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**Intracranial Amoebiasis in Ornamental Goldfish (*Carassius auratus*): a Case Report**

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Two ornamental goldfish were presented to the Utah Fish Disease Diagnostic laboratory by a private aquarist with a concern over the fish's erratic swimming and abnormal orientation in the water. The condition was described as being chronic and progressive. Several affected individuals had previously been euthanized. The fish had been obtained from various pet stores. The fish were housed in various containers which utilized undergravel filtration and dechlorinated tap water. Previous treatment for the fish consisted of over the counter commercial preparations to remove external parasites.

A physical examination showed two active individuals that showed caudo-cranial and ventro-dorsal orientation in the water. The fish were slightly emaciated, although the owner reported the fish showed good appetite for a commercial koi ration. Gross appearance of the external surface and viscera showed no abnormalities. Microscopic examination of the gill filaments from the euthanized fish showed moderate number of monogenetic trematodes on the secondary lamellae. Turbid cerebrospinal fluid examined on a wet mount showed numerous active amoeboid organisms (see figure 1). Based on the morphology, a tentative identification of *Naegleria* or *Acanthamoeba* sp. was made. Due to the potential for zoonosis, the owner

was advised to eliminate the remaining fish. They were referred to the Fish Parasitology lab at Brigham Young University for further study.

At that location, eight goldfish were housed for further observation and study. From this group, two swam erratically and became lethargic. These were removed from the tanks, euthanized and examined for parasites. When an incision was made into the cranium, a grey to yellow purulent exudate appeared. A wet mount of the exudate examined microscopically showed the presence of both amoeboid and flagellated amoeba moving actively throughout the slide preparation. Stained specimens were prepared and then the brain of the infected fish was excised and fixed with buffered 10% formalin. The two protozoa observed were consistent with *Naegleria* and *Acanthamoeba*. *Naegleria* (Lom and Dykova 1992) has both an amoeboid and biflagellated phase in its life cycle, while *Acanthamoeba* has pseudopodia only. Both organisms are facultative parasites with prominent free living forms. These are common soil and aquatic protozoa. From our literature search, this is the first recorded natural intracranial infection of these species of amoeba for fish.

Voelker et al. (1977) described laboratory and pet goldfish infected with amoebae

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described as being of the family Hartmannellidae. Among the histopathologic lesions noted in those fish were granulomas from miliary nodules of the viscera as well as granulomas in the brain. Taylor (1977) published an article on the isolation and experimental infection of free-living amoeba in freshwater fish and had success infecting the intracranial area of blue tilapia (*Sarotherodon aureus*) with *Acanthamoeba polyphaga*. The protozoan has been isolated from the spleen of redeye bass (*Micropterus coosae*) from Lake Chinabee, Alabama. The Taylor study was initiated due to two large fish kills of blue tilapia in Florida and Alabama. The amoeba were found mainly in the peritoneal fluid, intestine and gills. Subsequent surveys of fish in these two states identified *Acanthamoeba*, *Naegleria* and *Vahlkampfia* in fish. During the surveys of wild fish populations, no amoebae were found in the intracranial space (Taylor 1977). Under laboratory conditions, Taylor (1977) reports successful infection of *A. polyphaga* in the brain of tilapia. This parasite can penetrate fish tissue and go to various organs in the host. Hoffman (1976) and Bauer (1984) do not list amoeba for the intracranial area of fish. A recent book published on "Fish Medicine" lists no intracranial amoebae (Stoskopf 1993). Lom and Dykova (1992) list both *Naegleria* and *Acanthamoeba* in their book "Protozoan Parasites of Fishes". Derr-Harf et al. (1986) injected *Naegleria australiensis* into the brain of rainbow trout (*Oncorhynchus mykiss*) fingerlings, causing patent infections in the host. More interest is apparent for amoeba from the gill surface of fish. Amoeba have been reported as ectoparasites on the gill surface of salmonids (Kent 1992; Sayer et al. 1974). The organisms are present in the aquatic environment to cause intracranial infections. At the last International Congress of Parasitologists (ICOPAVIII) held in Izmir, Turkey (1994), Huizinga and Smith (Abstract 021.1)

reported on the evolutionary process of *Naegleria* found in fish adapting to mammalian brains. They had observed free living *Naegleria* in the brain, kidney and intestine of fish. *Naegleria australiensis* from fish caused *in-vitro* cytopathology and mouse histopathology.

Species of *Naegleria* and *Acanthamoeba* are capable of facultative parasitism in humans (Beaver and Jung 1985); becoming highly pathogenic in intracranial areas. *Naegleria fowleri* causes primary amoebic meningoencephalitis (PAM) in humans. Species of *Acanthamoeba* have also caused encephalitis and corneal ulceration in humans (Beaver and Jung 1985). Thus further work is warranted on the intracranial forms in fish.

Four of the eight ornamental goldfish housed at the University lab have died and all have had amoeba in the intracranial area. No success has been made in culturing the amoeba or infecting laboratory mammals. Measurements and observations of the wet and stained slide preparations of the protozoa are consistent with *Acanthamoeba* and *Naegleria*. All the examined goldfish had monogenetic trematodes and *Ichthyophthirius multifiliis* on the gill surface. The gill surface may be an entry point for the intracranial amoeba. The histopathology of the infected fish is under investigation. The authors would appreciate information on other reports of intracranial amoeba of fish.

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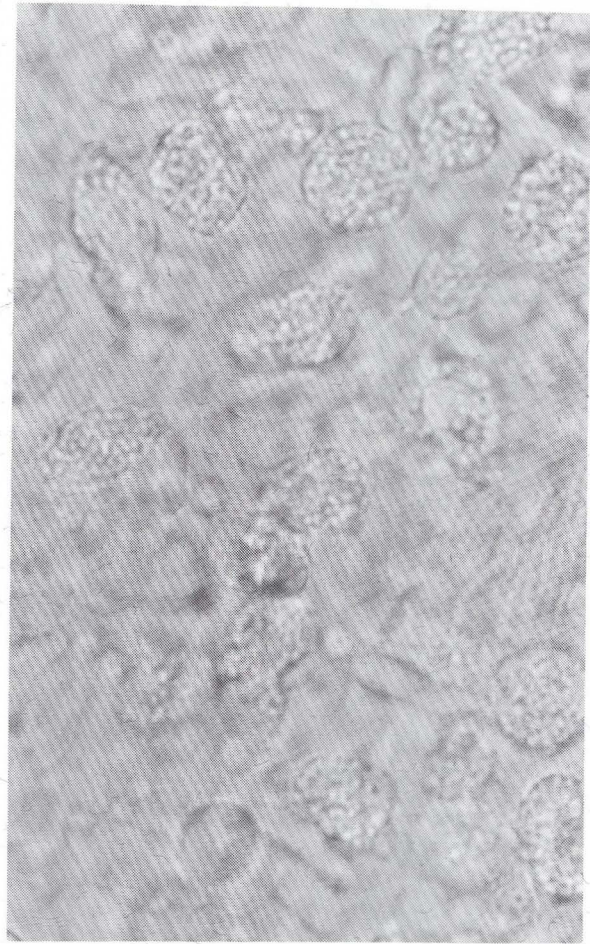


Figure 1. Photograph of amoeboid organisms from cerebrospinal fluid of goldfish.

\*\*\*\*\*CALL FOR NOMINATIONS\*\*\*\*\*

The Awards Committee is soliciting nominations from the Fish Health Section membership for the S.F. Snieszko Distinguished Service Award, Special Achievement Awards, and Snieszko Student Awards. Individual nominated for the S.F. Snieszko Award must be nominated by a current member of FHS. The person making the nomination should obtain six letters of recommendation from fish health scientists, and submit them with a current curriculum vitae for the candidate, and a letter of nomination to the awards committee. Individuals considered for a Special Achievement Award must be nominated by a current member of FHS with a letter that states the accomplishment and its the significance, and its implications (local/regional/world-wide). Additional documents relating to the work should be included in the nomination packet submitted to the Awards Committee. Applicants for the Snieszko Student Awards should send a curriculum vitae and 3 letters of recommendation to the Awards Committee. The deadlines for the Snieszko Distinguished Service Award and Special Achievements Awards is MARCH 15, 1995. Applications for Snieszko Student Awards will be accepted until MAY 15, 1995. Please send all materials to: Larisa Ford, Awards Committee Chair, NFHRI, NBS, 1700 Leetown Rd., Kearneysville WV 25430 phone:304-725-8461 x225, fax: 304-725-8461 X237 or 304-728-6203

## Treatment of Bacterial Gill Disease with Hydrogen Peroxide

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Hydrogen peroxide was recently found to be effective in controlling fungus on eggs and fish ( Schreck, C.B. et al., 1993 ). This information led to U.S. Food and Drug Administration to rule that hydrogen peroxide is a low regulatory priority drug when used at levels to 500 mg/L to control fungi on all species and life stages of fish, including eggs. Bacterial gill disease causes significant mortality in fish reared in Washington state fish hatcheries. No registered chemicals are available to treat bacterial gill disease of salmonids. The objective of this study was to test hydrogen peroxide as a treatment for bacterial gill disease.

### **Materials and Methods: Small Scale Test**

Bacterial gill disease was diagnosed in cutthroat trout (*Oncorhynchus clarki*) from a production circular pond. Diseased fish from the production pond were moved to hatchery troughs. Replicate groups of 50 fish were treated with either a 1 hr drip treatment with 100 or 250 mg/L hydrogen peroxide. Treatments were administered on three consecutive days. Replicate groups of untreated control fish were also maintained. Test and control fish averaged 13 g. Fish were not feed on the days that treatments were administered. Water temperature during the test were 8.3 to 12.2 C. Mortality was monitored for seven days following the treatment.

### **Production Test**

Rainbow trout (*Oncorhynchus mykiss*) reared in four large circular ponds were diagnosed with bacterial gill disease. Three ponds of rainbow trout were treated with hydrogen peroxide in a 20 minute bath for three consecutive days. Fish were treated with either 50, 75, or 100 mg/L hydrogen peroxide. One pond was maintained as an

untreated control. The fish size varied from 4.2 to 6.2 g. The number of fish per pond also varied from 25,900 to 50,300. Fish were not feed on the days that treatments were administered. Water temperature during the test ranged from 8.9 to 15.6 C. Mortality was monitored for 10 days following the last treatment.

### **Results and Discussion Small Scale Test**

The total mortality was lower in the fish treated with 100 mg/L hydrogen peroxide groups then the control or 250 mg/L hydrogen peroxide treated groups ( Table 1.) Unfortunately, transfer of the fish to the hatchery troughs probably reduced the stress and the overall mortality of the control fish.

### **Production Test**

The total mortality for the 14 day post treatment was lower in the fish treated with 50 mg/L hydrogen peroxide compared to higher doses and the untreated control. (Table 2). However, the production test should be view with caution since the fish size and number varied between the ponds. In summary, hydrogen peroxide was effective in treating bacterial gill disease in cutthroat and rainbow trout. A treatment regiment of three consecutive days of 50 mg/L hydrogen peroxide administered in a 30 minute bath or 100 mg/L hydrogen peroxide in a 1 hr drip are currently being tested at additional hatcheries. Additional testing is need to further determine the lowest effective dose and duration along with the effects in other fish species.

### **Reference**

Schreck, C.B., M.S. Fitzpatrick, R.L. Chitwood, L.L. Marking, J.J. Rach, and T.M. Schreier. 1993. Research to identify effective antifungal agents. Annual report 1993. Bonneville Power Administration, Portland, Oregon. 30 pp.

Table 1. Treatment of bacterial gill disease infected cutthroat trout with hydrogen peroxide.

Treatment Group	Dose (mg\L)	Mortality Number	Mortality Percent	Mean Mortality
Control-1	0	2\50	4.0%	2.0%
Control-2	0	0\50	0%	
H2O2-1	100	0\50	0%	1.0%
H2O2-2	100	1\50	2.0%	
H2O2-1	250	8\50	16.0%	9.0%
H2O2-2	250	1\50	2.0%	

Table 2. Treatment of bacterial gill disease infected rainbow trout with hydrogen peroxide.

Treatment Group	Dose (mg\L)	Mortality Number	Mortality Percent
Control	0	782\49,300	1.6%
H2O2	50	90\39,100	0.2%
H2O2	75	152\25,400	0.6%
H2O2	100	942\48,100	1.9%

\*\*\*\*\*POSITION ANNOUNCEMENT\*\*\*\*\*

**Research Assistant I**

The College of Veterinary Medicine, Mississippi State University is seeking a Research Assistant I to provide technical assistance involving molecular biological studies on fish diseases. This will involve work with cell lines, recombinant DNA techniques, fish microbiology, biochemistry and radioisotope use. **QUALIFICATIONS:** B.S. in biology, fisheries, microbiology, biochemistry or related discipline with 4 years related work experience preferred; or M.S. in the disciplines described. **SALARY:** Commensurate with qualifications and experience; minimum \$20,000 per year. **APPLICATIONS:** Applications will be accepted through December 12, 1994 or until a suitable candidate is identified. Qualified persons should submit a letter of application briefly outlining qualifications and pertinent experience along with a resume, transcripts and three letters of reference to: Ms. Barbara Rhoades, Administrative Officer, College of Veterinary Medicine, Box 9825, Mississippi State University, Mississippi State, MS 39762-9825. phone 601-325-1418.

Mississippi State University is an AA/EOE employer

## Serological and Virulence Characterization of an Aquatic Birnavirus Isolated from Coho Salmon Broodstock, *Oncorhynchus kisutch*.

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In December, 1993, a virus was isolated from Coho salmon, *Oncorhynchus kisutch*, returning to the Lummi Bay Sea Ponds in the Nooksack watershed of Northern Puget Sound, Washington. The appearance of the cytopathogenic effect and serological typing with a polyvalent anti-IPNV antiserum from the National Fish Health Research Center, Leetown, WV and a polyclonal anti-VR-299 antiserum confirmed that the virus was a member of the aquatic birnavirus group (Olson, et al. 1994). In this report, we describe further characterization of the antigenic composition and virulence characteristics of the virus, and ruminant over the implications of the results.

The virus was submitted for epitope analysis and virulence testing in the second passage on chinook salmon embryo (CHSE-214) cells (Lannan, et al., 1984). Cytopathogenic effects (CPE) were not noted in carp epithelioma (EPC) cells (Fijan, et al., 1983) on primary isolation, and this lack of CPE was also noted upon subsequent passage at HMSC. This is somewhat distressing since EPC is commonly used for the isolation of salmonid viruses and has been found to be generally susceptible to IPNV. While there have been reports that certain European strains of IPNV fail to replicate in fathead minnow (FHM) and EPC cells (Hill and Dixon, 1977), it has been assumed that other cell lines used for isolation of the

virus would be susceptible to all strains of aquatic birnaviruses. Evidently not, and this reinforces the need to utilize at least two cell lines when screening for aquatic birnaviruses.

Epitope analysis of the new isolate (93-511) using a panel of 11 monoclonal antibodies was carried out. The monoclonal antibodies were produced against the AS strain (serotype A6, or Canada 1 of Hill and Way, 1988), the West Buxton strain (serotype A1 of Hill and Way, 1988; commonly called the VR-299 serotype), and eel virus European (a member of the Ab or A3 serotype of Hill and Way, *idem*) strains of aquatic birnavirus (Caswell-Reno, et al., 1989; Lipipun, et al., 1989). Analysis was carried out by immunodot blot using the methods of Caswell-Reno, et al., (1989) and Lipipun, et al., (1989). Comparisons were made with the epitopic patterns of several known aquatic birnaviruses. The results are presented in Table 1. In this test system, the isolate from Washington coho salmon is identical to the BC-189 isolate obtained from sea cage Atlantic salmon (*Salmo salar*) off the coast of Vancouver Island, British Columbia in 1989 (Traxler and Evelyn, 1991). Both of these isolates have an epitope composition which differs from the Jasper, Alberta serotype (A9 of Hill and Way) by a single epitope (lacking W5). In turn, the Jasper serotype differs from the West Buxton, Maine serotype

only in its lack of reaction with E6 antibody. Thus, the 93-511 isolate most closely resembles the "North American" serotypes, and is clearly different from the VR-299 type and the major European types Ab and Sp, as well as the three other Canadian serotypes (data not shown).

Since there have been no previous isolations of aquatic birnaviruses from this area of Washington, and the isolation of aquatic birnaviruses is rare in seawater in the Pacific northwest, it is tempting to try to determine the source of the virus. The BC-189 and 93-511 isolates are the only ones detected in seawater on the eastern rim of the Pacific Ocean, and are the only two isolates of more than 180 which have been tested in immunodot that possessed this pattern of epitopes. It is unlikely that the coincident patterns of reactivity are due to chance. This brings to the forefront some intriguing questions about the relationship between these two virus isolates.

Was the Washington infection a contamination from the earlier 1989 occurrence in Atlantic salmon? The site from which the British Columbia virus was isolated is approximately 300 km as the fish swims from the Bellingham site in Washington where 93-511 was isolated. It is unlikely that the Atlantic salmon served as a source of contamination for the Lummi Bay coho because of the geographic distance.

Were the coho contaminated in their seaward migrations? Aquatic birnaviruses have been isolated from a diverse array of marine fish and invertebrate species (Hill and Way 1988) and, thus, could have served as a source of virus. To evaluate this possibility with locally indigenous marine species, 30 oysters and 30 clams inhabiting the mud flats near the effluent

from the Lummi Sea Pond facility were tested for the presence of aquatic birnaviruses in BF-2 and CHSE-214 cells. The samples were collected 3 weeks after the removal of the aquatic birnavirus-infected fish from the facility. No aquatic birnaviruses or any other CPE-producing agents were detected in these samples.

Was this stock of coho salmon persistently infected with the virus, but at an extremely low prevalence level? If so, sampling at the assumed 5% prevalence level may not have detected the virus, even by multiple sampling. The population size of the captured broodstock was approximately 1000. If the prevalence level of virus was 1%, 258 fish would have had to be sampled to detect the virus with 95% confidence; if the level were 0.1%, 950 fish would have had to be sampled (Simon and Schill, 1984). However, since this facility was the unfortunate recipient of a visit from the North American strain of viral hemorrhagic septicemia (VHS) in 1989 (Stewart, et al., 1990), ovarian fluids have been sampled at a high level on EPC cells only. It is known that ovarian fluid samples are not a reliable indicator of the presence of IPNV (Reno, 1988; Hedrick and Fryer, 1982), and since this strain of virus does not appear to replicate well or at all in EPC cells, virus might have been present but not detected by these methods. However, the fact that 16/93 pooled tissue samples from these fish were found to be positive for the virus in December 1993 and January 1994 indicates a very high prevalence rate. Thus, persistent low prevalence of the virus in the population is probably not a logical explanation for not previously detecting the virus. Thus, with the information we have at hand, the source of the virus remains obscure.

Examination of recent data indicates that in the Pacific northwest coast (Washington,

Oregon and British Columbia) occurrences of IPNV are few and episodic rather than perennial and persistent, as it is in other areas such as Idaho, Pennsylvania, Japan, Maritime Canada, and Europe. The isolation from coho in Washington is not "out of character" for this region, but the reasons for the differences in the detection of virus bear further scrutiny.

As reported earlier, the progeny derived from these coho salmon were destroyed (Olson, et al., 1994). Prior to destruction, a portion of the eyed eggs from this same stock was sent to the Fish Disease Research Laboratory at the Hatfield Marine Science Center in January, 1994. At 30, 60, and 90 days posthatch, 60 fish were sampled and processed for the detection of virus (Thoeson, 1994). There was no evidence of aquatic birnaviruses or any other viruses in these samples.

Virulence tests were then performed to determine if the virus isolated from the Lummi Bay coho was capable of inducing disease in several salmonid species. Using a standard immersion exposure of  $10^5$  TCID<sub>50</sub>/mL of passage 2 virus in water for 5 hours (McAllister & Owens, 1986), 100 each of the following fish, weighing approximately 0.5 to 1 g, were challenged: coho from the Lummi stock; chum salmon, *O. keta*, from the Nehalem River, Oregon; chinook salmon, *O. tshawytscha*, from the Nooksack River, Washington; steelhead, *O. mykiss*, from Alsea Hatchery, Oregon; brook trout, *Salvelinus fontinalis*, from Wizard Falls Hatchery, Oregon. A replicate batch of 100 fish of each species was exposed to cell culture medium without virus as a negative control. As a positive control, 50 brook trout were exposed in the same manner to a virulent isolate of IPNV from Idaho (182-83, a Buhl subtype). Mortalities were monitored over a period of one month.

As the results in Table 2 indicate, the 93-511 strain of aquatic birnavirus is avirulent. No signs of IPN disease were noted in any of the experimental animals which died or survived, except the trout infected with the virulent isolate which showed behavioral and gross signs of IPN disease. Mortalities in chum salmon were high because they were not transferred to seawater early enough. Similar unexplained mortalities occurred in the steelhead over a period of two months, but no evidence of IPN disease was noted. However, the controls manifested a higher mortality than did experimentally infected fish, and the increased mortality was due to a fungal infection. Survivors of all species (30 fish in 10 fish pools) were tested for the presence and titer of virus after the termination of the experiment. No virus was detected in the chinook salmon. Low titers were detected in the three other *Oncorhynchus* species, but brook trout had nearly 100-fold higher titers of 93-511. Those trout which had been exposed to the virulent Buhl subtype virus had 10,000-fold higher concentrations of virus than those brook trout exposed to 93-511. No control animals had detectable levels of virus. Under the conditions tested here, this strain of virus does not appear to be virulent, while brook trout exposed to a virulent strain succumb to IPN disease. The BC-189 isolate from Atlantic salmon in sea cages was also avirulent by when tested in several Pacific salmon species (Traxler and Evelyn, 1991); in fact, these authors did not detect any residual virus in the test animals after infection. This is in contrast to the current findings of low virus titers for strain 93-511 in exposed fish. So these two virus isolates have an identical epitope conformity in 11 epitopes as well as similar virulence characteristics.

These findings raise several questions: is the epitope identity of 93-511 to BC-189



coincidence or a reflection of a common source of contamination? Does their similar lack of virulence support a common source? Does the detection of an avirulent aquatic birnavirus in the absence of disease warrant the destruction of the offending stocks, or does an avirulent strain have the potential to gain virulence? Why doesn't the 93-511 strain grow in EPC cells and can this characteristic be correlated with avirulence? What is the mechanism underlying the poor in vivo replication of the 93-511 isolate compared to the virulent Idaho isolate? Stay tuned for further messages.

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Table 1. Reaction patterns of various aquatic birnaviruses with a panel of monoclonal antibodies. Terms in parenthesis indicate geographic location and species from which virus was isolated. A positive response indicates that the virus contains the named epitope. Differences are either an increased or decreased number of epitopes relative to 93-511.

VIRUS ISOLATE	Anti-Aquatic Birnavirus Monoclonal Antibody											Difference from 93-511
	AS-1	W1	W2	W3	W4	W5	E1	E2	E3	E5	E6	
93-511 (Washington: Coho salmon)	+	+	+	+	+	-	+	-	-	+	-	-
BC-189 (British Columbia: Atlantic salmon)	+	+	+	+	+	-	+	-	-	+	-	0
JASPER (Alberta: brook trout)	+	+	+	+	+	+	+	-	-	+	-	1
WB (Maine: brook trout)	+	+	+	+	+	+	+	-	-	+	+	2
SP (Denmark: rainbow trout)	+	-	-	+	-	-	+	-	-	+	-	3
AB (Denmark: rainbow trout)	+	+	+	-	-	-	+	+	-	+	+	4
VR-299 (West Virginia: rainbow trout)	+	-	-	+	+	+	+	-	-	+	+	4
EVE (Japan: Japanese eel)	+	+	+	-	-	-	+	+	+	+	+	5
182-83 (Idaho: rainbow trout)	+	-	-	+	-	+	+	-	-	+	+	5

# STANDARDS AND PROCEDURES FOR THE CERTIFICATION OF FISH PATHOLOGISTS

## I. INTRODUCTION

The Fish Health Section (FHS) provides a peer review system to identify professionals possessing the competence, training, and ethics required to effectively serve the fish health needs of fisheries programs and aquaculture. Individuals meeting the following requirements shall be eligible for certification by the FHS as "Fish Pathologists."

The FHS/AFS certified Fish Pathologist is a professional who specializes in the causes, nature, and control of the diseases of finfish, (hereinafter referred to as "fish.") Through a regimen of academic education, specialized training, and experience, the individual has developed a thorough understanding of the fish, its environment, infectious and non-infectious diseases, and the interrelationships involved.

The Fish Pathologist is an individual in the fish health field who utilizes various disciplines including fisheries biology, water quality, microbiology, parasitology, toxicology, pharmacology, and histopathology to provide an accurate evaluation and diagnosis of fish health problems. When necessary, the Fish Pathologist is capable of seeking appropriate specialized assistance in determining the etiology of a health problem. If 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.

The Fish Pathologist is competent to conduct fish health inspections, process samples, perform or supervise laboratory work, and interpret in-house results, as well as those from specialized reference laboratories. The Fish Pathologist is also capable of providing responsible recommendations and/or prescriptions (licensed veterinarians only) for control measures for fish diseases within legal constraints.

Technical skills, experience, and high ethical standards enable the Fish Pathologist to serve fisheries programs and aquaculture through the evaluation and diagnosis of fish health problems, through responsible recommendations for disease control, and through the administration of programs designed to enhance the health of cultured and free-ranging fishes.

## II. OBJECTIVES

A. To maintain 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.

B. To identify individuals possessing technical and professional competence that 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.

C. To foster and promote the maintenance of high ethical standards for individuals involved in fish health.

D. To provide minimum standards for education, experience, and ethics required by the FHS for certification as a Fish Pathologist.

E. To guide educators in the development of curricula that will qualify graduates for Fish Pathologist certification, 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 college or university.

Applicant must provide documentation of degree earned.

2. A minimum of 12 quarter or 8 semester hours of fisheries courses at an accredited college or university. Course work must include fish anatomy and physiology (laboratory required), ichthyology or fish biology, and fish culture.

## B. Specialized training

1. **Fish Health:** A minimum of 5 quarter or 3 semester hours at an accredited college or university; or 100 lecture hours at a Professional Standards Committee (PSC) approved or accredited training center. Laboratory required. 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 1/2 hour for calculation purposes.) Applicant must submit certified transcripts and document course content.
2. **Academic Science:** The applicant must have taken a minimum of 29 semester hours or 40 quarter hours in the following general course areas at an accredited college or university. Applicants already holding a Doctor of Veterinary Medicine (DVM) degree will be considered to have met the academic science requirements. It is recognized that course titles for the same subject matter may vary between schools, therefore the applicant must document course content as well as submit certified transcripts.

		<u>Lab</u> <u>Required</u>	<u>Semester</u>	<u>Minimum Hours</u> <u>Quarter</u>
1.	Pathogenic bacteriology	Yes	3	4
2.	Parasitology	Yes	3	4
3.	Virology	Yes	3	4
4.	Immunology	Yes	3	4
5.	Pathology/Histopathology	Yes	3	4
6.	Nutrition	No	2	3
7.	Biochemistry	No	4	6
8.	Vertebrate physiology	Yes	3	4
9.	Pharmacology	No	3	4
10.	Water Quality/ Pollution Biology/Limnology	No	2	3

## C. Stipulations and Considerations

1. A grade of "C" or greater is required in all course work. Courses taken "Pass/Fail" are not acceptable.
2. Academic science requirements 1 through 9 (III.,B.,2.) are considered satisfied by graduates of accredited veterinary schools.
3. College accredited or PSC approved correspondence or training courses may be used to fulfill fisheries (III.,A.,2.) and academic science (III.,B.,2.) course requirements.
4. Individuals having "extensive" experience or expertise in a subject may substitute this for fisheries (III.,A.,2.) or specialized training (III.,B.,1.& 2.) course requirements if they can adequately document or substantiate this to the satisfaction of the Board of Certification. This consideration will expire January 1, 1997.
5. A Grandfather clause will exist until January 1, 1997 allowing individuals caught between the old and new requirements to apply and become certified. Individuals must submit their individual situations to the chairperson to the Board of Certification. The decision of the Board will be final. To be eligible for this consideration, individuals must register with the chairperson of the Board of Certification by January 1, 1996.
6. The Pharmacology requirement will not become mandatory until January 1, 1997, allowing the development of a correspondence course for those without access to this course at their college or university.

## D. Professional work experience

1. **Definition:** Full-time fish health work experience is defined as a minimum of 75% 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; or (4) administrative work directly related to fish disease diagnostics and control.
2. **Requirement:** The applicant must have a minimum of 3 years of professional level full-time fish health work experience during the 5 years preceding application.
3. **Restriction:** Work experience gained prior to meeting the Basic Academic Education requirement III.,A.,1. (i.e., Bachelor's Degree) does not qualify as professional work experience. All other educational requirements (III.,A.,2., and III.,B.,1.& 2.) must be completed at least one year prior to applying for certification.

## E. Work status at time of application

The applicant must be engaged in fish health activities at the minimum rate of 75% of the total work time.

**ABSTRACT SUBMISSION INSTRUCTIONS**

**FISH HEALTH SECTION/AFS AND EASTERN FISH DISEASE WORKSHOP  
SYRACUSE, NEW YORK  
19-22 JULY 1995**

Please type the abstract on the attached abstract form, keeping all printed material within the "box." Use the attached abstract as an example. Please note: 1. The title should be in all capital letters, 2. Use superscript numbers, if necessary, to denote affiliation of authors, 3. Place a superscript asterisk (\*) following the author who will make the presentation, 4. Please use a good quality printer, as abstracts will be duplicated as they are received.

Please complete the following form and submit it with your abstract by May 31, 1995 to:

Dr. Frank Hetrick  
Fish Disease Unit  
Department of Microbiology  
University of Maryland  
College Park, Maryland 20742

I am submitting an abstract for the Fish Health Section/AFS and Midwest Fish Disease Workshop Meetings.

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Telephone:** AC (     ) \_\_\_\_\_

I prefer that my presentation be: \_\_\_\_\_ an oral presentation  
\_\_\_\_\_ a poster presentation

If necessary, I would be willing to change  
the format of the presentation     \_\_\_ yes     \_\_\_ no

## ANNOUNCEMENT

### OF THE JOINT MEETING OF THE FISH HEALTH SECTION OF THE AMERICAN FISHERIES SOCIETY AND THE EASTERN FISH DISEASE WORKSHOP

July 19-22, 1995  
Syracuse, New York USA

The Joint Meeting of the Fish Health Section of the American Fisheries Society and Eastern Fish Disease Workshop will be held in Syracuse, New York from July 19-22, 1995. It is not too early to begin consideration of submission of an abstract for this meeting. The general meeting schedule has been arranged to allow air-travelers to arrange for supersaver airfare. The program will have Wednesday July 19, serve as a travel day with a reception in the early evening. Formal presentations will be on Thursday, Friday and in the morning on Saturday, July 20-22. An optional field trip will be arranged to tour the Oneida Fish Hatchery of the New York State Department of Environmental Conservation on Saturday afternoon, July 22. This state-of-the-art walleye hatchery went through its first full production year in 1994. Although the nature of the overall program of the scientific meeting will be influenced by the type of abstracts submitted, we are looking to develop a meeting that will have a balance of basic and applied studies/presentations.

The 1995 meetings will be coordinated by John Schachte and Paul Bowser (Local Arrangements Co-Chairmen). Frank Hetrick will serve as program chairman. Abstracts should be sent to Frank Hetrick. A general time line for the meeting is as follows:

- May 31, 1995 - Receipt deadline for abstracts (please note oral or poster presentation preference)
- June 15, 1990 - Notification of abstract acceptance

The meetings will be held at the Sheraton Inn Syracuse, located just off exit 37 of the New York State Thruway. The Sheraton Inn also provides a courtesy van service to the Syracuse Airport. A block of rooms have been reserved for the meetings for the nights of 19-22 July 1995. Reservations may be made by calling the Sheraton Inn Syracuse (toll free reservation number 800-325-3535 or 315-457-1122).

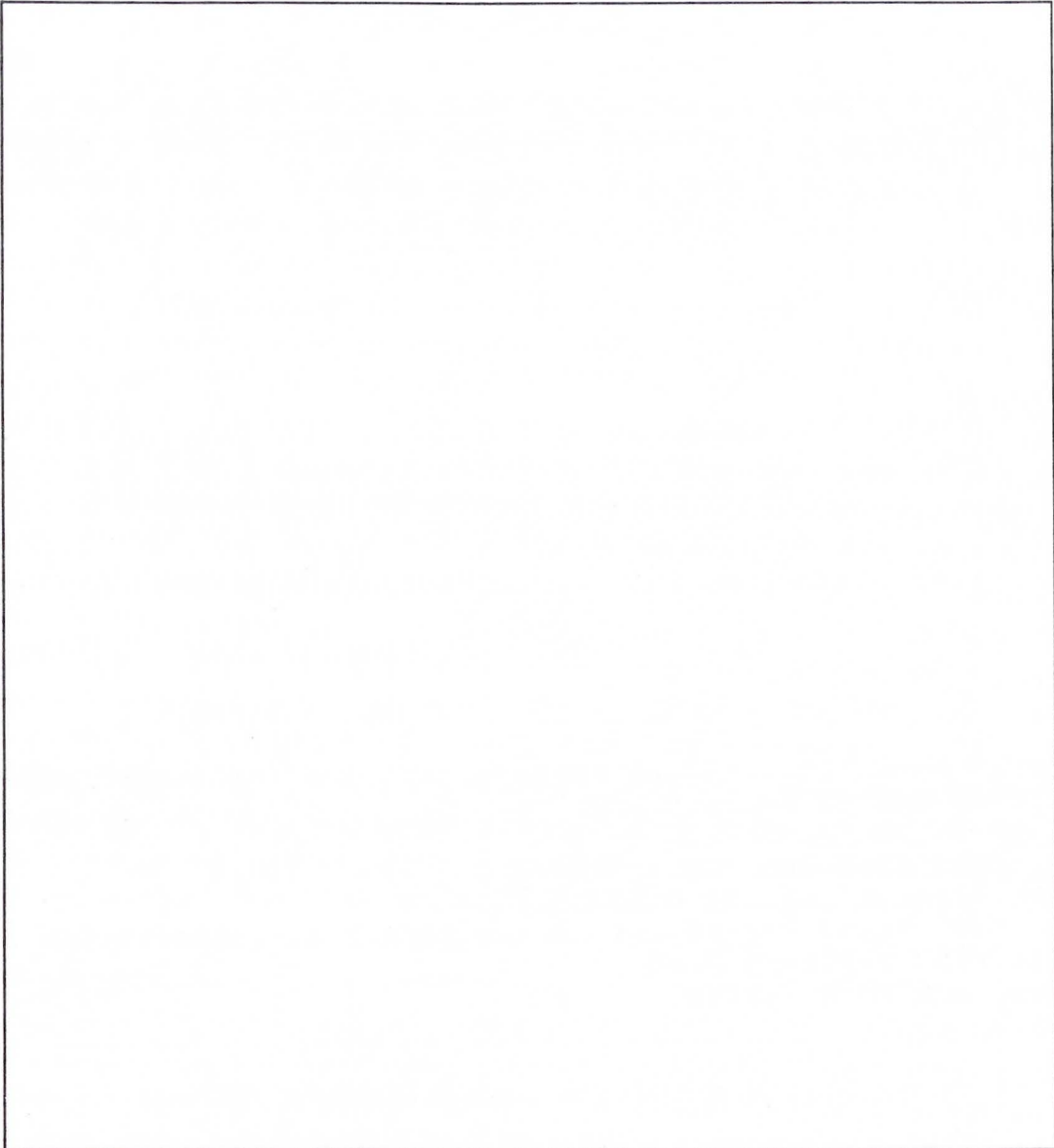
(for more information contact:

Dr. John Schachte, Jr.  
Fish Disease Control Unit  
New York State Department  
of Environmental Conservation  
8314 Fish Hatchery Road  
Rome, New York 13440  
(315) 337-0910

Dr. Paul R. Bowser  
Department of Avian and  
Aquatic Animal Medicine  
College of Veterinary  
Medicine  
Cornell University  
Ithaca, New York 14853  
(607) 253-3365

ABSTRACT

FISH HEALTH SECTION/AFS AND EASTERN FISH DISEASE WORKSHOP  
SYRACUSE, NEW YORK  
19-22 JULY 1995



**PREREGISTRATION FORM  
FISH HEALTH SECTION/AMERICAN FISHERIES SOCIETY  
AND THE  
EASTERN FISH DISEASE WORKSHOP**

19-22 July 1995  
Syracuse, New York

I will be attending the Joint Meeting of the Fish Health Section of the American Fisheries Society and the Eastern Fish Disease Workshop:

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Phone:**            AC (       ) \_\_\_\_\_

Preregistration Fee: \$65.00      (postmarked before 15 June 1995)

\$75.00      (postmarked after 15 June 1995)

\$ \_\_\_\_\_      Amount enclosed

Please send this preregistration form and fee (check made payable to Fish Health Section/AFS) to:

Dr. John Schachte, Jr.  
Fish Disease Control Unit  
New York State Department of Environmental Conservation  
8314 Fish Hatchery Road  
Rome, New York 13440

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Hotel reservations should be made directly with:

Sheraton Inn Syracuse  
Electronics Parkway  
Liverpool, New York 13088  
(315) 457-1122  
(800) 325-3535



## VI. RECERTIFICATION

- A. FHS certified Fish Pathologists must be recertified 5 years after initial certification and every 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 requirements and appropriate forms. When so notified, the individual seeking recertification must submit a non refundable \$50.00 recertification fee to the Chairperson of the Board of Certification and payable to the AFS/FHS.
- C. To be recertified, the Fish Pathologist must meet the following criteria:
1. During the previous five years, the individual must have been engaged in fish health activities at the minimum rate of 50% percent of the total work time (full-time employment) for a minimum of 3 years.
  2. Each individual must remain a member of the AFS/FHS for each of the five years prior to recertification.
  3. When a Continuing Education program is in place, each individual must participate in the program through workshops, seminars, meetings, classes, etc. approved and specified by the PSC in order to meet the total CE units required for the 5-year period prior to recertification. The AFS/FHS newsletter, provided as a part of membership, will contain information regarding continuing education opportunities and recertification requirements.
- D. The requirements for recertification (VI.,C.,1.) must be substantiated in letters of recommendation from the individual's immediate supervisor or employer and from 3 fish health professionals. The requirements for recertification in VI.,C.,2 & 3, must be documented in the application for recertification. Letters of recommendation are to be mailed directly to the Chairperson, Board of Certification.
- E. Deficiencies in any of the recertification criteria will result in the loss of certification and the need to reapply under current application requirements. If extenuating circumstances arise, a letter describing the circumstances must be forwarded to the PSC for review. Any rulings by the PSC will be final.
- F. 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 an official seal, indicating the year of recertification, which is to be affixed to the original certificate where indicated.
- G. Any Fish Pathologist denied recertification shall be so notified in writing by the Chairperson of the Board of Certification, within 2 months, with reasons for denying recertification.
- H. Fish Pathologists desiring a review of a negative decision by the Board of Certification 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 PSC committee. The review panel for such considerations shall consist of all PSC committee members and the Chairperson of the Board of Certification. The decision of the review panel shall be final and shall be completed within 3 months of the formal review request.

## VII. REVOCATION

- A. Fish Pathologist certification 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.
-

#### IV. APPLICATION PROCEDURES

- A. Applicants must be members of the American Fisheries Society and the Fish Health Section.
- B. Application forms may be obtained from the Chairperson of the Professional Standards Committee or Board of Certification.
- C. Individuals seeking certification as Fish Pathologists must file completed application forms, including required supporting documents, and a \$50.00 non-refundable application fee with the Chairperson of the Board of Certification. The applicant is responsible for an accurate and complete application as well as arrangements for the timely submission of letters of recommendation. Applications with discrepancies will be returned.
- D. At the time of application, applicants shall promptly arrange for the forwarding of 4 letters of recommendation directly to the Board Chairperson from the following:
  1. The applicant's immediate supervisor or employer must submit a letter of recommendation directly to the Board of Certification Chairperson which documents the applicant's current work status (III.,E.). If appropriate, this letter may also document the applicant's previous professional work experience (III.,D.,2.) as defined in (III.,D.,1.), technical proficiency and total years and months of professional level fish health work experience of which he or she has direct knowledge. Self-employed persons are exempt but must submit 4 letters of recommendation from fish health professionals (IV.,D.,2.).
  2. Letters of recommendation on the applicant's behalf must be submitted directly to the Board of Certification Chairperson by 3 fish health professionals (4 for self-employed persons). Letters must be from AFS/FHS certified pathologists or inspectors, or individuals recognized as authorities in the fish health field. These letters must attest to the applicant's professional work experience (III.,D.,2.) as defined in (III.,D.,1.), technical proficiency and, if appropriate, total years and months of professional level fish health work experience of which he or she has direct knowledge.
- E. 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.
- F. Applications not approved by the Board of Certification shall be returned to the applicant with a summary explanation.
- G. 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 the committee. Applicants have 3 months to request a review of a negative decision. The review panel for such considerations shall consist of all PSC Committee members and the Chairperson of the Board of Certification. The decision of the review panel shall be final and shall be completed within 3 months of the formal review request.

#### V. EXAMINATION

- A. All applicants who have fulfilled the qualification requirements in A through D above shall be required to take a written examination administered by a member of the PSC or an agent appointed by the PSC. 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. The examination will also include 35 mm slides. A minimum score of 70% will be required to pass the written examination.
- B. Prior to taking the examination, the applicant must submit a non refundable \$100.00 examination fee to the Secretary/Treasurer by personal or certified check made payable to the FHS/AFS. The Secretary/Treasurer will notify the Chairperson of the Professional Standards Committee who will notify the applicant of the site, date, and time of the examination.
- C. Upon successful completion of the written examination, the PSC Chairperson shall notify the applicant, the Board of Certification Chairperson, and the President of the Fish Health Section. 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 5 years.
- D. Applicants failing the examination must wait one year before retaking the exam. Applicants failing the exam a second time must reapply for certification under the current certification requirements.

Table 2. Virulence testing of two strains of aquatic birnaviruses in several species of salmonids. Fish were exposed by immersion in  $10^5$  TCID<sub>50</sub>/mL of virus for 5 hours. Percent cumulative mortality after one month. Values in parentheses indicate log<sub>10</sub>/g virus titer isolated from fish.

Species	Aquatic Birnavirus Strain			
	93-511		Idaho	
	Experimental	Control	Experimental	Control
coho	1% (3.5)	0% (none)	not tested	not tested
chinook	3% (none)	0% (none)	not tested	not tested
chum	70% (3.5)	95% (none)	not tested	not tested
brook trout	1% (5.25)	0% (none)	52% (> 10.0)	0% (0)
steelhead	43% (3.5)	47% (none)	not tested	not tested

\*\*\*\*\*

*An open letter to the FHS membership*

*Dear colleagues:*

*I am almost fully recovered from my being presented with the 1994 S.F. Snieszko Distinguished Service Award at the FHS banquet. For once in my professional career my brain turned to peanut butter during the presentation. I was quite surprised and yet very proud of the honor bestowed upon me. I thank all those who participated in the award process. From my tenure as section president some years back, I know what a struggle it is to get one's candidate into the final round.*

*As many of you know, I am no longer with the University of Idaho. My current goals are to avoid appointments to participate in activities which have no meaning. In that sense, I have volunteered my services to the Section. I think all of us should, in some fashion, be active in some function in the Section.*

*Another goal is to be more involved with continuing education for mid-career professionals. I have been involved with this activity for the past 25 or so years and it has been quite a learning experience - both for the participants and for me, especially. It is, I think, the best method to transfer research knowledge to the user groups. If I am to be successful in increasing the Section's involvement in continuing education, I will need the assistance of others. My address and telephone/FAX numbers are:*

*G.W. Klontz  
1908 East E Street  
Moscow, Idaho 83843*

*208-882-2617 (Res) 208-882-5812 (FAX)*

*Again, thank you all for the honor you bestowed upon me. I will continue to try to get it right.*

**G.W. (Bill) Klontz**

## 1994 Fish Health Section Business Meeting Highlights

\* A Procedural Manual is being developed for the Fish Health Section. The Procedural Manual Development Committee is working jointly with the Bylaws Rewrite Committee to draft new section bylaws and a Procedural Manual by February 1, 1995.

\* A revised Fish Pathologist Certification program was adopted by the section. Provisions will be made so that nobody is penalized because they are caught between the old and new requirements.

\* The section will be purchasing desktop publishing software to support the efforts of the Newsletter Committee.

**Archives Committee:** Jim Warren submitted various materials to the archives. Included are: a near complete set of AFS/FHS Newsletters, a letter from Jim to Dr. Robert F. Hutton, then Executive Secretary of AFS, to propose an association of fish pathologists within AFS in 1971, other correspondence concerning certification of fish pathologists within AFS. There are also files from various committees including awards, professional standards, nominating finance, FHS bylaws, time and place, membership and balloting, executive committee, technical procedures and board of certification. Photographs from the 1993 meeting in Denver, Co., have also been included. Yolanda Brady, Chairperson

**Awards Committee:** Two new members have been added to the awards committee as was requested at last year's meeting in Denver; they are Martin Chen and Bob Durburow. This year's Snieszko Award goes to George Klontz and this year's Special Achievement Award goes to John Thoesen for his leadership in editing the new edition of the Blue Book. Two Snieszko Student Awards were given in the sum of \$1000.00 each. Recipients were Michelle Moore and Mark Lawrence, both from LSU.

Pete Taylor, Chairperson

**Membership Committee:** As of June 1994 we have a total of 496 paid members. Membership may be down because of the recent dues increase. However, we are the fourth largest section of 19 in the American Fisheries Society. Sections larger than we included Fisheries Management (1015), Fish Culture (626), and Computer Users (613). The membership should make an active effort to recruit new members. Balloting was completed for new officers: President - elect is Jim Winton, Board of Certification Fish Pathologist is Scott Foott, Fish Health Inspector is Debbie Buchard, and Pete Walker was elected to the Nominating Committee.

**Newsletter Committee:** Since last year's report, four issues of the Fish Health Section newsletter have been published. Both the quantity and quality of material for the newsletter have been very good, although some regions of the country are much better at making submissions. Several documents dealing with Section business were included in the newsletter as inserts and saved substantial mailing expenses. We have continued to use recycled paper and vegetable-based ink in the publishing. International mailings continue to be very expensive and time-consuming as compared to bulk mailing for domestic readers. We continue to have some problems with members not receiving issues. The problem seems to lie in prompt payment of annual dues and AFS sending us labels for all the current members. After two years as principal editor, I have resigned, but Larisa Ford, the former co-editor has generously volunteered to assume that role. She can receive E-mail through Internet at R8\_NFRC.FHB.WV@mail.fws.gov. Beverly Dixon (Dept. of Biological Sciences, California State University, Hayward, CA 94542, phone: 510-881-3422, FAX: 510-888-4747, e-mail: bdixon@darwin.sci.csuhayward.edu) has agreed to serve as the new co-editor. Chris Wilson, Chairperson

**Nominating Committee:** The nominating committee, comprising Keith Johnson, Dave Tillinghast, and Jim Bertolini, submitted a slate of nominees to the membership. Ballots and a brief qualifications statement were mailed to the membership by mid-July with instructions for completion by August 1. Ballots were accumulated and mailed to the AFS Balloting and Elections Committee for counting. Keith A. Johnson, Chairperson

**Board of Certification:** Between the period May 1, 1993 and April 30, 1994, there were nine applications for Fish Health Inspector. Seven of these applicants were certified, one denied and the remaining two are in the process of either completing their applications materials or being voted upon by the Board of Certification. Seven Fish Health Inspectors have

been recertified and three allowed their certifications to lapse. Presently there are 52 active and 15 inactive Fish Health Inspectors. One new Fish Pathologist was certified. There were two applications received. Both are in the process of either completing their application materials or being voted upon by the Board of Certification. Two applicants have met the preliminary requirements and are pending successful completion of the written certification examination. Three Fish Pathologist recertification applications were received. One was a 5-year recertification, and two were 10 year recertifications. One certification was allowed to lapse. Currently there are 53 active and nine inactive Fish Pathologists. Since the beginning of the certification program the cumulative totals are as follows:

Fish Health Inspectors

Total number of applicants	105
Number of applicants certified	68
5 year recertification	17
10 year recertification	14
15 year recertification	4
Number inactive	15

Fish Pathologists

Total number applicants	94
Number applicants certified	63
5 year recertification	45
10 year recertification	11
Number inactive	9 <u>Ray Brunson, Chairperson</u>

Professional Standards Committee: In the autumn 1993 issue of the FHS newsletter, a draft was published of the proposed new requirements for certification as an AFS FHS fish pathologist. The intent was to allow everyone as an opportunity to comment on the proposed revisions and make sure we did not overlook any situations that would make it difficult or impossible for some qualified individuals to become certified. Responses from approximately 20 people contained many similar concerns, most centered around the amount of academic course work required and the availability and costs to take courses. All of these issues are dealt with in the final draft. After six years as chairman and additional years as committee member, I will "retire" this year. While it has been convenient for incoming presidents, it is far too long to hold this position. I have enjoyed the experience and all the friends along the way that have made it worthwhile. Ted Meyers, incoming president, will appoint a new chairman. John D. Cvitanich, Chairperson

Time and Place Committee: The 1995 meeting of the Fish Health Section will be in Syracuse, NY 20-22 July at the Sheraton Inn Conference Center. John Schachte and Paul Bowser are organizing the meeting and the Eastern Fish Health Workshop will cosponsor. A field trip to a state-of-the-art walleye hatchery will be offered. The 1996 meeting place has not yet been decided. Madison, WI, and Baton Rouge, LA, are possibilities. The section should consider whether we wish to have international meetings at regular intervals, and if so, what interval would be best. Our thanks to the organizers of the 1994 International Meeting on Aquatic Animal Health. Margaret S. Ewing, Chairperson

Blue Book Field Advisory Committee: The "Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens," (Blue Book) is completed and on sale now. An announcement and order form was placed in the last FHS Newsletter. I would like to take this opportunity to thank the Blue Book Committee, the Technical Procedures Committee, the Sampling Committee; who wrote the General Sampling Chapter, all the authors, and all the people who helped review the Blue Book. A lot of time and effort went into the last six years and I think the Section should be proud of everyone's effort. One of the most difficult parts of this revision was the consistency issues of fish health sampling. The General Sampling Chapter now represents a complete section on conducting fish health inspections. If an inspection is done according to the Blue Book then everyone will be providing the same type inspection and sampling methods. Now that the Blue Book is complete and on sale I have resigned as Chairman of the Committee. I wish the new Chairperson the best of luck and will be glad to assist in any way possible. John C. Thoesen, Chairperson

Technical Procedures Committee: This year saw the latest revision of the Blue Book completed, along with the Technical Procedures Committee's review of it. The new Blue Book is now published. The birthing of this document was a long and painful process. Let us hope it serves its purpose for a long time! Rod Horner, Chairperson

**Scientific Journal Report:** Bill Rogers relinquished his Chairmanship of the Scientific Committee and Coeditor of the Journal of Aquatic Animal Health (JAAH) to devote full time to his new position of Department Head, at Auburn University. John Grizzle and John Plumb remain Coeditors of JAAH. The Editorial Board was expanded from eight to twelve members and began serving as Associate Editors. With the expanded Editorial Board, the routing of manuscripts submitted to JAAH has changed so that authors send them directly to the AFS Editorial Office. Manuscripts are then routed to the appropriate Associate Editor who obtains three peer reviews. The reviewed manuscripts are then sent to either Grizzle or Plumb for final evaluation (acceptance, revision, or rejection). This procedure seems to be working well; however, the review process may be taking a little longer. In 1993, 74 manuscripts were submitted to JAAH for public consideration; of these 52 were accepted for publication, eight were rejected and 14 are still in review or revision. To date 33 manuscripts have been submitted in 1994. All issues of JAAH in 1993 and the first two issues of 1994 were published on schedule. John A. Plumb and John M. Grizzle, Coeditors

**Long Range Planning Committee:** At last years meeting in Denver, I handed out a draft for our Long Range Plan that had incorporated the input from numerous officers, past and present chairs of our standing committees. Most of these individuals contributed their thought toward the past, present and future mission, goals and directions of the Fish Health Section. The next step in the process was to invite broad section input into the document and this was attempted by providing the draft at Denver and an ensuing discussion period. While some input was achieved at that meeting, it was clear that people needed to take the draft home, carefully read it and make comments that could be fed back into the review process. At the conclusion of our Long Range Planning session in Denver this charge was delivered to the membership in attendance. Unfortunately, not one of those drafts was ever returned to me. In Bozeman, Montana in June, I again summarized our current state of planning. Jim Warren had a good idea that should be pursued. This was to summarize the points in a special newsletter issue that hopefully the membership would respond to. Ronald P. Hedrick, Chairperson

**Finance Committee:** As of September 1, 1994 we have a total of \$7091.66 in the General Account (West One Bank, Buhl, Idaho). A detailed accounting of this year's income and expenses are listed below.

	<u>Transactions</u>	<u>Subtotal</u>	<u>Total</u>
FHS General Account			
	Beginning Balance		3121.21
<b>Credits</b>	Section dues	5684.00	
	Certificates	510.00	
	Feed Co.	500.00	
	'91 Meeting	1529.00	
	'94 Abstracts	25.00	
	Interest	67.34	8315.34 11436.55
<b>Debits</b>	Newsletter	2527.05	
	AFS Plaque/Cert Seal	306.50	
	ExCom Travel	407.99	
	Misc Postage	63.68	
	'94 Ballot & Mailing	415.05	
	Blue Book	624.62	4344.89
<b>Ending Balance of General Account</b>			7091.66

A committee should be appointed to draft a contribution / advertisement flyer that would aid in obtaining financial donations from private or corporate sponsors. Additionally, since the section raised annual dues and the treasury appears to be growing, a yearly budget should be established. This would include setting dates for a fiscal year, budgets for each officer as needed, and forecasting income and expenses, including what monies will be available for continuing and new programs. Programs such as professional certifications, continuing education, and annual meetings should be looked upon as money making opportunities for the section. A long term goal may include hiring an executive director or some type of administrative assistant. Scott E. LaPatra, Chairperson

**\*\*NOTE:** A 1993-1994 President's report was not submitted.

## MESSAGE FROM THE 1994-1995 PRESIDENT

After learning that I would become the new elected president of the FHS, I felt two emotions come to fore. First, I was honored and very grateful to my peers for their support and confidence. Secondly, there came a humbleness or was it numbness, from the prospect of this important responsibility which I agreed to take on. In preparation for this essay I perused my collection of old FHS Newsletters dating back to January 1984 in hopes of finding a nugget or two of wisdom or wit from past presidential messages. This was both fun and nostalgic and with the turning of the pages a little sentimental when people, meetings, awards and scientific discoveries of past moments came forward once again. What I realized from this effort was a number of things about the Section during the last 10 years. Foremost was the newsletter itself which has always been the heart and soul of the FHS. What we are and what we are capable of becoming is in there for all to see. I am proud, as I believe all members are, in what achievements have been chronicled to date and of the continued quality as well as the usefulness of our newsletter. Thanks to all past and current newsletter editors. There were also recurrent themes in those pages that are still familiar subjects within the Section membership today. These included: the need for a proactive stance rather than a reactive one; fiscal concern about the ups and downs of membership recruitment; continued good supportive membership participation in Section committees; continued improvement of the fish health certification program; ongoing Bluebook revisions; need for development of a Section journal which became a reality; lack of response by the membership at large to important issues affecting the Section; concern about registering needed new drugs in aquaculture with the accomplished registration of Romet- a 15 yr effort - in November of 1984 and the beginning search for a new fungicide to replace malachite green, then (1984) legally used on INAD permit #2573; and finally review and changes made to the FHS bylaws. All these subjects are indeed timeless and will continue to be important to the Section and the concern of future FHS officers and committee members.

For the coming year, elections of the new officers and many of the committee appointments have been made. Past President, Ron Thune has done a fine job overseeing several ongoing longterm projects, some of which will continue during my tenure. These include the upgrading of the current fish health certification and recertification programs. To this end, the new requirements for Fish Pathologist certification (published in this newsletter issue) have been put in place while the upgrade of Fish Health Inspector requirements is in progress. Also a new continuing education program was initiated for use in the recertification of fish health practitioners with the presentation of a very successful workshop on viral CPE at the last Western Fish Health Meeting in Bozeman. This program will need further membership participation to help conduct other one day or afternoon workshops in specific fields of fish health expertise. All interested members please contact Craig Olson (206-438-1180), we need your help. The FHS bylaws are again under review and suggested changes have been proposed and will be voted upon by the membership in due course. However, because the bylaws contain much procedural information which would be better used in booklet form, an officer committee procedures manual will be developed first and the bylaws will again be reviewed accordingly. Certain of the proposed changes in the bylaws would also help initiate suggestions from the long range Planning Committee.

As mentioned in previous newsletters there are two other recurring areas of concern which the FHS membership should put some effort towards in 1995. One is recruitment of new members, especially students who will be the "new blood" to help carry the Section on in the future. My perception is that there are fewer student members now than there used to be at professional meetings. Paid membership in the Section as of September 1994 was 502 that is well below the all time high of 610 in 1990. We have lost some ground in membership and would do well to try and swell our ranks in the coming year. The second familiar challenge is to "light a fire" under membership enthusiasm in order to increase existing response to important issues such as bylaws changes, long range planning, elections and other comment opportunities. The membership is the FHS and I am asking for everyone's help and participation in the coming year.

Thank you, and please, suggestions are very welcome.

Ted Meyers, FHS President, 1994-1995

FHS 1995 Committees

## EXECUTIVE COMMITTEE

## Voting Members

Ted Meyers, President  
 Jim Winton, President-Elect  
 Ron Thune, Immediate Past President  
 Scott LaPatra, Secretary-Treasurer  
 Dave Tillinghast, Nominating Committee Chair

## Non-Voting Members

Jill Jenkins, Membership and Balloting  
 Yolanda Brady, Archives  
 Larisa Ford, Awards/Newsletter  
 Ray Brunson, Professional Standards  
 Rod Horner, Technical Procedures  
 Phyllis Barney, Board of Certification  
 Beverly Dixon, Newsletter  
 Paul Bowser, Time and Place  
 John Plumb, Scientific Journal

## STANDING COMMITTEES

Archives Yolanda Brady, Chair  
 Toni Amandi  
 Rod Getchell

Awards Larisa Ford, Chair  
 Sandra Ristrow, 1 yr  
 Bob Durborow, 3 yrs  
 Martin Chen, 3 yrs

Board of Certification  
 Phyllis Barney, Chair  
 Pete Taylor  
 Tamara Black, 2 yrs  
 Scott Foott, 3 yrs  
 Debbie Buchard, 3 yrs

Blue Book Advisory Paul Reno, Chair  
 Diane Elliot  
 Jack Frimeth  
 Jack Ganzhorn  
 Chris Horsch  
 Scott LaPatra  
 Steve Roberts

Finance Scott LaPatra, Chair  
 Larisa Ford  
 Jill Jenkins

Membership and Balloting  
 Jill Jenkins, Chair  
 Lisa Collins

Newsletter Larisa Ford, Co-editor  
 Beverly Dixon, Co-editor  
 Russ Lee

Nominating Dave Tillinghast, Chair  
 Jim Bertolini, 2 yrs  
 Pete Walker, 3 yrs

## Professional Standards

Ray Brunson, Chair  
 Phyllis Barney  
 Mike Kent  
 Martin Chen  
 Roger Herman

## Technical Procedures

Rod Horner, Chair  
 Kevin Amos  
 John Schachte  
 Tom Schwedler  
 Paul Bowser, Chair  
 Sue Marcquenski

## Time and Place

## AD HOC COMMITTEES

## Bylaws Review

Ted Meyers, Chair  
 Spike Bebeau  
 Vicki Blazer  
 John Cvitanich  
 Ron Hedrick  
 Randy MacMillan  
 John Plumb

## International Standards

Barry Hill, Co-Chair  
 Doug Anderson, Co-Chair  
 Bruce Nicholson  
 Pierre de Kinkelin  
 Victoria Rasheed  
 Hisatsuga Wakabayashi  
 Roaslie Schnick

## Long Range Planning

Ron Hedrick, Chair  
 John Plumb, Chair  
 John Grizzle

## Scientific Journal

## Criteria for Best Paper Award, JAAH

Bruce Barton, Chair  
 Phyllis Barney  
 Carl Schreck  
 Dave Groman  
 Doug Anderson

## Fish Health Professional-Veterinary Interactions

Ralph Elston, Co-Chair  
 Hugh Mitchell, Co-Chair  
 John Pitts  
 Doug Ramsey  
 Chris Wilson

## Continuing Education

Craig Olson, Chair  
 Richard Cooper  
 Lisa Collins  
 John Hawke

## FHS Promotion



## Meeting Announcement

## Western Fish Disease Workshop, June 6-9, 1995, Twin Falls, Idaho

The 1995 Western Fish Disease Workshop will be held at the Canyon Springs Inn in Twin Falls, Idaho. On June 6 a Continuing Education Session on histology will be conducted by John Morrison and Charlie Smith (contact Craig Olson [206-438-1181] with questions). Technical Sessions will be conducted on June 7 & 8 and a Tour of commercial aquaculture facilities is planned for June 9. Additionally, an informal Roundtable Session is scheduled for the evening of June 7 and a BBQ has been arranged for the evening of June 8.

A limited number of rooms has been set aside at the Canyon Springs Inn (208-734-5000). Two other motels next door, the Ameritel Inn (208-736-8000) and the Weston Plaza (208-733-0650), also have accommodations. Shuttle service is available at the airport. Make your reservations early. More information about the meeting, including agenda topics and registration, will appear in the next issue of this newsletter. Please contact Scott LaPatra or Elaine Thompson (208-534-8217) if you have any questions, suggestions for agenda topics, or need additional information.

In conjunction with the Western Fish Disease meeting the Western Regional Aquaculture Consortium (WRAC) IHN Work Group will hold a workshop for the private trout producers of the Hagerman Valley in Idaho on June 6 at the Rangen Research Center. The purpose of the Workshop is to inform the private sector of the progress and findings of the IHNV project and to transfer useful information to the industry. Please contact Gary Fornshell (208-734-9590) if you have any questions.

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**SYMPOSIA ABSTRACTS AVAILABLE:** At the recent ICOPA VIII meeting held at Izmir, Turkey (October 10-14) there were several papers given pertaining to fish parasites. This included a symposium chaired by P.T.K. Woo on "Immunity Against Fish Diseases" and a round table session chaired by R.A. Heckmann and R.A. Khan pertaining to fish parasites. A total of 37 papers were presented to the scientific audience and 24 posters were displayed on fish parasites during the 4 day meeting. The papers covered many aspects of fish parasites including: surveys, life histories, regional problems, immunity, distribution, treatment and nucleic acid (amplification) studies. I have copies of the abstracts for those interested in a set. Please write to me, Dr. Richard A. Heckmann, Dept. of Zoology, 574 WIDB, Brigham Young University, Provo UT 84602.

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**MODEL AQUATIC ANIMAL HEALTH REGULATION** document, in draft form has been made available to the FHS for comment. If you wish to review this draft document or have questions, please contact Ted Meyers, FHS President, Alaska Department of Fish and Game, CFMD Division Fish Pathology Labs, P.O. Box 25526, Juneau AK 99802-5526. phone 907-465-3577, fax 907-465-3510.

UPCOMING MEETINGS

Northeast Fish and Wildlife Conference. April 9-12, 1995. Sheraton Fontainebleau, Ocean City, MD. Contact: Maryland Department of Natural Resources, 580 Taylor Avenue, Annapolis, MD 21401.

East Coast Trout Management and Culture Workshop II. May 31-June 2, 1995. Penn State University, State College, PA. Contact: Marty Marcinko, 450 Robinson Lane, Pennsylvania Fish Commission, Bellefonte, PA 16823. (814)-359-5223.

Modulators of Immune Responses: Hiking up the Evolutionary Trail. July 8-15, 1995. Breckenridge, CO. Contact: Joanne Stolen, SOS Publications, 43 DeNormandie Avenue, Fair Haven, NJ 07704-3303. (908)-530-3199.

Fourth Asian Fisheries Forum. October 16-20, 1995. Beijing, China. Contact: the China Society of Fisheries, 31 Min Feng Lane, Xidan, Beijing, CHINA. (861) 602-0794.

The Fish Health Section Newsletter is a quarterly publication of the Fish Health Section of the American Fisheries Society. Submissions of any length on a topic of interest to fish health specialists are encouraged with the understanding that material is not peer reviewed. Submissions (files on diskettes in IBM, WP5.1 format preferred) should be addressed to the editors listed below:

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