

# NEWSLETTER

Volume 18, Number 3

Fall 1990

1990  
FHS 18(3)

## A Unique Serotype of Infectious Hematopoietic Necrosis Virus from Rainbow Trout in the Snake River Basin

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During the 1980's infectious hematopoietic necrosis virus (IHNV) became widely disseminated among salmonid populations of the Pacific Northwest. In Oregon, the virus has been detected in salmonids from almost every major river basin, and numerous smaller and secondary watersheds where it was not known to occur early in the decade. Awareness of IHNV strain variation within Oregon predated these events and thus a concern by the Oregon Dept. of Fish and Wildlife through the 1980's was to manage fisheries programs so as not to transfer strains of IHNV between enzootic areas. Management recommendations were based on definitive IHNV strain typing, or on geographical location and known salmonid population interactions. Early in the 1980's a polyclonal anti-IHNV glycoprotein rabbit antiserum (anti-G) which neutralized IHNV was made available to the Oregon Dept. of Fish and Wildlife by Drs. JoAnn Leong and Mark Engelking of Oregon

State University. This allowed enhanced epizootiological tracking of IHNV isolates in Oregon and the Columbia River basin. Later, neutralizing monoclonal reagent (Mab RB/B5) to IHNV was developed to further facilitate strain identification of IHNV isolates (Winton et al., Dis. Aquat. Org. 4:199-204, 1988). These antisera were made against the Round Butte Hatchery Oregon strain of IHNV and are specific for the glycoprotein of that virus.

Plaque reduction assays using these two neutralizing reagents on over 70 isolates of IHNV collected over more than 10 years, resolved these isolates into four distinct serological groups (Figure 1) designated I-IV. Every isolate has shown significant plaque reduction with

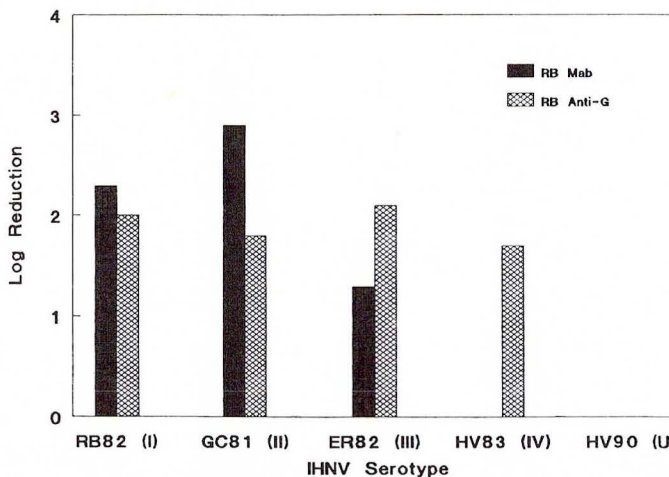


Fig. 1. Plaque reduction comparisons of IHNV using Round Butte anti-IHNV G protein polyclonal serum (RB anti-G) and Round Butte monoclonal IHNV antiserum RB/B5 (RB Mab).

one or both of these neutralizing sera. Type I isolates (RB82) are represented by a 1982 isolate from juvenile steelhead trout at Round

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**FHS OFFICERS AND COMMITTEES 1990-91****EXECUTIVE COMMITTEE****Voting Members**

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 Vicki Blazer, President-Elect  
 John Schatche, immediate Past President  
 Scott LaPatra, Secretary-Treasurer

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 John Civitanich, Professional Standards Committee  
 Ralph Elston, Board of Certification  
 Ron Hedrick, Time and Place Committee  
 Rich Holt, Nominating Committee  
 Kathy Hopper, Membership Committee  
 Rod Horner, Technical Procedures Committee  
 Randy MacMillan, Newsletter and Publications Committee  
 Fred Meyer, Awards Committee  
 Bill Rogers, Scientific Journal

**STANDING COMMITTEES****Nominating**

Rich Holt, Chair  
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 Paul Reno (3 years)

**Newsletter**

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**Board of Certifications**

Ralph Elston, Chair  
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 Ron Thune (2 years)  
 Bob Olson (3 years)

**Finance**

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**Awards**

Fred Meyer, Chair  
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 Steve Leek (3 yr)

**Time and Place**

Ron Hedrick, Chair  
 Ed Noga (1 yr)  
 John Rohovec (2 yr)

**Archives**

Toni Amandi, Chair  
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**Membership and Balloting**

Kathy Hopper, Chair  
 Beth MacConnell  
 Pat Chapman

Butte Hatchery in central Oregon. This group shows a high neutralization index with both antisera and the difference between the two is less than 0.5 logarithmic units. Typical Type II isolates (GC81) have a high Mab and relatively low Anti-G neutralizing profile and the difference is greater than 0.5 logarithmic units. This IHNV was isolated during a 1981 epizootic in juvenile steelhead trout at Gnat Creek Hatchery in Oregon on a tributary of the lower Columbia River. Southern Oregon coastal isolates show a Type III profile (ER82) in which the Anti-G neutralizing index is high and the Mab comparatively low. This difference is also greater than 0.5 logarithmic units. The Type IV group from the Hagerman Valley of Idaho are represented by HV83 and were isolated during 1983-84. These show no neutralization by the Mab reagent and about 2 logarithmic units of reduction with the polyclonal Anti-G serum. Isolates of this type were identified in rainbow trout from three commercial producers and one public hatchery in the Hagerman Valley of the Snake River basin.

In February of 1990, rainbow trout believed to be experiencing IHNV were obtained from one of the same commercial producers in the Hagerman Valley at which a Type IV IHNV was detected in 1983. It was of interest to determine if the neutralization profile of the 1990 isolate was the same as the 1983 Type IV isolate. Upon necropsy, kidney and spleen impression smears showed areas of intense fluorescence when stained by the indirect fluorescent antibody test (IFAT) for IHNV using the 193-110 monoclonal IHNV antibody as did similarly stained cell cultures inoculated with kidney-spleen homogenates (LaPatra et al., J. Aquatic Animal Health 1: 29-36, 1989). Therefore this 1990 isolate is presumed to be IHNV. Repeated attempts to neutralize this 1990 isolate, designated HV90 (U) in Figure 1, with both the Mab and Anti-G sera, however, have failed to show any degree of plaque reduction. Thus among the many isolates from Oregon and the Columbia River basin characterized by the monoclonal Mab-polyclonal Anti-G procedure outlined, this isolate appears unique. Studies to confirm the unique nature of this IHNV isolate are ongoing in collaboration with other investigators.

The author wishes to acknowledge the following contributors; Vernita Ediger, James Esselstyn and Sam Onjukka who conducted some of the neutralizations. Nancy Wood, Harold Ramsey, Joe Lientz, Ray Brunson and Jerry Zinn who provided some of the IHNV isolates. Cathy Lannan, Jim Winton, Mark Engelking and JoAnn Leong who provided valuable antisera. The La Grande Fish Pathology Lab of the Oregon Dept. of Fish and Wildlife is currently funded under the Bonneville Power Administration's Augmented Fish Health Monitoring Project.

## Oxolinic acid for the control of external columnaris disease in goldfish (*Carassius auratus*): A case history

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Baton Rouge, Louisiana 70803-8240

Oxolinic acid (1,2-dioxolo(4,5-6)quinoline-7-carboxylic acid, 5,ethyl-5,8-dihydro-8-oxo) is a member of the 4-quinolone series of antibiotics. Research involving the use of oxolinic acid for the management of bacterial fish pathogens indicates it to be effective for the control of *Aeromonas hydrophilla*, *A. liquefaciens*, *A. salmonicida*, *Cytophaga columnaris*, *Vibrio anguillarum* and *Yersinia ruckeri*. Little information can be found in the literature describing treatment regimes or the efficacy of the compound during a bacterial epizootic.

On 1 March 1990, 240 goldfish (*Carassius auratus*) were brought into our laboratory for use in a bioassay. The goldfish averaged about 3-5 g each and appeared to be in good health. Within 7 days, the first mortalities were observed. Affected goldfish had no external protozoan or fungal parasites and bacteria could not be cultured from blood, muscle or internal organs. External clinical signs and microscopic characteristics were consistent with those described for columnaris. Four days after the observation of the first moribund fish, percentage mortality among goldfish increased rapidly (Fig. 2). A bath treatment of 1 mg oxolinic acid/L water was started on day 7. Treatment of goldfish with oxolinic acid was conducted on 4 consecutive days. As mortalities ceased, treatment was discontinued.

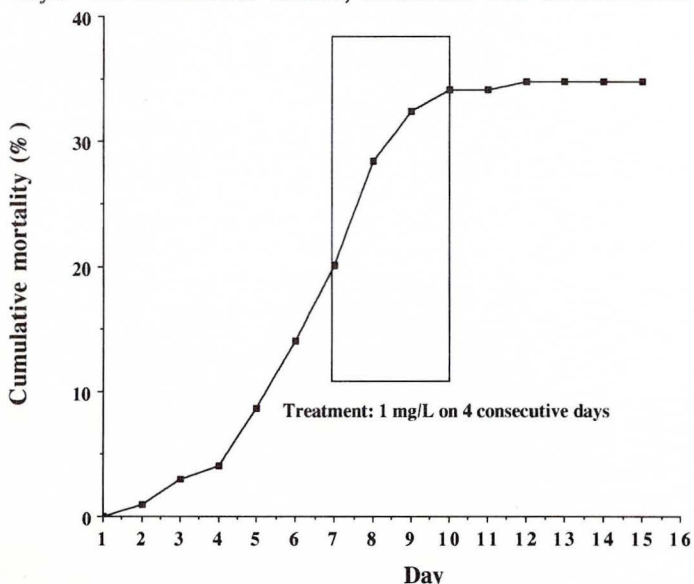


Fig. 2. Cumulative mortality (%) and oxolinic acid treatment regime of goldfish, *Carassius auratus* infected with external *Cytophaga columnaris*.

Following treatment, there were no further mortalities.

To treat fish, water flow was suspended in tanks and oxolinic acid was mixed into culture water. Bath treatment was 8 h in duration. Oxygen levels in tanks were maintained at saturation during treatment using diffused air. Following the 8 h treatment period, water flow was re-initiated. Water quality parameters at the time of the epizootic and treatment were: temperature 24 °C, pH 8.3, alkalinity 155 mg/L as CaCO<sub>3</sub> and hardness 33 mg/L as CaCO<sub>3</sub>.

## Eastern Fish Health Workshop Round-Up

David Groman  
Department of Pathology & Microbiology  
Atlantic Veterinary College  
University of Prince Edward Island  
Charlottetown, P.E.I. CIA 4P3  
Canada

On June 17th and continuing through the 19th, the 1990 Eastern Fish Health Workshop was convened at the Atlantic Veterinary College (AVC) on the campus of the University of Prince Edward Island (UPEI), Charlottetown, P.E.I., Canada. This annual meeting primarily brought together fish health scientists, professionals and researchers from the eastern region of North America, although participants from as far away as Norway and Alaska were in attendance. Opening addresses were presented by the Honorable Leonce Bernard, Minister of Fisheries & Aquaculture for P.E.I. and Dr. Reg Thomson Dean of the veterinary college. The theme of the meeting was "Diagnostic Technology", and this was highlighted by a key note address "Fin-Fish Disease Diagnostic Technology: Where Should We Be Headed" which was co-presented by Dr. Giles Olivier from the Department of Fisheries & Oceans, Halifax, Canada and Dr. Paul Reno from the University of Maine, USA.

In total, 38 oral presentations and 12 posters were given during the two day meeting, covering topics in Diagnostic Technology, Bacterial Diseases, Fish Immunology, Chemotherapeutants, Virology, Fin-Fish Pathology, Parasitology, Disease Control Measures and Shellfish Diseases. A best student presentation was awarded to Steve Griffiths of the University of New Brunswick for his paper entitled "The Use of Salmonid Reproductive Fluids as a Source of Primary Antibody For Use in The Assessment of BKD Infections". On both days workshops were held to discuss current concerns in the areas of diagnostics and shellfish disease. Dr. Rob Armstrong of the British Columbia Department of Agriculture & Fisheries chaired the Monday session on Diagnostics and Dr. Sharon McGladdery of the Department of Fisheries and Oceans Canada the Shellfish Diseases Workshop on Tuesday.

A limited number of programs with abstracts of the presentations and posters are available. Individuals wishing

to obtain a copy should contact Dave Groman at the Department of Pathology, AVC, UPEI, Charlottetown, PEI., C1A 4P3. Canada. Telephone: 902-566-0831.

On the lighter side, participants enjoyed both the balmy weather and hospitality provided through social functions organized by several generous sponsors. In particular, on Sunday the 17th Aqua Health Ltd. of Charlottetown sponsored a Lobster Boil at Shaws Hotel. On Monday afternoon, Martin Feed Mills of Ontario, sponsored a reception at the AVC, and on Wednesday Evening the 19th a banquet was held at which musical entertainment from "Celtic Express" was provided through contributions from Diagnostic Chemicals of Charlottetown, and Zeigler Feeds of Pennsylvania, USA. Additional financial support for the meeting was provided by the AVC, Canada Packers Inc., Dept of Fisheries and Oceans Canada, New Brunswick Dept. of Fisheries & Aquaculture, Nova Scotia Dept. of Fisheries and the PEI Dept. of Fisheries & Aquaculture. To all we are grateful.

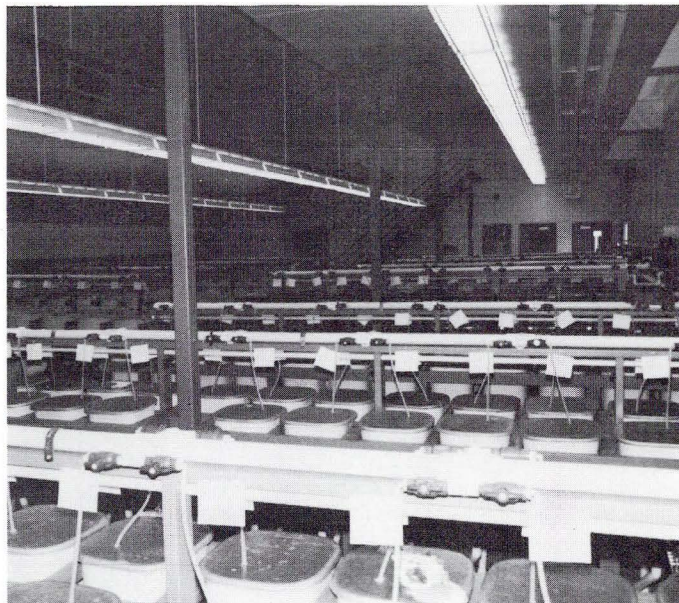
Locally, our organizing committee and technical support staff did a great job in making this meeting a success. In particular, a heartfelt thanks should be extended to Dave Groman, Gerry Johnson, Paul Lyon, Neil McNair, Kim Whitman, Claudia Campbell, Debbie Gallant, Sharon Gauthier, Janice Giles, Eileen Kinch and Morris Clark.

## New Fish Disease Laboratory at Oregon State University

The Oregon State University Fish Disease Research Group has now significantly increased their research capabilities with the dedication of a new regional \$1.5 million, 9000 sq. ft. fish disease facility. The laboratory was constructed through a grant from the Bonneville Power Administration with matching funds from OSU. Speakers at the dedication ceremony conducted on April 11, 1990 included Dr. John Byrne (President of OSU); Dr. George Keller (Vice President for Research and Graduate Studies, OSU); Peter Pacquet (Representing the Northwest Power Planning Council); Dr. Gerald Bouck (Chief, Biological Research, BPA); and Dr. John Fryer (Chair, Microbiology, OSU).

The laboratory represents a four-fold increase in the wet laboratory capacity for maintaining fish, as well as providing space for a large analytical laboratory, a tissue culture facility, a microscopy room, office space, a conference room, and a library. The latter are being equipped through the collective efforts of the Disease Group. This laboratory will greatly complement the Group's facilities which currently exist on both the OSU main campus in Corvallis and at the Hatfield Marine Science Center in Newport. The new laboratory will be utilized by the OSU Fish Disease Research Group which includes John Fryer, John Rohovec, JoAnn Leong, Bob Olson, Steve Kaatari, and Paul Reno who represent the Departments of Microbiology, Fisheries and Wildlife, and the Coastal Oregon Marine Experiment Station. This research group conducts studies in the areas of

pathogenic bacteriology, virology, mycology, parasitology, immunology, and epidemiology with a combined research staff of approximately 50 graduate students, technicians, post-doctoral fellows, and visiting scientists. Studies will also be conducted by members of the Oregon Department of Fish and Wildlife pathology section.



The laboratory is supplied with specific-pathogen free water from two wells, each with a capacity of more than 300 gpm. The water, which has an ambient temperature of 12.5 °C, is processed through a degassing tower to eliminate any gas supersaturation, then oxygenated to saturation. Thus, this system will provide consistent high quality water year-round. Effluent from the laboratory is treated with chlorine to prevent the escape of any pathogens from the facility. All systems are redundant and can be operated with a diesel-electric generator in the event of commercial power failures.

The wet laboratory is divided into two sections, one for stock fish and experiments not involving infectious agents and the other for holding fish used in disease experiments. The stock area has approximately fifty tanks of various sizes from 1 to 4 meters in diameter. The experimental area has approximately 124 one hundred-liter tanks and 150 twenty five-liter tanks which will accommodate various sizes of fish.  
- John Rohovec.

## MESSAGE FROM THE PAST PRESIDENT

During the 1989-90 business year the Fish Health Section has continued its efforts to foster professionalism and provide information transfer to the fish health community and others interested in fisheries related matters. Dedicated volunteers have assumed leadership roles while others have less visibly given of their time and talent to move our section's programs forward.

The committee reports of the 1990 FHS executive committee and business meeting included in this newsletter issue, gives clear testimony to their diligent efforts on the section's behalf.

It is of note this year that we continue to break new ground. The awards committee, for example, this year presented two distinguished service awards to two deserving members. One award went to John Plumb, a former FHS president and internationally acclaimed fish health researcher, and the other to Jim Warren, also a former president and respected fish health management pioneer. Additionally at our business meeting the awards committee was given the charge to develop a format for a meritorious service award. Such an award will allow the section to recognize the unusual efforts of those who have contributed significantly to the section, their agency or institution.

We have also renewed a spirit of activism in the section by attempting to make our collective voices heard on issues of importance both to fish health and aquaculture in general. Two resolutions were introduced and passed concerning FDA food fish designation for drug administration purposes, and uniform worldwide procedures for registration. These resolutions have been submitted to the AFS resolutions committee and may be considered for action as early as the September annual AFS EXCOM meeting in Pittsburgh.

In citing only these two examples as well as the aforementioned committee reports, it is my hope that all will recognize that our continued progress and credibility rests on the continued involvement of all our members no matter how great or how small. Some will lead and gain recognition but only through the cooperation and dedication of those who are less visible in their efforts. I along with the entire membership am grateful to all of you who have worked with me this year as your section president. Join me and the committee chairs and members to support our new president Charlie Smith, that he might enjoy a year as fulfilling as has been my own.

*John H. Schachte*  
President 1989-90

## MESSAGE FROM THE PRESIDENT

I count it a real honor to have been elected president of the Fish Health Section. Major changes are taking place in the fish health arena and I am looking forward to an interesting and challenging year of activities in this section of the American Fisheries Society.

Certain efforts were undertaken this past year, under the able presidency of John Schachte, that made considerable progress. However, because of their complex nature, they were not completed. An example is the progress made by the

Professional Standards Committee regarding certification procedures for Fish Health Inspectors and Pathologists. Efforts are continuing in this area that will clarify, expedite and upgrade the certification process. Another example is the initiative to support proposed legislation to facilitate drug registration for use in aquaculture not only in this country, but worldwide. This is an important issue that will get continued support from the FHS.

The section continues to grow with a membership of over 500. Hopefully, we can continue to stimulate membership as it applies to all potential fish health disciplines.

I hope to work closely with the Ad Hoc committee on New Initiatives this coming year. One important issue that needs addressing is the possibility of developing National Fish Health Guidelines as they pertain to the National Aquaculture Bill.

The annual meeting of the FHS will be held in conjunction with the Western Fish Disease conference at the Hatfield Marine Science Center in Newport, Oregon on August 1-3, 1991. The meeting is scheduled between two International conferences which will allow visiting scientists to attend the FHS meeting. On July 29-31, just prior to the FHS meeting, the Second International Symposium on Viruses of Lower Vertebrates will be held at Oregon State University in Corvallis, Oregon. Immediately after the FHS meeting The International Congress for the Society of Developmental and Comparative Immunology will meet in Portland, Oregon at the Oregon Health Science University and Reed College. Dates for this meeting are August 5-9, 1991. Paul Reno has agreed to serve as program chairman for the 1991 FHS meeting.

I wish to thank you in advance for your support this coming year. I appreciate the willingness of those serving on the various committees. In closing, there is a broad and varied background in the membership of the FHS. Your active support will continue to make the FHS a success.

*Charlie E. Smith*  
President 1990-1991

## 1990 Annual Meeting Reports

### FINANCE COMMITTEE REPORT

Last year's report stated an ending balance of \$2,562.87 in the General Acct. This was an error and should have been \$2,962.87. Hence as of July 1, 1989 the Fish Health Section had a total of \$10,593.77 distributed in the Blue Book Acct. held at the AFS offices (\$7,630.90) and the General Acct. held in checking and saving accounts at the Fulton Federal Bank of Athens, GA (\$2,962.87).

As of July 10, 1990 we have a total of \$6,691.57 in the General Acct. and \$8,681.90 in the Blue Book Acct., giving a grand total of \$15,373.47. A detailed accounting follows.

**Interim FHS/AFS Financial Report for Annual Meeting  
July 1, 1989 - July 10, 1990**

Transactions	
<b>FHS General Account</b>	
Beginning Balance	\$2,962.87
<b>Credits</b>	
Monies from 1988 meeting	\$2,071.83
Section dues	3,865.00
Certificates	810.00
Blue Book sales	12.00
Deposit return (1989 meet)	500.00
Interest	322.80
<b>Debits</b>	
1989 Meeting	530.85*
Donation, World Congress	100.00
AFS Journal	750.00
Newsletter	1,339.69
Balloting	236.39
Prof. Stands. Meeting	750.00
AFS plaques and Cert. seals	146.00
<b>Ending Balance of General Account</b>	<b>\$ 6,691.75</b>
<b>Blue Book Account (credit)</b>	<b>\$ 8,681.90</b>
<b>Grand Total</b>	<b>\$ 15,373.47</b>

\*For the 1989 meeting the FHS initially wrote a check for a \$500 deposit to the hotel which has since been returned and is listed under credits. We also wrote a check for \$770.50 to the hotel during the meeting to cover expenses. We received a total of \$239.65 back during the year, hence there was a total deficit of \$530.85.

*Vicki S. Blazer*  
*Chairperson*

**Finance Committee Action Items**

- 1) Annual Section Dues - It is my opinion that as long as we are in good shape financially, the annual dues do not need to be increased. The major expense each year is of course the newsletter. I have not yet been billed by Mississippi State for the issues which have come out since Randy MacMillan took over as editor. However, I don't expect that to be more than a couple thousand dollars, which still leaves us in good financial shape. So, it appears that at this date there is no reason to increase the dues.
- 2) Use of Blue Book Account - In 1988-89 we had a number of expenses associated with the revision of the Blue Book. These expenses were absorbed by the General Account. As we get closer to a revision

and also as the Shellfish Blue Book progresses I expect there will be additional expenses. It should be decided whether we should continue to use monies from the General Account for this or whether it is more appropriate to use monies from the Blue Book Account. If we use the Blue Book Account should the secretary-treasurer bill the account at the AFS or how should it be handled?

**NOMINATING COMMITTEE ANNUAL REPORT**

The nominating committee has officially submitted the following candidates for the 1990 election cycle:

For President Elect

- Vicki Blazer
- Frank Hetrick

For Secretary-Treasurer

- Rod Horner
- Yolanda Brady
- Scott LaPatra

For Board of Certification

- Bob Olson
- Kent Hauck
- Tom Schwedler

For Nominating Committee

- Bill Eaton
- Paul Reno
- John Hawke

*Spike Bealeu*  
*Chairperson*

**TECHNICAL PROCEDURES COMMITTEE**

The Technical Procedures Committee awaits the proposals of the AD HOC Blue Book Field Advisory Committee for the revision of the Fish Health Section's Blue Book.

*Rodney W. Homer*  
*Chairperson*

**BLUE BOOK FIELD ADVISORY COMMITTEE**

The Blue Book committee met in conjunction with the Eastern Fish Health Workshop in Annapolis, Maryland in July of 1989. Three members were unable to attend.

At the Executive Committee Meeting a nine to four vote resulted in authorization to publish the fourth edition in loose-leaf format. Also an all-in-favor vote resulted in agreement to a Standing Blue Book Committee with Chairperson serving on the Executive Committee. An official ballot will be sent to the membership to vote on change of

the by-laws accordingly. The main concerns were still a method for keeping editions updated.

We are trying to have our first draft completed by December. The Virology and Parasitology sections are about complete. The Bacteriology section is coming along more slowly. Several authors have not completed their sections at this time.

Ron Goede has volunteered to draft the new sampling procedures section. Ron as well as several others have seen an increasing level of attention on definitions of "lots" etc. that must be addressed.

*John Thoesen, Chairperson*

### PROFESSIONAL STANDARDS COMMITTEE

The past year has been a very productive one for the PSC as well as marking a milestone in the development of the certification programs for which the PSC is responsible.

In February of 1990, members of the PSC traveled to Springfield, Oregon and devoted a weekend to reviewing and revising documents as well as developing programs. This meeting was supported by Snieszko and AFS General Funds and included a 2 1/2 page agenda of difficult and timely topics requiring member presence and participation.

Standards and Procedures for the Certification and Recertification of Fish Pathologists was the one document among the 4 critically reviewed that received the most attention. If the proposed revisions are accepted and go into effect, the most notable would be the following: (1) fish health courses taken at Leetown would no longer be accepted for fulfilling academic requirements (e.g., virology, immunology, etc.), (2) academic requirements would increase and be more specific, (3) professional work experience required after completing academic requirements would change from 3 years to 1, (4) demonstrated proficiency in a minimum of 4 of 7 areas would be deleted in lieu of increased academic standards and a more comprehensive examination which may include up to 50-35 mm transparencies, and (5) continuing education credits would be required for recertification.

A continuing education program was discussed and initial efforts to develop it have begun. Mike Kent has valiantly and enthusiastically agreed to head up the endeavor. The program will hopefully provide fisheries and fish health professionals with ongoing educational opportunities, as well as fit into a proposed requirement for recertification of fish pathologists and inspectors. Proficiency testing and its advantages were discussed, however, due to the limited membership in the FHS, it was decided that aspects of the continuing education program would be developed to accommodate voluntary proficiency testing by individuals or organizations.

Revisions and recommendations to the FHS Executive

Committee should be completed and submitted by the end of 1990. Approved changes will be published in the newsletter.

The PSC now has a formal set of criteria and guidelines as the basis for writing questions for the Fish Pathologists examination. Additionally, there are now chairpersons within each discipline who, along with other recognized authorities in the discipline, are preparing quotas of questions and 35 mm slides based on the new guidelines. The efforts are leading to a well-balanced, comprehensive examination that will test academic knowledge, problem-solving abilities, and proficiency.

Lastly, four appeals were resolved with two decisions by the Board of Certification being upheld and two overturned.

*John D. Cvitanich, Chairperson*

### BOARD OF CERTIFICATION

Since the last report, July 6, 1989, there have been six applications for Fish Health Inspector. Five of these applicants have been certified; one has been denied. Two Fish Health Inspectors received 10 year recertifications and two others received their five year recertification. At present there are 47 active and 4 former (retired or expired) Fish Health Inspectors.

Four Fish Pathologist applications have been reviewed (one applicant submitting twice). Of these, two are ready to take the examination for certification; the other applicant has been denied on both of his applications. Eighteen Fish Pathologists received their 5 year recertification. At present there are 56 active Fish Pathologists and 3 former (retired or expired) Pathologists.

No expenditures have been made during this period.

### BOARD OF CERTIFICATION SUMMARY TO DATE:

#### Fish Health Inspectors

Total number applicants	72
Number certified	47
5 year recertification	10
10 year recertification	10

#### Fish Pathologists

Total number applicants	84
Number certified	59
5 year recertification	36

*Ralph A Elston, Chairperson*

### SNIEZKO STUDENT TRAVEL AWARDS COMMITTEE

This is the first year that travel funds have been awarded from money willed to the Fish Health Section by Dr. S.F. Snieszko. Three students were granted \$400.00 each for travel to the FHS Annual Meeting in Minneapolis this year.

The winners were Stewart Alcorn, University of Maryland, for "The immune response of wild brown bullhead catfish to 5 known bacterial pathogens is not affected by pollutants found in the Chesapeake Bay"; Larry Hanson, Louisiana State University, for "Biochemical characterization and gene-mapping of the channel catfish virus thymidine kinase" and Jiraporn Kasornchandra, Oregon State University, for "Characterization of a rhabdovirus isolated from snakehead fish". Candidates for next year's awards to the 1991 meeting to be held somewhere in the Western U.S. or Canada, are now being solicited. Proposed abstracts and recommendations should be sent to Dr. Alec G. Maule, Oregon Cooperative Fishery Research Unit, Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon 97331-3804. A grant of \$750.00 was given to the Professional Standards Committee for travel support of four members. Their meeting was held in Springfield, Oregon and headed by John Cvitanich. Their formal report is being filed.

*Doug Anderson, Chairperson*  
*Alec Maule*  
*Pete Walker*

#### NEWSLETTER AND PUBLICATIONS

Two issues of the FHS Newsletter have been published under the direction of new editors and committee as of July 1, 1990.

Efforts are being made to have the newsletter in a camera ready format to reduce publication expenses. Individuals who can submit material in a camera ready format or on floppy disk for use with Word Perfect can help expedite the process.

We wish to thank all contributors to the newsletter for their submissions and their patience. We encourage membership participation in constructive critique and submissions.

*Randy MacMillan, Chairperson*

#### FISH HEALTH SECTION RESOLUTIONS

##### INITIATIVE TO FACILITATE AQUACULTURE DRUG REGISTRATION

WHEREAS, few drugs are registered worldwide for use in aquaculture; and

WHEREAS, a major obstacle to this registration is the great expense of completing extensive data requirements in relationship to potential markets;

WHEREAS, pharmaceutical and chemical companies are inhibited from pursuing the registration of drugs for aquaculture due to the low sales volume, lack of patent

protection for existing drug treatments, tremendous diversity of cultured aquatic species and diseases, and lack of uniform testing guidelines and data requirements from country to country; and

WHEREAS, a worldwide market is needed before a company will make a profit on an aquaculture drug; and

WHEREAS, few data generated on aquaculture drugs are accepted outside of the originating country and the required tests are too expensive to repeat from country to country; and

WHEREAS, few drugs known to be effective on diseases of aquatic species have data generated on mammalian safety, environmental fate, residues, and metabolism; these data are also the most expensive, costing approximately \$3 million to meet the requirements of the U.S. Food and Drug Administration; and

WHEREAS, the Organization for Economic Cooperation and Development (OECD) has developed an array of guidelines for testing chemicals based on Good Laboratory Practices that are acceptable to its 24 member countries, including the United States, Canada, United Kingdom, and Japan; and

WHEREAS, these guidelines were developed to provide a common basis for the acceptance of data on an international basis, thus, providing the opportunity to reduce direct and indirect costs to governments and industry associated with testing and assessment of chemicals; and

WHEREAS, other guidelines, such as residue and metabolism, can be added because the OECD has a program for updating and adding tests to their guidelines; and

WHEREAS, the Round-Table Consultation on Documentation on Drugs in Aquaculture held in Oslo, Norway on June 25 to 28, 1990, has already initiated the development of worldwide, uniform guidelines appropriate for testing aquaculture drugs; and

WHEREAS, representatives of the U.S. Food and Drug Administration (FDA) participated in this international meeting;

THEREFORE, be it resolved that the Fish Health Section, American Fisheries Society request that the Center for Veterinary Medicine, FDA, continue to participate in the Round-Table initiative begun in Norway and in the review and acceptance of OECD guidelines for testing drugs to facilitate the registration of aquaculture drugs in the United States and worldwide.



## Publications Available

**Techniques in Fish Immunology.** J.S. Stolen, T.C. Fletcher, D.P. Anderson, B.S. Roberson, W.B. van Muiswinkel (eds) 1990. 222 pp. SOS Publications, 43 DeNormandie Ave. Fair Haven, NJ 07704-3303 \$42.00.

This workbook presents state-of-the-art developments in adapting the techniques of immunology to the study of fish health, aquaculture and environmental toxicology. The 21 contributions are crammed full of information written by the specialists in each of the techniques. For instance, the well-known team studying the effects of aquatic toxicants on the ability of fish to protect themselves from diseases (A. Weeks, E.S. Mathew, and J.E. Warinner at Virginia Institute of Marine Science) has written a section on "Assays of immune function in fish macrophages, techniques used as indicators of environmental stress". Other important contributions include sections on delayed-type hypersensitivity skin reactions (R. Stevenson, B. Raymond), and the collection, separation and identification of fish leukocytes (A.F. Rowley). The first 10 sections carefully review some basic adaptations of immunological techniques to fish health, fluorescent antibody test, ELISA, agglutination, and western blot.

The book is written for undergraduate and graduate university students and has excellent flow diagrams and schematics to help explain complex procedures. Fish pathologists and aquaculturists interested in recent developments in serodiagnosis of fish diseases should also be interested and familiar with the techniques presented here. Many of these assays will become commonly used for fish disease diagnosis and monitoring fish health. For the rapidly moving field of immunology and fish health, this is a valuable publication.- *Doug Anderson.*

**Annual Review of Fish Diseases.** M. Faisal and F. M. Hetrick (eds). Pergamon Press.

A peer-reviewed annual periodical which publishes current reviews and theoretical papers dealing with aquatic animal health. Of interest are reviews summarizing the current knowledge of infections of fish caused by viruses, bacteria, fungi or parasites; virulence factors of fish pathogens; nonspecific factors involved in host susceptibility and resistance to infection; the epidemiology of fish diseases; basic and applied immunology of aquatic animals; the association of pollutants with disease incidence and tumor development; and the therapy and prevention of disease.

- Volume 1, 1990: Fish Diseases in Aquaculture
- Volume 2, 1991: Fish Immunology and Immunopathology
- Volume 3, 1992: Pollution and Carcinogens
- Volume 4, 1993: Diseases of Shellfish
- Volume 5, 1994: Fish Diseases as a Model for Biomedical Research

For information contact: Dr. M. Faisal, Virginia Institute of

Marine Science, College of William and Mary, Gloucester Point, Virginia 23062 or F.M. Hetrick, Dept. Microbiology, University of Maryland, College Park, Maryland 20742.

## Passages

John Cvitanich, formerly the fish pathologist for Anadromous Inc., is now the Research Director for Trouw Research Center-North America, a division of Trouw International, Boxmeer, The Netherlands. His address remains: 188 West 'B' St., Springfield, Oregon 97477. Phone (503) 746-1442.- *Julie Soares.*

## Blue Book Supply Exhausted

Supplies of the 3<sup>rd</sup> edition of the "Blue Book" are exhausted and are no longer available. The 4<sup>th</sup> edition of the "Blue Book" will be available soon. All members of the "Blue Book" committee are encouraged to submit items to Mr. John Thoesen as soon as possible.

## Positions Available

**Virology/Immunology Post-Doctoral Position:** A post-doctoral research position and two graduate research positions are currently available on diagnostic procedure development for certain viral and other pathogens of farm-reared penaeid shrimp. These USDA and Sea Grant funded positions will concentrate on development of serologic and molecular diagnostic procedures for certain virus diseases, but may be expanded to include studies on pathogenesis and host response, with possible study on other viral, rickettsial, chlamydial, and bacterial agents of shrimp. Applicants are sought that have an interest and training in virology, bacteriology, immunology, and/or molecular biology. Applicants should send a letter of intent, curriculum vitae, University transcripts, and two letters of recommendation. Applications and questions may be directed to: Dr. D.V. Lightner, Dept. Veterinary Science, University of Arizona, Tucson, AZ 85721. Phone (602) 621-8414; FAX (602) 621-6366. **The University of Arizona is an equal opportunity/affirmative action employer. Women and minorities are urged to apply.**

**Fish Virologist Position:** The Oregon Department of Fish and Wildlife is inviting applications for a fish virologist position located at Corvallis, Oregon. The person in this position maintains a fish virology monitoring program to detect and identify fish viruses and conducts research on virus detection and control methods.

Copies of the job announcement listing minimum qualifications and application forms are available from: Personnel, Oregon Dept. Fish and Wildlife, P.O. Box 59, Portland, OR 97207. Phone (503) 229-5400. Applications must be received at this address by 5:00 p.m. on Sept. 14, 1990. **ODFW is an equal opportunity employer.**

**FHS AD HOC COMMITTEES****Program (1991 Meeting)**

Paul Reno, Chair  
John Rohovec  
Bob Olson

**Scientific Journal**

Bill Rogers, Chair  
John Plumb  
John Grizzle

**S.F. Snieszko, Student Awards Committee**

Alec Maule, Chair  
Pete Walker

**International Standards**

Chair to be named  
Bruce Nicholson  
Barry Hill  
Pierre de Kinkelin  
Victoria Rasheed  
Hisatsuga Wakabayashi

**Procedures Evaluation**

\*Emmett Shotts, Chair  
(Streptococcus, Lactobacillus)  
\*John Hawke (*Edwardsiella ictaluri*)  
\*Yolanda Brady (CCV)  
Phyllis Barney  
\*Cliff Starlipper (*Flexibacter*, gill diseases)  
Howard Jackson  
Ron Hedrick  
\*Diane Elliott (*Aeromonas salmonicida*)  
Robert Durborow (Warmwater parasites)  
\*Roselynn Stevenson (*Yersinia ruckeri*)  
Jeff Teska  
\*Phil McAllister (VHSV)  
\*Russ Kelly (IPNV)

**Long Range Projects & Planning**

Ron Hendrick  
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John Thoesen, Chair  
\*Scott LaPatra (IHNV)  
\*Jack Frimeth (coldwater parasites)  
Chris Horsch  
Diane Elliott  
Steve Roberts (*Renibacterium*)  
Jack Ganzhorn (*Vibrio*)

\*Designates Disease Committee Network Chair

**Meetings**

**IR-4/FDA Workshop for Minor Use Drugs: Focus on Aquaculture.** October 15-16, 1990. Holiday Inn, Bethesda, MD. Contact Dr. Arthur Craigmill, Animal Drug Coordinator, Dept. of Environmental Toxicology, University of California, Davis, CA 95616-8588.

**Symposium on Diseases of Asian Aquaculture,** Nov. 26-29, 1990. Sawer Beach, Bali, Indonesia. Information may be obtained from Dr. Mohd. Shariff, Asian Fisheries Society, Fish Health Section, c/o Faculty of Fisheries and Marine Science, University Pertanian Malaysia, 43400 Serelang, Selangor, Malaysia.

**Annual Meeting of the American Society of Zoologists.** Dec. 27-30, 1990. Marriott Rivercenter, San Antonio, Texas. Information contact Ms. Mary Adams-Wiley, American Society of Zoologists, 104 Sirius Circle, Thousand Oaks, CA 91360.

**International Conference on Problems of Chemotherapy in Aquaculture: Theory and Reality.** March 12-15, 1991. Paris, France. Contact Office International des Epizooties, 12 rue de Prony, 75017 Paris, France.

**European Association for Veterinary Pharmacology and Toxicology, 5<sup>th</sup> Congress.** August 18-22, 1991. Copenhagen, Denmark. Contact Folke Rasmussen, Chairman of the Congress, Karlebogard, 91 Karlegovej, DK-3400 Hillerod, Denmark.

**3<sup>rd</sup> International Congress of Comparative Physiology and Biochemistry.** August 25-30, 1991. Tokyo, Japan. Contact Congress Secretariat, 3<sup>rd</sup> International Congress of Comparative Physiology and Biochemistry, Zoological Institute, Faculty of Science, University of Tokyo, Hongo, Tokyo 113, Japan FAX 81-3-816-1965.

**Election Results**

180 Ballots Received

President: Vicki Blazer  
Secretary-Treasurer: Scott LaPatra  
Board of Certification: Bob Olson  
Nominating Committee: Paul Reno and John Hawke

*Congratulations*

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## S.F. Snieszko Distinguished Service Award

August 28, 1978

Dear John:

To my complete surprise and amazement during a coffee break last Thursday (August 24) Ken Wolf presented me with the diploma of the first recipient of the Distinguished Service Award of the Fish Health Section of the American Fisheries Society. During the Centennial meeting of the American Fisheries Society I was similarly honored by the parent society. It makes me extremely happy to be so greatly honored, especially since I am a foreign born citizen of the United States.

These, and other honors which I have received in the United States, as well as the high position in the United States Government, contradict the often expressed opinion that not all citizens are equally treated. It is of particular satisfaction to me that I can serve as example of the fairness of the people of this great country.

With thanks and appreciation, I am,

Sincerely yours,

S.F. Snieszko  
Senior Research Scientist

The "S.F. Snieszko Distinguished Service Award" given by the Fish Health Section of the American Fisheries Society is the most coveted of awards that any of us in the fish health field can receive. It is not something that we "set out to receive," but any of us would like to receive. "Doc" Snieszko was a kind, sincere, gentle, warm, caring individual; qualities equaled by his scientific contributions to fish health in North America and to the world. It was with great pleasure and surprise to receive the "S.F. Snieszko Award" at the recent FHS/Midwest Fish Disease Workshop in Bloomington, Minnesota. Personally, there is no more meaningful, professional expression than receiving this award. In all of our professional lives there are a small number of mentors and friends that stand out in molding our development. "Doc" has been among those few for a great number of people and certainly one that had great influence on me. I wish to thank the Awards Committee, President John Schachte and the entire Fish Health Section for this award.

While looking through my FHS files recently, I realized that when I was President of the FHS in 1978, I had the honor of presenting the first "Distinguished Service Award" to S.F. Snieszko in Kansas City. "Doc" was unable to attend therefore Ken Wolf accepted on his behalf. "Doc" sent a monetary gift to cover the initial cost of the award not knowing that he was to receive it. I later received the letter below from "Doc" and I believe it speaks for itself.

John A. Plumb

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**Deadline For the Fall Edition of the FHS Newsletter is November 15, 1990.**

**Address contributions to Dr. Randy MacMillan, Director of Research, Clear Springs Trout Company, P.O. Box 712, Buhl, Idaho 83316 or any member of the Newsletter Committee.**

**Contributions submitted on 3.5 or 5.25 inch floppy disks in Word Perfect 5.0 or 5.1 are appreciated.**

**Fish Health Newsletter**

The Fish Health Newsletter is a quarterly publication of the Fish Health Section of the American Fisheries Society. Submissions of any length on a topic of interest to fish health specialists are encouraged with the understanding that material is not peer reviewed. Submissions should be addressed to the editor or to a member of the publication committee.

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Idaho's  
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