

# Fish Health Section Newsletter

# AFS

*Branda ✓*

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Volume 7

April - June 1979

Number 2

## FHS ELECTIONS FOR 1980 OFFICERS

The following candidates are presented by the Nominating Committee, chaired by Dr. George Klontz, for 1980 offices in the Fish Health Section. Officers shall be elected by simple majority with at least one-third of the active membership of the Section participating. Please find the ballot on the last page, vote, and return your ballot today. Votes received after September 21, 1979, will not be counted.

*President is Doug Mitchem*

Nominees, followed by brief resumes, are:

- |   |   |
|---|---|
| President Elect:                                  | John Schachte, Jr.<br>Dennis Anderson<br>Richard Heckmann |
| Secretary-Treasurer:                              | Robert Busch<br>Joseph Sullivan                           |
| Nominating Committee Chairman:                    | Trevor Evelyn<br>Guy Tebbit                               |
| Members - Professional Board<br>of Certification: | Don Amend<br>Tony Novotny<br>Bill Klontz<br>Bill Rogers   |

### John H. Schachte, Jr.

Dr. Schachte is Associate Pathologist for the New York Department of Environmental Conservation. John is a member of AFS, FHS, New York Chapter/AFS, and the Wildlife Disease Association. He has served on the Technical Procedures Committee/FHS and as program co-chairman for the FHS/Midwest Fish Disease Workshop joint meeting in 1978. He is New York's representative on the Fish Disease Control Committee of the Great Lakes Fishery Commission.

*1979  
Vol 7 (2)  
Nominating book p. 9  
Nuclear stain p. 12  
Conc. of helm. p. 12*



John's interests include fish immunology, breeding of trout for disease resistance and diagnosis and control of diseases of cultured fish. His current activities involve the development and maintenance of a fish health program for New York State hatcheries and the direction of the Fish Disease Control Unit laboratory and personnel located at Rome, New York.

#### Dennis Anderson

Andy is Director of the Fish Disease Control Center, U.S. Fish and Wildlife Service, Fort Morgan, Colorado. He also serves as area hatchery biologist for Region 6 and as chairman of the Service's Technical Advisory Group for Fish Health. Andy has served as editor of the FHS newsletter in 1973-74, has been approved as a FHS/AFS Fish Health Inspector, and is currently chairman of the Membership and Balloting Committee/FHS. His current activities include diagnostics and coordination of fish disease control in Region 6/FWS and the Colorado River Basin where he serves as a member of the Fish Disease subcommittee of the Colorado River Wildlife Council.

#### Richard Heckmann

Dr. Heckmann is Professor of Parasitology at Brigham Young University in Provo, Utah. He currently serves as Chairman of the Professional Standards Committee/FHS and has been instrumental in developing standards for certification of Fish Health Inspectors and Fish Pathologists. Dick has authored numerous publications, actively participates in several professional societies, and is well known for his research on parasitic infestations of fish.

#### Robert Busch

Dr. Busch is Director of Research at the Rangen Research Hatchery, Hagerman, Idaho. He is active in disease diagnostic and consultative services for the trout industry and in contract research particularly involving vaccines and chemotherapeutics. He was formerly Assistant Professor of Fish Pathology at Humboldt State University, Arcata, California. Bob has served FHS on the Finance Committee, is a past editor of the Newsletter and currently serves as Secretary-Treasurer.

#### Joseph Sullivan

Dr. Sullivan is a postdoctoral student at the University of Idaho, Moscow, Idaho. Joe was formerly a fish disease diagnostician with the Southeastern Cooperative Fish Disease Project at Auburn University and has taught fish health and aquaculture courses at Humboldt State University. He is currently involved with culturing steelhead in closed systems and the use of ultraviolet radiation to kill fish pathogens. Joe has been editor of the Newsletter/FHS since the fall of 1977.



Trevor Evelyn

Dr. Evelyn is a research scientist in fish health at the Fisheries and Oceans Canada, Resource Services Branch, Pacific Biological Station in Nanaimo, B.C. He is currently engaged in developing fish vaccines, has published on various fish diseases, and was actively involved in producing Canada's new Fish Health Protection Regulations and the manual of disease detection procedures associated with the Regulations. Trevor has served on such AFS/FHS Committees as Technical Procedures, Professional Standards, Newsletter, and Nominations and has contributed sections to such special FHS projects as the "Blue Book" and "Glossary of Fish Health Terms."

Guy Tebbit

Dr. Tebbit is Vice President and Laboratory Director of Wildlife Vaccines, Inc., Denver, Colorado. His responsibilities include research, development, licensing, production and quality control of biologics for fish as well as administration of the feed technical and public diagnostic services of the company. Guy did his Ph.D. thesis on salmonid fish viruses in Oregon and was involved in several viral, bacterial and serological surveys of Pacific salmon. He has been active in AFS/FHS serving on the newsletter committee and chairing the Technical Procedures Committee as well as serving as Program co-chairman of the 1978 meeting. Guy also served on the viral disease panel in 1974 in preparation of the "Blue Book."

Don Amend

Dr. Amend is Director of Research for Tavolek, Inc., Redmond, Washington. He is a member of AFS/FHS, American Society for Microbiology, AAAS, World Mariculture Society and Sigma Xi. Don is a past president of FHS and has served on many committee and technical assignments in FHS over the years. Internationally recognized as an expert on infectious diseases of fish, especially viral diseases and methods of disease control, he has interests in pathogenesis and prevention of disease by chemotherapeutics, disinfectants, vaccines, and management techniques.

Tony Novotny

Tony is a fisheries research biologist with National Marine Fisheries Service, Manchester, Washington. He is a member of AFS/FHS/FCS and the Northwest International Chapter/AFS and has served as a 2nd Vice President for the FCS. He is an AFS certified fisheries scientist and has been actively conducting research in the culture and diseases of salmonids since 1968.

Bill Klontz

Dr. Klontz is Professor and Department Head, Fisheries Resources, College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow, Idaho. He maintains membership in the AFS/FHS/FCS, American Institute of Fishery Research Biologists, and Pacific Fishery Biologists and has served on several committees in the FHS. Bill teaches fish culture, fish diseases and fish physiology and conducts research on aquaculture methodology and infectious and noninfectious diseases of freshwater and marine fish.

Wilmer Rogers

130  
Dr. Rogers is Professor of Fisheries and Allied Aquacultures, Auburn University, Auburn, Alabama. His memberships include AFS/FHS/FCS, Fishery Administrator Section and Educators Section, American Society of Parasitologists, Washington Helminthological Society, Wildlife Disease Association, Sigma Xi, and Catfish Farmers of America. Bill is listed in Who's Who in the South and Southwest, Who's Who in America, American Men and Women of Science, and the National Register of Prominent American and International Notables. He has served on numerous committees in AFS and FHS and other groups and has provided technical fisheries assistance in Bangladesh, Thailand, Philippines, Brazil, and Honduras. Bill teaches and conducts research in fish parasitology and pond management and directs several post-graduate students.

## POSITION ANNOUNCEMENT

Fish Pathologist. Applications are now being accepted for an experienced Fish Pathologist to operate a field diagnostic laboratory and conduct various field operations related to fish health. Applicants must have a good background and experience in diagnostic functions such as bacteriology, virology, cell culture, immunology, serology and parasitology. Interested individuals should send a resume or curriculum vitae to:

Dr. Guy L. Tebbit  
Laboratory Director  
Wildlife Vaccines, Inc.  
11475 West 48th Avenue  
Wheat Ridge, Colorado 80033

7(2), 1979  
Bill Klontz

Dr. Klontz is Professor and Department Head, Fisheries Resources, College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow, Idaho. He maintains membership in the AFS/FHS/FCS, American Institute of Fishery Research Biologists, and Pacific Fishery Biologists and has served on several committees in the FHS. Bill teaches fish culture, fish diseases and fish physiology and conducts research on aquaculture methodology and infectious and noninfectious diseases of freshwater and marine fish.



QUARTERLY HIGHLIGHTS OF FWS REGISTRATION ACTIVITIES INVOLVING  
FISHERY-USE CHEMICALS AND DRUGS\* (JANUARY - MARCH 1979)

- A questionnaire on the priority ranking of fishery-use chemicals and drugs that was recently sent to all FWS fishery facilities has been tabulated and summarized. This survey, which is conducted every 2 years, indicates few changes with the times. Rotenone has retained top priority among the piscicides, followed by antimycin. Formalin again heads the list of therapeutants. The quaternary ammonium compounds, as a group, placed second with Hyamine 3500 being most frequently mentioned. Finding a candidate compound as a replacement for malachite green also received considerable emphasis, particularly from the Southeast (Region 4). Other compounds with high rankings included Terramycin and sulfamerazine. Erythromycin and Diquat were the chief "write-in" candidates. The leading disinfectants included HTH, Wescodine, and Betadine. Copper sulfate was first in the herbicides and algacides category followed by Diquat, Aquazine, and several other compounds in lesser order. MS-222 topped the list of anesthetics, with the MS-222/quinaldine sulfate combination being a strong second. You will note that a number of these compounds are not registered for the intended use. Instructions with the questionnaire, however, did not stress the registration status, but merely suggested that rankings be based on future anticipated needs to meet program objectives. The primary objective of the survey was to obtain a current appraisal of the Service's priority fishery chemical and drug needs, and to note where and how we might better utilize our registration efforts and funds to meet those needs.
- A draft of the proposed FWS policy concerning cooperative agreements with chemical and drug companies has been prepared and is being reviewed. When approved, the policy statement will be published in the Federal Register for the purpose of fairly and equitably notifying all drug manufacturers of our agency's interest and intentions and to solicit comment. This document will authorize agreements with industry to share the workload and costs in the registration of priority compounds for fishery and wildlife uses. The conditions for these agreements will be spelled out under a "guidelines" attachment. The consensus from both research and operations personnel has indicated that the policy will be helpful in expediting the registration of these needed products.

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

--An early March meeting was held with the Food and Drug Administration officials to "clear the air" on (a) proposed definitions of "food fish" and "non-food fish" relating to life stages in using drug treatments, and (b) guidelines for the registration of minor-use drugs. After nearly 2 years of discussions, FDA has rejected the Service's definitions and states that the matter is no longer negotiable.

Progress, however, is developing on the minor-use guidelines. Although the FWS recommendations were not accepted in toto, it appears that many of the suggested procedures will be used. FDA will shortly publish their new policy on minor-use registrations, followed by guidelines that should reflect a reduction in data requirements. Word on the revised policy is encouraging, with anticipation that clearance of minor-use compounds can be significantly expedited.

--In another meeting with FDA officials concerning the pending clearance of formalin for use as a fungicide and parasiticide, we were told to submit additional data for documentation to fully satisfy the label requirements and environmental impact considerations. Preparation of the supplemental data packet and the final review process are expected to require another 3-4 months to complete. When approved, the data and labeling will be made available to interested companies for registration and marketing purposes.

Harry Van Meter, Registration Liaison Officer  
Division of Fishery Ecology Research

#### QUARTERLY HIGHLIGHTS OF FWS REGISTRATION ACTIVITIES INVOLVING FISHERY-USE CHEMICALS AND DRUGS\* (APRIL - JUNE 1979)

--The newly-revised FWS listing of priority compounds, including the general status and estimated cost of studies required to complete registration, is indicated below. The rankings were derived from an analysis of the responses to a recent questionnaire on chemical and drug needs at Service facilities. Input by the National Fishery Research Laboratory, La Crosse, WI, with regard to the costs and realities of registration was also given consideration.

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<u>Rank</u>	<u>Compound--Status</u>	<u>Est. Cost to Complete</u>
1	<u>Formalin</u> -- all requirements completed; awaiting final action by FDA.	None
2	<u>Fungicide</u> to replace malachite green -- screening of candidates is underway.	\$2,000,000+
3	<u>Quaternary Ammonium Compound</u> -- work is underway on Hyamine 1622 and Hyamine 3500.	750,000+ (each)
4	<u>Rotenone</u> -- work is underway to remove Rebuttable Presumption Against Registration (RPAR) threat; mammalian safety work being contracted; re-registration effort continuing.	1,000,000+
5	<u>Broad Spectrum Antibacterial</u> to provide backup to Terramycin and sulfamerazine -- Nitrofurans are out; RO-5 and erythromycin being studied as possible candidates.	750,000+
6	<u>Ich Control Agent</u> to replace malachite green: formalin mixture for Ich and other protozoan parasites -- screening of candidates is underway at the Fish Farming Experimental Station, Stuttgart, AR.	1,000,000+
7	<u>Fish Toxicant</u> to provide backup to rotenone -- candidates include antimycin, Salicylanilide 1, GD-174, and synthetic pyrethrins.	2,000,000+
8	<u>Anesthetic</u> -- candidates include quinaldine sulfate, Etomidate, and the quinaldine sulfate: MS-222 mixture.	750,000+
9	<u>Erythromycin</u> -- must first resolve questions on its efficacy for bacterial kidney disease; if it proves effective, will pursue registration.	\$750,000+
10	<u>Other Therapeutants</u> (fungicides, antibacterials, and parasiticides) -- candidates are Diquat, Masoten and several experimental compounds.	750,000+ (Each)

- Data packets needed to satisfy environmental impact considerations and label requirements for formalin were submitted to the Food and Drug Administration (FDA) in April and May. This culminates a 6-year effort by the FWS to register the use of formalin as a fungicide and parasiticide. Hopefully, the review will be favorable so that plans can be initiated to make labeling information available to drug manufacturers who are interested in selling this product.
- An April meeting was held with Environmental Protection Agency officials to discuss the registration prospects of Bisazir under a proposed restrictive use. Preliminary studies at the Hammond Bay Biological Station, Millersburg, MI, suggest that this chemosterilant is feasible for use in sterilizing male sea lamprey. Arrangements are presently underway to contract for an Ames test to evaluate the compound for possible mutagenic properties. If the results prove negative, application will be made for an experimental use permit so that field trials may begin.
- Federal Aid monies are being used to fund three separate rotenone studies that are required for its re-registration. Two are mammalian safety studies (a 6-month dog study and a rat metabolism study) which will be funded from FY-1978 Federal Aid reverted monies. The other, a 3-generation rat study to determine possible effects of rotenone on reproduction, will be supported by FY-1979 Federal Aid administrative funds.
- Inquiries are being received from the regions concerning the status of a replacement compound for malachite green. No immediate replacement materials are in sight although screening and testing of four different candidate compounds are underway at the LaCrosse National Fishery Research Laboratory.  
Harry Van Meter, Registration Liaison Officer  
Division of Fishery Ecology Research

#### FRYER HONORED

Dr. John L. Fryer recently received the Oregon State University chapter of Sigma Xi Award for Outstanding Research. This honor was bestowed for his work on viral diseases of fishes and the immune response of salmon and trout. Dr. Fryer's name surfaces as a speaker and/or organizer in most of the fish disease conferences held in recent years. Few of the FHS members are not familiar with at least some of his work. Congratulations, John, you deserve it!



## PUBLICATIONS

### MYCOBACTERIOSIS

Dulin, M.P. 1979. A review of tuberculosis (mycobacteriosis) in fish. *Veterinary Medicine/Small Animal Clinician*: 731-735.

Mycobacteriosis is rarely seen in food fishes in recent years, but is quite common in aquarium fishes. Mark Dulin's review covers what to look for (some color plates), the causative organism, how to prevent and control it, and the potential hazard to fish pathologists working with it. Although most fish diseases pose no threat to the pathologist, this is not one to be careless with and is a good example of why sanitary working conditions are important. For more information or reprints, write: Dr. Mark P. Dulin, USDA, APHIS, NVSL, P. O. Box 844, Ames, Iowa 50010.

FREE BOOKS. Dr. Hoffman has 6 copies of the following book available on a first come, first served basis:

Rubzon, I.A. 1972. *Aquatic Mermithidae of the Fauna of the USSR, Vol. 1.* "Nauka" Publishers, Leningrad, 280 pp.- Translation Pub. for Agric. Res. Serv., U.S. Dept. Agric. and Nat. Sci. Found., Washington, D.C., avail. as TT74-52046 from Na. Tech. Info. Serv., Springfield, VA 22151.

"Mermithids (family Mermithidae) is a family of parasitic nematodes comprising many species, most of which have not been studied adequately. These nematodes parasitize nearly every order of class Insecta, aquatic and terrestrial alike. The present work is the first taxonomic study of aquatic mermithids, which differ considerably (both biologically and morphologically) from terrestrial mermithids, and comprise more than two-thirds of all the known species of the family Mermithidae.

The present study is divided into two volumes. Volume I consists of a morphological description, information on the methods of investigation, identification keys, and a diagnostic description of the species for 12 genera. Volume II gives identification keys and a diagnostic description of the species for another nine genera, in addition to information on the biology, ecology, and geographic distribution of mermithids. It also emphasizes the important role played by these beneficial parasites in the control of blood-sucking Diptera." (Quote from book jacket.)

For further information contact Dr. Glenn L. Hoffman, U.S. Fish and Wildlife Service, Fish Farming Experimental Station, P. O. Box 860, Stuttgart, AR 72160.

## MEETING

### 4TH ANNUAL SYMPOSIUM OF FISH PATHOLOGY

The 4th Annual Symposium of the Japan Research Group of Fish Pathology will be held October 7, 1979 at the Faculty of Fisheries, Hokkaido University, Hakodate, Japan 041 jointly with the Annual Meeting of the Japanese Society of Scientific Fisheries. The theme title of the symposium is "Diseases of Salmonids."

Convener: Takahisa Kimura, Ph.D.  
Faculty of Fisheries  
Hokkaido University  
Hakodate, Japan 041

9:00 - 9:30 AM

Disease Problems in Artificial Hatching  
and Releasing Work of Pacific Salmon

Tetsuo Kobayashi, Ph.D.  
Hokkaido Salmon Hatchery  
2-2 Nakanoshima, Sapporo  
Japan 062

9:40 - 10:10 AM

Disease Problems in Sea-water Reared  
Salmon Fry

Chikara Iioka, B.F.  
Shimohei Branch of Fisheries  
Experimental Station of Iwate  
Prefecture  
13-58-6 Osawa, Yamada-cho, Hei-gun  
Iwate Pref., Japan 028-13

10:20 - 10:50 AM

Taxonomical and Serological Studies on  
the Causative Agent of Vibriosis

Yoshio Ezura, Ph.D.  
Faculty of Fisheries  
Hokkaido University  
Hakodate, Japan 041

11:00 - 11:40 AM

Development of Effective Vibrio Vaccina-  
tion Program for Salmonid Culture

Keith A. Johnson, Ph.D.  
Tavolek, Inc.  
2779 152nd Ave., N.E.  
Redmond, Washington 98052  
U.S.A.



12:00 - 13:00 PM

BREAK

13:00 - 13:40 PM

Host susceptibility, Histopathologic and Transmission Studies on Ceratomyxa shasta, a Myxosporidian Parasite of Salmonid Fish

Keith A. Johnson, Ph.D.  
Tavolek, Inc.  
2779 152nd Ave., N.E.  
Redmond, Washington 98052  
U.S.A.

13:50 - 14:20 PM

Bacterial Gill Disease of Salmonids

Hisatsugu Wakabayashi, Ph.D.  
Department of Fisheries  
Faculty of Agriculture  
University of Tokyo  
Bunkyo-ku, Tokyo, Japan 113

14:30 - 15:00 PM

Rapid Diagnosis for Viral Diseases of Salmonids

Teiichi Nishimura, M. F.  
Tokyo University of Fisheries  
4-5-7 Konan, Minato-ku  
Tokyo, Japan 108

15:10 - 15:40 PM

Saprolegniasis in Salmonids

Kishio Hatai, M. F.  
Aquaculture Research Laboratory  
Nagasaki Prefectural Institute of  
Fisheries  
730-1 Nobozaki-cho, Nishisonoki-gun  
Nagasaki Pref., Japan 851-05

15:50 - 16:20 PM

Parasitic Diseases of Salmonids in Hokkaido

Teruhiko Awakura, Ph.D.  
Hokkaido Fish Hatchery  
2-2 Nakanoshima, Sapporo  
Japan 062

16:30 - 17:00 PM

General Discussion

Syuzo Egusa, Ph.D.  
Department of Fisheries  
Faculty of Agriculture  
University of Tokyo  
Bukyo-ku, Tokyo, Japan 113

## NUCLEAR STAIN

Occasionally the demonstration of protozoan nuclei aids in generic identification, e.g., the case of immature Ich and Hemiophrys; the latter with two macronuclei, the former with one macronucleus and one micronucleus. The rapid, wet, nuclear stain which can be used on fresh wet mounts or preserved wet material consists of 0.25% methyl green in 1% acetic acid. For further information contact Dr. G.L. Hoffman.

## CONCENTRATION OF INTESTINAL HELMINTHS

Now that fish inspection prior to shipping is becoming more fashionable, it is appropriate to mention time saving techniques. Recently we have had to inspect hundreds of fish for intestinal tapeworms. Naturally, individual fish examination becomes very tedious and time consuming. For many years fish parasitologists have been using various labor saving techniques for helminth work but it may be timely to mention our simple technique. Remove the gastro-intestinal tracts of 5 fish, slit them open with scissors or other suitable instrument, and drop them into a 500 ml conical cylinder of water. Swish the G-I tracts around to free the contents, remove the G-I tracts and allow the helminths to settle for 15 minutes, remove most of the water (aspirating pump works well) and examine the sediment under the dissection scope (10X). One must also examine the cleaned guts at 10X because sometimes small helminths remain attached. Modifications of this simple procedure can be made to suit the size of fish, and numbers to be examined. If the fish are small, at least 10 fish may be used in one sample. For further information contact Dr. G. L. Hoffman, or Mrs. Brenda Rodgers, U.S. Fish and Wildlife Service.

## STAGES IN A PROJECT

1. Wild enthusiasm
2. Total confusion
3. Complete disillusion
4. Search for the guilty
5. Punishment of the innocent
6. Promotion of non-participants

(Anonymous contribution from a South African laboratory via Glenn Hoffmann)

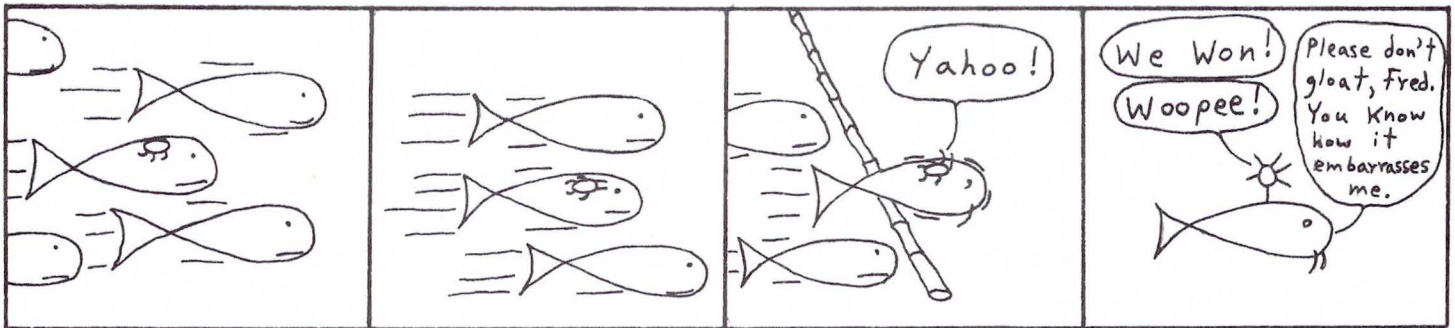


The NEWSLETTER of the Fish Health Section of the American Fisheries Society is published four times annually in accordance with Section objectives and mailed to the Section membership in good standing at the time of publication. The use of company or registered trade names does not constitute an endorsement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

- Dr. Joseph R. Sullivan (editor), 1106 E. Third, #201, Moscow, Idaho 83843
- Dr. Joe Geraci, Pathology Dept., University of Guelph, OVC, Guelph, Ontario, Canada N1G 2W1
- Dr. Glenn Hoffman, Parasitologist, U.S. Fish and Wildlife Service, Fish Farming Experimental Station, P. O. Box 860, Stuttgart, Arkansas 72160
- Mr. Paul Janeke, U.S. Fish and Wildlife Service, Fish Disease Control Center, 1100 E. Burlington Ave., P. O. Box 917, Fort Morgan, Colorado 80701

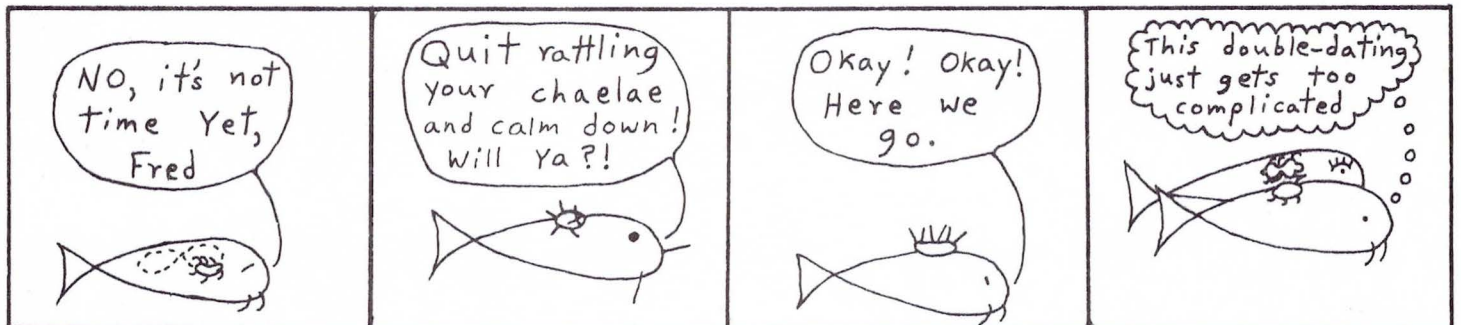
Catfish

Bert



Catfish

Bert



FHS OFFICIAL MAIL BALLOT

Mail your completed ballot to:

Dennis E. Anderson, Chairman  
Membership and Balloting Committee  
Fish Disease Control Center  
1100 E. Burlington Avenue  
Fort Morgan, CO 80701

*mailed  
return  
9-26-79*

President-Elect (vote for one):

- Dr. John Schachte
- Mr. Dennis Anderson
- Dr. Richard Heckmann

Secretary-Treasurer (vote for one):

- Dr. Robert Busch
- Dr. Joseph Sullivan

Nominating Committee (vote for one):

- Dr. Trevor Evelyn
- Dr. Guy Tebbit

Board of Certification (vote for two):

- Dr. Donald Amend
- Mr. Tony Novotny
- Dr. Bill Klontz
- Dr. Bill Rogers

-----DETACH AND MAIL TODAY-----TODAY-----NOW!-----

Joseph R. Sullivan  
1106 E. Third, #201  
Moscow, ID 83843



Dr. Glenn L. Hoffman  
Fish Farming Exp. Sta.  
POB 860  
Stuttgart, AR 72160