time prevent the kind of boom-and-bust development that happened in Chile. Unlike previous attempts to legislate fish farming at the national level, the Capps bill would ensure that U.S. aquaculture in federal waters, which extend from three to 200 miles offshore, establishes as a priority the protection of wild fish and functional ecosystems. It would ensure that industry expansion occurs only under the oversight of strong, performance-based environmental, socioeconomic and liability standards.

The bill also would preempt ecologically risky, piecemeal regulation of ocean fish farming in different regions of the U.S. Indeed, regulation efforts are already underway in many states, with no consistent standards to govern the industry's environmental or social performance. If these piecemeal regional initiatives move forward, it will get much more difficult to create a sustainable national policy for open-ocean aquaculture.

Previous federal bills introduced in 2005 and 2007 were fundamentally flawed -- and ultimately did not pass -- because they put the goal of aquaculture expansion far above that of environmental protection. Now, for the first time, a bill has been introduced that would demonstrably protect marine ecosystems, fishing communities and seafood consumers from the risks of poorly regulated open-ocean aquaculture.

The Obama administration is currently developing a national policy to guide the development of U.S. aquaculture. The administration would do well to embrace the vision articulated by Capps and Simitian for a science-based and precautionary approach to help ensure a responsible future for U.S. ocean fish farming.

Rosamond L. Naylor is director of the program on food security and the environment at Stanford University. George H. Leonard is director of the aquaculture program at the Ocean Conservancy in Santa Cruz.

Source: Los Angeles Times - [Read the Original Article](#)

Aquatic Education

Sea Lice 2010 -

8th International Sea Lice Conference

May 9-12, 2010 -

The Inn at Laurel Point,
Victoria, BC, Canada

Presentation: Sea Lice Biology and Emerging Issues—

Dr. Geoff Boxshall joined the Natural History Museum in London in 1974. His research has focused on the systematics, functional morphology and evolution of copepods and related crustaceans, extending across the whole range of life styles from parasites to plankton. He specialises in re-search on the systematics and biology of parasitic crustaceans.

He was elected Fellow of The Royal Society in 1994 and has won numerous awards recognizing his work. He has published extensively including over 180 scientific papers and has co-authored several books including Copepod Evolution Dictionary of Ecology, Evolution and Systematics (2nd edition, 1998), The Cambridge Illustrated Dictionary of Natural History (in 1987) and An Introduction to Copepod Diversity (in 2004).

Students are an important part of Sea Lice 2010 and are encouraged to attend and present their research. Awards from industry, government, and individual sponsors will be provided to students to offset travel costs according to need and the quality of the conference presentation.

See www.sealice2010.com for more Program information.

Join us as a conference sponsor -

contact Linda Hiemstra,

email: sealice2010@shaw.ca

2010 Dues Reminder

The WAVMA Membership year begins January 1 of each year. Shortly membership dues notices will be sent out to all present and past members. Please complete and submit them to the Treasurer at your earliest convenience, or use the form at the end of this newsletter or on the WAVMA website. Expanded members-only programs are anticipated for 2010 and Members are reminded that to receive all membership benefits, dues must be paid before April 1 of each year. Some of the initiatives to benefit members planned for 2010 and beyond include:

The 2010 WAVMA Annual General Meeting and Aquatic Veterinary Conference in Greece, and a similar one in South Africa in 2011.

Don't lose out, remember to renew your membership.

5th Annual CL Davis DVM Foundation

Marine Species Histopathology Workshop

May 13th, 2010

Vancouver, Canada

Location: Marriott Vancouver Pinnacle Downtown

The CL Davis DVM Foundation will host its 5th annual marine species histopathology workshop May 13th this year. As in years past, it is in conjunction with the annual IAAAM conference, this year in Vancouver, Canada.

KEYNOTE SPEAKER: Stephen Raverty, DVM, DACVP
An Overview of Pathology Findings of Marine Mammals within the Pacific Northwest 1998-2008

Dr Stephen Raverty is a board certified veterinary pathologist and is head of the of the pathology section of the provincial veterinary diagnostic laboratory in Abbotsford, British Columbia, Canada. For the last 10 years, Stephen has been actively involved in the investigation of infectious and noninfectious disease processes in dead stranded and live captured marine mammals. He is adjunct professor with the University of British Columbia, research associate with the Vancouver Public Aquarium, and pathologist with the Calgary Zoo.

Stephen has been involved with the diagnostic evaluation of sonar related stranded porpoises in the pacific northwest, health status of hunter harvested beluga in the western arctic, tissue response to tag implants in Hawaiian odontocetes, and evaluation of factors that may have contributed to the decline of the Irrawaddy river dolphins in Cambodia. He will present an overview of work undertaken on the health status of marine mammals within the Pacific Northwest.

The workshop will run from 8:00am until 4:30 pm and will consist of the Keynote presentation followed by 10-15 marine species case presentations. Fish, birds, and marine mammals are welcome. These presentations will focus on audience interaction to promote case discussion. All participants submitting a case will receive a DVD set of digital slides and case histories prior to the workshop.

Registration is \$75 for both presenters and attendees through April 30th, 2010. Late registration will be \$100. This price includes case slide DVDs and morning and afternoon snacks.

For more information contact:

Judy.St.Leger@Seaworld.com

Aquatic Education

The 41st Annual Conference of the IAAAM

Vancouver, British Columbia, Canada

May 8 - 12, 2010

The 41st Annual Conference of the IAAAM will be hosted by Dr. Martin Haulena at Vancouver Aquarium. It is time that those of you who are planning to present abstracts at the upcoming conference start working on them as the deadline for abstract submission is 2 weeks earlier than usual, on February 10, 2010.

The abstracts will highlight your work in the area of marine mammals, fishes, aquatic birds, aquatic amphibians and reptiles, aquatic invertebrates.

Registration Information

The Conference Web Page is now available and you can register online.

Your full registration includes full conference attendance, proceedings, ice breaker, aquarium events/auction and the banquet.

Student Registration includes conference attendance, proceedings, ice breaker and aquarium events/auction. Banquet registration is not included.

Hotel Information

The conference will be held at the Vancouver Marriott Pinnacle Downtown Hotel. The special conference rate of \$189.00 (Canadian) or \$176.12 (US) is available from Sunday, May 9, 2010 to Friday, May 14, 2010. The hotel address is 1128 West Hastings Street, Vancouver, V6E 4R5 Canada if you would like to map it. Please use the link below to reserve your room as the host hotels usually fill up pretty fast.

Workshops

May 8, 2010

* Harbor Porpoise Pathology - Morning Session - 8:00AM-12:00PM

* Harbor Porpoise Pathology - Afternoon Session - 1:00PM-4:00PM

* Fish Health Lab - 8:00AM-4:00PM

* ACZM Ultra-Short Course - 8:30AM-5:00PM

May 10, 2010

* Clinical Conundrums - 6:00PM-9:00PM

May 13, 2010

* Marine Species Histopathology Workshop - 8:00AM-4:30PM

* Aquatic Animal Ophthalmology - 9:00AM-1:00PM

Find a Roommate

If you need help finding someone to share a room with in Vancouver, head over to the "Find a Room Mate" discussion forum and look at postings or add your own request. Be sure to include any specifics you are looking for such as gender and smoking preference.

For online details go to <http://tinyurl.com/yjuyms5>



Aquatic Education

AQUAVET I & II

May and June 2010

The University of Pennsylvania School of Veterinary Medicine and the College of Veterinary Medicine at Cornell University are pleased to announce the 2010 AQUAVET I & II Programs. They are aquatic veterinary medicine education programs that currently consist of two courses that will be presented this year at Stony Brook Southampton in Long Island, NY.

AQUAVET I: An Introduction to Aquatic Veterinary Medicine is a 4-week course (31 May - 25 June 2010) intended primarily for veterinary students.

AQUAVET II: Comparative Pathology of Aquatic Animals is a 2-week course (31 May - 11 June 2010) that is oriented toward the pathology of diseases of aquatic invertebrates and fish that are used in bio-medical research, encountered in display aquaria and are of importance in commercial aquaculture.

Veterinary students can receive credits for the course and graduate veterinarians can receive CE credits.

Applications for admission will be due by January 30, 2010 and may be obtained by accessing the program website from which the application form may be downloaded for completion and submission by mail.

Additional information may be found at <http://www.aquavet.info>.



Sixth International Symposium on Aquatic Animal Health (ISAAH-6)

Sept. 5 - 9, 2010,

Tampa, Florida, USA

You are warmly invited to participate in the sixth International Symposium on Aquatic Animal Health (ISAAH-6), September 5 – 9 2010, in Tampa, Florida, USA. The symposium will address present practices and new initiatives in aquatic animal health focusing on infectious diseases, wild stock, aquaculture development, planning and emergency response systems, interaction of diseases between wild and farmed stocks, and outcomes of physical, chemical and biological environmental stress.

The previous international symposia on aquatic animal health have attracted strong international support, with up to 425 participants from 35 countries!

The symposium will provide an inclusive forum for presentation of research, management, and policy issues related to the health of aquatic animals, whether wild, farmed or held on exhibit. The broadest range of animals is considered, from invertebrates to fish, amphibians, chelonians and marine mammals. The four days of scientific sessions will include invited plenary lectures and special topic sessions, parallel sessions of oral presentations, a dedicated half-day poster session, a student workshop, a diagnostic challenges session, and an exhibits area for books and informational displays from participating scientific organizations.

The symposium venue will be the beautiful Tampa Marriott Waterside Hotel, which features elegant accommodations, a choice of restaurants, an outdoor pool, and waterfront terraces.

Base room rates have been specially-negotiated at \$129 USD, single or double. Tampa is an eclectic city, with many nearby attractions, and is served by an excellent international airport.

The symposium will be hosted by the American Fisheries Society - Fish Health Section, and will be supported by the Emerging Pathogens Institute, University of Florida. The symposium organizers are Drs. Andrew Kane and Sarah Poynton. spoynton@hmi.edu

More information is available on symposium website (<http://aquaticpath.epi.ufl.edu/isaah6>).

Veterinary continuing education: Fish health and regulatory medicine

A free workshop for veterinarians on fish regulatory medicine is scheduled April 26-27 at the Pyle Center on the University of Wisconsin-Madison campus.

More than a dozen speakers are scheduled, many of them nationally recognized in the aquaculture field.

Topics include:

- Aquatic certificates of veterinary inspection
- Veterinary accreditation
- Updates from neighboring states and interstate regulations
- OIE's role
- VHS surveillance
- Biosecurity
- Wisconsin's Fish Health Medicine Certificate Program
- The national and international Aquaculture and Veterinary Medicine Organizations



Diagnostic lab tips and practitioner tips

The workshop is funded by the U.S. Department of Agriculture and the Wisconsin Department of Agriculture, Trade and Consumer Protection. The workshop is organized by Beverly Simonds and Dr. Myron Kebus, Wisconsin State Aquaculture Veterinarian.

WHEN: Monday, April 26, 6:00 p.m. to 9:30 p.m.
Tuesday, April 27, 8:00 a.m. to 5:00 p.m.

WHERE: The Pyle Center
702 Langdon Street
Madison, WI 53706

FEE: There is no fee for the conference, guest accommodations are not included

CAMPUS PARKING: <http://www.vip.wisc.edu/gettingAround.php>

VISITOR'S BUREAU: <http://www.visitmadison.com/visitors/stay/>

TO REGISTER: SPACE IS LIMITED, therefore, reserve your space by forwarding your name, address, business telephone number, e-mail address and organization name to:
W DATCP - Division of Animal Health
Attn: Beverly Simonds, Aquaculture Program Associate
P O Box 8911, Madison, WI 53708-9011
Call 608-224-4887 or e-mail beverly.simonds@wisconsin.gov

REGISTRATION

DEADLINE: April 12, 2010

CONTINUING

EDUCATION: Ten continuing education hours will be awarded to Veterinary Professionals who attend the program in its entirety.

Preliminary Announcement & Call for Speakers

*World Aquatic Veterinary Medical Association
2010 Aquatic Veterinary Conference, Annual General Meeting & Family Program*

For WAVMA to negotiate the best discounts, please e-mail the WAVMA Secretary (chris.walster@onlinevets.co.uk) to indicate your interest in attending and intended options.

If interested in giving a presentation please e-mail the WAVMA President eathan@vet.uth.gr.

Formal Registration with program details will open March 1, 2010

WHEN: July 12-14, 2010

WHERE: Athens, Greece

CEPD (Continuing Education & Professional Development) OPTIONS

1. Athens (Primary Program)

Monday, July 12 Aquatic Veterinary Presentations

Tuesday, July 13 Aquatic Veterinary Presentations

Wednesday, July 14 Aquatic Veterinary Presentations / WAVMA AGM

Thursday, July 15 (Optional) **Whole Family Historic Tour of Athens**

2. 3-Day Cruise CEPD Program & Family Fun (Optional)

Friday-Sunday, July 16-18 3-Day Cruise CEPD Program – **Greek Islands & Turkey Cruise** – Piraeus (Athens), Mykonos, Kusadasi (Ephessos), Patmos, Heraklion (Crete), Santorini, Piraeus (Athens).

ANTICIPATED COSTS:

Conference Registration: WAVMA Member (incl. refreshments/lunch) ~US\$200 / €146 / £130

Non-member (incl. refreshments/lunch) ~US\$300 / €215 / £192

Hotel: ~US\$124-153 / €90-110 / £80-98 (per day, single or double room, including breakfast)

Historic Athens Tour: ~US\$70 / €50 / £45 (per person)

Additional 3-Day CEPD/Greek Island Cruise: ~US\$696 / €500 / £446 (per person)

TRAVEL ARRANGEMENTS:

WAVMA is negotiating with travel agents for convenient and possible discounted travel, hotel and cruise reservations

POSSIBLE SCHOLARSHIPS & ASSISTANCE:

WAVMA is seeking sponsors to decrease cost and support veterinary student scholarships

Aquatic Education

Invertebrate Medicine 2010

August 28, 2010 (7:30 am – 5:00 pm)

NC State University, College of Veterinary Medicine – Raleigh, NC.

Program Overview

This course will introduce the veterinarian, veterinary student, professional aquarist/curator, or serious hobbyist to the anatomy, physiology, natural history, and disease problems of the more important invertebrate groups: sponges, corals, mollusks, annelids, crustaceans, echinoderms, and arachnids.

Upon completion of this program participants should be able to:

1. Obtain a useful history and plan examination procedures in a variety of invertebrate species.
2. Perform gross necropsy examination of invertebrates and be able to identify major anatomical features and organ systems.
3. Anesthetize and recover invertebrate patients using water-soluble and gas anesthetic agents.
4. Calculate, compound and deliver medication for some invertebrates.
5. Identify probable causes of environmentally related problems in aquatic and terrestrial systems and recommend mitigation.

Be familiar with and able to use the common reference sources in invertebrate medicine.

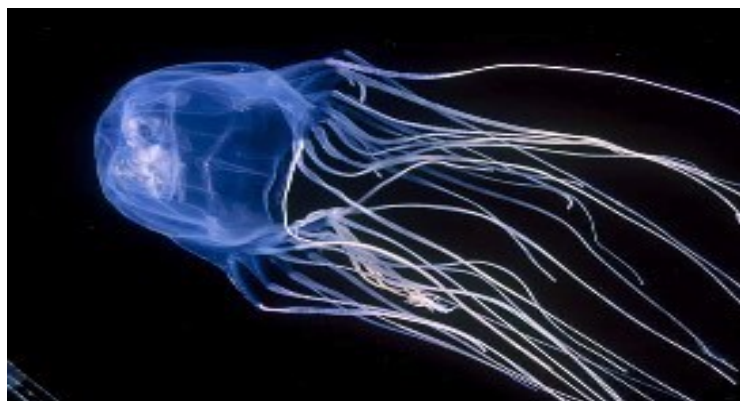
Registration Fees--Registration for this course is \$125. The fee includes lunch (FULL COURSE REGISTRATION ONLY) and proceedings on CD-ROM. There is an option of doing either morning or afternoon for \$75. These half-day registrations do not include lunch.

Cancellation Policy: Full refunds will be granted for notices received in writing, either by mail, fax, or e-mail, by the end of early registration. A refund less a 25% administrative fee will be granted for requests received during late registration. No refunds will be granted after the course has begun.

Continuing Education Credit: This course offers eight (8) hours of continuing veterinary medical education for veterinarians and veterinary technicians. Morning and afternoon sessions are four (4) hours each. Full attendance is required to receive total CVME credit.

Preliminary Schedule: 7:30 - 8:00am – Registration; 8:00 - 8:15am - Introductions, Course Overview (Dr. Greg Lewbart); 8:15 - 11:00am -Aquatic Invertebrate Medicine, to include sponges, coelenterates, flatworms, mollusks, horseshoe crabs, crustaceans, and echinoderms (Dr. Greg Lewbart); 11:00am - 12:15pm - Aquatic Invertebrate Wet Lab (Shane Christian and Faculty); 12:15 - 1:00pm - Lunch (provided); 1:00 - 4:00pm - Terrestrial Invertebrate Medicine, to include spiders, scorpions, centipedes, millipedes, and insects (Drs. Ryan De Voe and Dan Dombrowski); 4:00 - 5:00pm - Terrestrial Invertebrate Wet Lab (Shane Christian and Faculty).

Full Details, Registration and Accommodation: go to <http://www.cvm.ncsu.edu/conted/invert.html>



Aquatic Education

26th Caribbean Veterinary Medical Association Conference

“Promoting Animal Health and Welfare for Sustainable Human Development”

Ocho Rios, Jamaica.

November 3-6, 2010.

The CbVMA conference is designed for veterinarians, senior veterinary students and allied professionals who are interested in improving the health and welfare of all animals: companion animals, farm animals, horses, marine mammals and more. These animals represent one side of an ever more complex and difficult association between animals and man. This tenuous relationship exists in the Developing World in an even more stark juxtaposition than in the First World. The challenge of this conference is to demonstrate how improving the well-being of animals benefits people whether they live in the First World or the Third World.

The biennial CbVMA conferences are the premier meeting venues for Caribbean veterinarians. They bring together colleagues from almost all the Islands and from parts of Central and South America. There was also a time when, through the Commonwealth, hundreds of Canadian veterinarians participated in these conferences. In 2010 we are not only inviting back to the Caribbean our Canadian colleagues, but we are actively encouraging veterinarians from all over the world to attend. This is only natural now, as with four inter-national veterinary schools situated in the English-speaking Caribbean there are thousands of veterinarians practicing throughout the world who have received their training in this region.

The CbVMA 2010 Scientific Pro-gram will feature regionally and inter-nationally renowned speakers. For four days leading experts in the veterinary profession will deliver information on important veterinary topics that span the range of species and the diversity of interests in veterinary medicine.

And it goes without saying that if you are in the Caribbean you're going to have fun. The Conference will be at Jamaica's largest conference hotel, the Sunset Jamaica Grande Resort and Spa. It's an all-inclusive family hotel so you can bring your family, and after you check in and register, you can do just about anything you want without the payment of an additional fee.

We will not be as big as some of the veterinary conferences that are to be found in North America and elsewhere. However, you will not experience a nicer place to learn and a closer feeling of family, than you

will when you join us in Ocho Rios, Jamaica, between November 3 and November 6, 2010.

Symposia/Wet labs:

The Scientific Committee is open to receive proposals and/or sponsor-ship for symposia and wet labs that relate to the general conference theme. Sessions will last 50 minutes and will consist of a maximum of three presentations with a short time for discussion at the end of the session.

Major speakers will have the entire 50 minutes to make their presentations. It is desirable that participants of symposia should be self-financed although funding will be available for key-note speakers. The Wet Labs will cover a variety of topics of interest to veterinarians of all ages and levels of experience. Small groups of veterinarians will be accommodated in each Wet Lab so that each individual will be involved in the activity.

DEADLINE FOR SUBMISSION OF ABSTRACTS:

MAY 31, 2010

Participants are invited to submit abstracts of proposed oral or poster presentations to the CbVMA Conference Scientific Committee. Oral presentations should not be more than 40 minutes long. Abstracts should contain title of the presentation and a one paragraph summary of the presentation. Authors will be notified regarding Abstract acceptance. Accepted abstracts will be printed in the Conference proceedings that will be distributed at the Congress. Please indicate if you are submitting your abstract for oral or poster presentation.

For recommending Symposia, Wet labs and submission of Abstracts: Chairman,

Scientific Committee CbVMA Conference Secretariat
P.O. Box 1111, Kingston 8, Jamaica

Email: scientificchair@cbvma.org

For more information on the **26th Caribbean Veterinary Medical Association Conference** go to <http://cbvma.org>.



Aquatic Veterinary Opportunities

Aquatic Veterinarian Needed

MGM Mirage, Las Vegas, NV

Position Code: 318001

Employment Status: Full-Time

JOB DESCRIPTION:

It is the primary responsibility of the Veterinarian of Dolphin Care to provide input and medical expertise in support of the Mirage Dolphin Habitat collection and maintain the program of veterinary care in accordance with United States Department of Agriculture regulations. All duties are to be performed in accordance with departmental and Mirage policies, practices and procedures.

Specific Job Functions:

- * Design, update and implement a preventative animal health care program.
- * Monitor the general health and well-being of the animal collection, maintaining a preventative veterinary program, diagnosing and treating impaired animals, and communicating with outside experts and consultants in the veterinary field.
- * Participate in decisions concerning animal management, research and conservation.
- * Plan, direct, and execute a comprehensive preventative animal health care program, including routine monitoring of animals and water quality, medical treatments and effective communication with animal care staff.
- * Participate in the planning and executing of nutritional and reproduction management plans for the animal collection.
- * Establish and conduct effective testing methods and procedures in order to ensure the health of the animal collection and comply with government regulations.
- * Ensure the safety of our animals.
- * Work closely with the Curator to coordinate all husbandry and veterinary activities.
- * Participate in animal acquisition and disposition decisions.
- * Provide veterinary oversight on animal transports by monitoring the animal's health and vital signs.
- * Monitor all construction activities to ensure the safety of our animals, guests and staff.
- * Conduct postmortem analyses and studies.

- * Develop and conduct research projects and publish results with the Animal Care Department.
- * Assist with the development and construction of new exhibits.
- * Participate in general water quality monitoring, and routinely communicate with the Life Support staff.
- * Participate in local, national and international professional veterinary and scientific organizations.
- * Attend continuing education seminars which provide new and innovative information in order to gain knowledge related to veterinary medicine.
- * Ensure full compliance with all related governmental organizations.
- * Maintain a current Nevada Veterinary license, Federal Drug Enforcement Agency license, registration with the Nevada State Board of Pharmacy and accreditation in the State of Nevada to issue health certificates for animal transport.
- * Work with animal care staff on current husbandry procedures through staff meetings and continuing education.
- * Maintain effective communication and coordinate services of consulting veterinarians and specialists with extensive expertise in specific veterinary areas.
- * Other requirements listed on the website

JOB REQUIREMENTS:

- * A Doctorate of Veterinary Medicine degree with the ability to obtain a Nevada Veterinary License within the first six months of employment required.
- * Able to obtain a Drug Enforcement Agency license and register with the Nevada Board of Pharmacy within the first six months of employment required.
- * Three (3) years of experience in aquatic animal medicine required.
- * Three (3) years of work experience in an Association of Zoos and Aquariums accredited institution, Alliance member facility, or equivalent, working with aquatic animals and associated husbandry, life support, and legal issues required.
- * Other requirements listed on the website

See <http://tinyurl.com/yhujxpd> for full details and to apply for this position.

Sponsors and Supporters

Aquaculture is regarded as the fastest growing segment of the Agriculture Industry. The need for veterinarians to be involved in Aquaculture is growing as the industry grows. As a result, in 2007 veterinarians from around the world formed a new organization, the **World Aquatic Veterinary Medical Association**. This Association is devoted to serve the discipline of aquatic veterinary medicine in enhancing aquatic animal health and welfare, public health, and seafood safety, and to support the veterinary profession, aquatic animal owners, allied industries, and other associated stakeholders. We provide educational information to veterinarians, and keep them updated on new regulations and other developments through the WAVMA.org website and a quarterly newsletter.

We ask you, as a member of the aquaculture industry, to consider supporting the efforts of WAVMA. Your company can become an annual Sustaining Member and help promote the field of Aquatic Veterinary Medicine. This will not only benefit your company by our promoting it on our website and in our newsletters, but will also positively impact the food finfish and shellfish, and ornamental fish industries by providing better access to veterinarians with an interest in aquatic animal medicine.

Formed as a non-profit Veterinary Association with global membership and influence, the WAVMA programs, actions and services benefit those involved in aquatic veterinary medicine – from the veterinarians to their clients, aquarium keepers, aquatic animal breeders, retail fish stores, public aquariums, fish farmers, aquaculture industries and government agencies. We invite you to join WAVMA as a **Sustaining Member** (*an allied veterinary organization, or a company or entity whose members are predominantly non-veterinarians, and who support the Mission and Objectives of the Association, and financially support the functions of the Association*). All dues contributed to WAVMA (a 501 (C) 6 Corporation) may be fully tax deductible; please consult your tax advisor regarding specific questions of deductibility.

Membership Categories:

Individual Memberships to WAVMA for veterinarians are \$100 per year.

Sustaining Memberships are for an organization, company or entity who supports the Mission and Objectives of the Association. Sustaining Memberships start at \$500 per year.

Direct benefits enjoyed by **Sustaining Members** include:

- An annual roundtable meeting with Executive Board Members at the WAVMA Annual General Meeting
- Complimentary website link from the WAVMA.org website to the company's or organization's website
- Complimentary listing and discounted display advertising in our WAVMA quarterly newsletter
- Access to a pool of key opinion leaders for R&D and Marketplace insights and strategies
- A personalized plaque acknowledging sponsorship (Platinum and Gold level)
- Formal recognition and visibility at the AGM and a high-profile international meetings

Sustaining Membership Categories are:

| | |
|------------------|-----------|
| Platinum Sponsor | \$10,000+ |
| Gold Sponsor | \$5000 + |
| Silver Sponsor | \$2500 + |
| Bronze Sponsor | \$1000 + |
| Supporter | \$500 + |

The WAVMA Executive Board looks forward to your support for our vision to advance the field of aquatic medicine worldwide, and to concomitantly promote responsible aquaculture, responsible fish husbandry, and the conservation of our aquatic resources. If you would like additional information concerning WAVMA membership please contact the Secretary, Chris Walster chris.walster@onlinevets.co.uk or go to www.wavma.org.

Contact Corner

2010 WAVMA Executive Board

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Meetings Committee- Dr Julius Tepper. E-mail: cypcarpio@aol.com

Scholarship Committee - Dr David Scarfe. E-mail: dscarfe@ameritech.net

Koi Pond photograph by Nick Saint-Erne

Past Presidents

Dr. Peter L. Merrill (USA) 2007

Dr. Ron Roberts (UK) 2008

Dr. Hugh Mitchell (USA) 2009



World Aquatic Veterinary Medical Association

One Profession; One Discipline; One Voice – Cohesive & Inclusive!

2010 MEMBERSHIP APPLICATION

INITIAL APPLICATION or RENEWAL (circle one)

For your convenience please complete and mail with the correct remittance (in US\$), or credit card information, to:

Dr. Dusan Palic

4211 Welbeck Dr.

Ames, IA 50010-4018 USA

Phone/Fax: (515) 294-2571

e-Mail: dulep@iastate.edu

Complete all mandatory fields marked with an *. Please be as comprehensive as possible.

Contact Information

*Name (First, Middle, Last) _____ Date _____

Business/Organization (if applicable) _____ Position/Title _____

*Mailing Address _____

*City _____, *State/ Province/ Canton/ County (UK) _____

*Zip/Postal Code _____, *Country _____

*Primary Phone _____ Is this a business ? /home ? or /cell/mobile ?

Secondary Phone _____ Is this a business ? / home ? or /cell/mobile ?

*Primary e-Mail _____; Secondary e-Mail _____

Check one membership category 1

Full Member (US\$100) **Student Member** (US\$50)

Primary Veterinary Degree (as awarded, e.g. DVM; VMD; BVMS; DEDV; Dr. vet. med.; MVZ, etc) _____

Year _____; University _____; City _____; Country _____

Veterinary Technician/Nurse Member (US\$50)

Name of supervising veterinarian _____; Phone _____; e-mail _____

Affiliate Member (US\$100)

*Degree _____; *Year _____; *University _____; *City _____, *Country _____

Allied Veterinary Organization Member (US\$500)

*Total number of current members _____; *Number (or %) of members that are *veterinarians* _____;

*Estimated number of members involved with *aquatic veterinary medicine* (any species/disciplines) _____

1 Membership Categories & Privileges

Full Member—individual veterinarians that have graduated from veterinary Schools, Colleges or Universities recognized by any country as being a prerequisite for practicing veterinary medicine. Full Members are eligible to be nominated and serve as WAVMA Officers, and to serve on any WAVMA Committees.

Allied Veterinary Organization Member—legally formed organizations or entities (association/society) whose members are predominantly veterinarians. Allied Veterinary Organization Members are eligible to appoint a delegate and alternate delegate (must be WAVMA Full Members in good standing) to serve on the WAVMA Advisory Council.

Student Member—students enrolled fulltime in veterinary Schools, Colleges or Universities recognized by any country as being a prerequisite for practicing veterinary medicine. Student Members are entitled to all the right and privileges of Full Members, except to serve as an Officer of the Association, or to vote in any general election, referendum or ballot of the association's Full Members.

Veterinary Technician/Nurse Member—any non-veterinarian that is employed to assist in the legal practice of veterinary medicine, while under the direct supervision or direction of a veterinarian. Veterinary Technician/Nurse Members are entitled to all the rights and privileges of Full Members, except to serve in any voting capacity on any committees, councils, trusts, boards, liaisons or other entity that may be formed to do Association business.

Affiliate Member—any non-veterinarian that is a graduate of a nationally recognised university or institution of higher education, and who supports the Mission and Objectives of the Association. Affiliate Members are entitled to all the rights and privileges Student Members, except to serve in any voting capacity on any committees, councils, trusts, boards, liaisons or other entity that may be formed to do Association business.

**World Aquatic Veterinary
Medical Association**

WAVMA Secretary
Dr. Chris Walster
Chris.Walster@onlinevets.co.uk

AVN Newsletter Editor
Dr. Nick Saint-Erne
Saint-Erne@q.com

One Profession; One Discipline;
One Voice—Cohesive & Inclusive!

We're on the Web:

WWW.WAVMA.org

WHO ARE WE

The mission of the World Aquatic Veterinary Medical Association is to serve the discipline of aquatic veterinary medicine in enhancing aquatic animal health and welfare, public health, and seafood safety, in support of the veterinary profession, aquatic animal owners and industries, and other stakeholders.

The purpose of the World Aquatic Veterinary Medical Association is:

To serve aquatic veterinary medicine practitioners of many disciplines and backgrounds by developing programs to support and sustain members, and the aquatic species industries that they serve.

To identify, foster and strengthen professional interactions among aquatic medical practitioners and other organizations around the world.

To be an advocate for, develop guidance on, and promote the advancement of the science, ethics and professional aspects of aquatic animal medicine within the veterinary profession and a wider audience.

To optimally position and advance the discipline of aquatic veterinary medicine, and support the practice of aquatic veterinary medicine in all countries.

The ideas presented in this publication express the views and opinions of the authors, may not reflect the view of WAVMA, and should not be implied as WAVMA recommendations or endorsements unless explicitly stated. Information related to the practice of veterinary medicine should only be used within an established valid Veterinary-Patient-Client Relationship.

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