FISH HEALTH SECTION

AFS

NEWS LETTER

Volume 9, Number 1

JANUARY - MARCH, 1981

USFWS FACING BUDGET CUTS

As expected, the U.S. Fish and Wildlife Service is facing severe budget cuts under the Reagan Administration. At this writing, rumors abound and many changes may yet be made, but it appears certain that very few programs will survive unscathed.

One program that has taken decades to develop faces complete extinction as early as September 30th of this year. The nationwide network of Cooperative Fishery and Wildlife Units are scheduled for termination by fall. Many Fish Health Section members over the years have received training from the 26 Cooperative Fishery Units and 3 combined Fishery and Wildlife Units based at state universities throughout the country. Several hundred staff members and graduate students will be affected by the closings. Said one Ph.D., "A doctoral degree used to guarantee you a job. In lieu of what's happening, it has become a liability instead of an asset."

Other Federal fishery programs are also facing the budget cutting axe. At Leetown, West Virginia, the still fledgling National Fisheries Academy has only one course - the Hatchery Management Long Course - still scheduled for 1981. The famous Fish Disease Long Course has been cancelled until September, 1982 at the very earliest. The National Fish Health Research Laboratory, however, will be funded at the same level as present. It has been reported that the fish hatchery program in general will be left untouched.

It is impossible to predict what the long term results of all this will be, but the 1980s promise to be a decade of change for the U.S. Fish and Wildlife Service and the fisheries field.

Maine Fish & Wildlife photo by Tom Carbone.

SALMINCOLA CAN KILL BROOK TROUT

Fish health workers in many parts of North America regard the copepod parasite *Salmincola edwardsi* as more of a curiosity than a nuisance. As this photo testifies, the trout louse can actually kill captive adult brook trout under the right conditions. This fish was one of several held in a display pool at a State of Maine fish hatchery. *Salmincola* infestations preclude keeping brood stock at this station. The parasite is not, however, a problem in raising fingerling and spring yearling trout.

It is interesting to note that IPN virus was successfully eliminated from the same hatchery in 1968 by eliminating all fish at the station and disinfecting with sodium hypochlorite. Although the station has remained virus-free since that time, *Salmincola edwardsi* showed up again within a few years.

This parasitic copepod is quite host specific. It is confined almost entirely to salmonid fishes of the genus *Salvelinus*. In Maine, it has been found on wild brook trout *(S. fontinalis)* and lake trout *(S. namaycush)*.

For further information contact: Peter Walker, Hatchery Biologist, Maine Dept. of Inland Fisheries and Wildlife, 284 State St., Station 41, Augusta, Maine 04333.

NOVA SCOTIA SALMON HIT HARD BY ACID RAIN

Reprinted from *CANADA TODAY/D'AUJOURD'HUI*

Acid rain has already caused the extinction of Atlantic salmon in some Nova Scotia rivers.

During spring thaws pH levels in such rivers have dropped from six to four in a few days, and such an abrupt drop can kill the salmon eggs and larvae. The effect on the water is temporary - the pH may rise as rapidly as it falls - but the effect on fish is permanent.

Dr. Walton D. Watt of the Canadian Department of Fisheries and Oceans reported on nine rivers in late 1980. All have pH measurements below 4.7. Since there is angling data from the past hundred years, scientists have a clear idea of when the salmon became extinct. Until the 1950s the annual catch in some of these small rivers was 100 to 200 fish. By 1960 it was only half as many, and a decade later not a fish was landed. Rainfall chemistry data from the 1950s show that the acidity in the rainfall has increased tenfold during the period. Eleven other Nova Scotia rivers are considered threatened, and, given the current rate of acidification, Watt expects these salmon runs to be gone in twenty years. He says air trajectory studies show two-thirds of the pollution is coming from U.S. sources in Ohio and Pennsylvania, while one-third originates in the Canadian Maritimes.

The entire February, 1981 issue of *CANADA TODAY/D'AUJOURD'HUI* (Vol. 12, No. 2) is devoted to the staggering acid rain threat confronting the United States and Canada; its sources, its effects, its solutions. This newsletter is published monthly and is available free of charge from the Canadian Embassy, 1771 N Street, NW, Room 300, Washington, D.C. 20036.

SNIESZKO NOMINATIONS SOUGHT

The FHS Awards Committee is seeking nominations for its prestigious 1981 S. F. Snieszko Distinguished Service Award. Please submit your nominations by May 15 to: Dr. W. D. Paterson, Chairman, Connaught Laboratories, 1755 Steels Avenue West, Willowdale, Ontario M2N 5T8, Canada.

ANOTHER EXOTIC!

Sections from a skin biopsy of a diseased, valuable koi carp revealed the first U.S. record of *Dermocystidium koi* (Protozoa: Unclassified). The parasites are found in elongate cysts, 0.04 - 0.3 millimeters, containing many spherical spores, 5 - 10 micrometers, each containing a single large vacuole. In the absence of scales, the mass of cysts grows between the epidermis and dermis. If it occurs beneath scales, it invades the underlying musculature. One of us (GLH) has seen it in common carp *(Cyprinus carpio)* from Korea and the original description was from Japan (Hoshina, T. and Y. Sahara 1950. Bull. Jap. Soc. Sci. Fish. 15(12): 825-829).

Submitted by George Migaki, Armed Forces Institute of Pathology, Washington, D.C. 20306, Dr. James R. Hill, Veterinary Disease Lab., San Jose, California 95112 and Dr. Glenn L. Hoffman, Fish Farming Experimental Station, Stuttgart, Arkansas 72160.

AFS AUDIO-VISUAL CHAIRMAN SEEKS HELP

In a letter to all AFS Division and Section Presidents, Audio-Visual Committee Chairman Don Duff has expressed his desire to obtain members to serve on his committee. This new committee has been assigned the development of audio-visual programs for both internal and external AFS use to inform members and the public of the Society's role in our fisheries profession. Duff is therefore especially interested in obtaining members with an interest and/or expertise in the audio-visual field. If you wish to help out, please contact: Don Duff, Wildlife Management Staff, Forest Service - USDA, 324 25th Street, Ogden, Utah 84401.

The committee is also interested in obtaining slides from members in any and all aspects of the fisheries profession from office and administrative work to management and research activities. Please forward your contributions to: Dick Wydoski, c/o AFS Slide Library, USFWS, National Fisheries Academy, Route 3, Box 40-G, Kearneysville, West Virginia 25430.

USFWS FISHERY-USE CHEMICALS & DRUG REGISTRATION

QUARTERLY HIGHLIGHTS (OCT. - DEC. 1980)

Hoffman-La Roche, Incorporated has applied to the Food and Drug Administration (FDA) for a New Animal Drug Application (NADA) to market a medicated premix of their antibacterial compound, Ro-5-0037, for control of furunculosis and enteric redmouth disease in salmonids. The Service, in cooperation with the company, conducted several of the studies required for registration. The Service is continuing its experimental use of the premix for the control of *Aeromonas hydrophila* infections in channel catfish and for vibrio infections in salmonids reared in saltwater. Injection of hatchery-held Atlantic salmon spawners against outbreaks of furunculosis is still another possible use. These studies are being conducted by staff biologists of the National Fish Health Research Laboratory at Kearneysville, West Virginia.

The Service terminated its registration efforts on malachite green more than 2 years ago because of significant evidence of teratological and other potential problems involving human safety. Use of the compound was banned at the National Fish Hatcheries without an alternative registered fungicide being available. No immediate replacement compounds are in sight, although screening and testing have been accelerated on three potential candidates: Duter, copper oxychloride and Cuprimyxin. The latter compound also shows promise in controlling bacterial gill disease. Studies are being shared by the National Fishery Research Laboratory, La Crosse, Wisconsin; Fish Farming Experimental Station, Stuttgart, Arkansas; and the National Fish Health Research Laboratory, Kearneysville, West Virginia.

A November meeting was held with officials of the Environmental Protection Agency (EPA) to identify data gaps affecting the continued registration of rotenone and to review protocols for studies that were either recently contracted or are about to be contracted by the USFWS. Numerous issues were clarified that made it possible to reevaluate priorities and to incorporate some of the tests EPA has listed on an "earliest convenience" basis. Federal Aid administrative funds totaling $293,000 will be used in FY-81 to support eight rotenone studies required by EPA for reregistration. The Penick Corporation, under a cooperative agreement with the Service, has recently committed funds up to $30,000 for the purchase of radiolabeled rotenone needed for three of the studies.

An October response from FDA means further delay on the Service's February, 1980 data packet submission for meeting final requirements in the clearance of formalin for fishery use. FDA contends that the data at hand do not support labeling claims for control of external parasites on aquarium and bait fishes or for control of fungal infections on fish eggs. In January, the Service will submit revised labeling to FDA that will restrict the use of formalin to the control and prevention of specific protozoans and monogenetic trematodes on cultured food and sport fishes (trout, salmon, catfish, largemouth bass and bluegill). If the revised version label is approved, the label can be amended later to include other fish species, diseases and uses.

The FDA recently amended the Service's Investigational New Animal Drug Application (INAD) to include the treatment of eggs with erythromycin phosphate for all salmonids rather than only for rainbow trout.

EPA has approved the Service's Experimental Use Permit (EUP) to field-test a solid bar formulation of the registered liquid lampricide, TFM. If successful, this would eliminate the need for field personnel to monitor pumping operations in small upland streams. The resultant savings in future operations could be substantial. Field testing is expected to begin next spring.

Trade names mentioned here and in future quarterly reports are for informational purposes only. They do not imply U.S. Government endorsement of the products. We also call to your attention that the use of any drug or chemical must be in accordance with current laws and regulations. All uses of fishery compounds must be approved by appropriate state and federal agencies. Only those uses described on the label are permitted, and only at the rates listed.

Compiled by Harry D. Van Meter, Registration Liaison Officer, and submitted by Robert E. Stevens, Chief, Division of Fishery Ecology Research, USFWS, Washington, D.C. 20240.

BKD DETECTION IN QUEBEC

By R. Lallier[1], G. Olivier[1], P. Chartier[1], C. Turcotte[1], B. Dion[2] and P. Paulhus[2].

1 Départ. Patho.-Micro. Fac. Méd. Vétérinaire Université de Montréal, Saint-Hyacinthe

2. Ministère des Loisirs de la Chasse et de la Pêche du Québec. Direction de l'aménagement et l'exploitation de la faune, Québec.

The presence of Bacterial Kidney Disease (BKD) has been reported in hatchery stocks in British Columbia and Nova Scotia (Bell 1961; Evelyn *et al* 1973; Paterson *et al* 1979). Quebec was claimed to be free of BKD; however, no systematic studies were carried out before 1979. This disease, caused by a fastidious gram positive diplobacillus, was recently named *Renibacterium salmoninarum* (Sanders and Fryer 1980).

Since the sensitive indirect fluorescent antibody technique (IFAT) (Bullock and Stuckey 1975) allows the detection of asymptomatic BKD infections, a systematic study was done on salmonid fish obtained from hatcheries and feral populations in the Province of Quebec. This article reports the principal conclusions obtained. These details are published elsewhere (Lallier et al 1981).

Using IFAT, we found *R. salmoninarum* in salmonids from the 11 hatcheries examined and from fish obtained from southern lakes and rivers in the province. Fifteen to 25% of the fish were classified as asymptomatic infected fish since one to ten positive cells per 50 fields was observed. However, we were unable to detect *R. salmoninarum* by IFAT in salmonids captured in the northern part of Quebec.

During the spring of 1979, an epizootic of BKD was observed in one hatchery. The causative agent of this outbreak *(R. salmoninarum)* was isolated in pure culture on KDM_2 from the majority of the speckled trout examined. In that period more than 90% of the fish were positive by fluorescence. One to two weeks before the disease was officially diagnosed, some fish were transferred to seven artificial pounds already containing trout. No mortality was observed in these pounds and, at the end of the summer, the percentage of carrier fish as determined by IFAT was around 20%. In 1980, no clinical signs of BKD were observed in the above-mentioned hatchery.

APOLOGIES TO OVERSEAS MEMBERS

The business of editing a newsletter is new to me. I don't think I had ever mailed out more than twenty pieces in a single day to say nothing of almost 600 newsletters! Consequently I did not know that many foreign countries require all mail to be sent in envelopes. Oct. - Dec., 1980 issues are still returning from all parts of the world. As they come back I am placing them in envelopes and sending them right off again.

To those overseas members whom I have inconvenienced, I offer my apologies. If any of you have still not received the Oct. - Dec., 1980 issue, please notify me and I will see that you get one.

Pete Walker, Editor

FHS TREASURER'S REPORT
(ENDING DECEMBER 31, 1980)

FHS/AFS General Account			
Beginning balance		2,108.25	
Credits:			
Membership dues	2,233.44		
Interest	94.89		
Purchase of 4th Biennial Abstracts	4.50		
Excess after 4th Biennial Expenses	419.30		
Favorable bank error noticed after account closed	.50		
		2,752.63	4,860.88
Debits:			
Newsletter	1,033.09		
4th Biennial expenses	775.70		
Awards, plaques	230.90		
Administrative costs	728.38		
		2,768.07	2,092.81
Balance brought forward to 1981			2,092.81
FHS/AFS Certification Account			
Beginning balance		594.50	
Credits:			
Fees	50.00		
Interest	29.27		
		79.27	673.77
Debits:			
Administrative costs	14.18		
		14.18	659.59
Balance brought forward to 1981			659.59
FHS/AFS Glossary Account			
Beginning balance		162.43	
Credits:			
Interest	7.46		
		7.46	169.89
Debits:			
Administrative costs	1.50		
		1.50	168.39
Balance brought forward to 1981			168.39
Total assets FHS/AFS as of December 31, 1980 ..... 2,920.79			

S. K. Johnson
FHS/AFS Secretary/Treasurer

TRICHODINA INVOLVED IN WILD FISH DIE-OFF

Shortly after ice-out in early May, 1980, a fish kill was reported by an angler at Moose Hill Pond in Livermore Falls, Maine. An investigation produced a few badly decomposed fish, but no conclusions could be made.

A period of warm weather followed in which the water temperature rose quickly. In late May reports of a large fish die-off in Moose Hill Pond again came in. This time numerous dead, dying or distressed smallmouth bass *(Micropterus dolomieui)* and redbreast sunfish *(Lepomis auritus)* were found in all areas of the pond. Affected fish were sluggish and displayed large, irregular areas of pale discoloration on the body surfaces and fins. A few individuals appeared to have external fungus infections.

Spawning had commenced and numerous nests were observed. Only two or three were definitely occupied while others were found with freshly deceased bass (the apparent occupants) lying nearby. This implied that the added rigors of spawning were contributing to the increased pace of the die-off.

Moose Hill Pond is a natural, clear water pond with a surface area of 40 hectares and a mean depth of 5.3 meters. It serves as a municipal water supply and, consequently, the entire shoreline is owned and protected by the water company. This fact and other clues ruled out the possibility of an environmental catastrophe such as a pesticide contamination.

Moribund bass and sunfish were collected for laboratory examination. Skin scrapings taken from the borders of the surface lesions revealed heavy infestations of a trichodinid protozoan. This was subsequently identified as *Trichodina fultoni* through descriptions by Wellborn (1967). All evidence indicated that this parasite was the primary cause of the fish kill.

An investigation of the fisheries management of Moose Hill Pond shed further light on the situation. Smallmouth bass were introduced to the pond in 1958. By the late 1960s, the pond contained a very large, stunted bass population. Studies conducted by fishery biologists at that time concluded that lack of suitable forage was a likely cause. Therefore, a species of crawfish was successfully introduced. During the 1970s, the growth rate of the bass improved slowly, but the population remained extremely high. (Unlike most of the country, there are relatively few Maine anglers who fish for bass.)

Considering these facts, it is probable that several factors contributed to the *Trichodina* epizootic in Moose Hill Pond. Crowded conditions, an unusually rapid temperature increase and spawning stress could have all been mediating forces. The latter was especially implicated since numbers of apparently healthy yearling bass and sunfish were observed along the shore. Perhaps this epizootic was Mother Nature's way of correcting an imbalance. It will be interesting to see what the growth rate and structure of the new bass population in this pond will be.

For further information contact: Peter Walker, Hatchery Biologist, and Denny McNeish, Fishery Biologist, Maine Dept. of Inland Fisheries and Wildlife, 284 State St., Station 41, Augusta, Maine 04333.

RARE SQUAWFISH STOLEN

The most cunning and persistent fish predator is the one we can do the least about — man. In one of the most despicable acts of fish hatchery larceny on record, 14 of 27 adult Colorado squawfish *(Ptychocheilus lucius)* — an endangered species of large minnow — were stolen from the Willow Beach (Arizona) National Fish Hatchery in November. The rare squawfish were being held at the hatchery as the nucleus of a planned program of propagation and re-establishment in their native Colorado River drainage.

To make matters worse, all but two of the 14 female squawfish in the group were among those stolen. As a consequence, the Colorado Squawfish Recovery Team has been left without "the divergent gene pool necessary for the development of a healthy population."

Three Las Vegas men were arrested on felony charges connected with the incident and now face possible fines of $20,000 and/or a year in prison for each stolen fish.

The fish were apparently cooked and eaten.

(Excerpted from the *Endangered Species Technical Bulletin* (USFWS), Volume VI, Number 2.)

BOOKS AND PUBLICATIONS

Atlas of North American Fishes. Prepared jointly by the North Carolina State Museum of Natural History and the U.S. Fish and Wildlife Service. This loose-leaf volume is a compilation of systematics, distribution, habitat and biology of the 777 recognized species of freshwater fishes in North America contributed by dozens of fishery scientists in the U.S. and Canada. Send payment in advance to: North Caroline State Museum of Natural History, Attention: Fish Atlas, P.O. Box 27647, Raleigh, North Carolina. 854 pp. $20.00 ($22.50 Canadian) + $3.00 handling.

The Computation of Dissolved Gas Levels as a Function of Temperature, Salinity and Pressure. By Dr. John Colt. Department of Civil Engineering, University of California - Davis, Davis, California 95616. 1980, 82 pp. No price given.

Fisheries and Wildlife Research - 1979. A summary of the activities of the research units of the U.S. Fish and Wildlife Service during fiscal year 1979. Government employees may obtain free copies from the USFWS Publications Unit, Washington, D.C. 20240. Others may obtain copies from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Refer to Stock Number 024-010-00584-0. $6.50.

Fiskeysdomme (Disease of Fishes). Second edition. By N.O. Christersen, Published by C.F. Mortensen, Copenhagen, Denmark. 1980. In Danish. 126 pp. No price given.

The Handbook of Drugs and Chemicals Used in the Treatment of Fish Diseases. By Nelson Herwig. Charles C. Thomas Publishers, 301-327 East Lawrence Avenue, Springfield, Illinois 62717. $17.50.

Octopus: Physiology and Behavior of an Advanced Invertebrate. By Martin J. Wells. A review of this book is featured in *Fisheries, Vol. 5, No. 6.* Chapman & Hall Ltd., John Wiley & Sons, Inc., New York, New York. 1978. 417 pp. $42.50.

Polluted Rain. Edited by T.Y. Yoribara, N.W. Miller and P.E. Morrow. Plenum Press, New York, New York. 1980. 502 pp. $49.50.

Polyploidy - Biological Relevance. Edited by W.H. Lewis. Plenum Press, New York, New York. 1980. 583 pp. $55.00.

Proceedings of the First National Crawfish Culture Workshop, March 3-4, 1980. Contains papers on crawfish diseases as well as management, economics, soft shell crawfish, processing, genetics and population dy-

namics. Office of Institutional Research, P.O. Box 41009, USL, Layafette, Louisiana 70504. $5.00.

Radiation Effects on Aquatic Organisms. Edited by N. Egami. University Park Press, Baltimore, Maryland. 1980. 292 pp. $44.50.

Fish health publications from the American Fisheries Society:

A Symposium on Diseases of Fishes and Shellfishes. S.F. Snieszko, ed. 1970. Special Publication No. 5. 528 pp. $16.00. Members $8.00 (1 copy only).

Glossary of Fish Health Terms. G. Post, ed. AFS Fish Health Section. 1977. 48 pp. $5.00.

Fish Health Blue Book - Procedures for the Detection and Identification of Certain Fish Pathogens. D.W. McDaniel, ed. AFS Fish Health Section. 1979. 112 pp. $10.00. Members $8.00 (1 copy only).

Send orders for AFS publications to:

American Fisheries Society
5410 Grosvenor Lane
Bethesda, Maryland 20014, USA

UPCOMING EVENTS

April 19-23, 1981. 37TH NORTHEAST FISH AND WILDLIFE CONFERENCE. Location: The Cavelier Hotel, Virginia Beach, Virginia. Contact: Sam Putt, Commission of Game and Inland Fisheries, P.O. Box 11104, Richmond, Virginia 23230.

April 26-30, 1981. SYMPOSIUM ON FISH BIOLOGICS: SERODIAGNOSTICS AND VACCINES. Sponsored by the International Association of Biological Standardization (IABS) in cooperation with the AFS/Fish Health Section, National Science Foundation and U.S. Fish and Wildlife Service. Location: National Fish Health Research Laboratory, Leetown, West Virginia. Contact: Ora Dixon, Biologics Section, National Fish Health Research Laboratory, Route 3, Kearneysville, WV 25430.

May 4-8, 1981. CHEMICALS IN HATCHERY AND FISHERY MANAGEMENT. Location: Athens, Georgia. Contact: Fisheries Academy, National Fisheries Center - Leetown, Route 3, Box 49, Kearneysville, WV 25430.

May 11-12, 1981. DIAGNOSIS AND TREATMENT OF DISEASES OF WARMWATER FISH. Location: Mississippi State University. Contact: Thomas L. Wellborn, Jr., Extension Wildlife and Fisheries, P.O. Box 5405, Mississippi State, MS 39762.

May 17-23, 1981. MARICULTURE: CULTURE OF MARINE INVERTEBRATES FOR RESEARCH PURPOSES. Location: Marine Biological Laboratory, Woods Hole, Massachusetts. Contact: Admissions Office, Marine Biological Laboratory, Woods Hole, Massachusetts 02543. Telephone: (617) 548-3705.

May 19-22, 1981. THIRD BIENNIAL CONFERENCE ON THE ETHOLOGY AND BEHAVIORAL ECOLOGY OF FISHES. Location: Illinois State University. Contact: Jack Ward, Conference Organizer, Illinois State University, Normal, Illinois 61761.

June 23-24, 1981. 22ND ANNUAL WESTERN FISH DISEASE WORKSHOP. Location: Valley River Inn, Eugene, Oregon. Contact: David P. Ransom, Oregon-Aqua Foods, Inc., 88700 Marcola Road, Springfield, OR 97477.

July 13-17, 1981. ANNUAL MEETING OF THE WESTERN DIVISION OF THE AMERICAN FISHERIES SOCIETY. Location: Ala Moana Hotel, Island of Oahu, Hawaii. Contact: Gordon Haugen, 21543 S.W. 98th, Taulitin, Oregon 97062.

July 21-22, 1981. ANNUAL MEETING OF THE FISH HEALTH SECTION/AFS AND EASTERN FISH DISEASE WORKSHOP. Location: Mississippi State University. Contact: Thomas L. Wellborn, Jr., Extension Wildlife and Fisheries, P.O. Box 5405, Mississippi State, MS 39762.

August 2-5,1981. ACID RAIN/FISHERIES SYMPOSIUM. Sponsored by the Northeastern Division of the American Fisheries Society. Location: Cornell University, Ithaca, New York. Contact: Terry Haines, Department of Zoology, University of Maine, Orono, Maine 04473.

August 23-28, 1981. WATER REUSE SYMPOSIUM II. Sponsored by the American Water Works Association Research Foundation. Location: Washington, D.C. Contact: Richard D. Heaton, Water Reuse Symposium II, AWWA Research Foundation, 6666 West Quincy Avenue, Denver, Colorado 80235. Telephone: (303) 794-7711.

September 8, 1981 through May, 1982. FISH HATCHERY MANAGEMENT LONG COURSE. 16 trainee slots (12 Federal and 4 open). Application deadline: April 24, 1981. Location: National Fisheries Academy, Leetown, West Virginia. Contact: Wendell Ogden, Superintendent, National Fisheries Academy, USFWS, Route 3, Box 40G, Kearneysville, WV 25430. Telephone: (304) 725-8461.

September 16-18, 1981. 111TH ANNUAL MEETING OF THE AMERICAN FISHERIES SOCIETY. Location: The Classic Hotel and Convention Center, Albuquerque, New Mexico. Contact: Carl R. Sullivan, AFS, 5410 Grosvenor Lane, Bethesda, Maryland 20014.

March 29-April 2, 1982. ELEVENTH CONFERENCE OF THE INTERNATIONAL ASSOCIATION OF WATER POLLUTION RESEARCH. Location: Capetown, Republic of South Africa. Contact: Secretary-Treasurer, IAWPR, Chichester House, 278 High Holborn, London WC1V 7HE, England.

STRANGE WHITE SPOTS

Those of us involved in salmonid culture are familiar with so-called "white spot disease" in incubating eggs. Such white spots usually prove to be areas of coagulated yolk. However, a very different phenomenon was observed in several East Coast Atlantic salmon hatcheries in 1980.

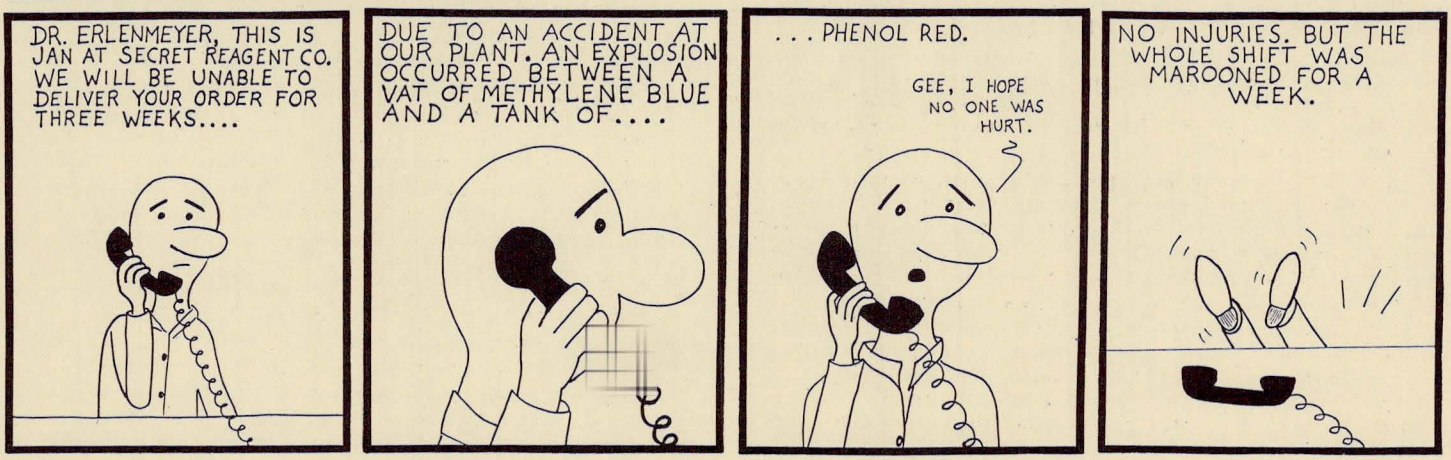
An unusually high incidence of white spot in the eggs incubating at several National Fish Hatcheries in New England led to a closer inspection. Under low magnification, the margins of the discolored patches were diffuse instead of distinct. Dissection of the affected eggs revealed that each white spot consisted of a "knot" of bacteria on the inside of the egg shell sometimes, but not always, in association with a fungus.

In the fall of 1980, the practice of water hardening eggs in a solution of erythromycin phosphate was adopted in the hope that it would prevent the occurrence of bacterial white spot. However, no incidence of the unusual condition was found in either the treated eggs or the untreated control lot although a few instances of internal fungus were noted. The phenomenon remains a mystery.

In spite of all this, the new egg treatment yielded an unexpected bonus. Atlantic salmon eggs treated with erythromycin phosphate and incubated at Craig Brook National Fish Hatchery showed a 10% higher eye-up than the untreated control lots. We hope that this positive side effect of erythromycin water hardening can be demonstrated elsewhere.

For further information, contact: Mike Hendrix, USFWS, Craig Brook National Fish Hatchery, East Orland, Maine 04431.

ICHTHYOWIZARD



WHAT ARE YOU DOING?

Most of us in the fish health profession are always on the watch for something publishable. Yet, aside from those major topics and events of which scientific papers are written, there are many day to day occurrences which are also of interest to your colleagues. Many tend to underrate their own work and consequently let much important information go unreported.

The Fish Health Section Newsletter is the means for disseminating this information. Over the years, hundreds of items that would have otherwise gone unreported were covered by this newsletter. But we want more. Think about it. What have *you* been doing? The last issue of this publication reached almost 600 of our colleagues in many parts of the world. Do your part to make it work. Take the time to contribute to its success.

BACTERIAL ZOONOSES PRECAUTIONS

The November, 1980 issue of the United Kingdom publication *Fish Farmer* (Vol. 4, No. 1) carried excerpts of a speech given by bacteriologist Dr. Brian Austin of the U.K. Ministry of Agriculture Fish Disease Laboratory at Weymouth, Dorset to the Institute of Fisheries Management in Brighton. In his presentation, Dr. Austin reported an incidence of a fish farm worker contracting a systemic infection of *Aeromonas hydrophila*. Thanks to an early diagnosis, the man was successfully treated with antibiotics and recovered.

Dr. Austin reported that water-borne diseases are rare in Great Britain. Fish culturists are not likely to contract diseases orally, but there is a risk of becoming infected through the skin via wounds. The article therefore advises that, " . . . fish farm workers should take sensible precautions to ensure that they do not contract infections. They should wear protective clothing and cover all cuts, scratches and abrasions. After work they should wash thoroughly in disinfectant, particularly their hands. And they should seek medical advice when feeling ill."

Even so, British fish farm workers exhibit a level of absenteeism comparable to similar occupations. "Work on a fish farm," according to *Fish Farmer* magazine, "Is safer than the drive to the place of work."

FHS/AFS CERTIFICATION MANDATORY FOR ALASKA

The certification programs of the Fish Health Section have been officially recognized by the State of Alaska. In an act signed into law by Governor Jay Hammond, " . . . fish health inspections determined to be necessary by the department (Alaska Department of Fish and Game) shall be performed by a professional fish health specialist *certified by the fish health section of the American Fisheries Society.*" Additional measures approved by the Alaska Board of Fisheries address enforcement and other technicalities associated with this measure. Details will be forthcoming.

Recognition by the State of Alaska increases the legitimacy of our Fish Health Section certification programs. We welcome these measures and wish them success.

For further information contact: Dr. Roger S. Grischkowsky, Chairman, Inspector Certification Recognition Committee, 5411 Trena Street, Anchorage, Alaska 99507.

THE NEWSLETTER: WHERE DO WE GO FROM HERE?

Our Newsletter, like the Fish Health Section itself, is growing. The Oct. - Dec., 1980 issue marked a milestone in this publication's growth. Not only did it contain a record amount of contributed material, but it was also the first issue to be printed in a two-column, typeset format. It is hoped that this more professional look will stimulate still more members to take an active part in the Newsletter. Many readers apparently liked the "facelift" and I am grateful to those who sent in their compliments.

Unfortunately, success has its price. While we saved considerably on postage (the typeset issue would have taken about 20 pages in the old format), these savings by no means offset the additional printing service costs incurred. After discussing this situation with Section President Dennis Anderson and Secretary/Treasurer Ken Johnson, it appears that to continue production of the Newsletter in this format will eventually deplete our funds.

We are therefore faced with three basic choices. We can return to the old, typewritten and photocopied format; cumbersome, but relatively inexpensive. We can also attempt to regress only part of the way to a cheaper format while still retaining as much of the professional look as possible. In the next few weeks I will look into several other ways to possibly cut our printing costs. The third possibility is that we keep the Newsletter in the new format as it is in this issue. To do this, we will have to accept the additional costs and this, in turn, will likely mean a dues increase.

It's a difficult decision for the Section to make. We need your input. I hope that every member will take time to check off his or her choice on the accompanying ballot and send it to me.

Pete Walker, Editor

FHS/AFS NEWSLETTER FORMAT REFERENDUM

sent in photo copy 5-5-81

CHECK ONE:

_____ Return to the old format.

_____ Try to find a cheaper, yet professional-looking format that is somewhere between the old style and the new and within our present financial means.

__✓__ Stick with the new format. We'll accept a dues increase if it becomes necessary.

Send to:

Peter G. Walker
Maine Dept. of Fish & Wildlife
284 State Street, Station 41
Augusta, Maine 04333

NORTH AMERICAN VETERINARY COLLEGES OFFER AQUATIC MED COURSES

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Dr. John W. Robinson of Riverside, Connecticut compiled the following list by personal communication with the deans' offices of each of the 28 North American veterinary colleges. Dr. Robinson, a graduate of the Veterinary College at Cornell in 1951, practiced companion-animal medicine in Greenwich, Connecticut for 25 years. He is currently writing and consulting on veterinary practice management.

The author notes that "about two-thirds of all our veterinary colleges presently offer or are planning to offer 'fish courses' in one form or another in the future - an exciting prospect."

University of California
School of Veterinary Medicine
Davis, California 95616
Dr. W. R. Pritchard, Dean

Cornell University*
New York State College of Veterinary Medicine
Ithaca, New York 14853
Dr. E. C. Melby, Jr., Dean

University of Florida
College of Veterinary Medicine
Gainesville, Florida 36201
Dr. C. E. Cornelius, Dean

University of Georgia
College of Veterinary Medicine
Athens, Georgia 30601
Dr. D. P. Anderson, Dean

Louisiana State University
School of Veterinary Medicine
Baton Rouge, Louisiana 70803
Dr. E. D. Besch, Dean

Mississippi State University**
College of Veterinary Medicine
Mississippi State, Mississippi 65211
Dr. K. D. Weide, Dean

University of Guelph***
Ontario Veterinary College
Guelph, Ontario, Canada
Dr. D. C. Maplesden, Dean

University of Pennsylvania
School of Veterinary Medicine
Philadelphia, Pennsylvania 19104
Dr. R. Marshak, Dean

University of Montreal (Quebec)
Faculty of Veterinary Medicine
Saint Hyacinthe, Quebec, Canada
Dr. Guy Cousineau, Dean

Texas A & M University
College of Veterinary Medicine
College Station, Texas 77843
Dr. G. C. Shelton, Dean

Washington State University
College of Veterinary Medicine
Pullman, Washington 99163
Dr. L. K. Bustad, Dean

* Offers three related courses at undergraduate level.

** Concepts of aquatic medicine are included in other studies rather than taught separately.

*** Total of five related courses available - graduate and undergraduate.

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