



Coelacanth Conservation Council

Conseil pour la Conservation du Coelacanth

Founded in April 1987
in Moroni, Comoros

Newsletter no. 3
April 1992

New coelacanth books

Two new books on the coelacanth were published in 1991. In May, Keith Thomson's book 'Living fossil. The story of the coelacanth' (W.W. Norton & Co., New York, 252 pp.) appeared, just in time for the annual A.S.I.H. conference in New York. Thomson's book comprises an historical account of the discovery of the early coelacanth specimens, a description of early coelacanth work, and an account of his personal involvement in coelacanth research, mainly on aspects of jaw mechanics, physiology, reproductive biology and phylogenetic relationships. Regrettably, the historical account is riddled with errors and the concluding comments on conservation are out-of-date, but the book makes interesting reading and should inspire a new generation of coelacanthophiles.

The second book, entitled 'The biology of *Latimeria chalumnae* and evolution of coelacanths', is edited by Jack Musick of the Virginia Institute of Marine Science, Mike Bruton of the J.L.B. Smith Institute of Ichthyology and Eugene Balon of the University of Guelph. This book was published as dedicated volume 32 of the journal 'Environmental Biology of Fishes' and reprinted in the book series 'Developments in the Environmental Biology of Fishes' (Kluwer Academic Publishers, Dordrecht, 446 pp.). Both hardcover (US \$ 199,00) and softcover (US \$ 72,50) versions were produced. The 27

papers by 44 authors from 9 countries are divided into five sections: Systematics and Evolution, Morphology and Physiology, Reproduction, Feeding and Parasites, Ecology and Conservation, and Inventory and Bibliography. The volume is the product of several scientists who initially worked independently but who came together at a conference in San Francisco (and in a series of informal meetings around the world) to work towards a better understanding of the coelacanth. This book is the largest and most comprehensive volume thus far published on coelacanths, and we hope that it will further stimulate coelacanth research and conservation.

Labelling coelacanth specimens

One of the chapters in the EBF book, entitled 'An inventory of all known specimens of the coelacanth *Latimeria chalumnae*, with comments on trends in the catches' lists the 172 specimens of 'old fourlegs' that are known to have been caught. Each specimen is assigned a new Coelacanth Conservation Council (CCC) number (CCC no. 1–158 for those whose dates of capture are known, and CCC no. a–n for undated specimens). We have thus fulfilled one of the original aims of the CCC, i.e. the compilation of an inventory of specimens. We aim to update the inventory through the medium of this

newsletter, and invite all coelacanth researchers to send us additional information on coelacanth specimens.

The next step in the inventory of specimens of *L. chalumnae* is to prepare labels giving the CCC numbers and other relevant information. These labels will then be sent to the institutions and individuals in 24 countries that hold coelacanth specimens, with the request that the label is attached to the specimens. In this way we will be able to ensure that all published accounts of coelacanth specimens will refer to the same inventory number.

Coelacanth bibliography

The EBF coelacanth volume also includes bibliographies on *Latimeria chalumnae* and on fossil coelacanths. The bibliography on the living coelacanth, which lists 823 publications in 16 languages, was compiled in the J.L.B. Smith Institute of Ichthyology and we would welcome additions and corrections. These changes will then be incorporated into updates of the bibliography that will be published in future editions of this newsletter.

Coelacanth search off South Africa

In May 1991 the J.L.B. Smith Institute of Ichthyology brought Hans Fricke, Jurgen Schauer and Lutz Kasang from Germany and Robert Kursteiner from Switzerland to South Africa to conduct deep-sea research with their manned submersible JAGO. One of the aims of this research programme was to determine whether a resident population of coelacanths exists off the South African coast. The first half of the diving programme was conducted in the Tsitsikamma National Park, Africa's oldest marine reserve, as part of a long-term survey of the fauna. Coelacanths are unlikely to occur there as a result of the relatively shallow water (< 110 m), and none were found. The second half of the survey was conducted on the continental slope offshore of the Chalumna River mouth near to the place of capture of the first coelacanth in 1938. Seven dives totalling over 25 h were conducted to depths of

over 370 m, which is about six times deeper than previous scientific dives off the South African coast. Although no coelacanths were found, a new phase of deep sea research in southern Africa was initiated with the discovery of many new invertebrate and vertebrate species and communities. The dives demonstrated the value of a manned submersible as a research tool, and it is likely that a submersible will now be built in South Africa to suit local conditions.

During the dives we found that the underwater habitat on the continental slope off the Chalumna consists of horizontal shelves of sandstone interspersed with cascades of sand. None of the deep caves and overhangs which coelacanths favour along the volcanic shores of the Comoros were found. Although negative data are not conclusive, it does seem that the deepsea habitat off South Africa is unsuitable for coelacanths. Attempts to dive off the Transkei coast to the north-east, where deep water rocky reefs occur close inshore, were unsuccessful due to the strong Agulhas Current (> 7 knots), but the possibility that coelacanths occur there cannot be dismissed.

Interestingly, we found that wreckfish, *Polyprion americanus*, are the dominant lurking predators off the Chalumna coast. These large (> 100 kg) bony-headed, blue fish look and behave uncannily like coelacanths, and were the cause of several 'quastie' alarms during the dives.

J.L.B. Smith's original prediction that the East London coelacanth was a stray seems to be born out. We still think that it is likely, however, that coelacanths occur in localities other than the Comoros, perhaps off the north-east coast of Madagascar near Tamatave.

Coelacanth conservation

Scientists from Germany, South Africa, U.S.A., Canada, Japan and Britain have been involved in efforts to conserve coelacanths in recent years but regrettably there is little sign that the Comoran authorities are responding to informed scientific opinion on the need to conserve the fish. The Comoros is not a signatory to C.I.T.E.S., the Ramsar

convention, or the World Heritage Site Convention, nor has it as yet proclaimed any marine reserves, although one off Moheli is planned.

During our various expeditions to the Comoros we have consulted regularly with the Director of the Centre National de Documentation et de la Recherche Scientifique in Moroni, Damir Ben Ali, and with the Minister of the Interior, M. Ali Mroudjae, and we have found them to be both cordial and cooperative. The reality of everyday life in the Comoros means, however, that short-term priorities sometimes have to take precedence over longterm goals, and the conservation of living resources is one of the casualties. The Comoros is a classical example of a country whose capacity to support people at an adequate standard of living has been severely reduced in recent years. There is a need to match short-term goals of feeding and sheltering people with longterm goals of maintaining essential ecological processes and life-support systems. The Comoran people, through their Islamic beliefs and their close empathy with nature, have an intrinsic conservation ethic, but there is a danger, as human demographic pressures mount, that the realities of survival will overrule the ethics of conservation.

Coelacanth dissections

Tissue samples from two frozen coelacanths at the J.L.B. Smith Institute of Ichthyology are available for research by bona fide scientists. The specimens, which measure 26 kg and 125 cm and 80 kg and 164 cm respectively, are in excellent condition and are likely to yield valuable tissues for study. For further information, please contact me at Private Bag 1015, Grahamstown, 6140 South Africa.

Addition to coelacanth inventory

The following additional coelacanth specimen has been caught since the publication of the inventory of all known specimens of *Latimeria chalumnae* by Bruton & Coutouvidis (1991):

CCC no. 159: (2) April 1991, (3) Hahaya, Grand Comoro, (8) + 80 kg, (9) 164 cm, (11) alive on capture, (12) frozen, (13) excellent condition, (15) J.L.B. Smith Institute of Ichthyology, (16) this specimen was donated by President Johar of the Comoros to the South African foreign minister R.F. Botha in 1991. The specimen was escorted back to South Africa by R.E. Stobbs, arriving on 4 May 1991. The specimen was X-rayed and found to contain no eggs or young. Eggs in early oogenesis were found in this specimen when recently dissected.

Reference

Bruton, M.N. & S. Coutouvidis. 1991. An inventory of all known specimens of the coelacanth *Latimeria chalumnae*, with comments on trends in the catches. *Env. Biol. Fish.* 32: 371-390.

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Additions to the bibliography of *Latimeria chalumnae*: I

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We are pleased to acknowledge the assistance of J.W. Atz, E.K. Balon, R. Cloutier and T.V. Waehneltd.

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CCC newsletter no. 1 appeared in volume 23 (4): 315–319 (1988) of this journal.

CCC newsletter no. 2 appeared in volume 30 (4): 423–428 (1991) of this journal.