

The History of the Fish Health Section's Certification Programs for Fish Health Professionals

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At the last Fish Health Section (FHS) Meeting in San Francisco, the future of the Section's professional certification programs was discussed. There is obviously still great enthusiasm for certification, but comments from Section members made it clear that it was time for a thorough review and revision of the program. Thus, a newly appointed ad-hoc committee chaired by Chris Wilson is beginning that work. As we move forward with this effort, it may be quite helpful to recall the history surrounding the formation of the program. Understanding the program's background could lead toward an understanding of present challenges and what should be done to insure the future relevance of this program. The purpose of this review is to give the history of the Fish Pathologist and Fish Health Inspector Certification programs.

What's in a name?

The FHS was not the first to declare the need for the title or position of "Fish Pathologist." An early mention of fish pathology was found in an 1899 report of the U. S. Commission of Fish and Fisheries (Smith 1899). It was stated "*It is strongly urged that the Commission be provided with a permanent expert in fish pathology.*" In 1898, the Commission requested Congress to authorize a full-time pathologist, but they were not successful; however Millard C. Marsh was assigned the duties part-time in 1899 (Bowen 1970). In 1915, Congress finally approved the appointment of a full-time fish pathologist and the Commission named none other than Herbert S. Davis as that pathologist (Bowen 1970). He actually used the title "Fish-Pathologist" following his name in his hallmark columnaris-disease publication "A New Bacterial Disease of Fresh-water Fishes" published in 1923 (Davis 1923). Emmeline Moore, the Chief Aquatic Biologist for the New York Conservation Commission from 1926 to 1939, was considered by her contemporaries to be "The Mother of American Fish Pathology" (Mitchell 2001). Several states, including California, Michigan, Missouri, New York, Oregon, and Washington, called their fish health workers "Fish Pathologists" long before the formation of the FHS.

The Fish Health Section members dealing with the certification program put a great deal of effort into the selection of the titles for the certified professionals. In 1973, the Professional Standards Committee had a goal of obtaining a unified professional title that accurately identified professional fish disease specialists [FHS Newsletter 1(3):1; 1(4):2]. From 1973 through 1981, the Professional Standards Committee wrestled over options for what would eventually become the "Fish Pathologist". Eleven proposed names were found including "Fish Pathologist", "Fish Pathobiologist", "Fish Disease Pathologist", "Fish Microbiologists", "Fish Health Biologist", "Fish Health Practitioner", "Fish Hatchery Biologist", "Fish Health Specialist", "Fish Disease Specialist", "Fish Disease Biologist", and "Fish Disease Diagnostician" (Don Amend letter, 23 May 1972; Gerald Bouck letter, 11 May 1973; certification draft from about 1975; and Mark Dulin letter, 3 December 1979). In late 1973, the committee decided that the name "Fish Pathobiologist" most accurately identified their professions [FHS Newsletter 1(4):2]. They said the term "*had a broader and more comprehensive definition than pathology and implied structural and functional differences.*" They urged all members to unite and accept this term.

By early 1975, the title "Fish Health Inspector" was accepted for those who would be doing inspection and certification work [FHS Newsletter 3(2):6-8]. There did not seem to be too much debate about this name although some later thought the title "Fish Health Specialist/Inspector" would have been less "funkie" and better accepted (McDaniel Letter, 11 August 1980).

In 1977, the committee again looked at different terminologies for the fish health specialists that would become

the "Fish Pathologist" and came up with a title to "*best encompass and describe persons associated with fish health.*" This title "Fish Health Biologist" was added to "Fish Pathobiologist" for consideration [FHS Newsletter 5(3):3]. There is no information or evidence as to which term was preferred, however in 1979, the title "Fish Pathologist" was accepted [FHS Newsletter 7(3):1-2]. In the rationale for the "Fish Pathologist" certification title the following explanation was given: "*The designation Fish Pathologist is given in the broad context. Pathology has been defined by Steinhaus and Martignoni (1970) as the science that deals with all aspects of disease including study of the cause, nature, processes, and effects of disease. Any branch of science, any technique or method, or body of facts that contributes to our knowledge of the nature and constitution of disease belongs in the broad realm of pathology ... If biology is defined as that branch of science that deals with the origin, structure, functions, and life history of organisms, then pathology might be defined as the biology of the abnormal. For each branch of biology there is a corresponding branch of pathology. In this sense, fish pathology is that branch of fish biology which embraces the general principles of pathology as they may be applied to wild and cultured fish. From this definition the designation Fish Pathologist can be properly assigned to qualified individuals dealing with fish disease. This term also has the advantage of being more clearly understood, by laymen and professionals alike, than any other professional label yet conceived.*"

Things were going well and the name problem seemed to be solved, but not quite. Later that year (1979), debate over the title of the certification would once again stall the program. Mark Dulin, a DVM, objected to the use of the title "Fish Pathologist" (letter dated 3 December 1979). Dulin felt the broader definition of "pathologist" given by Steinhaus and Martignoni (1970) applied only to invertebrates and that fish would come under a definition of pathology that was used in veterinary medicine. That definition required at least training in histology and the ability to describe histopathological alterations. He suggested the use of the terms "Fish Health Specialist," "Fish Health Practitioner" or "Fish Disease Diagnostician." Stan Snieszko, who usually said very little about controversial issues, weighed in on this one and agreed with Dulin (18 December 1979). This name reconsideration stalled the certification program for more than a year. A hand written note from Doug Mitchum (16 July 1980) stated that "*some people want to hold things up on the Fish Pathologist certification program. I think they want to change the title from Fish Pathologist to something else. Here we go again!!*" On 23 July 1980, a letter was sent to the Professional Standards Committee and the question was asked "*Should the name be changed from Fish Pathologist to another term (Fish Health Specialist)?*" No records of immediate responses were found.

Letters from Doug Mitchum (11 February 1981) and Jim Warren (20 February 1981) reflected a revitalized effort to make the program work and both strongly recommended the use of the title "Fish Pathologist". Both Mitchum and Warren referred to an editorial written more than a year earlier by Ken Wolf who strongly endorsed the use of the familiar title "Fish Pathologist" (Wolf 1979). This editorial along with a directive from FHS President Dennis Anderson to the Professional Standards Committee seems to have ignited the fire that finally resulted in the establishment of the Fish Pathologist Certification Program around mid-1981.

Certification programs: foundational to the Fish Health Section

The certification programs were foundational to the establishment of the Fish Health Section. In 1970, a full year before the first efforts were made to form the Fish Health Section, the Fish Disease Committee of the AFS (established in 1964 as a temporary committee) made a recommendation regarding certification of fish pathologists that was not approved (Jim Warren letter - 23 June 1971). Twelve of fifteen members of the Fish Disease Committee voted for the establishment of the Fish Health Section in 1971 (two member did not respond and one voted no), therefore the founding group as a whole desired certification programs as part of the FHS. Jim Warren, the main individual responsible for the establishment of the FHS, made it clear in his first letter (30 April 1971) to the Executive Secretary of the AFS that the purpose of establishing, what would eventually become, the FHS was to legitimize practicing fish pathologists. The following four paragraphs are the entire contents of that letter and it is clear that at the heart and soul

of the Section's formation was the issue of registering or certifying fish pathologists. Other fish health issues are not even considered in his letter.

"At several fish disease conferences in the past few years, the subject of organizing a national association of fish pathologists has been informally discussed a number of times. No one has ever thrown the subject formally on the table for discussion at these meetings but many feel there is a growing need for some sort of organization to aid in the standardization of procedures and in the classification or certification of fish pathologists.

Most of us in the fish disease control field are members of the AFS, but a vocal minority could be considered mavericks who feel the AFS has little to offer fish pathologists. The fisheries field is too small to be able to afford splinter-groups and for this reason I am inquiring into the possibility of forming an association of fish pathologists within the AFS.

At the present time there are a number of active chapters of the AFS which are formed largely on a geographic basis. I propose for your consideration, the formation of an AFS national chapter of fish pathologists. This mini-organization is likely too small to be able to stand alone but would bring their members into the AFS fold. As with the various existing chapters, the National Chapter of Fish Pathologists would have their own officers and would also form a board for the purpose of reviewing the credentials and ethics of practicing fish pathologists. The board could issue, for example, Class A, B, or C registrations based upon the training and experience of the pathologist. The qualification criteria developed by the board would be in keeping with current field requirements and would allow conservation agencies to better know the qualification of the fish pathologists across the nation upon whom the agencies must rely for fish disease control information.

I am sure there must be many ramifications of this proposal of which I am not aware. I would greatly appreciate any consideration that you and any other appropriate AFS leaders can give this matter. I will be attending both the Midwest Fish Disease Conference in Kansas City, Missouri on June 8th and 9th and the Western Fish Diseases conference in Corvallis, Oregon on July 7th and 8th. I would like, if possible, to convey your views to these two groups."

The response to Jim's letter by the executive secretary of the AFS, Robert F. Hutton (23 June 1971), indicated that chapters were required by the bylaws to have geographic limits (no national chapters) and that the AFS certification program had moved away from specialized categories (they had not approved last year's Fish Disease Committee recommendation regarding certification of fish pathologists). Hutton did offer hope that the bylaws could be changed (which of course they were).

FHS membership does not equal certification

An early discussion on the subject of certifying fish health professionals was found in letters sent (September through December 1971) among early FHS organizers (Robert Summerfelt, Don Amend, Pete Bullock, and Jim Warren). The issue of limiting FHS membership to certified fish health professionals such as Fish Pathologists was discussed. Three possible viewpoints were given: 1) *"membership restricted to certified fish health specialists"* 2) *"membership open but officers (also voting privileges) are limited to certified fish health specialists"* and 3) *"non-exclusive, wide open to all true believers"* -- non-certified people could be members, vote and hold office. The first two viewpoints were determined to be too exclusive and FHS membership, voting, and office holding were not tied to being certified.

Fred Meyer's response and the rationale for the certification program

Jim Warren sent out a letter (5 August 1971) to 15 fish health professionals that summarized the plan of action to get the chapter (Section) going and he received only one negative response. That response was from Fred Meyer (17 August 1971). Fred had some general problems that dealt with organizational issues but he had one very interesting problem that has not often been voiced and to my knowledge has never really been answered. He stated, *"A very real weakness in our request is that the fish pathologists are requesting certification, not the people who would*

benefit from or use the certification. Right now, it appears that we are asking to be certified for our own professional enhancement. Ideally, fishery administrators or the industry should request it."

The rationale given for the "Fish Health Inspector" [FHS Newsletter 6(4):11] and for the "Fish Pathologist" [FHS Newsletter 7(3):1-2] certification program did not include any outside request or need for the program by potential user groups. The rationale given for certifying the fish health specialists was; *"Need for a registry, certification procedure whereby ranks can be policed and upgraded by peer review. Attain a marked degree of professionalism among section members. Need to recognize those who can competently diagnose health problems and administer proper corrective measures."* The rationale given for the Fish Pathologist Certification Program included two paragraphs. The first paragraph was on the selection of the title, which is given later, and the second stated; *"The Fish Health Section has recognized the need for a peer review system to identify professionals possessing the competence, training and ethics required to effectively serve public and private fish producers through the prompt and accurate diagnosis of fish health problems, through the determination of proper corrective measures, and through the responsible prescription and supervision of therapeutic procedures. The Fish Pathologist will be qualified in the diagnostic methodology of both infectious and non-infectious fish diseases capable of suggesting and/or recommending a rational solution for problems encountered. Individuals meeting these requirements shall be eligible for certification by the Fish Health Section as Fish Pathologists."* Two user groups were mentioned here, but there is no indication or evidence that any public or private producers requested this service or that they felt they would benefit from this program.

In 1981, the need for certification programs was also tied to the issue of liability surrounding fish health cases. In the FHS Newsletter 9(3)5, it stated *"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."*

As we approach issues surrounding the future of the fish pathologist certification program, we must deal with the question, "Who would benefit from and really want to use the certification work?" Whether or not we started with an understanding of who would benefit from the certification program, we need to be ready to consider the present beneficiaries and repeatedly consider it every few years.

The vet threat

It is important to note that prior to the 1970's few veterinarians were involved in fish health; a handful of vets worked with fish disease problems since the mid-1920s (Mitchell 2001). It is generally accepted that DVMs were mostly trained to work with domestic and companion animals. Prior to the 1970s, fish were apparently considered wildlife and fish and wildlife agencies handled most issues involving fish including fish health problems. As aquaculture grew and distinctions between fish and other domestic animals became less distinct, some DVMs moved into the field and vet schools began to offer limited fish training. It was largely the fear of this developing interest of DVMs in fish health that triggered the efforts to produce certification programs by non-DVM fish health specialists (discussion follows).

Right or wrong, fish health workers felt threatened, insulted, or mistreated by veterinarians prior to any known conflict between the FHS members and veterinarians. In a letter dated 18 November 1974, Fred Meyers states to Richard Stroud, D. V. M., *"What you cannot appreciate is the way in which DVM's in the past have treated "fish pathologists." All too frequently, the attitude was – we are DVM's – that makes us instant experts!!! Yet when assistance was sought, Veterinary Schools exhibited practically no interest in working on fish problems. Now that commercial fish production is reaching significant proportions (\$\$ and pounds), veterinary colleges are demonstrating a commendable interest. The attitude of "move over and let us pros take over" still persists among some of the DVM's involved. Is it any wonder then, that some of us react negatively to what appeared to be a legalistic way to develop a case against the fishery people"* (the developing of this case, a conflict that developed in late 1974, is discussed later).

Probably the primary reason for the establishment of certification programs was concern that if the fish health specialist did not have a recognized certification, those in the veterinary profession would take over and the fish health

worker would be without a job. I received my "Fish Pathologist" certification in February 1983 and this concern was voiced among the FHS membership at the time and was, at least, part of my motivation to get certified. This same concern was expressed early in the formation of the Section. On February 17, 1972, Don Amend sent a report of the Steering committee to Jim Warren and in an attached hand written note he gave the committee several "what ifs" to think about. One of these stated, *"What if: Veterinarians wanted to take over all aspects of disease regulation and setting of standards. What would stop them from taking over, and you and I would be out of jobs because we weren't veterinarians?"* On September 11, 1972, Don Amend gave a presentation at the AFS Annual Meeting in Hot Springs, AR entitled "Professional Requirements for Fish Pathobiologists" (an alternate name for "Fish Pathologists"). He discussed training and ability to help with fish disease problems. Then he stated *"Questions have arisen as to the legality of non-veterinarians prescribing drugs and practicing medicine on fish, and that problems may be encountered due to lack of public recognition of a person lacking the title of doctor. ... At present veterinarians cannot claim expertise on fish diseases. ... the layman does not go to the veterinarian for help – he goes to a fish disease laboratory. ... to protect our image and to conclusively establish that we are the experts, we need the certification of fish pathobiologists. I urge the AFS – Fish Health Section to actively pursue the establishment of requirements for fish pathobiologist certification in coordination with the AFS Certification Committee."*

In late 1974, a questionnaire was sent to veterinarians (no non-vets were contacted) in several state by Richard Stroud, Oregon State University, a DVM who worked with fish health issues. This questionnaire brought the controversy between fish health specialist (FHS members) and veterinarians to a boil. Stroud asked veterinarians to reply to questions as to whether fish health was a function of veterinary practice; if they interpreted their state code to include fish; if they considered fish health activities to be a violation of veterinary practice acts; etc. A flurry of activity was generated by the questionnaire. Several FHS members responded to the questionnaire, to a presentation made Stroud and George Klontz at the 25th Annual Northwest Fish Culture Conference, Seattle, WA Dec. 4-6, 1974 and to Stroud's letter of response to Fred Meyer. Fred Meyer (November 1974) stated that *"The handling of the matter appears to be an attempt to disenfranchise fish health specialists via a legal route and it was this feeling that caused my response. ... I welcome veterinarians to join in fish disease control efforts, but not at the expense of the fish health researchers and specialists. ... Some form of certification must be developed -- and soon."* John Fryer (31 October 1974) wrote, *"I found this letter (and accompanying survey) disturbing and terribly self serving. ... I am simply appalled."* Jim Warren (12 November 1974) wrote, *"The FHS must keep alert to this issue and press even harder to develop our own professional standards. If we dally we will be gobbled up."* Don Amend (20 January 1975) wrote, *"Enclosed is a copy of Dr. Stroud's talk at the NWFCC regarding fish medicine and the Veterinary Practice Acts. It is obvious that problems may arise and our only hope is to establish strong professional standards with certification of competent individuals. It is only by this route that we will be able to gain the respect and acknowledgement of other medical fields. Otherwise, prepare yourself to relinquish your responsibilities to the veterinarians."*

Don Amend in his 1976 Presidential message to the FHS [FHS Newsletter 4-(1):1] stated: *"Those who make up the FHS come from a variety of educational backgrounds (re-tread fishery biologists, microbiologists and veterinarians). Unfortunately, a certain pecking order within the Section has led to a battle between the have and the have-nots. Problems and weaknesses within the Section have surfaced, and recently the possible threat of eradicating the fish pathobiologist emerged because of the conflict with State Veterinary Practices Acts. This to me is currently the FHS's greatest challenge. In order for our profession to survive, we urgently need to set professional standards."* In the FHS Newsletter [5(4)], Editor Joseph Sullivan called attention to an article by Dr. Mark P. Dulin entitled "Aquatic animal medicine: A new specialty for veterinarians." In this article veterinarians were encouraged to enter the fish health field and were given some idea of what to expect. Sullivan then commented, *"I wonder how many of us without veterinary degrees would feel threatened if DVM's in great numbers began competing with us? We may tell ourselves that our knowledge of aquaculture as well as fish diseases give us an advantage, but do we fear the prestige the DVM behind a name brings with it? Would someone care to take this ball and run with it?"* Three veterinarians (Lee Harrell, Mark Dulin, and Bill Klontz) in fish health did comment in the next two Newsletters.

In a "Note to Files" written on 8 December 1977, it states that "*Tom Wellborn reported rumblings in Mississippi re: adding fish to the law governing vet practices thereby making it impossible for him to do his current work with the catfish farmers of Mississippi.*" John Plumb, the 6th FHS president, wrote in a 2 February 1978 letter "*A second problem which the FHS must come to grips with is the conflict between veterinarians and non-veterinarians on who may do fish disease diagnosis and treatments. I do not advocate exclusion of the veterinarians as long as they are qualified, but I believe that we need to take a firm stand on our behalf and develop our own in-house program of screening qualified biologists ... The other alternative is to do nothing, but if we follow this approach, the non-veterinarian fish health biologist may find himself legally out of a job.*"

One goal -- two programs

The goal to validate, certify or register fish health workers and to have more than one type or program of validation, certification or registration was considered from the very inception of the FHS. As previously noted, Jim Warren wrote in his 30 April 1971 letter "*The board could issue, for example, Class A, B, or C registrations based upon the training and experience of the pathologist.*" Not all FHS members wanted more than certification one program. Don Amend, in a letter (20 February 1973) to Jim Warren, stated that ... "*as far as I know you are the only one who sees a need for two registries (two certification programs). From all the input into this committee last year, no one suggested that two registries were needed or even desirable. ... As far as I can see, there is no need for this subdivision at this time with such a small membership. I think the only title needed and which serves any useful purpose is that of fish pathologist.*" Not much more is mentioned of this debate and during the first decade, the FHS efforts to validate, certify, or register fish health workers went in two directions. Two groups, the Fish Health Inspectors and Fish Pathologists, began to be certified under two separate programs.

Initially, it was thought that people interested in being certified should first be certified by the AFS as "Fisheries Scientists", then the FHS Professional Standards Committee would determine if the applicant qualifies for some fish health certification [FHS Newsletter 1(4):2]. In 1972, the objective "*Developing standards for the variety of working specialties related to the fish health field*" was stated (1972 FHS Newsletter p.1). The Professional Standards Committee was given the responsibility for "*developing standards for professional competence in the specialties demanded by effective fish health protection programs*" (1972 FHS Newsletter p.5). In 1974, the Professional Standards committee made the decision to work solely on developing "*a list of people recognized by the FHS to be capable and competent in providing fish disease inspection/certification services*" [FHS Newsletter 2(3):1]. In mid 1975, certification standards for the "Fish Health Inspector" were proposed [FHS Newsletter 3(3):6-8]. By the summer of 1976, an accepted procedure for the certification of "Fish Health Inspector" was available [FHS Newsletter 4(3):7]. The first three "Fish Health Inspectors", Jim Warren, Charles Suppes, and Doug Mitchum, were certified by early 1978.

Once the Fish Health Inspector program was operational, the "Fish Pathologist" certification effort gained intensity. Using the fish health inspectors criteria as a guide, in 1977, the Professional Standards Committee stated that it would be "*developing criteria and procedure for registering general practitioners in the field of fish health*" [FHS Newsletter 5(1):]. In 1979, procedures for the "Fish Pathologist" certification program were approved [FHS Newsletter 7(3):1], but in 1980 certification was put on hold until 1 February 1981 largely due to certification title problems mentioned above) [FHS Newsletter 8(4):1]. In 1981, fish pathologist certification was again approved but then put on hold because of the need to clearly distinguish between the two certification programs (inspector vs. pathologist) [FHS Newsletter 9(3):1]. The first "Fish Pathologist", John Grizzle, was finally certified on December 17, 1982. He was given certificate #2 as Doc Snieszko was made an honorary recipient and received #1. Certificates #3 through #15 were given out from 03 January 1983 to 15 February 1983.

Other issues

There were a number of other issues (un-referenced information from several letters and FHS Newsletters in the

archive files), in addition to the vet threat, the name game and the decision to develop two programs, that took the time and attention of those developing the certification programs. Making a clear distinction between the roles served by the Fish Pathologist and the Fish Health Inspector, deciding the breadth of experience needed by the Fish Pathologist and drafting a scoring procedure to be used by the Board of Certification to evaluate candidates for certification were extremely time consuming issues. The Professional Standards Committee also had to determine if it should require testing of applicants, allow for a grandfather clause to exclude from testing those applying in the first few years, charge applicants a fee, and require the re-assessment of certified individuals on a regular basis. Determining the work background and educational requirements for those certificated in each program also required much time and effort.

A premature start for the Fish Pathology Certification Program certainly caused some headaches. On 2 May 1980, fourteen completed applications for certification as Fish Pathologist were under review and more than ten others were in process (Doug Mitchum letter 2 July 1980). Final issues of the program had not been settled and apparently these applications were discarded or returned. Of the fourteen applicants, only seven later became certified and only four were in the first group of fifteen certified [FHS Newsletter 13(2)1].

Summary

It is apparent that the certification programs of the FHS were developed with much consideration and effort. Some issues that plagued the early development of these programs may still be with us today. Is there a need for the two certification programs we have? Do we need more? Is the name game really over? If the FHS wishes to expand its reach and include those that work with aquatic animals other than fish, then are the current certification programs and certification titles sufficient? It is hoped that the conflicts between fish health specialists and veterinarians are of historical interest only. Regardless of the reasons for the establishment of the certification programs they are important to DVMs because they are currently one of the best ways for a DVM to demonstrate expertise in fish health. Veterinarians are found in all levels of the fish health field and are encouraged to continue their role and to become even more active. There are many DVMs in the FHS and several with certifications. They are also represented in the leadership. All programs including certification programs are currently being reviewed and updated to make sure that they meet current needs. The current leaning of the committee is to revise "inspector" to make it somebody that is qualified to oversee the entire regulatory inspection process from collection to report. The "inspector" may not need to know all of the methodological details, but they need to understand regulations, appropriate tests, sampling and the like.

As we re-open discussions on our professional certification programs we should be ready to consider them in light of user group needs, with regard for the standards of practice set forth in the current state veterinary practice acts, and with an expanded view of needs in aquatic animal health. It will take a major effort, as it has in the past, to strengthen and make necessary adjustments in the programs, but these efforts are necessary if we are to continue with certification programs that are relevant to those working in the aquatic animal health community.

References

- Bowen, J. T. 1970. A history of fish culture as related to the development of fishery programs. *In* A Century of Fisheries in North America, Ed. N. G. Benson. Special Publication No. 7. American Fisheries Society. Washington, D. C. pp. 71-93 (87-88).
- Davis, H. S. 1922. A new bacterial disease of fresh-water fishes. *Bull. U. S. Bureau Fish. for 1921-1922.* 38:261-280.
- Letters, notes, drafts and presentation referred to by dates are in Archive Committee files and some can be made available upon request.
- Mitchell, A. J. 2001. *Finfish Health in the United States (1609-1969): Historical perspective, pioneering researchers*

and fish health workers, and annotated bibliography. *Aquaculture*. 196:347-438.

Fish Health Section Newsletters are in Archive Committee files and can be copied and made available upon request. It is our hope to soon have them all available on line.

Smith, H. M. 1899. Report on inquiry respecting food-fishes and the fishing-grounds. U. S. Comm. Fish and Fisheries. Report of the Commissioner for 1898, Part XXIV. Washington, Government Printing Office. pp. CXXIII-CXLVI (CXLII-CXLV).

Wolf, K. 1979. Editorial: On the name Fish Pathologist. *Fish Health News*. USDI/USFWS 8(4):i-ii.