

*Certification
of Fish Pathologists*
*F.H. Inspectors
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Fish Health Section Newsletter

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CERTIFICATION OF FISH PATHOLOGISTS

The Professional Standards Committee and the Executive Committee have completed all of the required reviews for the procedure to certify fish pathologists. The approved program is given below. All interested persons should obtain application forms from:

Dave McDaniel
Chairman, Board of Certification
Fish Health Section/AFS
Rt. 1, Box 31A
Shepherdstown, WV 25443

PROFESSIONAL STANDARDS AND PROCEDURES FOR THE CERTIFICATION OF FISH PATHOLOGISTS

FISH HEALTH SECTION AMERICAN FISHERIES SOCIETY

Rationale: The designation "Fish Pathologist" is given in the broad context. Pathology has been defined by Steinhaus and Martignoni (1970) as "the science that deals with all aspects of disease including study of the cause, nature, processes, and effects of disease. Any branch of science, any technique or method, or body of facts that contributes to our knowledge of the nature and constitution of disease belongs in the broad realm of pathology. . . . If biology is defined as that branch of science that deals with the origin, structure, functions, and life history of organisms, then pathology might be defined as the 'biology of the abnormal.' For

*1979
7(3)
Zap 89, Henshaw 89, 10
Rev of FHS Bluebook, P. 11
Proposed conglomerate meeting P. 15 (a Plenary meeting)*

each branch of biology there is a corresponding branch of pathology." In this sense, fish pathology is that branch of fish biology which embraces the general principles of pathology as they may be applied to wild and cultured fish. From this definition the designation "Fish Pathologist" can be properly assigned to qualified individuals dealing with fish diseases. This term also has the advantage of being more clearly understood, by laymen and professionals alike, than any other professional label yet conceived.

The Fish Health Section has recognized the need for a peer review system to identify professionals possessing the competence, training and ethics required to effectively serve public and private fish producers through the prompt and accurate diagnosis of fish health problems, through the determination of proper corrective measures, and through the responsible prescription and supervision of therapeutic procedures. The Fish Pathologist will be qualified in the diagnostic methodology of both infectious and non-infectious fish diseases capable of suggesting and/or recommending a rational solution for problems encountered. Individuals meeting these requirements shall be eligible for certification by the Fish Health Section as "Fish Pathologists."

Introduction: The professional certification of Fish Pathologists has four basic objectives:

- a. To identify technical, professional and ethical competence of individuals qualified to diagnose problems; recommend and/or prescribe control measures within legal constraints; and administer programs designed to enhance the health of cultured and free ranging fishes.
- b. To provide individuals, employing organizations, regulatory agencies, the courts, and the general public with definitive minimum standards for education, experience and ethics required by the Fish Health Section for professional certification as a Fish Pathologist.
- c. To establish the mechanism for a peer review system within the Fish Health Section which can efficiently and judiciously evaluate the academic training, specialized training and work experience required for professional certification as a Fish Pathologist.
- d. To guide educators in the development of qualifying curricula and to assist employers with the development of position classifications commensurate with the requirements for professional certification as a Fish Pathologist.

Qualifications: Three basic components make up the requirements to be met by individuals seeking certification as Fish Pathologists. These are basic academic and work experience requirements including training in the basic environmental, nutritional and water quality requirements for cultured and wild fish, specialized fish health training, and the successful completion of a written examination.

- a. Basic academic and work experience: This requirement cannot be waived. Required are a Bachelor's Degree in a biological science and a minimum of 12 quarter hours (9 semester hours) of fisheries courses such as fishery biology, ichthyology, fish culture, fishery management, or other closely related courses in aquatic science. In addition, a minimum of three years (36 months) must be completed in the performance of work as a professional level fish pathologist.
- b. Specialized Training: All applications will be reviewed to identify evidence of specialized training specifically applicable to the fish health field. A minimum of 16 academic quarter hours (12 semester hours) of specialized training is required.¹ Examples of qualifying specialized training are as follows:
 1. College credits earned in fish health or directly related topics at an accredited university.
 2. Formal lecture-laboratory courses in fish health.²
 3. Specialized on-the-job training courses in fish health.²
- c. Written Examination: This requirement cannot be waived. There will be, however, a three year period of grace during which applicants will not be required to take the written examination. Beginning on July 1, 1982, all new applicants meeting the requirements set forth in "a" and "b" above will be advised by the Chairman of the Board of Certification of their eligibility to take the written examination. The examination will be administered by a member of the Board of Certification, at least annually, at one or more regional or national fisheries meetings. Applicants will be notified of examination sites and dates. Whenever possible these sites and dates will be arranged to accommodate the applicants. Applicants will have one year, from the date of their notification of eligibility, to take the written examination.

¹In exceptional cases, the Board of Certification may waive this requirement if valid evidence of equivalent qualification can be demonstrated. Requirements "a" and "c" cannot be waived.

²Credits for courses and OJT (e.g. Fish Health Workshops) not obtained for college credit may be calculated on the basis of 2 semester credits earned for each 40 hours of formal lecture-laboratory training completed as provided by Board of Certification or Professional Standards Committee guidelines.

The written examination will be composed of multiple choice, matching, true and false, and fill-in-the-blank questions. Topics covered include fish disease etiology, diagnostic procedures, pathology of fish diseases, therapy, pond management, fish disease control, general fisheries, fish culture, and other items essential to a good knowledge of the care and health of fish. A minimum score of 75 percent is required to pass the written examination.

Application Procedure:

- a. Application forms may be obtained from the Chairman of the Professional Standards Committee.
- b. Individuals seeking certification as Fish Pathologists must file completed application forms with the Chairperson of the Board of Certification. Applicants should promptly arrange for the forwarding of the required three letters of recommendation to the Board Chairperson at the time they prepare their application. Supporting documents such as transcripts, evidence of special training, awards, evidence of other certifications, publications, etc., are an important part of the completed application.
- c. The Board of Certification shall review all applications. Upon satisfactory completion of all application requirements, the Chairperson of the Board shall notify successful applicants, in writing, of the sites and dates scheduled for the written examination. (Applicants whose applications have been approved by the Board of Certification prior to July 1, 1982, will not be required to take the written examination.) Upon successful completion of the written examination, the Board Chairperson shall notify the applicant and the President and the Secretary-Treasurer of the Fish Health Section. Applications not approved by the Board of Certification shall be returned to the applicant.
- d. Upon receipt of the notice of their successful completion of all application and examination requirements, new applicants shall remit a certification fee of \$25.00 to the Secretary-Treasurer of the Section. The Secretary-Treasurer, upon receipt of this fee shall so notify the President of the Section and the Chairman of the Professional Standards Committee. The Section President, when assured of the completion of all required certification procedures, shall then officially notify the applicant of his certification as a Fish Pathologist by sending him a congratulatory letter and a certificate indicating the period of certification.

- e. The Board of Certification shall, at least semi-annually, review and process all new and renewal applications received by the Chairperson since the previous business session. Board members shall be excused from any sessions at which their own certification applications are considered. All forms and required supporting information used in the rating of applicants shall be those provided or specified by the Professional Standards Committee and shall remain in the confidential files of the Board of Certification in a permanent file. These confidential records shall be made available to the Professional Standards Committee, upon written request by the Committee Chairperson, in the event of an appeal of Board action.
- f. An annual report of all actions, both affirmative and negative, shall be prepared by the Board Chairperson and submitted to the Chairperson of the Professional Standards Committee at a time designated by the PSC Chairperson or by the Section President.
- g. Certifications awarded by the Section shall be valid for five (5) years from the date of issuance unless revoked for just cause. Renewal applications shall be obtained from the Chairperson of the Professional Standards Committee, completed by the applicant, and submitted to the Chairperson of the Board of Certification for review by the Board as described above. The fee for renewal of certification shall be \$10.00 and the payment procedure shall be as set forth in item "d" above.
- h. Any applicant desiring a review of a negative decision made by the Board of Certification may appeal by filing a written request with the Chairperson of the Professional Standards Committee within 30 days of receipt of the negative decision. A review panel will be convened within 60 days which shall consist of all members of the Professional Standards Committee and the Chairperson of the Board of Certification. The written decision of the review panel shall be final.
- i. Fish Pathologist certification may be revoked by the Board of Certification for the following reasons: gross negligence, incompetence, falsification of data or reports, misrepresentation, misuse of controlled substances, or acceptance of a bribe. Information regarding unethical action should be filed, in writing, with the Chairperson of the Board of Certification. Upon substantiation of the information and a unanimous determination by the Board of Certification that revocation proceedings are justified, a registered letter of notification will be issued by the Chairperson of the Board to the individual involved. An automatic appeal process, as described in "h" above, will then take place. The written decision of the review panel shall be final.

Guidelines for Preparing Applications:

- a. Fill out each section of the application by typing the required information in the spaces indicated or on additional sheets of plain paper bearing the applicant's name and the sections of the application for which supplementary information is being furnished.
- b. Attach all pertinent supportive documents such as transcripts, other certifications, descriptions of specialized training, nature of work experience, publications, etc., to the back of the application. Supplementary information of this kind is very important to the scoring of applications.
- c. Prior to July 1, 1982, applications will be rated on the basis of 50 percent for academic training and 50 percent for professional experience. After July 1, 1982, rating will be approximately 35 points for academic training, 35 points for professional work experience, and 30 points for the written examination. A minimum score of 75% for each part will be required in order for applicant to meet this requirement.

CHANGE OF EDITORS

I retire as editor with this NEWSLETTER and Ken Johnson becomes the new editor. Henceforth, please send all contributions to him. His address is:

Dr. S.K. Johnson
Dept. of Wildlife and Fisheries
Room 202 Nagle Hall
Tex Texas A&M University
College Station, Texas 77843

Thanks Joe
I would like to thank those who have served on the NEWSLETTER committee -- Paul Janeka, Joe Geraci, Mark Dulin, Mat Cardella, and especially Glenn Hoffman whose contributions have been prolific. I envy his ability to write so much so well. Thanks also to Bert Williams whose 'Catfish' shows parasites can be fun.

Please support Ken with contributions whenever you notice something that would be of interest to the Fish Health Section. Progress in any field is largely a function of the speed at which new ideas and discoveries are spread around. If you find something of value to the Section, but in an obscure place, consider it your responsibility to bring it to light. Obscurity is not a prerequisite, however. Hot ideas, different opinions, and anything of value are welcome.--Joe Sullivan

QUARTERLY HIGHLIGHTS OF FWS REGISTRATION ACTIVITIES INVOLVING
FISHERY-USE CHEMICALS AND DRUGS* (JULY - SEPTEMBER 1979)

--Twenty-three persons participated in a Chemical and Drug Registration Workshop on July 18-19 at the National Fishery Research Laboratory - La Crosse. Agencies represented were the U.S. Department of Agriculture, Food and Drug Administration, Great Lakes Fishery Commission, and the Fish and Wildlife Service. Officials from the Environmental Protection Agency and National Marine Fisheries Service were also invited but could not attend. The first day's agenda involved various interagency problem areas. These were highlighted by discussions of FDA proposals on minor use regulations and that agency's objection to accepting FWS-supported guidelines to exclude early life stages of fish from the "food fish" classification.

Items covered on the second day dealt with strategies for better communication and coordination within the Service in its chemical and drug registration effort. Agreement was reached to have the Technical Advisory Group (TAG) be responsible hereafter for prioritizing the Service's fish health chemical and drug needs. TAG is a select group of 10 FWS employees who advise the Fisheries Program Manager on pertinent fish cultural matters.

USDA reported on their agency's plan to implement a national survey of the annual harvests and market values of cultured food and game fishes. They indicated that the questionnaire might be modified to provide FWS the mechanism for gathering information on fish mortalities from parasites and diseases, and related data on chemical treatment costs. The Service is checking further into the matter.

--FWS has responded to FDA's newly proposed rule changes for minor use drugs (published July 20 in the Federal Register, Vol. 44, No. 14) with comments to indicate that the changes fall short of reducing data requirements for the registration of fishery-use drugs. The proposed rules limit the potential benefits for fish and other minor species to those drugs that are already registered for treatment of similar conditions in major species. No provision of reduced requirements is indicated for drugs without some relief, it will continue to be extremely difficult to register drugs specifically for fishery use.

- FDA has responded to the latest FWS data submission on quinaldine sulfate, a candidate fish anesthetic. Because a recent Japanese paper implicates quinoline (a closely related compound of similar structure) as a carcinogen in rats, FDA has advised the Service that additional mammalian safety studies on quinaldine sulfate will be required. The high cost (estimated \$500K) to complete registration and relative low priority for an additional fish anesthetic will effectively reduce the Service's interest in pursuing registration at this time.
- A recent newspaper story alleged that the Environmental Protection Agency was planning to cancel fishery uses of rotenone. This allegation was thoroughly investigated with EPA and proved to be completely false. Rotenone continues to be properly registered for use as a fish toxicant and there is no indication that EPA plans to challenge that registration in the foreseeable future.

Harry Van Meter
Registration Liaison Officer
Division of Fishery Ecology Research

*Use of trade names does not imply U.S. Government endorsement of commercial products.

HIGH DDE IN ALABAMA

Residents of Triana, Alabama who regularly eat fish caught in a local tributary of the Tennessee River were found to have very high levels of p,p'-DDE (a metabolite of DDT) in their blood. Serum samples were taken from 12 life-long residents of Triana. Eleven of the serum samples contained from 65 to 602 parts per billion (ppb) of p,p'-DDE. The twelfth contained 3,256 ppb, four times higher than any previously reported value. Those who ate fish once a week or less averaged 162 ppb. Those eating fish at least twice a week averaged 212 ppb. The highest values were reported from persons eating fish four to six times per week. The general population in the United States averages 16.2 ppb.

Fish from the tributary averaged 204 parts per million of DDT-related compounds. The initial source appeared to be a defunct DDT-manufacturing plant located about six miles upstream from Triana on the tributary.

ELECTION RESULTS

The election results are as follows:

President-Elect	- Dennis Anderson
Secretary-Treasurer	- Joe Sullivan
Chairman, Nominating Committee	- Trevor Evelyn
Elected to Board of Certification	- Bill Rogers
	Don Amend

Doug Mitchum, as last year's President-Elect, now takes over the FHS presidency from Ron Goede. Congratulations all!

"ZAP" YOUR FISH

The cattle prod, a battery-powered electrical shocker, has proven to be an efficient, effective method to immobilize fish. Depending on size and species of fish, 3-4 three second "zaps" to the head are usually sufficient. Recovery time is 2-3 minutes for small fish and 5-8 minutes for larger ones. It has been used on channel catfish, golden shiners, goldfish and buffalofish for taking blood samples, for use during artificial spawning procedures, to easily remove egg sacs from Lernaea-infected fish for Lernaea culture, to immobilize fish for diagnostic examination, and to weigh individual fish. Since it is portable and lightweight, it is handy for laboratory or field use. For further information contact Brenda Rodgers or Dr. Glenn Hoffman,

HENNEGUYA

SPORE CONCENTRATION WITH PLANKTON CENTRIFUGE

The plankton centrifuge has proved useful for concentrating spores of Myxosoma cerebralis since the discovery by Joe O'Grodnick and the late Wilbur Tidd independently (O'Grodnick, 1975, J. Wildl. Dis. 11:54-57). After Gib Taylor told me it showed promise for Ceratomyxa shasta, Brenda Rodgers and I tried it on a sample of very sparse Henneguya postexilis (interlamellar). Spores were numerous in the concentration, indicating that this method will also be useful for Henneguya work.

-- Glenn L. Hoffman, Parasitologist

INTERLAMELLAR HENNEGUYA -- Obviously it is important to identify positively this form of henneguyosis. The following information extracted from Minchew (1977), J. Protozoology 24 (2): 213-220, has helped us -- all measurements in microns, averages bare, ranges in parentheses, key measurements underlined.

Henneguya exilis and relatives
(From Minchew 1977)

		Total length	Body length	Body width	Polar caps	Polar caps coils
Gills, interlamellar	<u>H. postexilis</u>	<u>52</u> (42-62)	15 (13.5-17)	3.7 (3.5-4)	6.6 & 7 x 1.5	<u>6-8</u>
Gills, intralamellar	<u>H. longicauda</u>	<u>108</u> (91-127)	16 (14-17.5)	4 (3.5-4.5)	7.7 7.0-8.5 x 1.5-2	<u>9-12</u>
Gills, visible cysts	<u>H. exilis</u>	<u>69</u> (60-90)	17.6 (16-19)	4.9 (4-5)	8.5 7-9 x 1.5-2	9-12
Base of fins and viscera	<u>H. diversis</u>	<u>49.5</u> (40-62)	14.8 (13.5-16.5)	4 (3.2-5)	6.5 6-7.5 x 1-2	<u>6-8</u>
Skin, "pustules"	<u>H. pellis</u>	<u>100.4</u> (79-124)	<u>13</u> (11-14.5)	5 (4.5-5.2)	7.2 6-8.5 x 1.8	8-10
Adipose fin	<u>H. adiposa</u>	<u>61</u> (45-75)	16.3 (12-19)	4 (3.5-5)	7.7 6.2-9 x 1-2	<u>6-8</u>

Glenn L. Hoffman, Parasitologist, U.S. Fish and Wildlife Service, Fish Farming
Experimental Station, P.O. Box 860, Stuttgart, Arkansas 72160

PUBLICATIONS

REVISED FISH HEALTH BLUE BOOK

The revised 1979 edition of the "Blue Book" is now available, but unlike the last edition, it is not being distributed free. The following information is quoted from the AFS Publications order form:

Fish Health Blue Book - Procedures for the Detection and Identification of Certain Fish Pathogens. D. W. McDaniel, ed. Fish Health Sec., AFS. 1979. 112 pp. \$10. Members \$8 (1 copy only).

Send order to:

AMERICAN FISHERIES SOCIETY
5410 Grosvenor Lane
Bethesda, MD 20014 USA

Make checks payable to American Fisheries Society in US currency or equivalent. Include 15% postage charge on orders from countries other than USA, Canada, or Mexico.

There are several words and phrases around which discussion of this book should revolve. They are "standard," "detection," "identification," "certain fish pathogens," and "Fish Health Section."

The introduction to this edition announces that the standard methods put forth in the first edition of the "Blue Book" made the Fish Health Section the lead organization in our field. Thus the reputations of the Fish Health Section and our "state-of-the-art" standard are inexorably bound. This appears to others to be our "credo." That it is complete, correct and fulfills its stated purposes becomes much more important, therefore, than if David McDaniels had put this out entirely on his own authority. If he had, it would have been an excellent work; since he did not, it makes my blood run cold.

The sins of this book are primarily sins of omission. Some sins are innocuous. Among the "certain fish pathogens," I believe that Golden Shiner Virus, Spring Viremia of Carp, mycobacteriosis, and several primarily warmwater parasites are important enough to have warranted inclusion. Most of the parasitic diseases given have such short or non-existent descriptions that no one could seriously attempt to detect and identify them solely on the basis of this book. This section will not help the virologists and bacteriologists and will infuriate the parasitologists; but it is an improvement over the first edition.

The words "detection" and "identification" are most important. If you are familiar with what you are attempting to find, the detection methods given here are superb. But if you do not know the taxonomic features of Myxosoma cerebralis, Ceratomyxa shasta, or Bothriocephalus acheilognathi, presumptive and/or confirmatory diagnosis of these diseases could easily be made following the procedures given here when actually an unimportant related parasite is involved. Very few additional lines of taxonomic information would have been needed to build a much tighter case. Likewise, it would not have taken much space to describe the typical cell culture CPE important in the presumptive diagnoses of IPN and CCV.

How long will it be before a commercial aquaculturist's fish are mistakenly condemned by a fish pathologist certified by the Fish Health Section who made his incorrect diagnosis by correctly following the procedures in this book? Can we disclaim all responsibility then? -- Editor

Klontz, G.W., P.C. Downey, and R.L. Focht. 1979. A manual for trout and salmon production. Sterling H. Nelson and Sons, Inc. Murray, Utah. 22 p.

Though the pages are large and the print small, a lot more than twenty pages are necessary to put together a good trout and salmon production manual. Nevertheless, the ratio of significant bits of information to numbers of words is very good. It is of particular interest to the fish health specialist because it identifies many sources of non-infectious disease in the discussion of the factors affecting growth rates of trout and salmon. Though safe limits on some environmental factors are mentioned, a short discussion of the more intangible subjects will at least serve to keep them in the mind of the fish farmer.

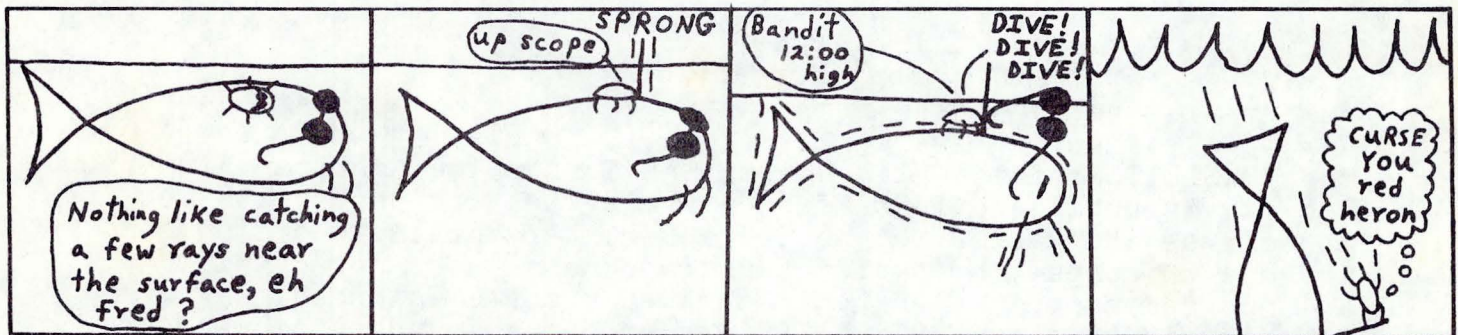
Good methods are given for determining population size, carrying capacities of ponds, and feeding rates. Despite what the quality of the feed may or may not be, the smooth, inoffensive manner in which the Silver Cup name is brought into the discussion of feeding guidelines is an effective masterpiece of advertising. Although the FHS NEWSLETTER would never endorse any brand of feed over any other brand, we suggest that you obtain a copy of this free pamphlet from Sterling H. Nelson and Sons, Inc., Murray Elevators Division, 118 West 4800 South, Murray, Utah 84107. -- Editor

Plumb, J.A. (ed.) 1979. Principal diseases of farm-raised catfish. Southern Cooperative Series No. 225. 92 p.

If you are not involved with raising catfish or diagnosing their diseases, you should get this booklet. If you are involved, you must get this booklet. The six contributors thoroughly explore nearly every conceivable infectious disease of catfish, the role of stress, and methods for preventing and treating infectious diseases. Naturally, the discussion of host specific diseases applies mainly to catfish, but the discussion of many diseases and of general philosophy applies to other forms of fish culture as well. The style is readable by both pathologists and culturists. Forty-seven black and white and color plates complement the text well. The methods of treatment section should enable the culturist to correctly apply medications at the recommended levels. Concepts such as active ingredient, parts per million, volume determination and conversion factors are explained followed by several relevant examples. Several tables provide short cuts for the necessary calculations. Free copies of the bulletin may be obtained from the Alabama Agricultural Experiment Station, Auburn University, Auburn, Alabama 36830. Residents of the former Confederate States, Kentucky, Puerto Rico, and the Virgin Islands should obtain copies from their own agricultural experiment stations. Y'all hear?

Catfish

Bert



Catfish

Bert



DIRECTORY OF CONFUSION INTERNATIONAL

There has been some confusion as to when membership in the Fish Health Section begins and ends. Membership in the parent group, the American Fisheries Society, goes from one fall meeting to the next. The change in Fish Health Section officers also goes from fall to fall. However, the FHS by-laws state that membership in the Section is from January 1 to December 31. If you have joined within the year, you should receive back issues of the NEWSLETTER to number 1 of the current volume. If you have just sent in your dues with the recent billing by the parent society, your membership is paid up from January 1, 1980 to December 31, 1980.

Within the past calendar year, the number of members in the FHS appears to have declined. Although this is possible from one calendar year to the next, it is technically impossible within the year. Therefore, some members were not receiving NEWSLETTERS and/or former members were still receiving issues. If you or someone you know is entitled to back issues which have not been received, please let us know.

With each issue, about half-a-dozen copies are returned to the editor since members have neither given us a change of address nor left their new address with the Postal Service.

In order to escape from this morass, we are going to put together a Directory of Fish Health Section Members. Please send your name, current address, and phone number to:

Paul Janeke
U.S. Fish and Wildlife Service
Fish Disease Control Center
1100 E. Burlington Ave.
P.O. Box 917
Fort Morgan, CO 80701

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The NEWSLETTER of the Fish Health Section of the American Fisheries Society is published four times annually in accordance with Section objectives and mailed to the Section membership in good standing. The use of company or registered trade names does not constitute an endorsement but serves only to keep members informed. Contributions to the NEWSLETTER are encouraged and should be sent to one of the following Committee members no later than the 1st of December to be included in the next quarterly issue.

The NEWSLETTER Committee members include:

Dr. S. K. Johnson (editor), Dept. of Wildlife and Fisheries,
Rm. 202 Nagle Hall, Texas A&M Univ., College Station,
Texas 77843

Dr. Joe Geraci, Pathology Dept., Univ. of Guelph, OVC,
Guelph, Ontario, Canada N1G 2W1

Dr. Glenn Hoffman, Parasitologist, U.S. Fish and Wildlife
Service, Fish Farming Experimental Station, P.O. Box
860, Stuttgart, AR 72160

Mr. Paul Janeke, U.S. Fish and Wildlife Service, Fish Disease
Control Center, 1100 E. Burlington Ave., P.O. Box 917,
Fort Morgan, CO 80701

Mr. Matteo Cardella, USDA, National Veterinary Services
Laboratory, P.O. Box 844, Ames, Iowa 50010

MEETING

CALL FOR PAPERS FOR THE 4TH BIENNIAL FISH HEALTH SECTION WORKSHOP

The Fourth Biennial Workshop of the Fish Health Section of the American Fisheries Society will be held jointly with the Western Fish Disease Conference June 24 - 26, 1980 at the Edgewater Inn, Seattle, Washington. The first two days will be devoted to the FHS where invited and contributed papers will be given. The third day will be devoted to the unique Knights of the Round Table discussion "patented" by the Fish Disease "mossbacks" of the Pacific Northwest. The FHS invited papers will include review papers (state of the art) by experts in bacteriology, virology, parasitology, immunology, physiology, and disease control. In addition, original papers will be presented on various subjects of fish health.

People interested in presenting papers, please contact either co-chairman:

Tony Novotny
Northwest Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric
Administration
2725 Montlake Blvd. E.
Seattle, WA 98112
(206) 842-5434 (Manchester, WA)

Donald Amend
Director of Research
TAVOLEK, INC.
2779 152nd Ave., N.E.
Redmond, WA 98052
(206) 883-2150

Contributed papers should be limited to 20 minutes. Please send titles by January 31, 1980.

A PROPOSED MEETING

Earlier this year, Fred Meyer, as the keynote speaker, addressed the International Association of Aquatic Animal Medicine. An analogous situation would be the Anglican Archbishop of Canterbury addressing the Roman Catholic College of Cardinals. The IAAAM is largely (formerly exclusively) composed of DVM's. Though also interested in marine mammals, birds, et cetera, their concern with fish diseases makes them a parallel organization to the Fish Health Section. The FHS is, of course, primarily composed of persons who became involved with fish health management through a fisheries background. Some persons are members of both organizations.

Fred pointed out that there has never been a direct approach to obtaining a degree in the fish health field. Persons wishing a career in this field have had to pursue it through a fisheries-zoology-microbiology route or through veterinary medicine. Since the IAAAM admitted only DVM's and the FHS requires concurrent membership in the American Fisheries Society, fish health specialists have tended to segregate into one or the other group. Fred acknowledged that each type of professional had advantages and disadvantages over the other, but that the parochialism that had developed was disadvantageous to both.

Fred, as a member of the Fish Health Section and a non-DVM, felt that his invitation to address the IAAAM was a step by them to bring these two groups of researchers together. He proposed another step, a national or international meeting in 1980 or 1981 involving all groups interested in aquatic animal health. Participants could be the Fish Health Section, the IAAAM, the World Mariculture Society, the Wildlife Disease Association, the Fish Culture Section, and others.

If you care to voice an idea, send it to the NEWSLETTER. If you want to help put it together or at least participate, write to:

Dr. Fred P. Meyer
U.S. Fish and Wildlife Service
National Fisheries Research Laboratory
Box 818
La Crosse, Wisconsin 54601

Dr. Joseph R. Sullivan
1106 E. Third, Apt. 201
Moscow, Idaho 83843