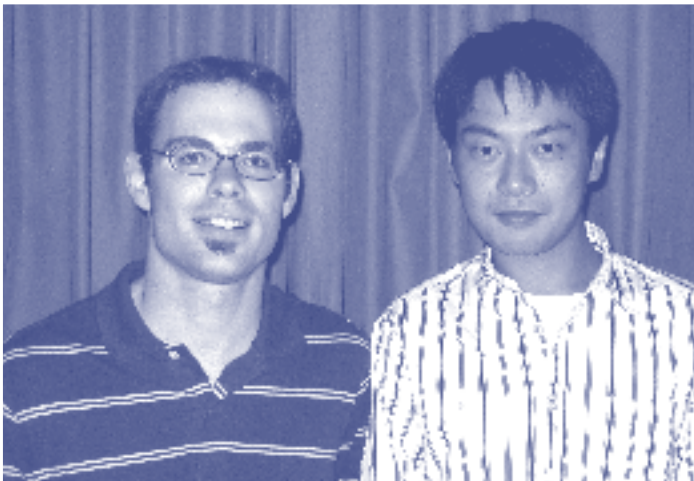




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Richardson and Blaxter Award Winners



Dominique Robert (left) of the Université Laval won the J.H.S. Blaxter Award and Yuichi Fukunishi (right) of Kyoto University won the Sally L. Richardson Award at the 29th annual Larval Fish Conference in Barcelona.

Congratulations to Yuichi Fukunishi, winner of the 2005 Sally Leonard Richardson Award and to Dominique Robert, winner of the 2005 J.H.S. Blaxter Award.

The Richardson Award honors the best student paper presented at each annual Larval Fish Conference, and the Blaxter award recognizes the best student poster.

Yuichi's presentation, entitled "Ontogenetic changes of UV-B radiation induced mortality and avoidance behavior against UV-B in red seabream *Pagrus major* and black sea bream *Acanthopagrus* ...continued on p. 9

Delegates for 29th Annual Larval Fish Conference

ESP	41	ISL	3
USA	36	POL	3
AUS	10	AUT	2
CAN	9	CZE	2
JPN	9	DNK	2
ITA	6	BEL	1
PRT	6	BRA	1
FRA	5	EGY	1
GBR	5	FIN	1
NOR	5	KOR	1
RUS	5	NLD	1
MEX	4	SWE	1
DEU	3	TTO	1
IRL	3	TWN	1

President's Message



Many of you will have already heard the sad and shocking news that our President-Elect, Joe Brown, died suddenly at his home in Shoe Cove, Newfoundland on Sunday, 4 September 2005.

We have been deprived of an exceptional colleague and long-time friend. You will read more about Joe on pages 6 and 7 of this edition of *STAGES*.

Dr. R. Christopher Chambers, of the NOAA Northeast Fisheries Science Center, has generously agreed to step in as President-Elect of the Section. You can learn more about Chris online at: www.fishlarvae.com/scientists/theguys.asp?SID=62

ELHS Secretary Bruce Comyns. Hurricane Katrina damaged the home and laboratory of the Section's Secretary, Bruce Comyns.

Bruce and his family are fine, but they will be in rebuilding mode for some time. Bruce was to host the 30th annual Larval Fish Conference (2006). Likewise, Joe Brown was to host the 31st annual Larval Fish Conference (2007). But these plans have had to change. See page 5 of this edition of *STAGES* for the current plans for our conferences.

Here is my status report on the various initiatives that I brought to your attention in the previous issues of *STAGES*.

Election of Officers. We are in the process of obtaining bids for additional development of the LFC web site that will allow online election of ELHS officers. If you are interested in serving as an ELHS officer, or would like to nominate someone, please contact Chris Chambers (Chair, AFS-ELHS Nominations and Mail-Ballot Committee) at: chris.chambers@noaa.gov. Specifically, within

...continued on p. 10

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

January 5, 2006

News from the Regions



Northcentral Region

Jim Garvey

from: Laura Csoboth, Fisheries and Illinois Aquaculture Center, Southern Illinois University

Evaluating a large restored backwater in the Illinois River

At Southern Illinois University Carbondale, we have been working for these past 2 years to assess the biological response of fishes to the Swan Lake Habitat Rehabilitation and Enhancement Project (HREP). Swan Lake is a major backwater (about 1,000

ha) of the Illinois River, Illinois, USA (Figure 1), and through the HREP, was compartmentalized into three management units representing three levels of intensity in waterfowl and fisheries management. The HREP is intended to reduce sedimentation in the Swan backwater and manipulate water levels for the management of both fish and waterfowl. The scope of the response monitoring is therefore widespread, encompassing fish, waterfowl, and invertebrate use of the restored backwater complex and has been a collaborative venture with state and federal agencies. Because restoration goals included improving the spawning and nursery habitat of this backwater system, an objective of this post-project monitoring is to determine larval fish production within Swan Lake and to quantify ichthyoplankton drift between the backwater and river. Larval and juvenile fishes within the backwater are sampled using bow-mounted tow nets (Figures 2 & 3), which can be modified to effectively sample water depths as shallow as 0.5 m. We attached nets to a floating PVC frame and set this at the mouth of the lake to quantify bidirectional drift between the lake and river.



Figure 2. Laura Csoboth collects fish larvae from a drift net frame that is suspended in the water column at the channel between Swan Lake and the Illinois River.

We are excited about this dataset as we have had two very different sampling seasons. The first year (2004) had a moderate summer flood pulse, and the second (2005) experienced a 3-month drought. Where in 2004 Swan Lake generated peak larval densities exceeding 300 fish m⁻³, this year's lack of adequate rainfall dampened larval production. High densities in 2004 were the result of a clupeid- and cyprinid-dominated backwater. Although clupeids and cyprinids were dense, the dominance in families in the drift between the backwater and the river shifted slightly to more fluvial-dependent species like Sciaenidae. We have observed an interesting dynamic not only among the river and

continued on p. 3



Figure 1. The 1,000-ha Swan Lake backwater lake of the Illinois River. The Mississippi River is in the lower right-hand portion of the figure.

Section Officers

President

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

Secretary

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

Treasurer

Elisabeth H. Laban
National Ocean Service, NOAA
Beaufort Laboratory
elisabeth.laban@noaa.gov

President-Elect

R. Christopher Chambers
NMFS, NE Fisheries Science Center
James Howard Marine Science Lab
chris.chambers@noaa.gov

Secretary-Elect

Denice M. Drass
NMFS, SE Fisheries Science Center
Pascagoula Laboratory
denice.drass@noaa.gov



Northeast Region

Motz Grothues

The Northeast Section welcomes back Jon Hare. Jon was in the Northeast Region as a graduate student at SUNY Stony Brook, but since then worked at the NOAA Beaufort Laboratory (North Carolina). He moved to the NMFS Narragansett Laboratory (Rhode Island) in February. Jon is working with the NEFSC Ecosystem Monitoring program, which surveys zooplankton and ichthyoplankton on the northeast U.S. shelf six to seven times per year. The group also oversees two Ship of Opportunity transects: one across the Gulf of Maine and one from New York to Bermuda. This program collects XBT and Continuous Plankton Recorder data monthly on both transects.

Jon is still finishing up work from Beaufort including a project examining the mechanisms of larval ingress into Chesapeake Bay (with Simon Thorrold, Harvey Walsh, Christian Reiss, Arnoldo Valle-Levinson, and Cynthia Jones), a study of the buoyancy of late-stage larvae (with Harvey Walsh and Mark Wuenschel), and an examination of the influence of over-winter mortality on the population dynamics of Atlantic croaker (with Ken Able) among other topics. He is starting up research on the northeast shelf using the NEFSC datasets; an important task is the confirmation of larval fish identifications from the Ecosystem Monitoring Program. He is also working on a project led by Dave Mountain to assess the utility of the Video Plankton Recorder for monitoring zooplankton abundances on the shelf. Jon is an approved adviser in the National Research Council Research Associateship program, which funds post-doctoral positions, and is he willing to discuss post-doctoral opportunities with anyone who is interested. He can be reached at jon.hare@noaa.gov.

Mike Fahay (NMFS, Northeast Fisheries Science Center, Broward Laboratory in Sandy Hook, NJ) reports the completion of the taxonomic sections of the revised *Early Life History Stages*



European Region

Audrey Geffen

Three events showcased European early life-history studies this year: the Larval Fish Conference in Barcelona (July), the European Aquaculture Society annual meeting in Trondheim (August), and Larvi 2005 (the 4th International Fish and Shellfish Larviculture Symposium) in Ghent (www.aquaculture.ugent.be/larvi).

At the European Aquaculture Society meeting Josianne Støttrup and Julia L. Overton (Danish Institute of Fisheries Research, DIFRES) presented their recently-started 3-year project aimed at production of cod larvae for stock enhancement in the eastern Baltic Sea. They reported:

In 2004, a 5-month evaluation project financed by the Ministry of Food, Agriculture and Fisheries (through EU fisheries sector funds) took place to examine the potential for restocking to improve the eastern stock of Baltic cod. This evaluation project revealed that not only egg production, but the poor survival of the early life stages, limited recruitment success due to the unique hydrodynamics and ecology of the Baltic Sea.

With this ecological bottleneck identified, combined with the improved methods of fish culture technology, a 3-year

Northcentral...continued from p. 2

backwater compartments, but also between the two Swan Lake compartments sampled. These results are among a rare, comprehensive time series of larval fish production in a large river ecosystem. Our hope is

of *Fishes of Western North Atlantic North of 35N, west of 40W*. It will soon be undergoing technical editing by the editors at NAFO. A checklist included will document the 1,070 species occurring in study area. There are 753 ontogenetic descriptions, including 496 new descriptions added to Fahay (1983). It will be published in 2 volumes. Hopes are up for a 2006 publication date. §

project (2005–2007) has been funded by the Ministry of Food, Fisheries and Agriculture (through EU fisheries sector funding) to document and establish a protocol to culture and release cod larvae into the Baltic Sea around ICES (International Commission for Exploration of the Sea) Area 25 in order to enhance the cod stock east of Bornholm.

This project is divided into several work packages that cover a) establishment of a healthy captive broodstock, b) production and incubation of good quality eggs, c) identification of the most ideal stage of development, and its duration, for release of larvae into the Baltic ("window of opportunity") and the method of transfer and release, c) identification and location of plankton patches around the Bornholm Basin for release of larvae, and d) the method of tagging the larvae so that the contribution to the recruiting stock can be monitored during recapture 1-2 years after release.

During the final year of the project it is planned to release a minimum of 47 million first-feeding larvae from the months of May to August. This is equivalent to a 1% increase in 2-year-old recruits.

The project will be carried by the DIFRES in collaboration with Bornholm's Salmon Hatchery, Nexø, Espersens A/S, and Bornholm and Christiansø Fisheries Union. For further information, please contact Josianne Støttrup (jgs@dfu.min.dk) §

that our research will provide insight into the contribution of backwaters to river fish assemblages and improve management of these increasingly human-modified systems. §



Figure 3. Juvenile gizzard shad collected in drift samples from the Swan Lake backwater.

Recent Events

What You Missed at the 29th Annual Larval Fish Conference in Barcelona



A mostly American delegation: (counter-clockwise around the table from left foreground) Morgan Busby, Makino Hirona, Bev Powells, Perce Powells, Carolyn Hoss, Don Hoss, Linda Fuiman, Ann Matarese, Kevin Kiernan.



A British delegation: (left to right) Richard Nash, Audrey Geffen, Mark Dickey-Collas, and David Horne.



A Texas delegation: (left to right) Maria Alvarez, Rafa Perez, Brie Sarkisian, Megan Fencil.



An especially distinguished and scholarly delegation: (left to right) Andy Bakun, Lynnath Beckley, and Rick Shaw.

Who We All Thank for an Exceptional Job of Organizing the Conference



Future Larval Fish Conferences

30th Annual Larval Fish Conference. Following from the devastation caused by Hurricanes Katrina and Rita, the 30th annual Larval Fish Conference (2006) will not be held in New Orleans as planned. The American Fisheries Society has graciously agreed to allow the Larval Fish Conference to meet in conjunction with their annual meeting, 10-14 September 2006 in Lake Placid, New York, USA.

The local host for the meeting, Doug Stang, will coordinate with the Section to ensure that the LFC program is distinct from the overall AFS sessions and that we have our own conference rooms. Details about the 2006 Larval Fish Conference will be posted, as they become available, at www.fisheries.org and, of course, at www.larvalfishcon.org.

31st Annual Larval Fish Conference. Joe Brown had offered to host the 2007 Larval Fish Conference in Newfoundland, Canada. Since his death, we are waiting to see if his colleagues will be able to carry on with this commitment. If not, other venues will be considered. If you think that you might be able to host the LFC, please contact Howard Browman or Jeff Govoni.

32nd Annual Larval Fish Conference. Catriona Clemmesen has confirmed that the University of Kiel (Germany) will present an offer to host 2008 Larval Fish Conference. Catriona will participate in the 2006 meeting and make her formal offer at the annual meeting of the ELHS Executive Committee. §

Diadromous Fishes Symposium

A symposium on "*Challenges for Diadromous Fishes in a Dynamic Global Environment*" will be held in Halifax, Nova Scotia, Canada from 17 to 24 June 2007. This symposium will build upon the successful "*Common Strategies of Anadromous and Catadromous Fishes*" symposium of 1986 (AFS Symposium 1) but will have more emphasis on recent alterations to the aquatic environment and the effects that human activities have had on aquatic resources. Meeting information and contacts can be seen at www.anacat.ca or by contacting Alex Haro, S.O. Conte Anadromous Fish Research Center, USGS, 1 Migratory Way, Turners Falls, MA 01376 or call (413)-863-3806. §

World Fisheries Congress

Doug Beard, John Casselman, and Howard Browman have been appointed as the American Fisheries Society's representatives to the 2008 World Fisheries Congress Program Committee. This conference will be held in Yokohama, Japan. Everyone with an interest in the early

...continued on p. 9

Zebrafish Symposium

The symposium "Zebrafish in Comparative Context" will be held at the Society for Integrative and Comparative Biology (SICB; www.sicb.org) meeting in January 2006, in Orlando, Florida, USA.

This Symposium will provide a unique opportunity for interaction between scientists who study the comparative development of fishes in a phylogenetic context and those who use the molecular and genetic resources of the zebrafish (*Danio rerio*) model system to study fundamentals of vertebrate development. Such an integration will broaden our understanding of the relationship between genotype and phenotype and stimulate discussions about how a comparative approach can help to generate new hypotheses about fundamental features of fish development and evolution. Symposium speakers and topics include:

- Mark Cooper (University of Washington) – Evolution of gastrulation in fishes
 - Joe Fetcho (Cornell University) - Neurobiology of escape response
 - Marnie Halpern (Carnegie Institution) – Zebrafish brain specification and asymmetry
 - Patricia Hernandez (George Washington University) – Muscle development
 - Chuck Kimmel (University of Oregon) – Development and evolution of pharyngeal skeleton
 - Tom Kocher (Hubbard Center for Genome Studies, University of New Hampshire) – Comparative genomics of teleost fishes
 - Paula Mabee (University of South Dakota) – *Danio* skeletal evolution re: other cypriniforms and teleosts
 - Rick Mayden (St. Louis University and PI, Cypriniform ToL Initiative) – Systematics of *Danio*
 - Amy McCune (Cornell University) - Insights from natural *Danio* mutants
 - David Parichy (University of Texas) – Evolutionary genetics of *Danio* pigment pattern development.
 - John Postlethwait (University of Oregon) – A comparative analysis of the consequences of genome duplication in teleost fish.
 - Tom Schilling (University of California, Irvine) - Craniofacial development
 - David Stock (University of Colorado) – Comparative studies of tooth development in teleost fishes.
 - Jackie Webb (Villanova University) – Comparative development of cranial sensory systems.
- Funding may be available for students and post-docs to support some travel costs. Contributed paper sessions and poster sessions will accompany this symposium. If you are interested in contributing a paper or poster to an accompanying session, contact the Symposium Organizers, Jackie Webb (Jacqueline.webb@villanova.edu) or Tom Schilling (tschilli@uci.edu). §

People



In Memoriam Joseph A. Brown, 1945-2005

We were deeply saddened by the sudden loss of one of our own recently. Joe Brown passed away in September – he was 59 years old. Joe touched the lives and careers of so many of us that it is virtually impossible to count us all. He was a member of the Early Life History Section of the American

Fisheries Society for many years. To those who knew and worked with him, he was a supervisor, mentor, colleague, and above all, a friend. We will miss him dearly.

Joe was born in Philadelphia to Joseph and Josephine Brown in 1946. His formative early years were split between Grey, Maine, and summers spent in Chadd's Ford Inn, Pennsylvania.

Joe attended St. Francis Xavier University in Antigonish, Nova Scotia, Canada in 1964. He received his BSc in Biology in 1968.

Joe was drafted into the US Armed Forces during the Vietnam era following graduation, and he became an excellent marksman in the infantry. Just prior to undertaking what was to have become his tour of duty in Vietnam, he caught pneumonia. This twist of fate led to his reassignment to Germany as a finance clerk. With much glee, Joe would recount the "power of the pen over the sword," when describing the influence possible payroll delays would have on Generals.

Joe returned to university after his discharge from the army, working toward his graduate degrees in biology. He worked with Dr. Jon Lien at Memorial University of Newfoundland in St. John's, Newfoundland, Canada, on seabirds. He completed his MSc in the Department of Biology there, under the supervision of Dr. John Green, investigating the ecology of Arctic shanny. It was during this period that Joe met his wife and fellow biologist,

Faye Murrin. He spent two years in Nova Scotia working in various capacities, including museum curator and laboratory instructor, as Faye completed her graduate work.

Joe was awarded his PhD in Biology from Queens University in Kingston, Ontario, Canada, in 1983, which he conducted under the supervision of Dr. Patrick Colgan. He performed much of his research at the Lake Opinicon lab, where he obviously left his indelible mark. A "Joe Brown Look-Alike Contest" is held annually at the Opinicon lab to this day. His combined laboratory and field studies on fish behaviour were groundbreaking. He earned the prestigious Hoar Award in 1983, awarded annually to the top PhD thesis presentation by the Canadian Society of Zoologists. He conducted postdoctoral work at Queens with Dr. Peter Johansen.

Joe accepted a faculty position at the Ocean Sciences Centre, Memorial University of Newfoundland in St. John's in 1984, where his career proliferated rapidly. His research success on fish behaviour and aquaculture belies his abbreviated time among us. He authored and co-authored over 130 papers, book chapters, and proceedings. He and his colleagues had over 50 successfully funded research projects, worth in excess of \$8 million. Joe served on numerous review boards, panels, and committees and was affiliated with over 50 national, international, regional, provincial, and academic organisations while he was at Memorial University.

During his career, he supervised an incredible number of graduate students – the achievements of whom he was immensely proud. He mentored students with an inspired blend of significant scientific endeavour, unique humour, and legendary sociability, lubricated with much beer. He was a supervisor and colleague who had a gift for keeping people around him grounded. Joe was always quick to offer his encouragement after research talks. He had a gift for down-playing the inevitable mistakes made in the course of conducting good research, and regarded them as learning experiences to be embraced.

Joe Brown's impact on our science has been profound and will continue to be so well into the future, through the work of his many students and colleagues. We are privileged to have known him. He was an example to us all of how science should be done and enjoyed.

— Robert S. Gregory
St. John's, Newfoundland





Geoff Moser Retires

Although a bit tardy, the ELH community wishes to congratulate Geoff Moser on his retirement after an incredibly productive career in the area of systematics and ecology of marine fishes. Geoff retired in June of 2002 after 40 years of service as a fishery biologist with the National Marine Fisheries Service in La Jolla, California. At the time of his retirement, he served as Leader of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) Ichthyoplankton Ecology Program.

Geoff's scientific career began at Dartmouth College, where he received his Bachelors degree in Biology in 1960. In 1962, he began work as a fishery biologist for the Bureau of Commercial Fisheries (eventually to become the National Marine Fisheries Service) in La Jolla, California. For the next 40 years, he would play an integral role in the study of the systematics and ecology of marine fishes, particularly those species inhabiting the California Current system. Over the years, Geoff has rightfully earned the reputation as one of the world's authorities on the systematics and identification of early life stages of marine fishes.

In the 1960s, Geoff began a decades-long professional association with scientists at the La Jolla Laboratory, Southwest Fisheries Center. Among those scientists were Elbert Ahlstrom, Reuben Lasker, Paul Smith, and John Hunter. Geoff's collaborations with Elbert "Ahlie" Ahlstrom led to the identification and classification of the larval and early juvenile stages of hundreds of species of fishes occurring in the California Current system. Geoff's early research interests included the reproductive and developmental biology of rockfishes, but his interests quickly expanded to include the identification, systematics, and ecology of the early life stages of a vast array of marine species. Beginning in 1969, Geoff and Ahlie Ahlstrom published a series of classic papers on the development, distribution, and morphology of early stages of myctophid fishes (lanternfishes). These early studies of the egg, larval, and juveniles stages of marine fishes expanded, and in 1978 Geoff and Ahlie began work on an identification guide to the most common species (over 100) occurring in the CalCOFI ichthyoplankton collections. This work was interrupted by the untimely death of Ahlie

Ahlstrom in 1979, but Geoff, along with colleagues at the La Jolla Laboratory and elsewhere, continued the work. In 1983, Geoff organized a symposium to honor Ahlie and his scientific contributions, resulting in the symposium volume entitled, *Ontogeny and Systematics of Fishes*, published by the American Society of Ichthyologists and Herpetologists in 1984. The volume was a significant collection of papers summarizing the study of the ontogeny and systematics of marine fishes.

Geoff's efforts to publish a more comprehensive guide to the early life stages of CalCOFI species continued throughout the 1980s and early 1990s. Colleagues in the "Larval Lab" at the La Jolla Laboratory, including Richard Charter, Bill Watson, Dave Ambrose, Elaine Sandknop, and Sheri Charter, along with former staff members Barb Sumida McCall, John Butler, and Betsy Stevens (with help from Bill Richards, Michael Brogan, Bruce Mundy, and Michael Shane), contributed major efforts toward the completion of the guide. The group effort culminated in the 1996 publication, *The Early Stages of Fishes in the California Current Region*, Atlas No. 33 of CalCOFI. The guide was a monumental compilation of information and illustrations of the early life stages of over 500 taxa of fishes in the California Current Region. It is one of the most comprehensive regional guides ever published on the early life-history stages of marine fishes.

Over his career, Geoff garnered several prestigious awards for his research, including the Department of Commerce Silver Medal and two NOAA Bronze Medals. He has published over 210 scientific papers, and these papers have covered the gamut from flatfishes to midwater species to shoaling pelagics. Yet, he has always been quick to credit others for their contributions to research projects on which he worked, and he would usually be the last to take credit for important accomplishments recognized by others. That is his nature. It is also the reason why so many colleagues share a sense of true friendship and loyalty towards him.

Those of us who have had the privilege to know and work with Geoff over the years wish him well in his retirement. He continues to publish even in retirement, enjoying his home in Bozeman, Montana with his wife Pam. He remains active as a volunteer for the Red Cross and Trout Unlimited, and of course, there is always time for trout fishing in one of the beautiful streams of Montana. Geoff, we wish you the best!

— Dan Margulies

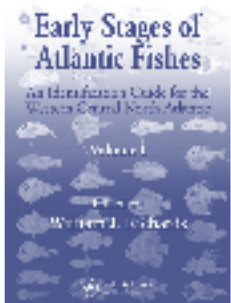
More on Joe Brown

The Aquaculture Association of Canada posted an obituary for Joe at: www.aquacultureassociation.ca/brown.html. Another obituary posted by the Atlantic Provinces Council on the Sciences appears at: apics.dal.ca/joebrown.html. The latter reports: "A scholarship has been established in his memory, and donations may be directed to MUN Alumni office, specifying the Joe Brown Memorial Scholarship Fund." Contributions to this fund can be made online at: <https://www5.mun.ca/dir/viking.gv020.p001> §

Grace in Retirement

Grace Klein-MacPhee reports that, despite being semi-retired, she is working part time on an ichthyoplankton survey of Narragansett Bay. She will be comparing data with Chris Powell on juvenile distribution and egg and larval distribution in the bay. She has a new e-mail address: gracekmac@110.net. Professional correspondence can be sent to Dr. Grace Klein-MacPhee, RIDEM, 3 Fort Wetherill Rd., Jamestown RI 02835. §

Publications



Available now: *Early Stages of Atlantic Fishes: An Identification Guide for the Western Central North Atlantic.*

Edited by W.J. Richards

This two-volume set is the definitive reference covering the ELH of those fishes found in the part of the Atlantic that stretches from North Carolina to the Equator, across the territorial waters of at least 40 countries. With contributions from more than 70 international experts, the book should be of great interest to fishery scientists, marine biologists, oceanographers, and ecologists.

Over 2600 pages, this two-volume masterwork covers the eggs, larvae, and juveniles of all families known to inhabit this area. It brings together all of the published information of merit plus original research results, providing information designed to identify these ELH stages generally collected by plankton nets. Chapters in the volume are devoted to each of the 214 families. All of them include a brief synopsis of the family, early life stage identification, meristic data tables, and significant accounts of lower taxa, with one page giving detailed information and the facing page devoted to illustrations.

- ISBN: 0849319161
- Publication date: 2005.
- Number of pages: 1824 (2 volumes)
- Publisher: CRC Press.

Bruce Collette reminds us that this volume completes the NMFS-sponsored series of volumes on early life-history stages of all the regions of the continental US: Mike Fahay for the Northeast; Geoff Moser for the Southwest; and Ann Matarese et al. for the Pacific Northwest. §

Proceedings of the 29th Annual Larval Fish Conference

The conference proceedings will be published in a special volume of the journal *Scientia Marina*. *Scientia Marina* is a journal of marine sciences published since 1955 by the Institut de Ciències del Mar de Barcelona (CSIC). This journal has been included in the Science Citation Index since 1998 (www.icm.csic.es/scimar/scimar1.html). This special volume will be edited by Jeff Govoni and M. Pilar Olivar. It will include between 20 and 30 papers from the conference. All manuscripts will be peer-reviewed by at least two readers, in addition to the editors. Publication is expected to be at the end of 2006 or the beginning of 2007. Copies of the book will be distributed free of charge to all conference registrants. §

Other Recent Publications of Interest

Developmental Biology of Teleost Fishes. Y.W. Kunz. Published by Springer Press. ISBN 1-4020-2996-9. 2004.

Early Life History of Fishes in the San Francisco Estuary and Watershed. Edited by F. Feyrer, L.R. Brown, R.L. Brown, and J.J. Orsi. Published by the American Fisheries Society. ISBN 1-888569-59-X. 2004.

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.

Larval Fish Sampling and Identification Workshop Planned

Drs. Nancy Auer, Darrel Snyder, David Jude, and Edward Roseman have proposed a continuing education course on larval fish sampling and identification to be held as part of the 2006 American Fisheries Society meeting in Lake Placid, New York (the 30th annual Larval Fish Conference will be held in conjunction with this meeting). This workshop will train scientists, students, and educators in the systematics and identification of freshwater larval fishes common to the northeast United States with emphasis on Great Lakes fishes. This type of training is not commonly offered in traditional college fisheries curricula because it requires special skills and expertise often not available at most institutions or agencies. Further, many new environmental monitoring and research initiatives are underway that involve examination of fish early life history and ecology, emphasizing a need for scientists trained to sample and identify larval fishes. This workshop will expose participants

...continued on p. 9

Awards...continued from p. 1

schlegeli" was co-authored by R. Masuda and Y. Yamashita, from Maizuru Fisheries Research Station, Field Science Education and Research Center, Kyoto University, Japan. Yuichi received a plaque and a check for \$600.

Dominique's poster was entitled "Feeding ecology of larval Atlantic mackerel (*Scomber scombrus*) in the southern Gulf of St. Lawrence (Canada)." His co-authors were M. Castonguay and L. Fortier. Dominique received a plaque and a check for \$300.

Honorable mention for the Richardson Award went to Monica Gagliano from the School of Marine Biology and Aquaculture, James Cook University, Australia for her presentation "Direction and intensity of phenotypic selection on the early life history traits in a tropical marine fish" co-authored by M.I. McCormick and M.G. Meekan. §

WFC...continued from p. 5

life stages of fishes should think of ways to ensure that this subject area is well represented and visible at this important meeting. Please let Doug, John, or Howard know if you have any suggestions for the program. Be proactive about it! §

Workshop...continued from p. 8

to larval fish collection gear types, the advantages and limitations of using each gear type, at least 15 species of freshwater fish larvae will be available for identification, examples of relevant literature, and sources to obtain copies of literature to assist in identification will be available. Participants will develop techniques for identification of larval fishes applicable to other species they may encounter in future work.

We hope to have confirmation and more information about this workshop for the next issue of STAGES. §

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

*unless you've paid your 2006
dues. Renew today!*

Richardson Award Winner's Abstract

ONTOGENETIC CHANGES OF UV-B RADIATION INDUCED MORTALITY AND AVOIDANCE BEHAVIOR AGAINST UV-B IN RED SEA BREAM *Pagrus major* AND BLACK SEA BREAM *Acanthopagrus schlegeli*. — Y. Fukunishi, R. Masuda, and Y. Yamashita.

Red sea bream *Pagrus major* and black sea bream *Acanthopagrus schlegeli* are both common sparid fishes in Japanese coastal waters. Larvae and juveniles of black sea bream spend their life in very shallow waters such as the surf zone, whereas those of red sea bream dwell in deeper water. We compared their ontogenetic changes of tolerance to and avoidance from ultraviolet (UV-B) radiation. Two series of experiments were conducted using hatchery reared individuals with matching ages. In the tolerance experiment, larvae and juveniles from each species (age 13-46 days) were stocked in beakers, and were exposed to one of five different levels of UV-B radiation (1.8, 1.1, 0.2, 0.1 and 0 W m⁻²) for one hour. Their survival rates were calculated 12 or 24 hours later. In the avoidance experiment, larvae and juveniles (age 3-49 days) were put in a long aquarium, half of which was covered with UV blocking film and was placed under UV-B radiation. Avoidance index was calculated based on observations using a video camera. Black sea bream showed significantly better survival compared to red sea bream for most ages tested under the two strongest level radiation conditions. Only black sea bream of ages 37 and 49 days showed a significant avoidance from UV radiation, whereas red sea bream did not show avoidance on any days tested. High tolerance to and avoidance from harmful UV-B radiation in the black sea bream suggests that they are better adapted to high UV-B environments.

Blaxter Award Winner's Abstract

FEEDING ECOLOGY OF LARVAL ATLANTIC MACKEREL (*Scomber scombrus*) IN THE SOUTHERN GULF OF ST. LAWRENCE (CANADA). — D. Robert, M. Castonguay, and L. Fortier.

By hampering feeding performance and growth, low availability of suitable prey during the larval stage of fish may compromise survival by extending the period of vulnerability to predators. Few studies have verified that larval fish feeding is limited at low prey density in the sea. To examine this relationship, it is important to define a prey field based on larval feeding selectivity before relating zooplankton availability and feeding performance in fish larvae. The present study focuses on the feeding dynamics of larval Atlantic mackerel (*Scomber scombrus*) captured on the Magdalen Shallows (southern Gulf of St. Lawrence) from late May to mid-September in the years 1997 to 2000. Gut content was analysed on a stratified sub-sample of 494 larvae randomly selected within different length classes in each year. Chesson's alpha index was used to measure the selectivity of larvae for their prey. In all years, first-feeding larvae strongly selected for naupliar stages of the copepod *Pseudocalanus* spp. At a body length of 9 mm, selectivity shifted from these nauplii stages towards cladocerans and fish larvae. The copepods *Oithona similis*, *Temora longicornis* and *Calanus finmarchicus* were selected against by larvae of all lengths. Piscivory was observed from the first-feeding stage (<5 mm) and its incidence increased with larval size until reaching a plateau around a body length of 9 mm. Out of the 10% of identifiable fish prey, all were conspecific, indicating a high rate of cannibalism. A feeding performance index, independent of fish length and time of capture, was then computed to assess the relationship between feeding efficiency and the density of preferred prey. The relative influence of vertical mixing and temperature on feeding performance is also assessed, and their potential impacts on growth and recruitment are discussed.

President's Message...cont'd from p. 1
the next 12-18 months, the Section will need a Secretary-Elect, Treasurer-Elect and President-Elect. Please consider serving!

Standing, sessional, and ad-hoc committees. We still need volunteers for the following: Annual Conference Committee; Nominations and Mail-Ballot Committee; Sally L. Richardson Award Committee; J.H.S. Blaxter Award Committee; Student Travel Grants Committee. Please step forward!

New theme image, promotional poster and pamphlet. Artist-illustrator Glynn Gorick has delivered the Section's new theme image which was made into a poster (right). These were distributed at the 2005 LFC in Barcelona and some are available from Section Secretary Bruce Comyns (bruce.comyns@usm.edu). Given Bruce Comyns's situation, work on an updated promotional pamphlet for the Section has been delayed. The plan is to have these ready for distribution at the 2006 LFC.

Membership recruitment. The secure payment area of the LFC website is now available. New and renewing affiliate members can pay their dues online by credit card at: www.larvalfishcon.org/join_elhs.asp

All current full and affiliate members are urged to assist us in recruiting new members. Make our websites known to your students and colleagues and circulate the new pamphlets and posters when you go to other conferences.

Member contact information. The contact information (particularly e-mail addresses) in our member database

is outdated for approximately 30% of you. If you think that you are one of these, please write to ELHS Secretary Bruce Comyns (bruce.comyns@usm.edu) and provide him with your new coordinates.

Contributions to STAGES. Newsletter Editor Lee Fuiman and I know that the content of our newsletter does not reflect even a small fraction of our members' activities. You can help remedy this by contributing something! Doing that is simple. Just send your regional representative:

- an abstract of what you and your team are involved in;
- a modified conference abstract;
- a brief description of your thesis project;
- a review of a new book or interesting article;
- anything you think your colleagues might be interested in knowing about!

WE WANT TO KNOW WHAT YOU ARE DOING, SO TELL US!

Fate has conspired to deprive us of a dear friend and colleague. Mother Nature has taken from us a cherished heritage city and venue for several fish-related conferences and LFCs over the years. A small number of your colleagues have stepped forward to save our Section under these trying circumstances. Please reflect upon this and consider what YOU can do to help rebuild and rejuvenate our Section after these tragic events. §

— Howard I. Browman



Early Life History Section's new theme image. Available as a poster from the ELHS Secretary. Artwork by Glynn Gorick.

Images from Barcelona

Speak No Evil, See No Evil, Hear No Evil.

(also known as Arild Folkvord, Richard Nash, and Tom Miller)



Backgrounds of New Officers

R. Christopher Chambers – President-Elect

Chris is a Research Fishery Biologist at the Northeast Fisheries Science Center of NOAA's Fisheries Service. Based at the Howard Laboratory (Sandy Hook, New Jersey), where he leads the Life History and Recruitment Group, he and his team conduct research on ecological, life-history, and toxicological issues pertaining to fishes of coastal and estuarine waters. After receiving his Ph.D. at Duke University in 1984, Chris began researching fishes during his postdoctoral studies in Bill Leggett's lab in Montreal. He has been an active participant in the Larval Fish Conferences and in ELHS/AFS business since 1987. He was a co-organizer of the 18th annual Larval Fish Conference in St. Andrews, Canada, and co-editor (with Ed Trippel) of *Early Life History and Recruitment in Fish Populations*, which emanated from that conference. Along with colleagues at Sandy Hook, Chris also co-hosted the 25th annual Larval Fish Conference in 2001.

Elisabeth H. Laban – Treasurer

Elisabeth has almost 20 years experience determining the age and growth rates of larval and juvenile fishes. Her career started in 1985, as an undergraduate at the University of South Carolina, working in John Mark Dean's lab. While at USC, she co-authored the *Manual for Otolith Removal and Preparation for Microstructural Examination*, with David Secor and John Dean. In the early 1990's, she moved to North Carolina and began a career in federal service at the Beaufort Laboratory. In 1993, at the first International Otolith Symposium, she led a 3-day workshop on techniques for

otolith preparation and analysis. In 1996, she was invited to Brasil to conduct classes for graduate students, technicians, and researchers at three universities. In 1999, she took an active role when the Larval Fish Conference was hosted by the Beaufort Laboratory. Currently, she is working with: (1) NMFS researchers trying to answer the question of timing of the first annulus formation; (2) NOS and NMFS researchers on age determination of the lionfish; (3) graduate students from East Carolina University and University of North Carolina - Wilmington; and finally, (4) branching out into genetics as a way to identify larval fishes of Gray's Reef. Elisabeth says "I look forward to the opportunity to serve as the Treasurer of the Early Life History Section of AFS."

Denice M. Drass – Secretary-Elect

Denice has been involved with the study of larval fishes since 1992 when she received her master's degree working on leptocephali in the Bahamas. She joined the National Marine Fisheries Service, Pascagoula lab in 1993 and has worked with a variety of species of larval fishes while there. She is currently working on a Ph.D. degree at George Washington University, studying fish systematics using tilefish larval characters. She has attended most of the Larval Fish Conferences since the joint meeting in New Orleans in 1996 (missing the 1998 and 2002 meetings). She has presented both posters and oral papers at various meetings. She was an affiliate member for a few years and became a full member in 2000. Denice says "*I have watched various colleagues helping the society by serving as officers and always thought that when I had some more experience, that it would be my turn to volunteer. I'm not sure that I'm ready, but I will try to preserve the work done by previous secretaries in maintaining current contact information for the membership and recording accurate minutes of the business meetings.*" §

Editor's Ramblings



Disasters Bring Delays

Buoyed by the great Larval Fish Conference and the historic city and wonderful food of Barcelona (not to mention our delightful week of vacation in colorful Sevilla), I was expecting to continue my personal goal of getting each issue of *STAGES* in your hands during the month it is scheduled. Alas, several disasters prevented that, as I am sure you will understand. Hurricane Katrina ruined the lives of too many residents of Louisiana and Mississippi and seriously impacted countless more. Among those was Section Treasurer Bruce Comyns. Bruce is recovering from the personal and professional losses. Since he provides the mailing list for each issue of *STAGES*, Hurricane Katrina also affected our newsletter production. Thankfully, Hurricane Rita had a smaller impact, but as former Section President Jeff Isely reports, the impact is huge, nonetheless (Jeff is actively working on the disaster clean-up in Beaumont, Texas). For *STAGES*, Hurricane Rita set back my production schedule as our institute prepared and evacuated for the storm. Finally, the loss our dear friend and colleague Joe Brown is yet another devastating loss. We'll miss the excellent research he and his students would have presented at future conferences. We'll miss his always upbeat nature. And, I'll miss the conversation we'd planned to have when we learned in Barcelona that were both born in Philadelphia. §

**Are you reading
someone else's issue
of *STAGES*?**

Join *ELHS* and receive your own copy of
the newsletter three times per year.
See page 12 for details.

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:

Elisabeth H. Laban
Treasurer, AFS-Early Life History Section
National Ocean Service / NOAA
101 Pivers Island Road
Beaufort, North Carolina 28516-9722 USA

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

