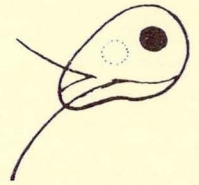


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SECTION

AFS

NEWS
LETTER



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9(3)

FISH PATHOLOGIST CERTIFICATION - AT LAST!

KEN WOLF GETS 1981 SNIESZKO

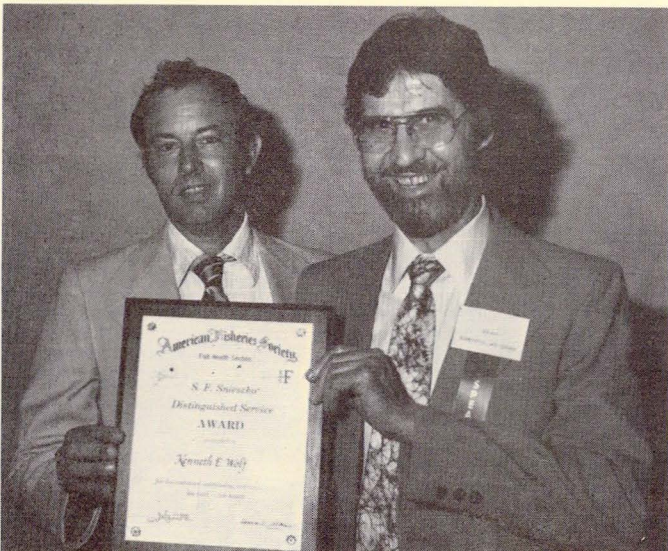
Kenneth E. Wolf is the recipient of the Fish Health Section's 1981 S. F. Snieszko Distinguished Service Award. Citing Ken's many outstanding contributions to the fish health field, FHS Secretary/Treasurer Dr. Ken Johnson of Texas A & M University made the presentation during the banquet held at Starkville, Mississippi on July 21 as part of the joint Eastern Fish Disease Workshop and annual meeting of the FHS.

In 1954 Dr. Wolf joined the staff at the Eastern Fish Disease Laboratory (now National Fish Health Research Laboratory) after completion of his studies at Utah State University. He has served the fish health profession through his work at Leetown ever since. In 1972, Ken was appointed Director of the Leetown facility - a post he held for six years. Currently he is the Senior Research Scientist at the laboratory.

Many do not know that Ken Wolf's original field of expertise was bacteriology. Soon after entering the field of fish health, he recognized the need for work in fish virology and went on to become the most respected researcher in that field. His work on IPN virus and the establishment of the RTG-2 cell line are classics. More recently, the challenges of protozoology have occupied most of Ken's time. His contributions to our understanding of *Myxosoma cerebralis* and *Ichthyophthirius* are outstanding.

Ken Wolf. The Fish Health Section is proud to honor one of the best.

Dr. S.K. Johnson (left) presenting Dr. Ken Wolf with the 1981 Snieszko Award.



The program has suffered its setbacks; its pitfalls. But finally, after an exhaustive series of meetings including post-midnight sessions at the 1981 Annual FHS Meeting in Starkville, Mississippi, Chairman Paul Janeke and his newly-reorganized Professional Standards Committee completed the guidelines for the Fish Pathologist Certification program. After the July meeting in Starkville, it remained only for the approval of the FHS Executive Committee at the AFS Annual Meeting in Albuquerque before it could become a reality. The details are featured in this issue.

FISH HEALTH INSPECTORS, FISH PATHOLOGISTS WHAT ARE THEY?

As all of you are probably aware, the FHS began certifying Fish Health Inspectors (FHI) five years ago and attempted to begin certifying Fish Pathologists (FP) two years back. Probably due to poor communications, considerable misunderstanding and confusion has developed regarding what FHI's are, what FP's will be, and the distinction between the two as certified by the FHS. Some believe that the FP program will replace the FHI program. Others are confused due to the very real probability that some individuals may qualify for both certifications. Even though there may be, in the very near future, individuals certified as both Fish Health Inspectors and Fish Pathologists, the intent of each program is distinct from the other.

Beginning in the late 1960's, interest in controlling the dissemination of certain fish pathogens snowballed. State, federal and foreign agencies began implementing laws, statutes, policies and regulations directed at this objective. The bulk of these were directed at the control of six to eight specific pathogens of salmonids. The intent was to stop or lessen the movement of fish and fish eggs from sources contaminated with one or more of the target organisms to areas where these were not known to exist. Here was born the continually increasing demand for routine health inspections of cultured and some feral fish populations by qualified people using acceptable procedures to determine the presence or absence of six to eight specific organisms.

"... qualified people using acceptable procedures..." Acceptable procedures were interpreted by the FHS membership as meaning standardized procedures. At its first biennial meeting in 1974, the FHS began writing *Suggested Procedures for the Detection and Identification of Certain Infectious Diseases of Fishes* which was published in 1975 as *Procedures for the Detection and Identification of Certain Fish Pathogens*. Although these publications lacked some information regarding fish health inspections per se, they did establish standardized technical procedures for the detection and identification of those pathogens worthy of control.

Initially, and largely today, the bulk of the fish health inspection work was done by state, provincial and federal agency hatchery biologists. This group remains relatively small, consisting of probably fewer than 50 individuals. It was often difficult for the fish culturists or fish health program administrators to determine if a given hatchery biologist was

Certif. Fish Health Pathologist P. 3.

"qualified" to conduct a health inspection. As often as not, this determination was made by what some call "the good ol' boy system." If an individual was a "good ol' boy," that individual was qualified. Conversely, persons who were not "good ol' boys" were *not* qualified. What ever happened to "good ol' girls" ? !

As with standardized technical procedures, the FHS recognized the need to establish a means to identify those individuals possessing the professional, technical and ethical competence to conduct fish health inspections using standardized procedures and to subsequently issue certificates or other such documents attesting to the health status of populations inspected. The Professional Standards Committee formulated the Fish Health Inspector certification program which was approved by the Excom in 1976. The Board of Certification began accepting applications in October of that year.

The Fish Pathologist certification program was initiated in October of 1979, was hauled into drydock for repair one year later (prior to any certifications) and will be reimplemmented on January 1, 1982. This program is described in *Standards and Procedures for the Certification of Fish Pathologists* which appears elsewhere in this newsletter. The introduction of that article describes the FHS certified Fish Pathologist. Basically, the FP approaches a fish health problem from a broad base of specialized, yet diversified training and professional level experience in fish health. This is the individual who is called when fish are dying from unknown causes, whether they be infectious or noninfectious. He or she must consider a multitude of unknowns ranging from water quality to kidney disease to chemical toxicity to nutritional problems.

The distinction, I believe, between the Fish Health Inspector and the Fish Pathologist is this. The FHI has essentially a fish health inspection "cookbook" from which to work. This tells the inspector how to collect specific tissues from a specific number of fish and how to assay these tissues to determine the presence or absence of specific organisms. The FP has a stiff fish in hand and must fit all the pieces of the puzzle together to determine the cause.

The need for both Fish Health Inspectors and Fish Pathologists is well established and continues to grow. Consequently, FHS certification programs will continue to play an important role in identifying these individuals for the foreseeable future.

Paul W. Janeke, Chairperson
Professional Standards Committee

ELECTION RESULTS - 1981/82 FHS OFFICERS

Congratulations to the following FHS members who were elected to office for the upcoming year:

President-Elect	Emmett Shotts
Secretary-Treasurer	Paul Janeke
Board of Certification Chairman, Nominating Committee	Tom Wellborn
	Ron Major



Banquet speaker Ron Goede at the FHS Meeting in Starkville, MS.

COMING EVENTS

April 12-15, 1982. *39TH NORTHEAST FISH AND WILDLIFE CONFERENCE*
Location: Hyatt Cherry Hill Hotel, Cherry Hill, New Jersey. Contact: A. Bruce Pyle and Bruce Freeman, Division of Fish, Game and Wildlife, CN 400, Trenton, NJ 08625.

May 9-13, 1982. *Joint Meeting of the IAAAM and 7TH Eastern Disease Workshop*. Location: the Inner Harbor Hyatt Hotel, Baltimore, Maryland. Call for papers: abstracts ready for publication, limited to 250 words. IAAAM members send to Dr. J.T. Bell, College of Veterinary Medicine, Drawer V, Mississippi State University, Mississippi State, MS 39762. Papers on fisheries and fish health should be sent to Dr. Richard Wolke, Department of Animal Pathology, University of Rhode Island, Kingston, RI 02881. Deadline on papers is March 1, 1982.

May 17-28, 1982. Short course - *Diagnosis and Treatment of Diseases of Warmwater Fish*. Location: Mississippi State University. Instructors: Dr. Fred P. Meyer and Dr. Thomas L. Wellborn, Jr. Tuition: \$164.00. Contact: Thomas L. Wellborn, Jr., Extension Wildlife and Fisheries, P.O. Box 5405, Mississippi State, MS 39762.

WHERE TO GET YOUR FP APPLICATION

FHS/AFS members can obtain application forms after January 1, 1982 from either of the following:

Dr. Wilmer "Bill" Rogers, Chairman - Board of Certification
Fishery Building
Auburn University
Auburn, Alabama 36830

Paul Janeke, Chairman - Professional Standards Committee
Fish Disease Control Center
P.O. Box 917
1100 E. Burlington Avenue
Fort Morgan, Colorado 80701

- THE 1981 ANNUAL MEETING - M.S.U., CATFISH AND HEAT

Many FHS members got the chance to experience real southern hospitality when they attended the joint meeting of the Fifth Annual Fish Health Section/AFS and the Sixth Annual Eastern Fish Health Workshop at Mississippi State University on July 21-23. We are indebted to Dr. Tom Wellborn, Jr. and the many Mississippi Cooperative Extension Service and M.S.U. staff members who helped make the meeting a success.

Over one hundred fish health workers from many parts of the U.S. and Canada enjoyed two days of excellent presentations and panel discussions capped off by a banquet on the evening of July 22. Highlights of the banquet included a thought-provoking and highly entertaining speech by Utah State Fish Pathologist Ron Goede on the need for awareness and preparedness in the increasingly common legal actions involving fish health professionals. Those in attendance were also privileged to witness Dr. Ken Wolf's receiving of the FHS's Dr. S.F. Snieszko Distinguished Service Award.

Those who chose to stay a third day were treated to a tour of Humphreys County, Mississippi, the catfish capitol of the world. The farms, feed mill and processing plant were most impressive. The 103° heat, on the other hand, was most *oppressive* - at least to us northerners.

The FHS Meeting itself was somewhat dulled by the absence of both President Dennis Anderson and President-Elect Bill Klontz. Both cancelled at the last minute for personal reasons and thereby left the Section without a quorum. Nevertheless the meeting was ably conducted by Secretary-Treasurer Ken Johnson. Important issues were discussed and several straw ballots were cast to obtain the views of the membership as an aid to the decision making that fell upon the FHS Executive Committee at the September AFS Meeting in Albuquerque. Results of that meeting are reported elsewhere in this issue.

The outstanding accomplishment of the 1981 meeting took place behind the scenes. Under the guidance of Chairman Paul Janeke of the USFWS Lab in Fort Morgan, Colorado, the Professional Standards Committee managed to crank out a draft of the Fish Pathologist Certification procedure during meetings that took them well into the wee hours of the morning. The Section owes a big vote of thanks to Paul and P.S.C. members Dr. Jim Carlisle, Doug Mitchum, Dr. John Schachte (unable to attend the meeting) and Dr. Dave Ransom for devoting so much time and effort to bring this important program to fruition at last.

STANDARDS AND PROCEDURES FOR THE CERTIFICATION OF FISH PATHOLOGISTS FISH HEALTH SECTION AMERICAN FISHERIES SOCIETY

I. Introduction

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 the fishery resource by meeting its fish health needs. Individuals meeting the requirements which follow shall be eligible for certification by the Fish Health Section as *Fish Pathologists*.

The FHS/AFS certified Fish Pathologist is the professional *general practitioner* of the fish health field. Through a regimen of appropriate training and experience, the individual has developed a thorough understanding of the animal, the animal's environment, infectious and non-infectious disease processes, and the inter-relationships involved. This, in combination with appropriate technical skills and high ethical standards, enables the Fish Pathologist to serve the fishery resource through prompt and accurate evaluation and diagnosis of fish health problems, through the determination of proper remedial measures, through responsible recommendations and/or prescriptions of therapeutic control measures within legal constraints, and through the administration of programs designed to enhance the health of cultured and free ranging fishes. The Fish Pathologist must be capable of characterizing pathological signs, of drawing valid conclusions as to their meaning, and if necessary, of seeking appropriate assistance in determining the specific cause or causes of the disease. In those circumstances where a definitive diagnosis is not possible, the Fish Pathologist must have the ability to utilize all available information to establish the most logical cause of the problem.

II. Objectives

- A. To identify individuals possessing the technical, professional, and ethical competence which qualifies them to evaluate and diagnose disease 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 establish a peer review system within the FHS which can efficiently and judiciously evaluate the basic academic training, specialized training, and work experience required for certification as a Fish Pathologist.
- C. 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 FHS for 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 certification as a Fish Pathologist.

III. Qualifications

A. Basic academic education

1. Bachelor's Degree or advanced degree in a biological science from an accredited university. Applicant must provide documentation of degree earned.
2. Minimum of twelve (12) quarter or eight (8) semester hours of fisheries courses at an accredited university. Applicant must submit certified transcript(s) and document course content.

B. Specialized training

1. Finfish and/or shellfish health: minimum of five (5) quarter or three (3) semester hours at an accredited university; or 100 lecture hours at a recognized training center (two laboratory hours equivalent to one lecture hour). Applicant must submit certified transcript(s) and document course content.
2. Applied science: the applicant must have taken a minimum of 3 of the 4 courses in *Discipline Group One*, 3 of the 5 courses in *Discipline Group Two* and a minimum of 8 of the 16 total number of courses. Additionally, he or she must have earned a minimum of 3 quarter or 2 semester hours in each of the required disciplines for a minimum total of 45 quarter or 27 semester hours.

a. *Discipline Group One*

- 1) Bacteriology
- 2) Parasitology
- 3) Virology
- 4) Mycology

b. *Discipline Group Two*

- 1) Pathology
- 2) Epidemiology
- 3) Immunology
- 4) Histopathology
- 5) Toxicology

c. *Discipline Group Three*

- 1) Histology
- 2) Nutrition
- 3) Pharmacology
- 4) Biochemistry
- 5) Physiology
- 6) Anatomy
- 7) Public health

Credit in specialized training/ applied science may be earned for work completed in specialized training/ fish health or in basic academic education. Applicants are required to provide university catalog description or other documentation of course content.

Credit for courses taken at recognized training centers and not for college credit may be calculated on the basis of 3 quarter hours or 2 semester hours earned for each 40 hours of formal lecture-laboratory training. (NOTE: Each hour of laboratory training counts as ½ hour for calculation purposes.)

C. Professional work experience

1. Definition: Full-time fish health work experience is defined as a minimum of 75 percent of the applicant's professional work time during a 12-month period engaged in fish health activities which may include (1) disease diagnostics and control, (2) fish disease/health research, (3) fish disease/health instruction at the university level or its equivalent, and/or (4) administrative work directly related to fish disease diagnostics and control. A minimum of 50 percent of the total time must be engaged in diagnostics and disease control.
2. Requirements: The applicant must have a minimum of three (3) years of professional level, full-time fish health work experience during the five (5) years preceding application. In his or her working experience, the applicant must have demonstrated proficiency in a minimum of four (4) of the following seven (7) areas: 1) bacteriology, 2) parasitology, 3) virology, 4) pathology, 5) mycology, 6) histopathology, 7) immunology/serology.
3. Restriction: Work experience gained prior to meeting the basic academic education and specialized training requirements does not qualify as professional work experience.

D. Work status at time of application: The applicant must be engaged in fish health activities at the minimum rate of fifty (50) percent of the total work time.

E. Letters of recommendation

1. The applicant's immediate supervisor or employer must submit, directly to the Board of Certification Chairperson, a letter which documents the applicant's current work status (see III., D.). If appropriate, this letter may also document the applicant's previous professional work experience (see III., C., 2.) as defined in III., C., 1., technical proficiency in required disciplines (see III., C., 2) and total years and months of professional level fish health work experience (see III., G.) of which he or she has direct knowledge.
2. Letters of recommendation in the applicant's behalf must be submitted directly to the Board Of Certification Chairperson by a minimum of three (3) fish health professionals. These letters must attest to the applicant's professional work experience (see III., C., 2.) as defined in III., C., 1., technical proficiency in required disciplines (see III., C., 2.) and, if appropriate, total years and months of professional level fish health work experience of which he or she has direct knowledge.
3. All letters of recommendation (see III., E., 1., 2.) must specifically address the following question: *Can you cite any situation where the applicant acted unethically in conducting his or her professional duties? If so, explain.*

F. Examination

All applicants who have fulfilled the requirements in A., B., C., D. and E. above shall be required to take a written examination administered by a member of the Board of Certification or an agent appointed by the Board of Certification. However, during the initial three-year period of this program, no applicants will be required to take the examination.

When the examination requirement becomes mandatory, eligible applicants will be so notified by the Chairperson, Board of Certification. Applicants will have one year from the date of notification to take the examination.

The examination will cover topics such as fish disease etiology, diagnostic procedures, pathology of fish diseases, fish disease therapy, fish pond management, fish disease control, general fisheries, fish culture and other items essential to a thorough knowledge of the care and health of fish. A minimum score of 75 percent will be required to pass the written examination.

G. Grandparent clause

Notwithstanding all other requirements under Section III., A., B., C. and D., during the initial three-year period of this certification program, applicants possessing a Bachelor's Degree or advanced degree in a biological science from an accredited university, but not meeting the additional academic and training requirements must have one (1) month of full-time professional level fish health work experience, in excess of the standard requirement (see III., D., 2.), for each quarter credit of academic credits lacking.

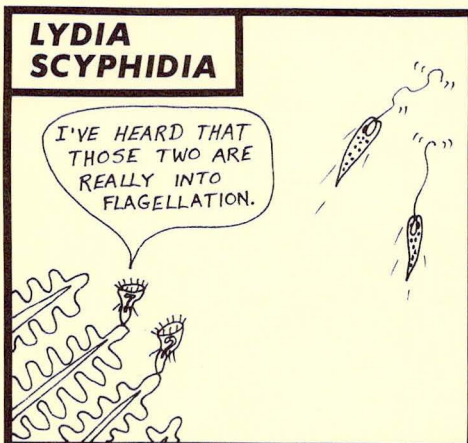
IV. Application procedures

- A. Application forms may be obtained from the Chairpersons of the Professional Standards Committee or the Board of Certification.
- B. Individuals seeking certification as Fish Pathologists must file completed application forms including required supporting documents and a \$10.00 nonrefundable application fee with the Chairperson of the Board of Certification. Applicants should promptly arrange for the forwarding of the three or four letters of recommendation to the Board Chairperson at the time they prepare their 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, that they are eligible to take the written examination and must do so within one year of the notification. (NOTE: Applicants who have filed completed applications with the Board, which are subsequently approved by the Board, prior to January 1, 1985, will not be required to take the written examination.) The Board Chairperson must also notify the applicant in writing of the site, date and time of the examination. If necessary, one alternative site, date and time will be provided. Prior to taking the examination, the applicant must submit a nonrefundable \$20.00 examination fee, by personal or certified check made payable to the Fish Health Section/AFS, to the Chairperson of the Board of Certification. 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 with a summary explanation of the reasons for non-approval. Applicants desiring a review of a negative decision by the Board may file a request with the Chairperson of the Professional Standards Committee for a formal review of their application by his/her committee. The review panel convened for such considerations shall consist of all Committee members and the Chairperson of the Board of Certification. The decision of the review panel shall be final.
- D. Upon receipt of notification of their successful completion of all application and examination requirements, new applicants shall remit a certification fee of \$40.00 (\$20.00 when written examination becomes mandatory) 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 Chairperson of the Professional Standards Committee. The Section President, when assured that all certification procedures have been completed, shall then officially notify the applicant of his/her certification as a Fish Pathologist by a congratulatory letter and a certificate indicating the period of certification, which will be five (5) years.

V. Recertification

- A. FHS certified Fish Pathologists must be recertified five (5) years after initial certification and every five (5) years thereafter.
 - B. Two months prior to each Fish Pathologist's five-year anniversary date, the Chairperson of the Board of Certification will mail to the Fish Pathologist notification of the recertification requirement. This will include the forms or format for this process. When so notified, the individual seeking recertification must submit a nonrefundable \$10.00 recertification fee, by personal or certified check payable to the Fish Health Section/AFS, to the Chairperson of the Board.
 - C. In order to be recertified, the Fish Pathologist must meet *both* of the following criteria:
 1. During the previous five years, the individual must have been engaged in fish health activities at the minimum rate of fifty (50) percent of the total work time (full-time employment) for a minimum of three (3) years.
 2. At the time of recertification, the individual must be engaged in fish health activities at the minimum rate of fifty (50) percent of the total work time (full-time employment).
 - D. Both of the requirements for recertification (see V., C.) must be substantiated in letters of recommendation from the individual's immediate supervisor or employer and from three (3) fish health professionals. Letters of recommendation are to be mailed directly to the Chairperson of the Board of Certification.
 - E. Upon recertification by the Board of Certification, the Fish Pathologist will be so notified in writing by the Chairperson. With this notification, the Fish Pathologist will also receive a stamp, indicating the year of recertification, which is to be affixed to the original certificate where indicated.
 - F. Any Fish Pathologist denied recertification shall be so notified in writing by the Chairperson of the Board with the reasons for denying recertification.
 - G. Fish Pathologists desiring a review of a negative decision by the Board regarding their recertification may file a request with the Chairperson of the Professional Standards Committee for a formal review of their recertification credentials by the committee. The review panel convened for such considerations shall consist of all committee members and the Chairperson of the Board of Certification. The decision of the review panel shall be final.
- VI. Revocation
- A. Fish Pathologist certifications may be revoked by the Board of Certification for reasons such as gross negligence, incompetence, falsification of data or reports, misrepresentation, acceptance of a bribe or any other action determined by the Board of Certification to be professionally unethical.
 - B. Information concerning unethical action as indicated in A. above should be filed with the Chairperson of the Professional Standards Committee.
 - C. Specific guidelines for conducting reviews of cases involving charges of unethical action and the appeal process will be added to this section as an appendix prior to January 1, 1983.



FHS ANNUAL REPORT TO AFS EXECUTIVE COMMITTEE

July 28, 1981

To: Mr. Richard A. Ryder, President AFS
From: Dennis E. Anderson, President FHS
Subject: Annual report of Fish Health Section to AFS Executive Committee

Fish Health Section membership currently stands at 465 (15 above last year) and the Fish Health Section treasury is solvent. Annual dues are still \$5.00 and only AFS members in good standing may belong to the FHS.

Our annual meeting was held in Starkville, Mississippi July 21-23, 1981. The workshop portion of the meeting proceeded smoothly and many excellent technical papers were presented. Due to unexpected last minute conflicts, neither the President or President-Elect could attend. Therefore, no business could be conducted by the Executive Committee or the membership as quorum requirements could not be met. Our next meeting will be held in Boulder, Colorado February 8-10, 1982 where we will meet jointly with the Fish Culture Section on the theme "Quality Improvement in Finfish Aquaculture."

The FHS is donating an electric trolling motor for the D-J expansion raffle at the annual AFS meeting in Albuquerque. Purchase of the motor was made from FHS general funds as no donor could be found.

Progress was made during this business year toward getting our Fish Pathologist certification program on line. A draft program guide has been submitted to me by our Professional Standards Committee and our EXCOM will vote on this proposed program at the AFS annual meeting. It is anticipated this certification will be fully functional by January 1, 1982 and that initial applications will number 50-100.

The Fish Health Inspector program is continuing with four inspectors certified during 1981. This brings the total number certified to 16.

No new fish health problems of nationwide significance were identified this year. Infectious hematopoietic necrosis continues to be a major problem in salmonids on the West Coast and in the Hagerman Valley of Idaho. Research into development of an effective IHN virus vaccine, therefore, continues to be a high priority need.

Registration of chemotherapeutants, particularly for control of ectoparasites in warm water culture, continues to be a major problem area. Reregistration of approved chemicals and initial registration of new ones are both very expensive endeavors but ones that must be undertaken to meet FDA and EPA requirements. Current estimates for registration of a single compound for one type of use are about 1.5 million dollars and 1.5 to 3 years elapsed time. Lack of usable approved drugs and chemicals will likely continue to be a problem in the aquaculture industry as the industry's purchases don't generate enough revenue to support registration testing.

Legal proceedings to determine liability in fish health cases involving infectious as well as noninfectious diseases are beginning to involve more of our fish health professionals. As such cases are increasing in number, it behooves the Fish Health Section to continue objective peer review certification programs to help protect our professionals as well as to help the courts identify fish health expertise. It is therefore incumbent upon the FHS to police our ranks to help weed out unqualified practitioners and to increase membership awareness of biolegal considerations.

Fish Health Section officers for the business year October, 1981 - September, 1982 will be Dr. William Klontz, President; Dr. Emmett Shotts, President-Elect; and Mr. Paul Janeke, Secretary/Treasurer.

USFWS REGISTRATION ACTIVITIES INVOLVING FISHERY-USE CHEMICALS AND DRUGS

The Fish and Wildlife Service is well aware of the problems associated with the use of malachite green, having discontinued general use of the compound several years ago in its fish cultural practices. However, since no alternate fungicides are currently available and because the Service has encountered increasing difficulties with its salmon production programs, it requested Food and Drug Administration (FDA) approval of a clinical exemption for restricted use of malachite green to treat fungal infections on adult salmon. The Service was recently notified by the FDA that an Investigational New Animal Drug Application (INAD) has been approved for this restricted use. The Service, however, must adhere to certain requirements imposed on use and dispersal of the drug and treated fish. Use of the fungicide is limited to emergency situations at 10 west coast and 5 east coast National Fish Hatcheries for the purpose of preventing excessive losses of infected prespawning salmon returnees

being captured and held for egg taking purposes. Meanwhile, research efforts are progressing in the screening, development and registration of several candidate compounds as possible replacements of malachite green.

A data packet was submitted in February, 1981 to satisfy FDA's latest requirements for approval of formalin for fishery use as a fungicide and parasiticide. However, word was received in August that there are still a few questions to be answered. Many questions formerly raised by the regulatory agency are apparently resolved, with indications for acceptance of labeling to cover its use for (1) control of fungi on eggs of salmon, trout and esocids, and (2) control and prevention of certain external protozoan parasites and monogenetic trematodes on trout, salmon, catfish, largemouth bass and bluegill. However, coverage of other cultured sport and game fishes, aquarium fishes and several common bait fishes (other than golden shiner, fathead minnow and goldfish) has been withheld until more supporting data are provided. Even without these data, final approval may still be several months away while the environmental assessment is being reviewed and arrangements made to publicize the release of Service data and labeling to drug manufacturers interested in marketing the product.

A recent article entitled *Potential Problems in the Registration of Sea Lamprey Control Agents* by Dr. Fred Meyer and Ms. Rosalie Schnick, contains interesting and up-to-date information on the registration requirements and status for a variety of potential fish control agents. Pheromones, hormones, attractants, repellents, sterilants, live biological agents and biologics such as serums, vaccines and antigens are all discussed. Reprints of the article, which appeared in the 1980 issue of the *Canadian Journal of Fisheries and Aquatic Sciences*, VI, 37, No. 11, may be obtained from the coauthors at the National Fishery Research Laboratory, La Crosse, WI 54601.

At the request of the Great Lake Fishery Commission, the NFRL-La Crosse began conducting a laboratory study last spring on residue levels in sea lampreys following treatment with the compound bisazir. Earlier studies have clearly shown the compound's effectiveness as an experimental chemosterilant on adult lampreys. If it can be demonstrated that no measurable residue levels persist, field testing involving the release of sterilized lampreys will follow. In the interim, however, the Environmental Protection Agency will require further development of safe handling procedures because of mutagenic characteristics of the compound. In spite of this problem, the compound offers a promising control method because the sterilized individuals would compete with fertile animals for mates and thereby reduce the reproductive success of the spawning population.

Two data packets were submitted in May to the Environmental Protection Agency (EPA) pertaining to the registration status of the larval lampicide, TFM. One packet contains supplemental information on the establishment of tolerances of the compound along with certain labeling changes requested earlier by EPA. The other packet was in response to EPA's review of environmental fate data submitted more than 2 years ago. The Service foresees no problem with the interim registration for conditional use of TFM as a lamprey control in Great Lakes tributary waters.

In May the Service responded negatively to the announcement of proposed changes in FDA regulations concerning the manufacture of medicated animal feeds. Oxytetracycline and sulfamerazine are the two affected drugs that are used in fish feeds at National Fish Hatcheries. Should the changes in the medicated feed program be approved, a new #1900 form will replace the #1800 form that is currently required for the purchase and use of these medicated premixes. Changes in the current #2656 form that is required for the milling of these premixes on site are also more restrictive and call for greater enforcement than at present. The Service has requested an exemption from these regulations on the basis that our fish hatcheries prepare only limited quantities of medicated feeds. Such feeds are destined for inhouse use only and their preparation is not comparable with that of a regular feed manufacturer. To require drug assays on small batches of medicated feeds at each facility would require an undue hardship and have no positive effect on control of the drug, medicated feed or safe use of the product.

Studies are underway at the National Fish Health Research Laboratory-Leetown, in cooperation with six west coast Federal and State Fish Hatcheries, to generate efficacy data to support the registration of erythromycin phosphate to prevent vertical transmission of bacterial kidney disease (BKD) in salmonids. Numerous tests recently completed involved injections of the compound into adult fish at least 30 days prior to spawning. Other tests involved solutions of the drug on fertilized eggs during the water hardening process. Results show that significant levels of the drug were taken into the eggs. Indications are that a combination of the methods may be more effective in stopping vertical transmission than the water-

hardening/drug solution treatment alone. The tests will continue. Treated eggs will be watched through the fry and fingerling life stages to determine if BKD has been eliminated.

As another possible use of the antibacterial, Ro5-0037, scientists of NFHRL-Leetown have conducted experiments with injections of the potentiating sulfonamide compounds in hatchery-held Atlantic salmon spawners against outbreaks of furunculosis. These fish are returning adults that are being held up to 5 months prior to spawning. Results of the study indicate that the compound is beneficial in reducing fish mortality and that its role is probably prophylactic rather than therapeutic. Injection of the adults has had no adverse effect on egg hatchability or fry viability.

Indefinite Quantity Contract (IQC) agreements are being initiated with qualified firms to expedite specific studies essential to the reregistration of rotenone and other pesticides of interest to the Fish and Wildlife Service. These IQC agreements allow the Service to select several reputable firms which are capable of doing all of the desired studies and to award these studies collectively to one or more of the competitive firms. This procedure eliminates the need to review each proposal from each individual firm for technical merit every time contract work is needed. It also reduces administrative supervision throughout the testing program since the Service will be dealing with fewer firms that will be doing several studies simultaneously.

The viral disease, infections hematopoietic necrosis (IHN), is estimated to have been responsible for the loss of over 100 million trout and salmon fry in widely-distributed waters of the country during the last 10 years. Scientists of the Seattle National Fishery Research Center (SNFRC) report that fish from all Pacific coast sockeye salmon populations examined in recent years from Oregon to Alaska are naturally infected with IHN virus. Kokanee salmon, a landlocked form of the sockeye salmon, are also said to be potentially infected. The disease is enzootic in populations of chinook salmon and steelhead trout of the Sacramento River drainage and other salmonid populations of the west coast. Several outbreaks of the disease have also occurred in midwestern and eastern states, possibly caused by the shipment of infected eggs. The rate of infection in adult carriers varies considerably between species, populations and sexes - some approach 100 percent. At times, IHN is extremely difficult to detect and may go unnoticed for years during routine sampling of salmonid populations. No therapy for the disease is currently known, but SNFRC is conducting studies that may lead to a remedy. Vaccines are being investigated and, in addition, four candidate chemicals known to kill the virus are being tested on fertilized eggs carrying virus from infected adult female salmon. Sockeye salmon populations, in particular, are in danger of being severely affected until such time as an effective control is discovered.

Submitted by Harry D. Van Meter, Registration Liaison Officer, Division of Fishery Ecology Research, USFWS, Washington, D.C. 20240.

ANDY'S SWAN SONG

I wish to thank all of you who have contributed time and energy to the Fish Health Section during this past year. I urge all of you who wish to continue or begin contributing to contact current President Bill Klontz to let him know of your willingness.

I feel we made excellent progress in several areas this year. We had a very successful workshop in Starkville, Mississippi in July thanks to the efforts of Tom Wellborn and his hard working program committee. We have a workshop scheduled jointly with the Fish Culture Section for Boulder, Colorado in February, 1982 and Program Co-Chairmen Ian Pritchard and John Schachte have put together an outstanding program you won't want to miss.

When I began my year, I considered revision and reactivation of the Fish Pathologist Certification program our most important goal. I am pleased to report that our Executive Committee approved (at the AFS meeting in Albuquerque on September 17, 1981) the guidelines that appear elsewhere in this newsletter and we will be ready to start accepting applications as of January 1, 1982. Paul Janeke deserves the bulk of the credit for accomplishing this goal as he took over the committee in February and worked very hard to meet deadlines. He also received a tremendous amount of support and assistance from the rest of his committee.

Other actions taken at our Albuquerque EXCOM meeting included:

1. Endorsement of the purchase of an FHS display.
2. Endorsement of a bylaws amendment to establish a Records and Archives standing committee to centralize and maintain records of FHS activities and correspondence (membership vote to follow).

3. Endorsement of a bylaws amendment to require that nominees for the Board of Certification must be board certified Fish Health Inspectors or Fish Pathologists (membership vote to follow).
4. Set the Fish Health Inspector certification fee at \$50 total with \$10 of this being a nonrefundable fee paid at the time of application.
5. Set the Fish Pathologist certification fee at \$50 total comprised as follows:
 - A. \$10 to accompany application (nonrefundable)
 - B. \$20 examination fee (nonrefundable)
 - C. \$20 certificate fee for successful candidates.
6. Approved waiving the application and fee requirements to issue Dr. Stanislas F. Snieszko Fish Pathologist Certificate #1 (provided that, upon contact by President Klontz, Dr. Snieszko agrees to become a Certified Fish Pathologist and thereby endorse this program).
7. Considered and rejected a FHS dues increase for membership year 1982 in favor of pursuing other means of increasing receipts and investigating means of reducing expenses while maintaining the current newsletter format.

A couple of the AFS Executive Committee decisions made at the Albuquerque meeting directly affect the Fish Health Section. Henceforth, all professional certificates will be issued by the parent body. The FHS will still handle all applications and Board of Certification reviews for both our Fish Health Inspector and Fish Pathologist programs and the certificates will be issued at cost by the AFS devoting AFS/FHS certification.

The AFS EXCOM was hesitant to support the "license to practice" concept of our certifications. After some wording modification of recommendations made by the AFS Certification Issues Committee, the EXCOM did agree to encourage conservation agencies to consider FHS standards as the minimum acceptable.

As I have no more news to report, I'll close by saying I enjoyed the opportunity to serve as your President this past year and found it very rewarding. I wish the new officers good luck and good cooperation. Bill Klontz, it is a time and energy demanding position you now occupy. However, if you can devote the necessary time and energy to it, I'm sure you'll find it richly satisfying and rewarding.

Sincerely,
Dennis E. Anderson
Past President (Has-been?)

MEMBER OR MEMBERSHIP?

The FHS has now been in existence about a decade. As is the case with any newly formed organization, the first years have been characterized by great enthusiasm. This is understandable because the organization's formation resulted from some specific needs. In the case of the FHS, the initial common concerns were the "Blue Book," the Fish Health Inspector certification and the Fish Pathologist certification. The first two needs have been fulfilled and the last is finally about to go on line. With these accomplishments under our belts, should we now retire and enjoy our benefits?

The achievements of the FHS have not been altogether altruistic. Certainly the programs enacted by the FHS were to enhance the fishery industry, but the membership itself will benefit from them as well. FHS certifications and even FHS membership will lend credence to your qualifications to perform fish health work or secure employment. So should we now let the Section work for us instead of working for the Section? Do you want to be a functional element (member) of the whole (membership) or an atrophied element benefiting from the existence of the whole? If too many of us choose the latter, the Section will become a crippled organization. How much use will a dysfunctional organization be to any of us?

Committee membership is on a voluntary basis. If there is a committee in which you are interested, contact the president and request placement. Hopefully our new president will not have to beat the brush to fill committees. Naturally, the volunteers will work harder than most draftees. If there is no committee of interest to you, at least contact the president and volunteer your services. In addition, support the most frequent source of FHS contact - this *Newsletter*.

Rex M. Flagg