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2005 Larval Fish Conference to be held in Spain

The 29th Annual Larval Fish Conference will be held in Barcelona, Spain, at the University Pompeu Fabra from **Monday, July 11** until **Thursday, July 14, 2005**. Conference information and instructions for registration and abstract submission can be found at www.larvalfishcon.org. Deadline for registration and abstract submission is **February 14, 2005**.

The meeting is being hosted by the Institut de Ciències del Mar of the Consejo Superior de Investigaciones Científicas. The local organizing committee is composed of ichthyoplankton researchers from the Consejo Superior de Investigaciones Científicas, the CIFPA of the Junta Andalucía, the Centre d'Aqüicultura of the IRTA, the Instituto Español de Oceanografía and the Fundación AZTI. More details on p. 5 of *STAGES*. §



ELHS Back Then

5 years ago: The Sally L. Richardson Award Committee was changed from ad hoc status to a standing committee in recognition of the importance of the award.

10 years ago: The 19th Annual Larval Fish Conference travels far from home ... to Sydney, Australia.

15 years ago: Publication of LFC proceedings begins to wane. None published from the 14th LFC.

20 years ago: A sight to behold, John Blaxter and Paul Webb demonstrate English country dancing at 9th LFC in Port Aransas, Texas.

25 years ago: The newsletter of the ELHS begins under the editorship of Fred Binkowski.

President's Message



Since The Section is running smoothly, this will serve mainly as a progress report on the various initiatives that I brought to your attention in the last issue of *STAGES*.

Election of Officers. Joe Brown and Denise Drass have generously agreed to have their names placed in nomination for President-Elect and Secretary-Elect, respectively. As of this writing, no other candidates have come forward. We need volunteers/nominees for Section officers (beginning with the election cycle after the one to be held in Barcelona this July): Treasurer, President, Secretary. If you are interested in serving, please contact Chris Chambers (Chair, ELHS Nominations and Mail-Ballot Committee) by email at: chris.chambers@noaa.gov. Hopefully, after the 2005 Section business meeting, we will be back on schedule with respect to the election of our officers!

Repopulate and Renew Membership on our Standing, Sessional, and Ad-Hoc Committees. We need volunteers for the following: Annual Conference Committee, Nominations and Mail-Ballot Committee, Sally Richardson Award Committee, J.H.S. Blaxter Award Committee, and Student Travel Grants Committee. Truly, serving on these will not require much of your time, so please step forward!

New Web Site for the LFCs. www.larvalfishcon.org – the home for the LFCs – is online! The site provides as much information as possible on past, current, and future LFCs. Please visit often.

Venues for Future LFCs. In addition to the 30th LFC in New Orleans (which has already been approved by the ELHS membership), Jeff Govoni and I are pleased to report that we now have the following firm offers to host the LFC:

Deadline for material to be included in the next issue of Stages:

April 7, 2005

News from the Regions



Pacific Rim Region

Iain Suthers

Larval fish ecology off the east coast of New South Wales, Australia

In September 2004 a team of biologists and mathematicians embarked on a research cruise to study the separation of the East Australian Current (EAC) from the east coast of New South Wales and the initial stages of the Tasman Front (formed by the EAC making its way to New Zealand). The team of biologists was led by Iain Suthers (University of New South Wales) and contained both young and old scientists to the field of larval fish ecology. The main aim of this research is to identify if the slope of the zooplankton biomass size distribution (an index of secondary production) is related to the growth of larval fish (another index of secondary production). In these oligotrophic waters, fish larvae may well be food limited.

Upwelling is associated with both the separation point of the EAC and the Tasman Front. At each location there are therefore two distinct and adjacent bodies of water, the relatively nutrient-rich upwelled water and the relatively nutrient-poor warm water associated

with a poleward flowing current. It is expected that the slope of the normalised biomass size spectrum (obtained from a mini-optical plankton counter mounted on a modified SeaSoar) will increase in the nutrient-rich upwelled water. This increase in secondary productivity, once flowed through to the larval fish populations, should be evident in their growth rates. Otolith increments will be used as an indicator of growth (the wider the increment the faster the growth) and fast growth in the larval stage should lead to a stronger year class.

PhD student, Tom Mullaney, will be analysing the data collected from the optical plankton counter and making comparisons with the otolith increment width of two of the more common species found, pilchards (*Sardinops sagax*) and the blue mackerel (*Scomber australasicus*). Honours student, Peter Burns, will be identifying the larval fish communities associated with the upwelled water and the warmer currents. Mark Baird will use the information obtained to validate a size-structured pelagic ecosystem model, which models the uptake of nutrients into a food web after upwelling events. Tony Miskiewicz has kindly offered to keep a close eye on the students identifying the larval fish species and Iain Suthers is steering the ship, with funding from UNSW and the Australian Research Council.

See www.famer.unsw.edu.au for contact details, images and information on

larval fish research at the University of New South Wales, Sydney, Australia. §



From old to new (left to right from top row): Tony Miskiewicz, Mark Baird, Tom Mullaney, Peter Burns in September 2004, on board the Research Vessel Southern Surveyor, a national research facility owned and operated by the CSIRO.

Section Officers

President

Howard I. Browman
Institute of Marine Research
Austevoll Aquaculture Research
Station
howard.browman@imr.no

President-Elect

vacant until next election

Secretary

Bruce H. Comyns
Department of Coastal Sciences
University of Southern Mississippi
bruce.comyns@usm.edu

Secretary-Elect

vacant until next election

Treasurer

Kathy Lang
NOAA - National Marine Fisheries
Service
Woods Hole, Massachusetts
kathy.lang@noaa.gov



North Central Region

Jim Garvey

from: Aquatic Ecology Laboratory, Ohio State University

Walleye (*Sander vitreus*) play a vital role in the Lake Erie ecosystem as both the top fish predator, and as a highly sought sport and commercial species. In fact, the largest recreational and commercial fisheries in Lake Erie are directed at walleye, and many surrounding communities rely on the economic impact of these fisheries as anglers visit every spring to fish “the walleye capital of the world.” Recently, this important game fish has experienced a decline in population size and high variability in recruitment. Two research projects at The Ohio State University are now underway, and focus on life-history characteristics of walleye and how they influence recruitment variability.

Jennell Bigrigg, a M.S. student at the Aquatic Ecology Laboratory (AEL; working with Roy Stein and Derek Aday), is investigating movement and potential stock structure of walleye. Understanding distribution and abundance of stocks is critically important to successful management. Further, knowing that populations can be divided into identifiable spawning stocks can dictate the need for additional information, such as their productivity, distribution, vulnerability to harvest, and contribution to the population. In this project, we seek to identify homing and migration behavior of walleye and to conduct a mixed stock analysis using otolith microchemistry. This technique is based on the premise that fish will absorb environmental elements and incorporate them into their otoliths, which serve as a repository of signatures from the areas they’ve inhabited. Thus, environmental variation in elemental concentration (due to habitat-specific differences in underlying geology) should be reflected in otoliths. Currently, walleye from Maumee, Sandusky, and Grand Rivers and

open-water reefs have been (and will be) collected during spawning seasons 2003-2005. To determine chemical signatures in the otoliths we use laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS). Basically, this involves running a laser from the focus of an otolith (in cross-section) to the margin, and quantifying the elemental signature of the ablated otolith material with mass spectrometry. This process establishes a chronological record of elemental concentrations found in the otolith. These records are then compared to water chemistry from each spawning habitat (and other locations within the lake) to determine the natal origin, homing, and migration behavior. In addition, we will collect fish that have been harvested via recreational or commercial angling and, through the same method, conduct a mixed stock analysis to establish relative contributions of various stocks to the population and the fishery within the lake.

We are also interested in determining whether adult phenotypes, as influenced by varying environmental conditions and genetics, differ among these spawning groups. Many examples have shown that adult phenotype can have significant influence on offspring quality. Jason Van Tassell, a Ph.D. student at the AEL (working with Roy Stein, Elizabeth Marschall, and Konrad Dabrowski), will quantify the degree to which phenotypes of spawning adults differ and if these differences translate to viability of offspring. In addition, a comparison will be made among the four primary spawning stocks (Maumee, Sandusky, and Grand Rivers and open-water reefs), which, in turn, will provide insight into their relative contribution to recruitment of Lake Erie walleye.

In combination, these projects will shed light on important life-history characteristics of walleye and answer questions that have previously been difficult or impossible to answer. Better understanding of the adult stock structure, migration patterns, homing behavior, and phenotypic variation should provide managers with important information for the creation of robust management initiatives. §



European Region

Audrey Geffen

from: University of Hamburg, Germany

Myron A. Peck has written from the Institute for Hydrobiology and Fisheries Research, University of Hamburg, where he is working with Mike A. St. John and Axel Temming.

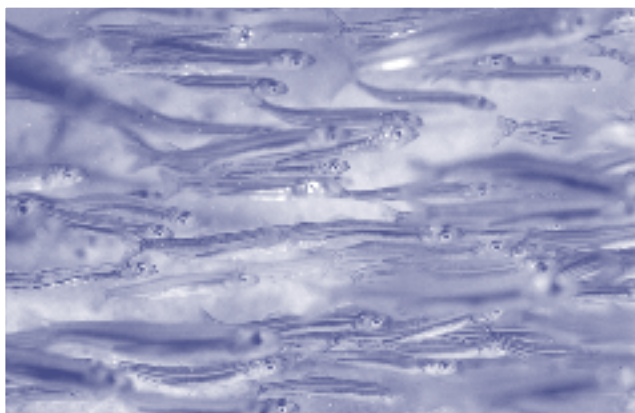
Small pelagic fishes are one of the most sensitive “bio-indicators” of climate change on regional and basin scales due to their short life spans, high intrinsic growth rates (r), and tight coupling to meso-scale physical processes linked to climate (typical “wasp-waist” response). At the IHF laboratory, experiments measuring vital rates of two small pelagic species, sprat (*Sprattus sprattus*) and Baltic herring (*Clupea harengus*), are ongoing within the German GLOBEC (IGBP-funded) research program and AQUASHIFT, a DFG-funded program examining the impact of climate change in various aquatic ecosystems.

The focus of recent research efforts on sprat has been to quantify bioenergetic parameters during the first year of life via measurements of feeding, respiration (routine and feeding energy loss) and growth at different temperatures and body sizes. To support field research, additional laboratory studies have calibrated and compared the response of post-larval sprat somatic growth (length, weight, and condition factor), otoliths (increment widths), and nucleic acids (RNA:DNA) to abrupt changes in feeding conditions. Recent research on Baltic herring has measured the survival and development rate of embryos (eggs) and characteristics of yolk-sac larvae at ten different temperatures between 3 and 21 °C, as well as the potential effect of microzooplankton and changes in fatty acid composition of prey on early larval growth and survival.

...continued on p. 4

Europe...continued from p. 3

Combining the results of IHF laboratory and field research, a coupled bio-physical, individual-based model (IBM) has been developed. The IBM is being used to compare the factors affecting clupeid growth and survival in the Baltic and North Seas, two extremely different environments. This and other modeling approaches, along with long-term field data, will be used to simulate match-mismatch dynamics and consequences at a variety of temporal (months to decades) and spatial scales (meters to basin). The ultimate goal of these activities is to understand the mechanisms responsible for the large shifts and fluctuations in the population abundance of these small pelagics observed during the last decades, especially in the Baltic Sea. §



Post-larval sprat swimming in the laboratory. Photo: D. Stepputtis.



Northeast Region

Motz Grothues

*from: Graduate School of
Oceanography, University of
Rhode Island*

Grace Klein-MacPhee was President of the Southern New England Chapter of AFS until June of 2004 when she received her Chapter President's plaque, thus becoming a Past President of the organization. She had a Hutton Junior Fishery Biologist working with her this summer which was a wonderful experience. Courtney Nosuch, a senior at North Kingstown High School, did a

project measuring growth rates of the mummichog and the Atlantic silver-side collected in two different marshes. The fish were collected as larvae and early juveniles and monitored for three months. Courtney also helped out with a Westport River fish survey. Courtney is now a freshman at Eckerd College studying marine biology.

Grace completed a study of winter flounder egg survival and hatchability when exposed to suspended solids produced by dredging in the Providence River. The eggs were exposed in chambers deployed adjacent to the dredging operation then retrieved at time of hatching. William Macy was the co-principal investigator in this project. The results were presented at the Ninth Flatfish Biology Conference in Westbrook, Connecticut, December 1 & 2, 2004. Walter Berry of the EPA Laboratory in Narragansett conducted laboratory exposures of winter flounder eggs to dredge materials and also presented a poster on his results at the meeting. These projects were funded by EPA, the State of Rhode Island, the Army Corps of Engineers and The Hudson River Foundation.

In Situ Effects of Suspended Particulate Loads Produced by Dredging on Eggs of Winter Flounder (*Pseudopleuronectes americanus*)

Grace Klein-MacPhee, William K. Macy, and Walter Berry

In March of 2002 the U.S. Army Corps of Engineers began dredging in the Providence River to deepen shipping channels leading to the Port of Providence. We studied the impact of increased sediment loading on the early life stages of winter flounder, primarily on eggs and newly hatched larvae, by doing exposures in the field in areas adjacent to the dredging operations. In 2003 and 2004, we exposed newly spawned flounder eggs in 9 holding chambers with 100 winter flounder eggs per chamber. The chambers were 20-25 cm above the bottom when the array was in place. We placed one ar-

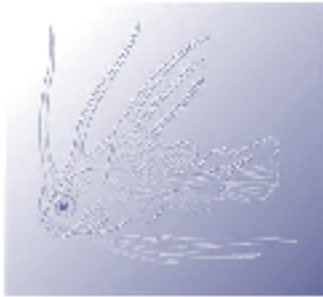
ray adjacent to the dredging operation and one outside of the plume. Divers retrieved the arrays during hatching. Numbers of eggs and larvae, amount of sediment settled in the chambers, and size of larvae were compared. There was a significant difference in the amount of sediment deposited in the experimental vs. the control chambers (3.59 vs. 0.69 g dry weight). There was no statistical difference in the numbers of live eggs and larvae between the treatment and the controls, although there was slightly greater survival in the controls (14.1 treatment vs. 15.5% controls eggs and larvae). Larvae were observed hatching and wriggling up through the sediment in both treatments. Survival of eggs exposed to similar amounts of sediment at the EPA laboratory showed similar results—higher survival in controls but results not statistically significant.

Winter Flounder *Pseudopleuronectes americanus* Hatching Success as a Function of Burial Depth in the Laboratory

Walter J. Berry, Elizabeth K. Hinchey, Norman I. Rubinstein, and Grace Klein-MacPhee

Previous experiments have shown that viable hatch of winter flounder eggs is reduced when the eggs are buried by as little as one half of one egg diameter (approximately 0.5 mm of sediment). This sensitivity to burial has resulted in seasonal banning of dredging in several northeastern U.S. estuaries. In this study, a series of experiments was performed to better determine burial effects on hatching success of winter flounder. In the first experiment, eggs were exposed to clean, fine-grained sediment with burial depths including a no-sediment control, dusting (< 0.5 mm), and up to 2 egg diameters (2 mm) of sediment. A trend of decreased hatching success and delayed hatching date with increasing depth of burial relative to controls was observed; however, differences were not statistically significant ($p > 0.05$). In a second experiment, treatments included a no-sediment control, 4 egg diameters (4 mm) of clean, fine grained sediment, and between 0.5 to 6 diameters (0.5 - 6 mm) of highly contaminated, fine-grained sediment.

...continued on p. 11



29th Annual Larval Fish Conference

Barcelona, Spain
11 - 14 July 2005



Host organization
Institut de Ciències del Mar, CSIC
<http://www.larvalfishcon.org>

THEME SESSIONS

- Effects of environmental variability on the life-history strategies and recruitment: global climate change
- Fronts, eddies and early life histories. Invited speaker: A. Bakun.
- Larval condition, growth and survival.
- Relationship between ecosystem features and the diversity of larval fish assemblages. Invited speaker: J. Govoni.
- Functional morphology, physiology and behavior. Invited speaker: H. Browman
- Fish development and systematics: New genetic advances and classical views. Invited speaker: J. Olney.

LOCAL ORGANIZING COMMITTEE

M P Olivar, I Palomera, P Rubiés, A Sabatés: Institut de Ciències del Mar (mpolivar@icm.csic.es)
I Catalán, P Cañavate: CIFPA Junta Andalucía (ignacio.catalan.ext@juntadeandalucia.es)
A Estévez: Centre d'Aqüicultura (IRTA) (alicia.estevez@irta.es)
A García: Instituto Español de Oceanografía (agarcia@ma.ieo.es)
L Motos: Fundación AZTI (lmotos@pas.azti.es)

EARLY LIFE HISTORY SECTION COMMITTEE

H Browman: Norway, Institut of Marine Research (howard.browman@imr.no)
J J Govoni: Beaufort, USA (NOAA) (Jeff.Govoni@noaa.gov)

Course Offering

Early Life History of Marine Fishes

A Graduate Course in Larval Fish Identification and Ecology

- Date: 1-17 August 2005
- 3 credits (600 level)
- Application deadline 1 May 2005
- Costs: \$1,200 tuition plus registration fees

This lecture and laboratory course offers a comprehensive view of the biology and taxonomy of early life stages of fishes. These stages, including pelagic eggs, larvae, and newly-transformed juveniles, are abundant and diverse components of aquatic ecosystems. Their small size, dynamic growth and mortality rates, and dependence on ambient environmental factors, including ocean physics, make these stages vulnerable to variability in climate and to stresses of anthropogenic origin. Level of reproductive success in teleosts, termed recruitment, is highly variable and largely dependent on variability in survival of these early life stages. Knowledge of their morphological development contributes to studies of phylogenetic relationships. Ontogenetic data serve to clarify the complex systematics of teleost fishes, the most diverse and largest class of vertebrates. Early life stages often have specialized

adaptations to insure survival in stressful habitats. In the laboratory, larvae of 130 families of teleostean fishes are examined and characters useful in identification are presented.

This is a graduate-level course for students with an interest in fish ecology, fisheries science, ichthyology and biological oceanography. It is presumed that students will have some experience and background in those disciplines. Prerequisites include an undergraduate degree in a biological discipline; permission of the instructors is required to be admitted to the course. No more than 15 students will be accepted. The lectures and laboratories will be held at the Marine Science Center of the University of New England. For further information, contact Dr. Olney (olney@vims.edu) or Dr. Houde (ehoude@cbl.umces.edu) or see our web site: www.vims.edu/adv/657/



People



In Memoriam William N. McFarland, 1925-2004

William "Mac" McFarland passed away on August 31, 2004 after a long illness with his family and devoted wife Florence at his side. Mac was 78.

Born in Toronto, Canada September 11, 1925, Mac grew up in Southern California. A

naturalized citizen, he attended the US Maritime Academy and served in the Merchant Marine and US Navy during WW II. Following his military service, Mac attended UCLA where he graduated and received his Ph.D. in Zoology (1959). During his graduate studies in California, Mac worked as biologist and water chemist for Marineland of the Pacific. Thus, began a life-long love of fish, vision, and light beneath the sea.

From 1961-89, Mac pursued teaching and research as a Professor of Biology, Cornell University, Ithaca, New York. In 1989, Mac was appointed Director of the Wrigley Marine Science Center, University of Southern California, located on Catalina Island, CA. While at Catalina, Mac and his wife Florence received the 1992 Marine Technology Society's Compass Distinguished Achievement Award in oceanography

and marine technology for their work in kelp forest monitoring and conservation. In 1995, the McFarlands moved to San Juan Island, WA. to work as independent researchers at the Friday Harbor Laboratory, University of Washington. Mac's recent investigations focused on the role of ultraviolet and polarization sensitivity in the visual ecology of fish. Mac also served on the Friday Harbor Laboratory Development Board and Scientific Advisory Board for the International Marine Center, Oristano, Italy. Mac held honorary appointments as Professor Emeritus at Cornell University and the University of Washington.

As a beloved professor and mentor, Mac leaves behind a legacy of inspiration, devotion, and accomplishment. He was a very special person who touched many lives with his wisdom, enthusiasm for life, and gentle humor. In remembrance of Mac, donations can be made to Friday Harbor Laboratory, (620 University Road, Friday Harbor WA 98250 C/O Robert Schwartzberg, Director of Development) to support students in marine science.

Mac is survived by his wife, colleague, and "best dive buddy" Florence McAlary; his sons, Jim and Ralph McFarland; daughters, Kelly and Jean McFarland; grandchildren Patrick, Andrew, Peter, Jamie, James, and Amber McFarland; and the many students and long-time friends that loved him too. §

Freshwater Guides...continued from p. 8

tions of yolk-sac larvae, larvae and juveniles have been included wherever possible and informative.

Simon, T.P. and R. Wallus. 2003. Reproductive biology and early life history of fishes in the Ohio River drainage.

Volume 1: Acipenseridae through Esocidae. 1990.

Volume 2: Catostomidae. 1994.

Volume 3: Ictaluridae - Catfish and Madtoms. 2003.

The principal objective of these publications is to provide an illustrated resource book series for biologists that study the reproductive biology and early life history of fishes that occur in the Ohio River or its tributaries. Comprehensive reviews of the literature as well as presentations of original data are included. Three purposes are served by these works: they provide another step in the evaluation and advancement of larval fish taxonomy; identify gaps in the knowledge of reproductive biology and early life ecology of fishes from the study area; and stimulate study in areas where such knowledge is still lacking. The diversity of species in the Ohio River drainage makes these books essential to fisheries biologists throughout North America and Europe. §

**THIS WILL BE
YOUR LAST ISSUE OF
STAGES...**

*unless you've paid your 2005 dues.
Check the expiration date on the mailing
label of this issue.*

Paul Smith Retires



After 40 years of service, Paul Smith retired from the Southwest Fisheries Science Center (SWFSC) in La Jolla, California in January 2003. At retirement, Paul was a Supervisory Fishery Biologist with the Fisheries Resources Division of the SWFSC and also served as an adjunct professor at Scripps Institution of Oceanography (SIO).

Paul's research expertise covered a variety of disciplines, but his main interests fell in the areas of pelagic ecology and survey system design. For several decades he has been recognized as a world authority in developing pelagic sampling systems for describing the distribution and abundance of ichthyoplankton and juvenile fishes.

Paul began his professional career in 1963 after receiving his Ph.D. degree from the University of Iowa. He came to SIO as a Sverdrup Postdoctoral Fellow in ecology and worked with Professor E.W. Fager. While at SIO, Paul began collaborations with other key scientists, including Dr. Garth Murphy, coordinator of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) and Dr. Elbert Ahlstrom, director of the La Jolla Laboratory of the Bureau of Commercial Fisheries (BCF – soon to become the National Marine Fisheries Service). Through these collaborations, Paul began his decades-long studies of coastal pelagic fisheries, plankton dynamics, and sampling design.

Paul's research has centered predominantly on coastal pelagic species, including sardines, anchovies, mackerels, and hake. Many of his publications have become classic works in the areas of ichthyoplankton sampling and pelagic ecology. His 1977 publication, "Standard Techniques for Pelagic Fish Egg and Larva Surveys," co-authored with Dr. Sally Richardson and published by the UN FAO, is still considered the bible for designing plankton field surveys. Nearly every reader of this article who has ever planned or participated in an ichthyoplankton field study has probably referred to Smith and Richardson (1977). Paul will also be forever associated with studies of the Pacific sardine and northern anchovy population fluctuations. His research career has spanned the post-collapse period for the Pacific sardine, the large increase in northern anchovy, and the subsequent recovery of the Pacific sardine population. During this period, Paul contributed many key analyses of these stock fluctuations and he was a leader in the establishment of a harvest moratorium for Pacific sardine which was important in the recent recovery

of the population. Paul also became interested in acoustical sampling while working in Norway several decades ago, and he has remained a world authority on the use of acoustical instrumentation to study plankton populations.

Paul's research has brought him numerous awards, including the Department of Commerce Gold Medal in 1990 for his work in interpreting adult fish population size time series and larval fish mortality rates from CalCOFI surveys. Over the years, he has also been a mentor to numerous graduate students at SIO and postdoctoral researchers at the SWFSC. Paul has always been generous with his time and expertise, and always open to discussions with colleagues seeking his advice. Our research group at the Inter-American Tropical Tuna Commission benefited from Paul's expertise on numerous occasions while planning a modest series of surveys of larval tunas in the Panama Bight in the late 1980s. Whether planning the proper net specifications or formulating our sample analysis, we knew that if we sought confirmation of our sampling design from Paul that we would receive the best advice possible. After all, when it came to larval field survey design, he pretty much wrote the book.

Even in retirement Paul continues to pursue research projects and can still be found periodically at work at the SWFSC (Paul.Smith@NOAA.gov) in La Jolla. For all those who have benefited from knowing Paul, we salute his major contributions to the fields of pelagic ecology and early life history and we wish him smooth sailing in his retirement. §

— Dan Margulies

Correction

On page 11 of the previous issue of *Stages* (volume 25, issue 3), the inaugural article from our European Regional Representative was cut short. As printed, it finished as follows:

"European research on the early life history stages is very active, and very diverse being supported by programmes in fisheries, ecology, developmental biology and aquaculture. But be—"

The story should have concluded as:

"European research on the early life history stages is very active, and very diverse being supported by programmes in fisheries, ecology, developmental biology and aquaculture. But before reporting on current activities, we can spare a minute to look back at the contributions of Port Erin, and give a small sigh at its closure. §"

Some way to treat a new Regional Representative! My apologies to Audrey.

— Editor

Publications



Available now: *Developmental Biology of Teleost Fishes*.

Yvette W. Kunz

In the compiling of this book, the vast literature dealing with the descriptive morphology, histology and cytology of teleost development has been combed and integrated. The book is divided into 21 chapters, starting with the egg and embryonic development up to hatching. This is followed by a

description of ectodermal, mesodermal and entodermal derivatives and the development of various organs. The subject index, species index and the abundant illustrations add extra value to this long awaited book. *Developmental Biology of Teleost Fishes* will be a valuable tool for scientists and students in the fields of biology, developmental biology, molecular biology and fish biology.

- ISBN: 1-4020-2996-9 S
- Publication date: 2004.
- Number of pages: 638
- Publisher: Kluwer/Springer.

North American Freshwater Larval Fish Identification Guides

With the upstart of many new 316B projects, a lot of folks out there are looking for larval fish identification guides. I recommend to most folks in the east and midwest the Ohio River volumes (1990, 1994, 2004, so far) and Auer's Great Lakes volume (1982). Electronic versions of Auer's Great Lakes guide can be downloaded from www.glfrc.org/pubs/pub.htm#pubs (select Special Publication 82-3). An order form for the Ohio River Basin volumes is available on the ELHS web site: www2.ncsu.edu/elhs/Order Form Ohio River -1.pdf

— Darrel E. Snyder

The following might help those who are unfamiliar with these references.

Auer, N.A. (ed.). 1982. Identification of larval fishes of the Great Lakes basin with emphasis on the Lake Michigan drainage. Great Lakes Fishery Commission, Ann Arbor, MI 48105. Special Pub. 82-3:744 pp.

This manual for the identification of larval fishes of the Great Lakes basin with emphasis on the Lake Michigan drainage treats 24 families and 145 species. In addition to a key to the families, keys were constructed for selected species within some families. Species accounts include descriptions of adult ecology, reproductive biology, diagnostic characters and meristics. A description of the egg is given, as are morphometric, morphological and pigmentation characteristics of yolk-sac larvae, larvae and juveniles. Illustrations

...continued on p. 6



Available now: *Early Life History of Fishes in the San Francisco Estuary and Watershed*

F. Feyrer, L.R. Brown, R.L. Brown, and J.J. Orsi, editors

This book is the primary source of information on the early life history of fishes in the San Francisco Estuary and its watershed. There has been a large body of research and monitoring conducted in the system; however, very little of it has been published. This book contains more papers on fish early life history in the system than all previous publications combined. There is a great deal of interest in the system itself, as it is the largest estuary on the Pacific Coast of the United States. In addition to providing a resource for people generally interested in the system, original papers on feeding ecology, growth, environmental requirements of species, community ecology, emerging modeling techniques, development, and toxicology will benefit scientists specializing in a variety of disciplines.

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- ISBN: 1-888569-59-X
- Publication date: 2004.
- Number of page: 296
- Publisher: American Fisheries Society
- Online: www.fisheries.org or 64.224.98.53/publications/catbooks/x54039.shtml

Other Recent Publications of Interest

Freshwater Fishes of the Northeastern United States - A Field Guide. R.G. Werner. Published by Syracuse University Press. ISBN 0815630204. 2004.

The Development of Form and Function in Fishes and the Question of Larval Adaptation. Edited by John Jeffrey Govoni. Published by the American Fisheries Society. ISBN 1-888569-58-1. 2004.

The Larvae of Indo-Pacific Coastal Fishes: An Identification Guide to Marine Fish Larvae. (2nd edition). J.M. Leis and B.M. Carson-Ewart. Published by Brill Academic Publishers. ISBN 90-04-13650-9. 2004.

The Big Fish Bang. Proceedings of the 26th Annual Larval Fish Conference. Edited by Howard I. Browman and Anne Berit Skiftesvik. Published by the Institute of Marine Research, Bergen, Norway. ISBN 82-7461-059-8. 2004.

Reproductive Biology and Early Life History of Fishes in the Ohio River Drainage: Ictaluridae - Catfish and Madtoms, Volume III. T.P. Simon and R. Wallus. Published by CRC Press. ISBN 0849319196. 2003.

Fishery Science: The Unique Contributions of Early Life Stages. Edited by Lee A. Fuiman and Robert G. Werner. Published by Blackwell Publishing. ISBN 0-632-05661-4. 2002.

Australian Museum Larval Fishes Website

The new Australian Museum Larval Fishes Website (www.amonline.net.au/larval_fishes/index.htm) has three main components:

- New taxonomic descriptions of fish larvae in the format of Neira, Miskiewicz & Trnski (1998, *Larvae of Temperate Australian Fishes*, University of Western Australia Press) that serve as a supplement to this excellent book;
- A searchable database of published literature for identification of the early life-history stages of Australian temperate teleost species, with particular reference to New South Wales; and
- A beautiful photo gallery of fish larvae (thanks primarily to Rudie H Kuiter).

There is also a brief glossary and links to other larval fish sites.

The peer-reviewed descriptions, some of which deal with species whose larvae have not been described elsewhere, are freely downloadable in one of three formats (HTML, low resolution pdf and high resolution pdf). The descriptions are designed for ease of use even if a copy of Neira et al. (1998) is not available. As of December 2004, descriptions by ourselves and AG Miskiewicz of four species from the families Aploactinidae, Aulopidae, and Labridae are available. We plan to have 10 descriptions available by about March 2005, including contributions by T. Trnski and others. Additional descriptions will be added as they become available and contributions are welcome. In most cases, the material upon which the descriptions are based is deposited in the Australian Museum.

The literature database covers the 1619 species of teleost fishes known from New South Wales waters, and provides information on four early life history stages. Of the 1619 species, the following have been described: eggs 179 (11%), preflexion larvae 319 (20%), postflexion larvae 407 (25%), and advanced larvae or settlement-stage larvae 242 (15%). In addition, if there is no information

on a life-history stage for a particular species, we have indicated if information is available for a congener. This adds another 4-13%, depending on early life-history stage. The level of quality of existing descriptions varies widely, and eggs and larvae of many important sport and commercial fishes remain unknown. Clearly, there is a long way to go in describing the early life-history stages of temperate Australian fishes. We hope this website will help advance the study of fish larvae in NSW and elsewhere.

This project was supported by the Australian Museum and by a NSW Government Biodiversity Enhancement Grant to the Australian Museum. Our very great thanks to Rudie Kuiter for supplying the great larval-fish photos.

NB – Neira et al. (1998) is still in print (see www.amonline.net.au/larval_fishes/book.htm)

§

— Jeff Leis and Amanda Hay



DeepFin – Phylogeny of All Fishes (www.deepfin.org)

Welcome to the Virtual Home of our Research Coordination Network! This site provides research and educational tools, data bases, and resources for systematic ichthyology. DeepFin is a nonexclusive group of scientists committed to expanding the knowledge base of fish systematics. Participation is open to anyone interested, so please join our team!

A Portal for Fish Phylogenetics: Our Directory contains a searchable database of Systematic Ichthyologists ("who is doing what" in fish systematics) and a mailing list. This directory incorporates the "Newsletter of Systematic Ichthyology," formerly published annually by the California Academy of Sciences, includes all participants of the 2003 edition, and

a literature data base. You can join the directory by clicking on the "Sign Up Here" link on the right. This component of DeepFin is sponsored in part by the American Society of Ichthyologists and Herpetologists.

State-of-the-art phylogenetic hypotheses (and reasonable alternatives) will be published at the website (Tree menu) through integration with the Tree of Life Web Project. The DeepFin project promotes education on fish biodiversity, fish evolution, and current knowledge on the phylogenetic relationships of fishes. §



Section Business



www.larvalfishcon.org

This is the online home of the Annual Larval Fish Conferences (LFCs)! The site provides as much information as possible on past, current, and future LFCs.

Site development is being handled by www.SimboliQ.com, in coordination with Howard Browman. Please contact Howard (howard.browman@imr.no) if you have any questions, concerns or suggestions.

Since this website greatly facilitates managing an LFC, we hope that some of you will step forward and offer to host a future meeting. It is never too soon to begin thinking about making an offer! Please contact Jeff Govoni (Chair of the AFS-ELHS Time and Place Committee: jeff.govoni@noaa.gov) if you are interested. §

REMINDER

Deadline for sending materials to include in the next issue of *Stages*:

May 7, 2005

Update on the Election of ELHS Officers

The Section has been behind schedule in nominating candidates for officer positions and in running elections. In order to rectify this, and put us back on schedule, the next election will be held at the ELHS Business Meeting at the 29th LFC in Barcelona. More information on the election of officers (from Howard Browman) is available on the ELHS website: www2.ncsu.edu/elhs/Announcing_ELHS_Election.doc §

Nominations Now Open and Sought for the Ahlstrom Career Achievement Award

As detailed in the October 2004 issue of *STAGES*, a lifetime achievement award has been established by the ELHS in the name of Elbert H. Ahlstrom, a pioneer in the study of the early life history of fishes. A committee consisting of Jeff Govoni, Churchill Grimes, Jeff Isley, and Art Kendall (chair) has been chosen to administer the Ahlstrom Award. The committee is now seeking nominations for this award. Nominations can be made by email to the committee chairman (Art.Kendall@noaa.gov). Please see the October 2004 issue of *STAGES* for details of the criteria for the award and procedures for making a nomination. If a suitable candidate is nominated, we would like to present the first Ahlstrom Award at the LFC in Barcelona in July 2005. §

J.H.S. Blaxter Award

ELHS membership present at the 28th annual Larval Fish Conference voted to establish a best student poster award in honor of Prof. John H. S. Blaxter. The following criteria have been approved for this award.

A. ELIGIBILITY FOR THE AWARD

- This is an award for students. A student is defined as:
 - A person who is currently enrolled and matriculating at a College or University as an undergraduate or graduate student;
 - A person who has completed the requirements for a degree within the past academic year;
 - A person who has enrolled in any accredited university in any country (i.e., the student does not have to be a U.S. or Canadian citizen).
- The award is for the best poster presented by a student at an Annual Larval Fish Conference (LFC) and the student must be first author and presenter of the poster.
- This award is not restricted to American Fisheries Society (AFS) or Early Life History Section (ELHS) members.

B. CRITERIA FOR THE AWARD

- Judges will use a modification of the AFS-ELHS criteria for judging the Sally Richardson Award.
- Judging criteria and a score sheet will be provided to the judges prior to the LFC at which they will serve.

C. JUDGES

- The ELH Section President will appoint the chair of the J.H.S. Blaxter Award committee (hereafter referred to as "the Committee").
- The Chair of the Committee will appoint judges prior to (or at) the LFC.
- The total number of judges appointed shall be three, including the Chair of the Committee. The Chair of the Committee, and the judges, should be Members in good standing of the ELHS.
- Judges should not be associated in any way with any of the students under consideration for the award.

Blaxter Award...continued from p. 10

- Judges will meet prior to the poster session to review the criteria and agree as to when they will judge the posters.

D. MISCELLANEOUS

- Authors eligible for the award will be clearly identified in the conference program.
- In the case of a tie, the award will be split equally between the winners.
- The same student may be awarded both the J.H.S. Blaxter Award and the Sally L. Richardson Award at the same LFC provided the subject matter of the two presentations is distinct.

E. AWARD PRESENTATION

- The author of the winning poster shall receive a check (in an amount equal to half the value of the Sally L. Richardson Award), a certificate, a one year paid Affiliate Membership to the Early Life History Section, and a brief description of Dr. Blaxter's contributions to early life history research.
- The J.H.S. Blaxter Award will be presented by the ELHS President or his/her representative at the LFC banquet. §

President's Message...continued from p. 1

2007, Memorial University of Newfoundland, St. John's, Newfoundland. Hosted by Joe Brown (email: jabrown@morgan.ucs.mun.ca).

2008, Leibniz-Institut für Meereswissenschaften, IFM-GEOMAR, Kiel, Germany. Hosted by Catriona Clemmesen (email: clemmesen@ifm-geomar.de).

2009, University of Victoria, Victoria, British Columbia. Hosted by John Dower (email: dower@uvic.ca).

ELHS members will be asked to vote upon these three possibilities at the Section's business meeting in Barcelona this summer.

Details will be posted to the LFC web site as they become available.

New Theme Image, Promotional Poster, and Pamphlet. Artist-illustrator Glynn Gorick is scheduled to deliver the Section's new theme image early this year. The image will be used to print posters and as the background art for an updated promotional pamphlet for the Section. Hopefully, these will be ready for distribution at the LFC in Barcelona.

Membership Recruitment. The LFC web site will soon include a secure payment area through which Affiliate Members will be able to pay their dues by credit card. Hopefully, this will facilitate membership for many of our Europe-based colleagues! JOIN US!

All current Full and Affiliate Members are urged to assist us in recruiting new members. Make our web sites known to your students and colleagues and circulate the new pamphlets and posters when you go to other conferences.

In closing, if you value the ELHS and its activities, then get involved! Get active! Come to the LFCs! Volunteer for service on one (or more!) of the Section's committees! Send a contribution to *STAGES*! Organize a theme session for one of the next LFCs! Think of something new and exciting! There is a lot that you can do. §

— Howard I. Browman

Northeast Region...continued from p. 4

Eggs buried in 4 diameters of clean sediment did not hatch. Hatching from eggs dusted with contaminated sediment was similar to controls, while eggs buried by 3 (egg) diameters of contaminated sediment had little or no hatching success. There was no evidence of delayed hatching. The results of the second experiment must be interpreted with caution, however, due to the low control survival (21%). Overall, the results of our initial trials indicate that winter flounder eggs may be more resistant to burial than previously thought. §

Editor's Ramblings



People Moving On

I've developed mixed feelings about the People section of *STAGES*, and I'm sure some of you feel the same. When a colleague I know through their publications retires, my first inclination is to reflect upon their work and how it may have influenced my own. If I've had an opportunity to meet or get to know the person much at all, my thoughts then move to their personality. Most often, I feel a momentary professional loss followed by happiness for my colleague's new adventure in retirement. So it is for Paul Smith, with whom I've worked editing a conference volume but only spoken with a few times. I enjoyed every bit of his company during those times. Best wishes Paul!

But then there are the colleagues who have passed away. In the year since I assumed editorship of *STAGES*, we have reported the loss of three colleagues, all of whom I knew pretty well. These are much more difficult to reconcile. Bill "Mac" McFarland was not a major player in the larval fish community, though he dabbled with larvae in his later years. However, Mac was a professor I got to know 30 years ago when I was one of several "fishy" graduate students at Cornell University. What a delightful man he was. I still recall one late summer picnic, the sun setting over the trees, and Mac holding court, describing the change in colors we would see in the sky as the sun retreated. Years later, I moved to Texas and learned that Mac had been on staff here in the late 1950s, so I brought him back to give a seminar. I'm sure glad he came back. This loss is especially tough. §

Newsletter Production Team

Stages is published in February, June, and October each year. It is assembled by the Newsletter Editor with contributions from several Regional Representatives and other individuals. Please send any articles, announcements, or information of interest to Early Life History Section members or affiliates to your local Regional Representative or to the Editor.

Newsletter Editor

Lee A. Fuiman
Marine Science Institute
University of Texas at Austin
stages@utmsi.utexas.edu

Northeast Region

Tom "Motz" Grothues
Institute of Marine & Coastal Sciences
Rutgers University
grothues@ahab.rutgers.edu

Southeast Region

Thomas E. Lankford, Jr.
Department of Biological Sciences
University of North Carolina
at Wilmington
lankfordt@uncw.edu

Northcentral Region

James E. Garvey
Fisheries & Illinois Aquaculture Cntr.
Southern Illinois University
jgarvey@siu.edu

Western Region

Daniel Margulies
Inter-American Tropical Tuna
Commission
dmargulies@iattc.ucsd.edu

Pacific Rim Region

Iain Suthers
School of Biological, Earth, &
Environmental Sciences
University of New South Wales
i.suthers@unsw.edu.au

European Region

Audrey Geffen
Department of Biology
University of Bergen
Audrey.Geffen@bio.uib.no

Join ELHS

Membership in ELHS is open to all persons or organizations interested in furthering ELHS objectives, regardless of membership in the American Fisheries Society (AFS). If you are an AFS member, simply add ELHS membership when you pay your Society dues.

Affiliate membership is open to persons or organizations who are not members of AFS. Affiliate members are encouraged to participate in Section meetings, committee work, and other activities, but they cannot vote on official Section matters, run for or hold an elected office, or chair standing committees. All members receive **Stages**.

To become an affiliate member, mail your name, institutional affiliation (if appropriate), mailing address, telephone and fax numbers, e-mail address, and dues (US \$10 per year) for the current and/or upcoming year(s) to:

Kathy Lang
Treasurer, AFS-Early Life History Section
NMFS/NOAA
166 Water Street
Woods Hole, MA 02543-1097

Remember to check the mailing label for your membership expiration date and renew, if necessary.

AFS-ELHS
University of Texas at Austin
Marine Science Institute
750 Channel View Drive
Port Aransas, Texas 78373-5015

