

On the memory of Professor Eugeniusz K. Balon (1930–2013)

The world-renowned ichthyologist of Silesian origin with Canadian and Czech citizenships Eugeniusz Kornel Bałon was born on the 1 August 1930 in the city of Orlová in the territory of Těšín/Cieszyn Silesia (currently: Moravian-Silesian region, district Karviná). He received his early education in the Polish schools of the county graduating from high school (Polskie gimnazjum realne imienia Juliusza Słowackiego w Orłowej) in 1949. In the same year he enrolled in the Faculty of Natural Sciences at Charles University in Prague where he received his master degree in Biology at the Faculty of Biological Sciences (established after the splitting of the Faculty of Natural Sciences) in 1953. After graduation he joined the State Fisheries and Hydrobiological Research Station in Trnava (Slovakia) as a research worker, and a year later moved to its ichthyological branch in Bratislava. When this workplace was taken over by the Slovak Academy of Sciences in 1956, it was renamed Laboratory of Fisheries.

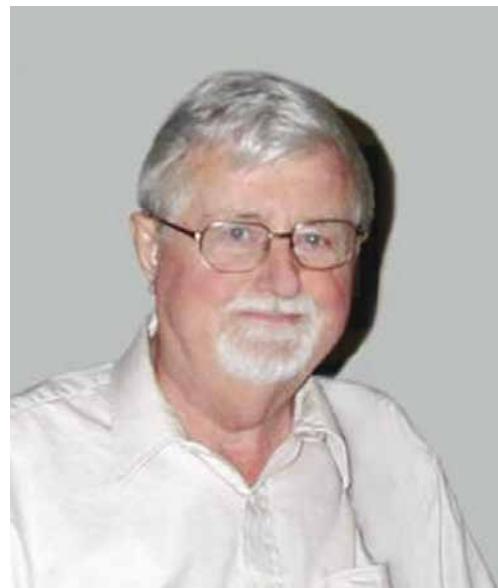
Eugene Balon was awarded the scientific degree “Candidate of Biological Sciences” – CSc. (1962) and academic degree “Rerum Naturalium Doctor” – RNDr. (1966) at the Charles University in Prague. In 1964 the Presidium of the Czechoslovak Academy of Sciences promoted him to the position of Senior Researcher (scientific qualification level II.a).

He has one son, Janusz S. Balon from his first marriage (1955) with Tatiana Lišková. In 1980 he married his second wife Christine Flegler.

From 1967 to 1971 Eugene Balon served as an expert of the Food and Agriculture Organization (FAO) of United Nations studying the fishes of Lake Kariba, the dam lake in the Zambezi River in Zambia. Having completed this mission, decided not to return to Czechoslovakia but emigrate and he moved via London (England) and Ann Arbor (USA) to the Province of Ontario in Canada. He briefly worked as a researcher in the Department of Zoology at the University of Toronto and in 1972 went to the University of Guelph where he first was appointed as Associate Professor (1972–1976) then became Full Professor until 1995 when, upon retirement he was granted the status of University Professor Emeritus.

On Wednesday 4 September 2013, this well-known and highly respected man passed away peacefully in his sleep at home in Rockwood, Ontario, Canada.

E. K. Balon participated in several international research projects, such as research of Marine Protected Area Rincon de Guanabo in Cuba (1965), the Lakes Kariba, Mweru and Tanganyika in Africa (1967–1971), the ichthyofauna of the upper Danube in Germany (1976 and 1984) and the Baram River in Sarawak



(1980). He also participated in expeditions to Comoros (1987, 1990), the Okawango delta in the Kalahari Desert (1987), and to Zanzibar (1990 and 1991).

In 1975 E. K. Balon founded the international journal Environmental Biology of Fishes and was its Editor-in-Chief for 27 years (until 2002). He started publishing book series Perspectives in Vertebrate Science (editing six volumes between 1980 and 1989) as well as the series Developments in Environmental Biology of Fishes (22 volumes, 1981–2002), founded the periodical Guelph Ichthyological Reviews and was co-editor of its first four issues (1, 1990 – 4, 1996). He was also a co-founder of the international organization for the protection of coelacanth, the Coelacanth Conservation Council. Eugene Balon became an honorary member of the Czech (1994) and Slovak (1995) Zoological Societies.

After his retirement in 1995, he traveled extensively, lectured and led seminars in many countries (South Africa, Papua New Guinea, Australia, Taiwan, Slovakia, Czech Republic, USA).

E. K. Balon is the author (or co-author) of 340 publications, including 11 books, 32 book chapters and 151 original articles in peer-reviewed scientific journals. He published under the names Eugeniusz, Evžen, Eugen and Eugene Balon, after 1958 occasionally and as of 1966 consistently including the abbreviation of middle name K.

The thematic spectrum of his publications was initially quite broad but in later years his studies concentrated more on the reproduction and ontogeny of fishes. His work “Growth of roach (*Rutilus rutilus*) and the revision of the main methods of its determination”, published in Bratislava in 1955, has for many years served as a guide and example for the ichthyologist of the former Czechoslovakia. Other significant publications dealt with and opposed the construction of Gabčíkovo waterworks of the Czechoslovak section of the Danube. A permanent link to us, however, remains the book *Fishes of Slovakia* (1967).

Eugene Balon's four-year stay in Zambia culminated in the 1974 publications: the book *Fishes of Lake Kariba* written by him, and the monograph *Lake Kariba – Man-made Tropical Ecosystem in Central Africa*. He continued the studies of reproduction and ontogeny of fishes, suggested a terminology for the different intervals in the development of fishes and other animals, created a Life-History Model as a means of comparing the various types of development, and introduced the Reproductive Gilds of Fishes. In the late 1970s he completed the theory of saltatory development of fishes and thereafter published a comprehensive idea how epigenesis impacts the evolution of living organisms.

Two fish species were named in honor of Professor Balon: the European percid *Gymnocephalus baloni* Holčík et Hensel, 1974 and the African cichlid *Tilapia baloni* Trewavas et Steward, 1975. Prof. Balon is senior author of the description of the Asian catfish *Glyptothorax jalalensis* Balon et Hensel, 1970.

We fondly remember his visits to our countries in 1991, 1993, 1995, 1997, 1998, 2001, 2004, 2007, and 2012. On those occasions we enjoyed his interesting and edifying lectures.

But forever we remember his humor, kind words and gestures that always accompanied his communications with us.

Honor his memory, may he rest in peace!

Karol Hensel

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Eugen Balon face to face with a model of one of the coelacanth, *Latimeria chalumnae* (photo by C. Fleger-Balon).

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- BALON E. K. 2002: Reminiscing briefly about Environmental Biology of Fishes (1976–2002). *Environmental Biology of Fishes* 65: 367–371.
- BALON E. K. 2003: Coelacanthiformes (Coelacanths). Pp.: 189–196. In: HUTCHINS M., THONEY D. A., LOISELLE P. V. & SCHLAGER N. (eds.): *Grzimek's Animal Life Encyclopedia. Second Edition. Volume 4. Fishes 1*. Farmington Hills Gale Group, 1000 pp.
- BALON E. K. 2004: Alternative ontogenies and evolution: a farewell to gradualism. Pp.: 37–66. In: HALL B. K., PEARSON R. D. & MÜLLER G. B. (eds.): *Environment, Development, and Evolution, Toward a Synthesis. The Vienna Series in Theoretical Biology*. Cambridge: Bradford Books, The MIT Press, 352 pp.
- BALON E. K. 2004: Evolution by epigenesis: farewell to Darwinism, neo- and otherwise. *Rivista di Biologia / Biology Forum* 97: 269–312.
- BALON E. K. 2004: About the oldest domesticates among fishes. *Journal of Fish Biology* 65 (Supplement A): 1–27.
- BALON E. K. 2006: The oldest domesticated fishes, and the consequences of a epigenetic dichotomy in fish culture aqua. *Journal of Ichthyology and Aquatic Biology* 11: 47–86.
- BELANGER S. E., BALON E. K. & RAWLINGS J. M. 2010: Saltatory ontogeny of fishes and sensitive early life stages for ecotoxicology tests. *Aquatic Toxicology* 97: 88–95.

Textbooks

- BALON E. K. & NOAKES D. L. G. 1990: *Principles of Ichthyology: Supplement to Lectures and Laboratory Exercises*. 5th substantially revised and reorganized edition. Guelph: University of Guelph, 349 pp. [The first edition in 1974 was designed as laboratory manual authored by Balon, the second 1977 greatly expanded edition incorporated more laboratory exercises and was co-authored by Noakes and Cichocki; since the third (1980), fourth (1987) and the fifth (1990) edition the compilation turned into a full scale textbook.). Written mainly by E. K. Balon.]
- BALON E. K., NOAKES D. L. G. & RUSH M. T. 1999: *Principles of Ichthyology. Sixth Edition*. Guelph: University of Guelph, 400 pp.

Educational films

- Co-author of “Ever Shorter Days of Africa” produced by Audio Visual Services, University of Quelp (20 min colour 16 mm and video), 1978.
- The “Story of the Coelacanth” by Jasmin Films and SBC, Port Elizabeth (32 min video).

Brief Curriculum Vitae, Lectures, and Projects

(January 2008, last Curriculum vitae of E. K. Balon)

Employment history

Charles University, Prague, Teaching Assistant, 1951–1953
Biologist, Fishery Research Station, Trnava, 1954 – 1955
First specialist at the first Slovak ichthyology working place of the Fishery Research Station (Ichtyologicke pracovisko Vyskumnej stanice rybarskej) at Železna Studienka in Bratislava, Slovakia, 1955–1956
Laboratory of Fishery (later Laboratory of Fishery and Hydrobiology), Bratislava, 1957–1967
Fish Biologist, Central Fisheries Research Institute UNDP/FAO, Chilanga, Zambia, 1967–1971
Research Associate, Department of Zoology, University of Toronto, 1972
Associate Professor, Department of Zoology, University of Guelph, 1972–1976
Professor, Department of Zoology, University of Guelph, 1976–1995
Visiting Professor, Forschungsinstitut Senckenberg, Frankfurt am Main, 1976, 1979, 1984
Visiting Professor, J. L. B. Smith Institute of Ichthyology and Rhodes University, Grahamstown, 1986–1987
IDRC Consultancy, Sarawak, Borneo, 1980
Expeditions to the Comoro Islands of the JLB Smith Institute of Ichthyology, 1987, 1990
ICOD/CIDA consultancy, Zanzibar, 1991, 1992
Visiting Professor, Center for Ecological Research, Kyoto University, JSPS Fellowship for Research in Japan, 1994
KLI workshop on Environment, Development and Evolution, Altenberg, Austria, 2001
International Workshop on the Application of the Fish Embryo Test as an Animal Alternative Method in Hazard and Risk Assessment and Scientific Research of the International Life Science Institute (ILSI), Health and Environmental Sciences Institute (HESI) and the European Centre for Ecotoxicology and Toxicology of Chemicals (ACETOC), at the L’Oreal campus in Aulnay-sous-Bois, Paris, France, 2008

Honours

Fellow No. 0064 of the International Academy of Fishery Research Scientists, since 1969
Hugh Kelly Fellowship, Rhodes University, 1987
Special recognition for contributions to charr research, International Symposium on Charrs and Masou Salmon, Sapporo, Japan, October 1988
A book on “Alternative life-history styles of fishes” edited by M. N. Bruton dedicated to my 60th birthday, 1990
Medal for Contributions to Science and Culture, Slovak National Museum, Bratislava, 1991
Director, Aquatic Conservation Network, 1992–1994
Honorary Member, Czech Society of Zoologists, 1994 – present
Honorary Member, Slovak Society of Zoologists, 1997 – present

Scholarly/Professional activity

Editor-in-Chief and Founder of the international journal **Environmental Biology of Fishes**, 1974 to 2002 (65 volumes published)
Series Editor and Founder of the international book series **Perspectives in Vertebrate Science**, 1980 to 2002 (6 volumes published)
Series Editor **Developments in Environmental Biology of Fishes**, 1981–2002 (22 volumes published)
Founding Member of Editorial Board, **Fischökologie**, 1989–2013
Founder, designer and editor of **Guelph Ichthyology Reviews**, 1990–1995
Member of Editorial Board, **Voprosy Ichthyologii**, 1993–2013
Assistant Editor **Rivista di Biologia/Biology Forum**, 1999–2000
Advisory Editor **Journal of Bioeconomics**, 2000–2013

Teaching experience

Undergraduate and graduate courses in Ichthyology, Environmental Biology of Fishes, Advances in Ichthyology, Advances in Evolution, Fish Biology, Fishery Science, Fishery Management, Vertebrate Zoology, Evolutionary Biology, Embryology.
Honour student lecture series and seminars in Fish population assessment, Riverine ecology, Coral reef ecology, Man-made lakes ecological production, Fish community structures, Epigenetics, Desert pupfish biology, Coelacanth biology.
Lifetime graduate and postdoctoral supervision: M.Sc. (18), Ph.D. (12), Post. doc. (7).
External thesis examiner: 26 (Canada, UK, France, Czechoslovakia, Germany, Austria, USA, Malaysia, Australia).

Committees

At the University of Guelph
Senate member 1988–1993

Senate Committee on International Activities, 1988–1991

Senate Committee on Bylaws and Membership, 1991–1993

As a senate member of the Bylaws and Membership Committee I was asked to prepare a brief and backgrounds for the establishment of the “Senate Committee for Fairness in Governance” (as it became to be known). After much work, many consultations and reviews the document was tabled.

Graduate Studies Committee (zoology)

Student counselor (zoology)

Alma Mater Fund (Alumni Association)

College Tenure and Promotion Committee

Curriculum Committee

Examination committee for Ph.D. and M.Sc. (often as chair, graduate faculty member, or supervisory committee member)

CBS Committee on International Programs

Groups for the Advancement of Fish Studies

National and international

Council of Biology Editors, USA

ACMR/IABO Working Party on Ecological Indices, 1975–1976

Chair, European Ichthyological Congress, Paris, 1976

Ontario Graduate Scholarship Program, Academic Panel Chair, 1978

Desert Fishes Council, Member

Coelacanth Conservation Council, Founding Executive

7th IEIC, The Hague, Section Chair 1991

CCFFR, Program Chair 1990/91

Solicited proposals for prices and reviews of grant applications

Kyoto Price, 1993, 1995, 1999, 2001, 2004, 2008

Japan Price, 1994, 1998

Foundation for Research and Development, Pretoria, South Africa, 1990, 1994, 1996

National Science Foundation, Washington, D.C. (several from 1977 to present)

National Geographic Society, Washington, D.C. (several since 1979)

Memberships in professional societies (past and present)

American Killifish Association

American Society of Ichthyologists and Herpetologists

American Society of Zoologists

Canadian Society of Zoologists

Canadian Society of Environmental Biologists

Coelacanth Conservation Council

Council of Biology Editors, Washington, D.C.

Czechoslovak (since 1992 Czech) Zoological Society

European Ichthyological Union

International Limnological Society (SIL)

International Association for the Advancement of Science

Ocean Voice International

The Smithsonian Associates

Research funding

National Research Council and National Science and Engineering Research Council of Canada operating and equipment grants held continuously since 1972, averaged per 3-year period CAN \$ 36,000 to 69,000; other grants held from Ontario Ministry of Natural Resources; Deutsche Forschungsgemeinschaft; SA Council for Scientific and Industrial Research; Worldwide Fund for Nature (WWF); United International Coelacanth Trust, the Japanese Society for the Promotion of Science, and National Geographic.

Project management and participation in international development agencies

1965 Rincon de Guanabo project – bilateral project of Academy of Sciences to survey the geology and biology of a land to laguna to coral reef to continental shelf profile. Results in a book entitled “Expedition Cayo Largo” by E. K. Balon & J. Seneš.

1967–1971 UNDP/FAO Central Fisheries Research Institute in Zambia – responsible for research on Lake Kariba, Lake Mweru and Lake Tanganyika. Results in two books and series of papers published from 1971 to 1974; the main

report and synthesis appeared in Ambio in 1978 as “Kariba: the dubious benefits of large dams”, later appeared in translations into German and Japanese.

1976, 1984 Black Sea to North Sea canal pre connection study of the Upper Danube River – as co-project leader with A. Lelek of a team supported by the Deutsche Forschungsgemeinschaft and NATO; results in several reports and published papers.

1980 Baram River studies in Sarawak, Borneo – IDRC consultancy at the closure of the first phase of a long term project; report, M.Sc. Thesis by Dwight Watson and 4 published papers.

1986–1987 Life history of flying fishes in the Flores Sea, Indonesia – a CIDA supported project of which a Ph.D. Thesis by Dwight Watson, defended in 1990, resulted.

1987, 1990 Research expeditions to Comoro Islands – two expeditions devoted to the conservation of the coelacanth, marine reserves and surveys which led to the establishment of the Coelacanth Conservation Council and CITES appendix 1 listing. English and French reports presented to the Government of the Federal Islamic Republic of the Comoros and WWF.

1987 Research expeditions to Okavango and Kalahari – ongoing project between Botswana and SA on resource assessment and conservation.

1990 Chernobyl biological assessment team – on site visit and consultations sponsored by the Russian Academy of Sciences.

1990, 1991 ICOD/CIDA collaborative project at the Institute of Marine Science, Zanzibar – design of projects and training of local staff. Survey of overexploitation of holothurians and the co-inhabiting pearlfishes.

1994 JSPS Research Fellowship in Japan – sabbatical from Guelph; initiation of studies on the origin of koi and its domestication in aquacultures around the world.

1997, 1998 National Geographic supported studies on coral reefs of Papua New Guinea – early development of trichonotid fishes with Eugenie Clark, and Christine Fleger-Balon.

2000 Indonesia, Bali Coral Reef Congress – symposium on coelacanth conservation, and diving expeditions on skunner Sea Safari VI around Bali and to Komodo archipelago.

2002 Cuba – Symposium on coral reefs and their conservation; Cayo Coco, Cuba.

2008 France, Paris – International Workshop on the Application of the Fish Embryo Test as an Animal Alternative Method 4–6 March 2008.

All Curriculum vitae data offered by Christine Fleger-Balon, Eugen's wife, from E. K. Balon's archives.
Bibliographical part compiled by Karol Hensel, adapted and revised by Miroslav Švátorá.