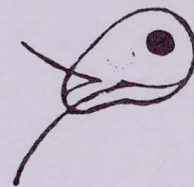


FISH HEALTH SECTION

AFS

NEWS LETTER



VOLUME 15, Number 4

October 1987

1986-87 ANNUAL REPORT OF THE FISH HEALTH SECTION PRESENTED TO THE AFS/EXCOM

The eleventh annual meeting of the Fish Health Section was held in conjunction with the 12th Annual Eastern Fish Health Workshop and the 18th Annual Midwest Fish Health Workshop in Baton Rouge, LA on July 14-16, 1987. Forty technical papers were presented and several posters were displayed. Approximately 90 persons attended the meeting. The FHS Executive Committee met and the Section conducted its annual business meeting.

The FHS treasury has in the General Account \$1,687 and in the Certification Account \$3,024. The AFS holds two other accounts for FHS: the Blue Book Account at \$1,554 and the Glossary Account at \$1,651. Major expenses this year were support of the FHS newsletter (\$1,757), and publication of the Membership Directory (\$607). A \$100 donation was made to the AFS Raffle.

The Examination Review Board has provided questions and the Professional Standards Committee and the Board of Certification are working out details of making the written examination available for certification of Fish Pathologists. Presently there are 52 Certified Fish Pathologists and 34 Certified Fish Health Inspectors.

The FHS Membership Directory was published during the year. This 71-page booklet includes bylaws, past officer lists, executive and standing committee lists, names of Certified Fish Pathologists and Certified Fish Health Inspectors, and standards for their certification.

The Snieszko Distinguished Service Award was presented to two individuals this year. Gordon R. Bell and William T. Yasutake were selected to receive this prestigious award in 1987.

Approximately 40% of FHS membership voted recently to elect Douglas Anderson as president-elect and Vicki Blazer as secretary-treasurer. Marshall Beleau was chosen for the Nominating Committee and Ted Meyers was elected to the Board of Certification.

Current officers of the Section are:

President - Ron Hedrick
Past President - Bill Rogers
President-elect - Doug Anderson
Secretary/Treasurer - Doug Anderson

The International Conference on Fish Health will be held in Vancouver, B.C. on July 19, 20 and 21, 1988. The FHS proposes to publish a Proceedings of the Conference.

ACTION RECOMMENDED: Many foreign fish health professionals are interested in becoming members of the Fish Health Section; however, they have no desire to become members of the American Fisheries Society. The FHS is proposing an "associate membership" in which non-North Americans could become members of FHS without becoming members of AFS. They would pay higher dues than regular members and would be non-voting members of the Section. Their main advantage would be having the prestige of belonging to a professional society and getting the society newsletter. The advantage to the Section would be an increased membership and additional dues to handle foreign mailing of the FHS Newsletter. **The FHS recommends that AFS support the initiation of an "associate membership" in the FHS for**

non-North Americans; we do not believe such a membership category would affect AFS membership.

ACTION RECOMMENDED: The FHS is proposing a "North American Journal of Fish Health" and seeks sanction and support from AFS to initiate such a journal.

The FHS sent a questionnaire to its members regarding the proposed journal. Approximately 1/4 of the membership responded and approximately 80% indicated a need for such a journal. Most members indicated that they would subscribe to the journal and would submit manuscripts. Most also indicated they would pay page charges. In view of the positive response, the FHS proposes the following:

Name of the new journal:

North American Journal of Fish Health

Purpose and Scope:

The NAJFH would be a publication of virtually all practical and technical aspects of aquatic health including diseases of finfish, shellfish and mollusks, histology, histopathology, diagnostic techniques, treatments, non-infectious diseases, physiology, immunology, toxicology, etc. and would possibly also include a "case reports section". Advertisements to support publication costs is also a possibility.

Need of a Fish Health Journal: At present, there are three journals, one Japanese and two European, specializing in diseases of aquatic organisms. The most renowned Journal of Fish Diseases had a 1-1/2 year backlog of manuscripts at the time of our survey and most N.A. fish health workers don't have access to the other journals. There are a number of journals such as 2 Canadian and several American journals that would take articles on fish health topics, but again, most fish health workers don't subscribe to them or do not have ready access to them. Also, most of these journals are overloaded with manuscripts and will reject articles on subject matter if not for other reasons. The NAJFH would be a readily available common source of information for fish health workers.

Editorial Procedures and Standards

The Journal would have two editors initially. Drs. Bill Rogers and John Plumb have volunteered to serve as technical editors. A peer review process will be in effect and all manuscripts will be subject to editing by the editors and/or an editorial review board or specialty reviewers. All prospective authors must follow "Instruction to Authors" regarding style and format. We seek administrative help from the Managing Editor office with such things as subscription maintenance, competitive printing bids, accounting, copyediting and other services to the technical editors. Although camera-ready copy would be acceptable, we prefer typeset copy and especially to have good quality pictures.

The FHS recommends that AFS support the initiation of a new journal: "North American Journal of Fish Health".

Bill Rogers, President

FHS OFFICERS AND COMMITTEES 1987-88

EXECUTIVE COMMITTEE

Voting Members

Ron Hedrick, Chair and President, FHS
 Doug Anderson, President-Elect
 Bill Rogers, Immediate-Past President
 Vicki Blazer, Secretary-Treasurer
 Charlie Smith, Chair, Nominating Committee

Non-Voting Members (Chairs of Standing Committees)

John Rohovec, Newsletter and Publications Committee
 Ron Hedrick, Awards Committee
 Randy MacMillan, Membership and Balloting Committee
 John Schachte, Professional Standards Committee/
 Board of Certification
 Ron Goede, Technical Procedures Committee
 Roger Herman, Archives Committee
 Ron Thune, Time and Place Committee

STANDING COMMITTEES

Nominating

Charlie Smith, Chair
 Craig Banner (2 years)
 Marshall Beleau (3 years)

Newsletter and Publications

John Rohovec, Chair
 Jim Winton
 Randy MacMillan
 Paul Bowser
 Doug Anderson
 Ron Thune

Technical Procedures

Ron Goede, Chair
 Kevin Amos
 Dennis Anderson
 Rod Horner
 Jim Warren

Professional Standards/ Board of Certification

John Schachte, Chair
 Marshall Beleau (1 year)
 Paul Bowser (1 year)
 Joe Sullivan (2 years)
 Drew Mitchell (2 years)
 Ted Meyers (3 years)

Finance

Vicki Blazer, Chair
 Randy MacMillan (Membership)
 John Rohovec (Newsletter)

Awards

Ron Hedrick, Chair
 Pete Bullock (2 years)
 John Fryer (3 years)

Archives

Roger Herman, Chair
 Margaret Ewing (2 years)
 Tony Amandi (3 years)

Time and Place

Ron Thune, Chair
 Paul Reno (2 years)
 Ron Hedrick (3 years)

AD HOC COMMITTEES

International Meeting

Trevor Evelyn, Chair
 Kevin Amos
 John Plumb
 John Rohovec
 Richard Heckmann

Program (1989 Meeting)

Paul Reno
 Ron Goede

Pathogen Evaluation Criteria

Dennis Anderson, Chair
 (To be named)

Procedures Evaluation

Emmett Shotts, Chair
 John Hawke
 Yolanda Brady
 Phyllis Barney
 Cliff Starlipper
 Howard Jackson
 Ron Hedrick
 Diane Elliot
 Robert Durborow

JOINT FISH HEALTH MEETING REPORT

The Joint Fish Health Meeting, combining the Eleventh Fish Health Section/AFS Annual Meeting, the 12th Annual Eastern Fish Health Workshop and the 18th Annual Midwest Fish Health Workshop was held July 14-16 in Baton Rouge, LA. During the meeting, attended by approximately 75 scientists and students, forty papers were presented on a wide range of topics and a special half day session was dedicated to a lively discussion of appropriate criteria for the evaluation of fish pathogens. It soon became apparent that what criteria were deemed important in evaluating the danger posed by a pathogen depended greatly on individual perspectives. Dennis Anderson has taken the results of our informal ranking for more complete analysis and will summarize the results in the Newsletter at a later date. Highlights of the meeting included the Jambalaya dinner on Tuesday and the Cajun banquet on Wednesday night. Dr. William "Tosh" Yasutake was named as one of this year's recipients of the S.F. Snieszko Distinguished Service Award at the banquet. Limited numbers of the program and abstracts are available at no cost by writing: Ron Thune, Dept. Vet. Micro. and Parasit., School of Vet. Medicine, Louisiana State University, Baton Rouge, LA 70803. Next year's Eastern Fish Health Workshop will be held in Orono, Maine hosted by Paul Reno, Department of Microbiology, University of Maine, Orono, ME 04469. The AFS/Fish Health Section will hold an International Fish Health Conference in Vancouver, British Columbia on July 19-21, 1988, hosted by Trevor Evelyn, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, B.C., Canada U9R SK6.

A MESSAGE FROM PRESIDENT HEDRICK

I am looking forward to an interesting year of activities in our Section of the American Fisheries Society. Many important initiatives are before us that will change our Section forever. Certainly highlights include the upcoming International Meeting of our Section in Vancouver, B.C. July 19-21, 1988 and the development of a new journal, the North American Journal of Fish Health published through the auspices of the AFS.

By this time all FHS members should have received information on the International Meeting. Regarding the journal, we have received approval by the excomm of the AFS in principle for proceeding. We hope that final approval can be obtained prior to, but at the latest by, the mid year meeting of the AFS excomm. Past-president Bill Rogers is to be given credit for his dedication to this project (which, by the way, continues as he and John Plumb have agreed to be technical editors for the new journal).

We were less successful with our request to create an associate membership within our Section. You might recall we proposed this form of membership for our foreign colleagues so that the Section might better cover the expenses of overseas mailing of the Newsletter. This was unanimously defeated by the excomm because they believed this was a discount method for obtaining the prestige and certain privileges that AFS provides.

New initiatives that I am proposing include enlargement of our membership to include those fish health scientists concerned with shellfish and perhaps provide the foundations for a "Blue Book" for the major pathogens detected in bivalves and crustaceans. Along these lines I have created a committee to begin examining the feasibility of such an undertaking. A second initiative is to create a compiled report of the diseases that each state would require inspection for and those that might preclude import of either salmonids or warmwater fish. This might help inspectors and pathologists in conducting exams on fish bound for importation.

Lastly, I would like to thank each of you for your willingness to participate in the important functions of our Section by serving on committees (either presently or in the future). These appointments in combination with our elected officers are what drive and direct our Section and we can only do this with a combination of your mental and physical energies. Thanks.

Ron Hedrick

ELECTION RESULTS

The election of officers for the 1988-89 Executive Committee has been completed and results are listed below. The elections were very close in almost all categories. Congratulations to the winners and those defeated are to be thanks for their willingness to serve. The FHS needs more people such as yourselves.

President-Elect
 Secretary-Treasurer
 Nominating Committee
 Board of Certification

Doug Anderson
 Vicki Blazer
 Marshall Beleau
 Ted Meyers

1987 SNIESZKO AWARDS

TOSH YASUTAKE RECEIVES S.F. SNIESZKO AWARD AT FHS ANNUAL MEETING

Dr. W.T. "Tosh" Yasutake was a recipient of the S.F. Snieszko Distinguished Service Award for 1987. The honor was especially timely as it was presented near the end of a long career in the fish health field. All fish pathologists have been aided by his pioneering work in histopathology and his many contributions to our understanding of fish disease. His work in fish health began in 1952 as a GS-5 fishery aid at the Western Fish Nutrition Laboratory in Cook, WA. In 1960, he moved to the Western Fish Disease Laboratory in Seattle where he remained as a research histologist. In 1980, Tosh obtained a Ph.D. degree working with Dr. S. Egusa at the University of Tokyo. Author of approximately 60 publications, Tosh is perhaps best known for the definitive *Microscopic Anatomy of Salmonids: An Atlas*. Not content to retire without something to do, Tosh has indicated he will come to work "for a few more years" on a limited basis to finish the companion volume of his histopathology. As a personal friend of Stan Snieszko, Tosh was particularly pleased to receive this award and all of us in the Section wish him well and add our congratulations.

GORDON RUSSEL BELL RETIRES — AND RECEIVES THE S.F. SNIESZKO DISTINGUISHED SERVICE AWARD

Gordon Bell retired at the end of July after 35 years in the employ of the Government of Canada, 30 of them spent as a research scientist in the fish health field at the Pacific Biological Station, Nanaimo, B.C. During his remarkable career, Gordon headed his laboratory's Fish Health Research Program, authored some 60 publications on fish health topics (including his several famous "Guides"), was instrumental in putting Canada's Fish Health Protection Regulations in place, and was well known nationally and internationally for his fish health expertise. Some 175 of Gordon's friends and colleagues, as well as members of his immediate family, attended the retirement party held in his honour on July 24 at the Nanaimo Golf and Country Club. During the ceremonies, Gordon was presented with, among other things, the S.F. Snieszko Distinguished Service Award!! Trevor Evelyn, Master of Ceremonies for the evening, made the presentation on behalf of Wilmer Rogers, President of the Fish Health Section. In making the presentation, Trevor outlined why the Awards Committee considered Gordon a worthy recipient and gave something of the history of the award so that all present were fully aware of the tremendous honour being bestowed on Gordon. Needless to say, Gordon, a modest and therefore completely unsuspecting recipient, was rendered speechless — but, thankfully, only temporarily! He rallied marvelously from his shock (a shock compounded at the party by a Gordon Bell Roast during which a colour slide was shown of him, asleep and clothed only in bubbles, in his bathtub!) to give a very touching "thank you" and farewell speech. Gordon's farewell "do" was certainly a fitting way to cap the career of a wonderful friend and colleague — and all of us who had the privilege and pleasure of associating with him on a regular basis will sorely miss him. We understand that Gordon will have to be careful if he is to have any "time off" to enjoy his retirement. Already, a number of local consulting firms are seeking his services, and he has been asked to undertake several overseas fish health assignments.



PASSAGES

Warren J. Groberg still works for the Oregon Department of Fish and Wildlife, but has moved "back home" to the eastern side of the state. His new address is Badgley Hall, Eastern Oregon State College, LaGrande, OR 97850, phone (503) 962-1823.

OPEN LETTER TO THE SECTION

Dr. Wilmer A. Rogers
President, Fish Health Section AFS
Department of Fisheries and
Allied Aquacultures
Auburn University, AL 36849
U.S.A.

Dear Dr. Rogers:

I am writing to thank you and your Awards Committee for the great honor shown me, along with my friend Tosh Yasutake, in presenting me with the S.F. Snieszko Distinguished Service Award. I never dreamed that I would receive this prestigious award and it will be a physical reminder of Stan Snieszko, a fine gentleman and scientist whom I had the pleasure of knowing. I also consider it to be a special honor to join Tosh in his well deserved distinction and I would like to thank him "publicly" for his outstanding contributions to our profession. I must say that presentation of the award by my friend and respected colleague Trevor Evelyn was an unforgettable experience. I am very grateful to him and others in our Fish Health and Parasitology group for their support over many years. In a very real sense it was a group award because none of us stands alone.

You might be interested in a brief account of the award presentation that occurred on the occasion of my retirement party, an intimate affair of 150 or so who had been reared in the special camaraderie of the Pacific Biological Station. I was beautified and crucified all in one evening! The crucifixion consisted of various uncomplimentary slides, the worst of which was a secret shot by my wife Marjorie (we won't reach our 40th next year!) of me asleep in the bathtub, "naughty parts" provocatively covered with bubbles. I looked like a stranded Bell-uga! However, I can assure you that Trevor solidly maintained the dignity of the Fish Health Section. His well kept secret bowled me over and I am still floating on air!

Fortunately for me I will be continuing my association with the Pacific Biological Station mostly in order to complete various manuscripts. I may have quit the job but I haven't quit the science. Therefore, as Jim Warren suggested some time ago it is about time I joined the AFS! My Application for Membership is in the mail — such is Jim's influence. Thank you and soon-to-be fellow members for your friendliness and stimulation, and for your acceptance of one as ancient as 63. My very best wishes to you all. Hope to see you in Vancouver in '88.

Most sincerely,
/s/Gordon Bell

FUTURE EVENT

49th Midwest Fish and Wildlife Conference

The 49th Midwest Fish and Wildlife Conference will be held December 5-9, 1987, at the Marc Plaza Hotel, Milwaukee. This conference is an annual gathering of fish and wildlife professionals from throughout central North America, and emphasizes applied research relevant to the management of regional fish and wildlife resources and their human users. The North-Central Division of the American Fisheries Society will hold its annual meeting at the conference, and AFS members from throughout the United States and Canada will be in attendance.

A wide variety of "fish" workshops, symposia, and special and general paper sessions are planned for this year's conference. Members of the Fish Health Section should be particularly interested in a workshop entitled "Fisheries Genetics: Techniques, Issues, and Research Priorities." Many of the topics discussed in this workshop are likely to relate to the control of diseases in wild and hatchery populations of fish. In addition to this and other fish sessions, there will be many different "wildlife" sessions, technical committee and working group meetings, and, of course, social functions. All AFS members are cordially invited to be a part of this year's Midwest Conference.

For further information about the conference please contact: John Lyons, Program Chair - Fish 49th Midwest Fish and Wildlife Conference, Wisconsin Department of Natural Resources, 3911 Fish Hatchery Road, Fitchburg, WI 53711 USA, Telephone (608) 275-3223

FISH HEALTH SECTION

FINANCE

The FHS General Account contains \$1687, the Certification Account, \$3024. The funds are deposited in a combined SuperNow Account at the Bank of Charles Town, WV. The AFS holds two other accounts, the Blue Book Account at \$1554 and the Glossary Account at \$1651 at the head offices. The major expenses this year were supporting the FHS Newsletter (\$1757) and publication of the Membership Directory (\$607). A \$100 donation was made to the AFS raffle. A detailed account of this year's income and expenses follows:

Doug Anderson
Chairman

July 1, 1987 Interim FHS/AFS Financial Report for Annual Meeting 7/18/86 - 7/1/87

	Transactions	Subtotal	Total
FHS/AFS General Account			
Beginning balance			1415.44
Credits			
Meetings	263.66		
Blue Book	468.00		
Membership Dues	2655.06		
Abstract sales	5.00		
Newsletter ads	700.00		
AFS raffle	100.00		
Interest	156.26		
		4347.88	
Debits			
Membership & ballot	193.60		
Meetings	1069.36		
Newsletter	1756.77		
Printing letterhead	135.00		
Publish Directory	607.29		
AFS raffle	180.00		
Plaques	133.50		
		4075.52	
Ending balance			1687.80
FHS/AFS Certification Account			
Beginning balance			2869.38
Credits			
Application fees (5)	50.00		
Interest	156.25		
Debits			
Mailing & copying	60.92		
Ending balance			3024.61
Summary: FHS Accounts	7/18/86	7/1/87	
General Account	1415.44	1687.80	
Certification Account	2869.38	3014.61	
Blue Book Account		1554.00*	
Glossary Account		1651.80*	
GRAND TOTAL			7908.21

DIRECTORY

The Fish Health Section Membership Directory was distributed to all AFS/FHS members on record as of April 22, 1986 in January 1987. The 71-page booklet includes Bylaws, past officer lists, executive and standing committee lists, names of Certified Fish Pathologists and Certified Fish Health Inspectors, and standards for their certification. The Directory is presently on computer memory files for easy updating. A limited number of copies are still available by written request to John Rohovec.

Rowan Gould
Chairman

PROFESSIONAL STANDARDS

Since the last annual Section meeting, the Professional Standards Committee (PSC) has processed and issued four certificates for fish health inspector and three five-year recertifications for fish health inspector. The committee also considered one appeal for rejection as a certified fish pathologist. The PSC upheld the Board of Certification's rejection of the appellant's application.

The committee's major task, the fish pathologist examination, is finally becoming a reality. The Examination Review Board has recently completed its review and submitted to the chairman of the PSC a list of questions deemed appropriate for the examination. The PSC is presently reviewing the format of the examination, to include a limited number of essay questions, as well as the method of administering the examination. The PSC is recommending that the Section president appoint a standing committee or board to administer and grade the examination. It should be offered at least once per year at the annual Section meeting as well as regional workshops as required. It is the intent of the PSC to make the examination available no later than January 1, 1988. Due to the delay in the availability of the examination since the expiration of the grandfather clause, the PSC will make an effort to arrange a one-time early administration of the examination if requested by potential candidates.

John H. Schachte, Jr.
Chairman

BOARD OF CERTIFICATION

During the past year, one Fish Health Inspector (FHI) was certified and 3 FHI's were recertified for an additional 5 year period. At present, there is one FHI Recertification application under review by the committee. Currently, there are 33 active certified FHI's (plus one retired FHI).

No Fish Pathologist (FP) have been certified in the past year. Two applications have been reviewed by the board and one applicant is approved to take the written examination. Another application is near completion for committee review.

Currently, there are 51 active certified FP's (plus one honorary FP).

Board of Certification summary:

	Fish Health Inspector	Fish Pathologist
Total number of applicants	51	62
Number certified	34 (67%)	51 (82%)
Number not certified	17 (33%)	11 (23%)
Five-year recertifications	15 (1 pending)	1
Number awaiting exam		

M.H. "Spike" Bebeau
Chairman

EXAMINATION REVIEW BOARD

The Examination Review Board received 233 questions which were solicited from numerous fish health specialists. These questions were edited for content, accuracy, and form. After this process 186 questions were deemed appropriate to be included in the examination for certification of fish pathologists. These edited questions were submitted to the Chairman of the Board of Certification.

J.L. Fryer
Chairman

COMMITTEE REPORTS

AWARDS

The Awards Committee received and reviewed dossiers of several candidates for the Snieszko Distinguished Service Award. After the review process, the Committee recommended to the Executive Committee that two individuals be considered for this award. Both Gordon R. Bell and William T. Yasutake had exemplary files and the Executive Committee acted positively on the Award Committee's recommendation that these fish health specialists receive the Section's highest award.

The Committee also discussed the necessity of standardizing the procedures for submission of nominations for the Snieszko Award. Requirements and qualifications for the receipt of the award are not well described in the Section By-Laws and better guidance would assist in making a difficult decision making process easier and more equitable.

John Rohovec
Chairman

NOMINATING

During May and June 1987 the members of the Nominating Committee canvassed the membership for volunteers and prospective candidates. We selected candidates for President Elect, Secretary-Treasurer, Board of Certification and Nominating Committee. The candidates submitted to the Section for the 1987-88 election year were as follows:

President Elect

Douglas Anderson
Thomas Wellborn
James Winton

Secretary-Treasurer

Vicki Blazer
Ray Brunson

Board of Certification

John Hnath
Theodore Meyers
John Morrison

Nominating Committee

Marshall Beleau
Rod Getchell
Michael Kent
Steve Leek

Tony Amandi
Chairman

MEMBERSHIP AND BALLOTING

As of June 30, 1987, there were 499 members in the Fish Health Section. This is an increase of 6.1% (29 new members) compared to June 30, 1986.

One ballot was cast during the past year. Election of a president-elect, secretary-treasurer, nominating committee (one for a three-year term) and Board of Certification (one for a three-year term). This election was completed on August 1, 1987, and the results are reported in this issue of the Newsletter.

Randy MacMillan
Chairman

EDITORIAL SUPPORT

For some time there has been the discussion concerning the FHS supporting a scientific journal. This year our President polled the membership by sending forms requesting feedback on whether there is a need for a **Fish Health Journal** and if the members would be interested in submitting papers and subscribing to the journal. Also this committee was asked to seek avenues of editing and printing. The membership survey revealed a strong support for the tentative journal, and about half of the members said they would submit papers. The AFS publication committee expressed interest in adding a fish health journal to their present excellent series of scientific journals; camera-ready and offset printing are being considered.

Doug Anderson
Chairman

NEWSLETTER AND PUBLICATIONS

The cost of publishing the Newsletter continues to be a major expense of the FHS. The editors have been able to obtain some support from advertisers who have paid \$100.00 per issue for inclusion of inserts. This has reduced our cost by 20%. Please make every effort to let our advertisers know you appreciate their support.

Rowan Gould and Vicky Adriance are to be thanked for their work on the FHS Directory. Again, advertisements helped defray the costs to the Section covering \$350.00 of the approximately \$750.00 paid for printing and mailing. The addition of phone numbers has made the directory more useful than ever. The text is now on computer disk and should be easier to update in a year or so.

Blue Book sales continue to be brisk. The Section sold 335 copies to FHS members at the introductory price of \$9.00 which netted over \$2500 after mailing. Since then, the AFS has assumed the task of advertising and order-processing, deducting \$3.50 per order from the \$15.00 (non-member) or \$12.00 (AFS member) price. This means that the Section now receives a minimum of \$8.50/book (before mailing) for an order. Through the end of June 1987, over 380 copies have been sold by the AFS meaning the Section has more than recovered the \$4280.21 it cost to print 1500 copies of the third Edition. Formerly, the Section received no money from the Blue Book. Under the current arrangement, all income from sales of the Blue Book will go to the FHS account where it may be used to support other activities of the Section.

The Section has received and granted a request for permission to translate the Blue Book into Japanese. The FHS will receive no money from this source as the Third Edition was intentionally not copyrighted to facilitate this type of dissemination. Some inquiries about a Spanish translation have also been received.

Finally, the editors of the FHS Newsletter wish to thank the many persons who took the time to contribute an article. Without this input, your Newsletter could not be published. Please continue to support us with your submissions. If you have not contributed recently, please make an effort to do so.

James R. Winton
Chairman

PATHOGEN EVALUATION CRITERIA

The PECC has investigated evaluation criteria utilized by human and veterinary medicine via communications with several Communicable Disease Centers and the National Animal Disease Laboratory. We found that they have no set criteria or standardized evaluation schema. Apparently, they investigate diseases that are referred to them through the politics of news reporting and national marketing. They wished us good luck and asked that we keep them informed of what we come up with.

Therefore, we're plowing new ground. As such, we probably won't be able to plow very deep on the first pass. However, we are hoping for a productive workshop session on this topic at the Baton Rouge meeting.

Dennis E. Anderson
Chairman

INTERNATIONAL MEETING

An International Conference on Fish Health will be held on July 19-21. This meeting will be hosted by the Fish Health Section of the American Fisheries Society and will have sessions on all aspects of fish health. The conference is scheduled to be held in Vancouver, B.C. Members of the FHS should have received a meeting announcement. For further information contact Dr. T.P.T. Evelyn, Pacific Biological Station, Nanaimo, B.C. V9R 5K6, Telephone 604-756-7066.

BOOK REVIEWS

"Precis de Pathologie des Poissons" by P. de Kinkelin, Ch. Michel and P. Ghittino, Institut National de la Recherche Agronomique (INRA) - Office International des Epizooties (O.I.E.), Paris, March 1986. 348 pp.

This soft covered volume is the outcome of the O.I.E. Commission's desire for a textbook that would further the cause of health in farmed fin-fish, worldwide. The purpose of the book is to provide veterinarians, not usually trained in fish and fish health matters, with an adequate background and working knowledge in this field. The Commission was fortunate in having the three above fish health experts author the volume. As expected, their handiwork is an impressive tome that should find wide use in the hands, not only of veterinarians, but also of other fish health practitioners.

The volume logically includes introductory material on fish anatomy and physiology, the aquatic environment, and factors in the aquatic environment that cause or predispose fish to disease. Aspects of the fish's anatomy, physiology, and environment relevant to fish health but not held in common with terrestrial vertebrates, are highlighted, as is the epizootiology of infectious diseases. Diseases of uncertain aetiology receive only brief mention, but diseases due to environmental (physical and chemical) and nutritional factors and to infectious agents (viruses, bacteria, fungi, and parasites) are dealt with at length, the latter also being treated as they occur in different aquacultures (e.g., in salmonid aquaculture and in non-salmonid aquaculture in various environments). Considerable attention is paid to the tools and techniques used in the field and laboratory for diagnosing fish health problems, both from the standpoint of pathogen identification and from the standpoint of detecting perturbations in the environment responsible for such problems. Finally, disease prevention and treatment are dealt with at length under such headings as water quality, fish handling, nutrition, stock selection, regulatory policies on fish transfers, disinfection, chemotherapy, chemoprophylaxis, and vaccination.

The volume is amply illustrated. There are 14 colour plates, 225 black and white figures, and 46 tables. The figures are well labelled and of high quality, the line drawings of the gill, for example, being perhaps the most informative illustrations of this organ that this reviewer has seen to date. The tables, too, are used to good effect because they reinforce and summarize at a glance much of the information dealt with in the text. The book is provided with a bibliography (some 600 key references are cited), a short glossary, and an index. Its price is 360 French francs and it is obtainable by writing INRA, Service de Publications, C.N.R.A. Route de Saint-Cyr 78000 Versailles, France. An English language version of this book may shortly be available under the title "Manual of Fish Pathology". Those interested in the English version should contact the senior author, Dr. P. de Kinkelin, for information about its availability.

Trevor P.T. Evelyn
Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, B.C., Canada

"Parasites and Diseases in Natural Waters and Aquaculture in Nordic Countries," Stenmark, A. and G. Malmberg (eds.), 1987, 250 pp., photocopy, 81 SEK, (Swedish krona) (in English). Orders should be pre-paid to #1 55 03-6, Naturhistoriska riksmuseet, Box 50007, S-104 05 Stockholm, Sweden.

This is the proceedings of the "Symposium on Parasites and Diseases in Natural Waters and Aquaculture" held in Stockholm, Sweden, December 2-4, 1986. It was arranged by Zoo-tax, Swedish Museum of Natural History and "The Working Group for Fish Parasites and Fish Diseases", and "The Swedish Council for Forestry and Agricultural Research".

There were 56 contributions presented with most of them appearing here in full; a few are represented by abstract only. There are representations from every major fish disease group including diagnosis, identification, control and therapy. Countries represented are British Columbia (Canada), Denmark, Finland, Greenland, Netherlands, Norway, Scotland, Sweden and West Germany.

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TRANSLATIONS UPDATE

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1. Egusa, S. 1978. Fish Pathology. John Fryer said the typescript has been completed. Contact National Marine Fisheries Service.
2. Ginetsinkaya, T.A. 1968. Trematoda. TT77-52042. Translation typescript being proofread 8-18-87.
3. Skarlato (ed.) (listed as Gusev earlier). TT79-52038. Investigation of Monogenea in the Soviet Union. Translated typescript has been proofread and returned to Amerind of India for publishing.
4. Izyumova, N.A. 1977. TT79-52044. Parasite Fauna of Fish of USSR Reservoirs and Ways of its Formation. Translated typescript has been proofread and returned to Amerind of India for publishing.
5. Schaperclaus, W. 1979 with later revisions. Fischkrankheiten (Fish Diseases), 2 vols. TT81-52150. Translation typescript expected August, 1987.
6. Schulman, S.S. 1966. Myxosporidan Fauna of USSR. TT77-52043. Translated typescript has been received. After proofreading, it will be returned to Amerind of India for publishing.

Note: Drew Mitchell has kindly agreed to distribute the above translated books. We will announce in this newsletter when copies have been received. Please direct your requests to Drew. His address is FFES, Box 860, Stuttgart, AR 72160.

EMPLOYMENT OPPORTUNITIES

AQUACULTURE PROGRAM COORDINATOR

The University of Idaho is accepting applications for an Aquaculture Program Coordinator. Required qualifications include an earned doctorate, proven ability to manage cooperative programs, and ability to generate and maintain funding. Preferred qualifications include experience in finfish aquaculture, record as a scholar, and ability to communicate. Salary is commensurate with experience. Duty station is in Hagerman area of southern Idaho. Closing date is January 15, 1988. Send letter of interest, resume, and names of four references to: Ernest D. Ables, Aquaculture Search Coordinator, Fish and Wildlife Department, University of Idaho, Moscow, Idaho 83843. Tel: (208) 885-6434. The University of Idaho is an equal opportunity/affirmative action employer and educational institution.

SENIOR RESEARCH ASSOCIATE MARINE LABORATORY ANIMAL MICROBIOLOGIST

The Department of Avian and Aquatic Animal Medicine at Cornell University College of Veterinary medicine invites applications for the position of Senior Research Associate in Marine Lab Animal Microbiology to be responsible for the use and development of diagnostic, research and educational programs. This position is located in the Laboratory for Marine Animal Health, Marine Biological Laboratory, Woods Hole, Massachusetts. This position requires a strong background in diagnostic microbiology and/or marine animal medicine. Applicants should have a Ph.D. in microbiology, with a doctorate in Veterinary Medicine preferred and 8-10 years related postdoctoral experience. All interested candidates should send curriculum vitae and names of three references to: Dr. Louis Leibovitz, Laboratory for Marine Animal Health, Marine Biological Laboratory, Woods Hole, MA 02543.

Cornell University is an affirmative action/equal opportunity employer/educator.

GRADUATE STUDY OPPORTUNITY

The College of Agriculture and the School of Veterinary Medicine at Louisiana State University have several fellowships available for Ph.D. candidates in Aquaculture, including fish diseases. Fellowships are competitive based on academic record, GRE scores and letters of recommendation. The stipends are for \$15,000 and are renewable for 3 years. For a brochure on the program contact:

Ron Thune, Dept. of Veterinary Microbiology and Parasitology,
SVM-LSU, Baton Rouge, LA 70803.

IHN MORTALITY OF SOCKEYE SALMON FRY AT WEAVER CREEK, BRITISH COLUMBIA SPAWNING CHANNEL

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The Weaver Creek spawning channel for sockeye salmon, *Oncorhynchus nerka*, is located in the lower Fraser River system, British Columbia. The channel started operating in 1965. Egg to fry survival until 1977 averaged 76%. After a flood occurred in 1977, egg to fry survival dropped but still averaged over 50% until 1987. An estimated 84.7 million eggs were deposited in the channel in the 1986 brood year. This was expected to result in the production of 50-60 million fry.

In April 1987 numerous sockeye fry were noticed to be migrating at least 3 weeks earlier than usual. There were large numbers of dead and dying fry along the sides of the channel which accumulated in back eddies. Many of the fry had a considerable amount of yolk yet to be absorbed as they were about 100 accumulated Celcius thermal units (ACTU's) from swim up. Much higher numbers of fry were observed moving out of the spawning channel during the day than occurred during normal years. Small drops of oil were observed bursting on the surface of the water. This was likely from ruptured yolk sacs of fry still in the gravel. Another unusual sign was an iridescence in the coloration of the fry. This was reported as a sign of IHN by Mulcahy et al. (1983).

IHN was found in all of the fry sampled that were migrating during daylight hours. The viral titers of these fry were extremely high, 10^7 - 10^8 /g of whole fish. Samples of fry migrating at night also revealed a 100% prevalence of IHN. This dropped to around 10% during the late part of the fry migration.

To determine the number of migrating fry that were likely to survive after moving out of the channel, 200 fry were trapped at various times and held for 4 days. This was done sequentially throughout the migration (March 15-April 12). In the early portion of the migration mortality during the 4 day period ranged from 80-97%, in the mid portion it ranged from 11-31%, and it dropped to 2.5% near the end of the migration.

A total of 19.1 million fry moved out of the channel during the period of migration. Using the information obtained by holding the fry and monitoring losses, it is estimated that 8.3 million of the migrants died shortly after leaving the channel. This resulted in an egg to fry survival of only 12%, instead of the expected 50-60%. This represents a minimum of 30 million fewer fry than were expected from the channel.

The cause of the epizootic is unknown. The environmental conditions for egg incubations and survival appeared to be optimum. Spawning sockeye at Weaver Creek are known to carry IHN virus. A single sample of spawning adults taken in the fall of 1986 revealed that 64% were positive for IHN. Highly infected adults may have been the cause of the observed mortality. At this facility excess adult spawners, which arrive after the channel is loaded, are allowed to spawn in the creek above the spawning channel. The 1982 brood year had high adult returns and deposited an estimated 31 million eggs in Weaver Creek above the channel. The estimated egg to fry survival of fish in the creek has averaged 6.9% over the past 20 years. Fry from these excess spawners were trapped several times during the migration but no IHN was detected. Nor were any unusual mortalities of sockeye fry observed in the creek. Undetected losses could have occurred in the early part of the fry migration from the creek. However, it appears the epizootic only occurred in the spawning channel.

FUMAGILLIN PROTECTS JUVENILE CHINOOK SALMON FROM EXPERIMENTAL INFECTIONS WITH PKX, THE CAUSATIVE AGENT OF PROLIFERATIVE KIDNEY DISEASE

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Myxosporean infections of fish are generally considered nontreatable diseases and attempts to identify prospective drugs for prophylaxis or therapy have met with partial or complete failure. *Myxobolus cerebralis*, the cause of whirling disease in salmonids, has been examined for its sensitivity to several compounds including Acetarsol, furazolidone, Clamoxiquin, Bialamicol and Cycloquanil (Bauer 1959; Taylor et al. 1973; Alderman 1986) but none have completely prevented infection by the parasite.

Recently, Fumagillin, an antibiotic produced by the fungus *Aspergillus fumigatus*, has been found to be effective in the treatment of myxosporean infections in common carp caused by *Sphaerospora renicola* (K. Molnar in press). The similarities between the parasite in carp and PKX (which may also be a *Sphaerospora* sp.) prompted us to test Fumagillin in chinook salmon where PKD infections are a serious obstacle to their husbandry.

Juvenile chinook salmon (mean wt. 5.5 g) reared from eggs in the laboratory were injected with kidney homogenates in minimal essential medium made from rainbow trout with heavy infections with PKX. Two groups of 30 fish received PKX parasites (2.0×10^5 per fish) via an intraperitoneal injection. Another two groups of 30 fish received an equal volume of minimal essential medium only. The fish were placed in four separate 20 L aquaria supplied with 15 C running well water. The day after injection a diet containing Fumagillin (a g/kg of feed) was fed (at approximately 1% body weight per day) to one group of fish injected with PKX and to one group of control fish injected only with medium. The remaining groups received the same diet but without drug added.

At 7 and again at 10 weeks post injection, 10 fish from each group were examined for renal swelling and the presence of PKX by paraffin sections stained with hematoxylin and eosin. No parasites or renal swelling were found among fish injected with PKX fed Fumagillin in the diet or either of the control groups that received injections with medium only. In contrast, at 7 weeks 9 of 10 fish injected with the parasite but not fed the drug had typical PKD signs including grossly swollen kidneys and numerous PKX cells. At 10 weeks post injection, 10 out of 10 fish had PKD and PKX cells.

These results, although preliminary in nature, demonstrate the potential efficacy of Fumagillin for treatment of PKX infections in chinook salmon. Further testing of the drug is underway. Of concern was the toxicity first noticed in the chinook 12 weeks after continuous feeding of the drug. Similar toxicity was noticed within 1 week in rainbow trout fed at these levels. Concentrations of 0.5 and 0.25 g/kg of diet are now underway to determine if this can reduce or eliminate any toxic effects. Additionally, early tests indicate some but not complete protection from ceratomyxosis caused by the myxosporean *Ceratomyxa shasta*. Similar studies with the causative agent of whirling disease, *Myxobolus cerebralis*, are planned. The potential of using Fumagillin combined with recent successes by Clifton-Hadley and Alderman (1987) for the treatment of PKD with malachite green may provide hope for chemical control of this and other serious myxosporean diseases of salmonid fish.

Edwardsiella ictaluri was found in the Imperial Warmwater Hatchery at Niland, California in June, 1987. This is the first known occurrence of *E. ictaluri* in California. A loss estimated at 30-50% of 180,000 channel catfish fingerlings occurred in the most affected pond. Mortality ceased during the next 28 days of feeding Terramycin at the rate of 5000 grams/ton. Additional work is underway to sample wild and commercially-reared channel catfish for the presence of *E. ictaluri*.

• Martin F. Chen, California Dept. of Fish and Game, P.O. Box 938, Victorville, CA 92392.

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 and should be addressed to one of the editorial staff or to a member of the publication committee.

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FHS NEWSLETTER

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