

Dan Hua

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- PATENT** Dan Hua, et al. A methodology of propagation and culture of freshwater pearly juvenile mussels. 200710131817.2 (CHINA). Nov. 2007.
- EDUCATION** Ph. D candidate, Fisheries Science, Virginia Polytechnic Institute and State University, Blacksburg, VA
M.S, Fisheries Science, Virginia Polytechnic Institute and State University, Blacksburg, VA. 2003-2005.
- POSITION** Natural Resource Specialist III, Laboratory manager
Freshwater Mollusk Conservation Center, Virginia Polytechnic Institute and State University, Blacksburg, VA
- RESERCH** My research concentration is in the area of conservation and protection of endangered aquatic animals, restoration and recovery of aquatic ecosystems, and propagation of endangered and economically important mollusks. I particularly concentrate on propagation federally endangered freshwater mussels and ability to grow juveniles to a suitable size, and assessment of the restoration of released mussels in their natal rivers. My research interests also deal with the development and utilization of commonly mollusks, such as pearl production using suitable mussel species, and integrated culture of mollusks and fish. I am also interested in the function of mussels for the improvement of water quality, and development of colorful pearls and shell ornaments as well.
- HONORS & AWARDS** Distinguished Researcher Award- Freshwater Fisheries Research Center (FFRC), Chinese Academy of Fishery Sciences (CAFS), China. 1989, 1992, 1996, 2001, and 2002.
Outstanding Expert-Bangladesh Fisheries Research Institute, Bangladesh, 2001.
Preminent Female Scientist Award of Wuxi City- China. 2002.
Winners of the 2005 National Collegiate Table Tennis Championship
- PROFESSIONAL EXPERIENCE** Natural Resource Specialist III, Laboratory supervisor, 2006-
Research Specialist, Virginia Tech, US, Aug. 2005-2006
Associate Professor, FFRC, CAFS, China, 2003-
Freshwater Mussel Research Unit Supervisor, FFRC, CAFS, China, 1995-
Research Associate, FFRC, CAFS, Wuxi, China, 1990-2003
Research Assistant, FFRC, CAFS, Wuxi, China, 1985-1990
- WORK EXPERIENCE** *Pearl Research Consultant*, Bangladesh Fisheries Research Institute, 2001
- Completed the project successfully by developing a pearl culture industry, the first

time to produce freshwater pearls and commercial production in Bangladesh. Additionally produced a manual entitled *Freshwater Pearl Culture: Principles and Techniques*, and a consultancy report on pearl culture research for World Bank's Agricultural Research Management Program (ARMP).

Visiting Scholar, Fisheries and Wildlife, Virginia Tech, Blacksburg, USA, 1999

- Established cooperative research between the FFRC, CAFS and the Virginia Cooperative Fish and Wildlife Research Unit.

TEACHING EXPERIENCE

Wuxi Fishery College, Nanjing Agricultural University, China, 2000-2003

- Taught undergraduate class 'Culture and management of freshwater and Marine Mollusk'

Asia-Pacific Regional Research & Training Center for Integrated Fish Farming, China, 2000-2003

- Organized training course 'Freshwater Pearl Culture Principles and Techniques'. Trained hundreds of participants in freshwater pearl culture from 50-60 countries in the Asia-Pacific, African, Latin American and East European.

LABORATORY EXPERIENCE

Propagation freshwater mollusk and fish, design recirculating system for rearing juvenile mussel and host fish, develop optimum feeding and culture protocols for growing out endangered species, implant on alive mussels for pearl production, supervise laboratory activities and write research reports

FIELD EXPERIENCE

Freshwater mollusk sampling, shocking (backpack, boat), water quality sampling and testing, and Global Positioning Systems

RESEARCH PROJECTS

Current Projects

- Mussel restoration plan for the Powell River: a NRDA settlement of the Lone Mountain coal slurry spill. Manager. Sponsor: U.S. Fish & Wildlife Service, USA. 2003-
- Mussel restoration plan for the upper Clinch River: A NRDA settlement of the Certus toxic spill. Manager. Sponsor: U.S. Fish & Wildlife Service, USA. 2004-
- Propagation of federally endangered mussels in Indian Creek, Tazewell County, Virginia. Manager. Sponsor: Virginia Department of Transportation. USA. 2005-
- Development and Demonstration of a Culture Protocol for the Freshwater Mussel: *Anodonta woodiana pacifica*. Principal Investigator. Sponsor: The Jiangsu Province Science and Technology Department, China, 2003-
- Conservation of the Chinese Endangered and Native Freshwater Mollusks. Principal Investigator. Sponsor: The Science and Technology Department of China, 2002-
- Exotic Species Import and Feasibility of Pearl Production in the Freshwater Mussel: Pink Heelsplitter. Principal Investigator. Sponsor: The Agriculture Department of China, 2001-
- Feasibility Study on Production of Colorful Pearls Using Pink Heelsplitter. Principal Investigator. Sponsor: Chinese Academic of Fisheries Sciences (CAFS), 2001-
- Feasibility Study on Propagation and Pearl Culture in Imported Species: Pink Heelsplitter. Principal Investigator. Sponsor: Ocean and Fishery Bureau of Jiangsu province, China, 2001-

Past Projects

- Database Establishment and Conservation of the Economic Freshwater Mussel: *Hyriopsis cumingii*. Principal Investigator. Sponsor: The Science and Technology Department of China, 2001-2003.
- Study on Nuclei Pearl Implantation and Production in Freshwater Pearl Mussels. Principal Investigator. Sponsor: Jiangying Scientific Committee, 2000-2002. From this project, a new protocol of shaped nuclei implantation method was created and applied in intensive pearl production.
- Import and Domestication of Highly Economic Fish Species for Local Fish Farming. Principal Investigator. Sponsor: Jiangsu Province Scientific Work Committee, 2000-2002. The research achieved the results of successfully importing 5 valuable species *Pseudobagrus fulvidraco*, *Siniperca chuatsi*, *Leiocassislongirostris*, *Piaractus brachypomus*, *Acipenser guldenstadti Brandt*, and producing 400,000 fingerlings to supply local fish farmers.
- Enhance pearl quality using a modified method for culture of the freshwater mussel *Hyriopsis cumingii*. Principal Investigator. Sponsor: CAFS, 1995-1999. From this study, the production of quality pearls increased by 20 % using the culture method of controlled shell growth.
- Pond Dynamics of Integrated Fish Farming. Research Assistant. Sponsor: International Development Research Center (IDRC) in Canada, 1985-1994.

SERVICE

Reviewer

- Aquaculture - Elsevier, an international Journal.
- National Natural Science Foundation of China. <http://www.nsf.gov.cn>.

Consultant

- Yiwu Science and Technology Bureau, Zhejiang Province, China
- Maanshan Science and Technology Bureau, Anhui Province, China
- Jiangyin Science and Technology Bureau, Jiangsu Province, China
- Peizhou Agricultural Multiple Management Bureau, Jiangsu Province, China
- Duchang Fishery Bureau, Jinagxi Province, China
- Tianmen Fishery Bureau, Hubei Province, China

PRESENTATIONS

- Propagation and culture of juvenile mussels (Unionidae) at the freshwater mollusk conservation center, Virginia Tech in 2007. Annual Tennessee's Rare Mollusk Committee Meeting. Dec. 2007. Morristown, TN.
- Captive Survival and Pearl Culture Potential of the Pink Heelsplitter (*Potamilus alatus* Say, 1817) (Bivalvia: Unionidae). 5th Biennial freshwater Mollusk Conservation Society Symposium and Habitat Restoration Workshop. March, 2007. Little Rock, AR.
- Propagation and culture of endangered juvenile mussels (Unionidae) at the freshwater mollusk conservation center, Virginia Tech. Dean's Forum on the Environment, Feb. 2007. Virginia TECH. Blacksburg, VA.
- Juvenile propagation and culture at FMCC Lab in 2006. TWRA annual meeting, Dec. 2006. Morristown, TN.
- Biology, captive propagation, and feasibility of pearl culture in the pink heelsplitter (*Potamilus alatus*). TWRA annual meeting, Dec. 2005. Knoxville, TN.
- Freshwater pearl production in China and feasibility of pearl culture in the pink heelsplitter, Oct. 2005 (Missouri State University, Springfield, MO).
- Freshwater pearl production in China and feasibility of pearl culture in the pink heelsplitter (*Potamilus alatus*), Oct. 2005 (Columbia Environmental Research

Center, U.S. Geological Survey, Columbia, MO).

- Commercial uses of freshwater mussels, Oct. 2005. Virginia Tech. VA.
- Conservation issues in China, Oct. 2004 and 2005. Virginia Tech, VA.
- Survival Rate and pearl production in captive Pink heelsplitter (*Potamilus alatus*). 2005 Symposium of the Freshwater Mollusk Conservation Society, May, 2005. St. Paul, MN.
- Freshwater pearl culture and production in China. National Shellfisheries Association 95th Annual Meeting, April, 2003, New Orleans, LA.
- Freshwater pearl culture and production in China, World Aquaculture April, 2002. Beijing, China.
- Study of age determination of freshwater mussels using thin section. World Aquaculture April, 2002. Beijing, China.

AFFILIATIONS

Senior Member, Chinese Society of Fisheries
Senior Member, Chinese Society of Malacology
Senior Member, Wuxi Fishery Society
Member, Freshwater Mollusk Conservation Society (FMCS), USA

OTHER ACTIVITIES

Member, Fisheries and Wildlife Graduate Student Association (FIWGSA)
Member, Virginia Tech Chapter of the American Fisheries Society (AFS)
Member of the Virginia Tech Table Tennis Team

SELECTED PUBLICATIONS

Books

- Hua, D., M. A. Mazid, and M. G. Hussain. 2001. Freshwater Pearl Culture Principles and Techniques. Momin Offset Press, Bangladesh.
- Hua, D., 2000. Culture of *Rana catesbiana* and *Rana grylia*. WaterPower Press. China.

Journal Papers

- Hua, D, and R. J. Neves. 2007. Captive Survival and Pearl Culture Potential of the Pink Heelsplitter (*Potamilus alatus* Say, 1817) (Bivalvia: Unionidae). North American Journal of Aquaculture. North American Journal of Aquaculture. 69:147–158.
- Wen, H. B., R. B. Gu, G. C. Xu, D. Hua (Corresponding author). 2007. Morphological Comparison and Discriminant Analysis in Native American Freshwater Mussel Pink Heelsplitter (*Potamilus alatus*) and Chinese Freshwater Pearl Mussels Triangle Sail Mussel (*Hyriopsis cumingii*) and Cockscomb Pearl Mussel (*Cristaria plicata*). Chinese Journal of Zoology. 42(3): 84-89.
- Wen, H. B., R. B. Gu, G. C. Xu, D. Hua (Corresponding author). 2007. Karyotypes on two species of freshwater mollusk: *Cipangopaludina cathayensis* (Heude) and *Lamprotula leai* (Gray). Journal of DALIAN Fisheries University. 22(1): 42-45.
- Xu, G. C., R. B. Gu, H. B. Wen, D. Hua. Dan (Corresponding author) and Y. F. Wang. 2007. Influence of Water Temperature and pH on Filtration Rate of *Anodonta woodiana pacifica*. Acta Hydrobiologica Sinica. 31(4): 600-603.

- Xu, G. C., R. B. Gu, H. B. Wen, D. Hua. Dan (Corresponding author), C. Nie, and L. F. Sun. 2007. Effect of temperature, body weight, food density on filter feeding rate and assimilation efficiency of *Corbicula fluminea*. Journal of Shanghai Fisheries University. 16(2): 151-156.
- Xu, G. C., R. B. Gu, H. B. Wen, D. Hua. Dan (Corresponding author), and C. Nie. 2007. Effects of environmental stress on lysozyme and superoxide dismutase of *Corbicula fluminea*-(Miiller). Journal of Anhui Agricultural University. 34(1): 74-78.
- Hua, D, H. B. Wen, G. C. Xu, and S. Y. Wang. 2006. Studies on growth and its variation of free amino acid in muscle and liver of *Eriocheir sinensis* by feeding *Anodonta woodiana pacifica*. Journal of Dalian Fisheries University. 20 (1): 83-86.
- Hua, D., R. B. Gu, G. C. Xu, and H. B. Wen. 2006. Propagation and juvenile culture of the round mussel (*Anodonta woodiana pacifica*). Tentacle. 14: 23.
- Wen, H. B., G. C. Xu, and D. Hua (Corresponding author). 2006. Preliminary observation on parasitic metamorphosis development of *Anodonta woodiana pacifica*. Journal of Shanghai Fisheries University. 15 (2): 252-256.
- Xu, G. C., R. B. Gu, H. B. Wen, D. Hua (Corresponding author), and Y. F. Wang. 2006. Influence of water temperature and pH on filtration rate of *Anodonta woodiana pacifica*. Acta Hydrobiologica. 30 (5):
- Hua, D, G. C. Xu, H. B. Wen, and Y. F. Wang. 2005. Study on the host efficiency of the three kinds of fish for the *Anodonta woodiana pacifica*. Journal of Zhejiang Ocean University (Natural Science). 24 (3) :213-216.
- Wen, H. B., G. C. Xu, D. Hua (Corresponding author). 2005. Preliminary study on the selective feeding and growth of *Anodonta woodiana pacifica* juveniles under the particular condition. Journal of Shanghai Fisheries University. 14 (4): 464-467.
- Hua, D., R. B. Gu, Y. F. Bai, and H. B. Wen. 2003. RAPD analysis of genetic diversity of wild and cultured *Hyriopsis cumingii*. Journal of Fisheries of China, 27(6): 540-544.
- Hua, D., R. B. Gu, and H. B. Wen. 2003. Freshwater pearl culture in China. Global Aquaculture. 6:50-51.
- Hua, D. Techniques of care of freshwater mussels for pearl production (I). Scientific Fish Farming. 2003. 10: 16-17.
- Hua, D. Techniques of care of freshwater mussels for pearl production (II). Scientific Fish Farming. 2003. 11: 16-17.
- Hua, D. 2003. The propagation, juvenile culture and pearl culture in freshwater mussel: *Hyriopsis cumingii*. Database of Chinese Fishery Science and Technology Information <http://www.cafs.ac.cn>.
- Hua, D. 2003. The morphology and ecology of *Hyriopsis cumingii*. Database of Chinese Fishery Science and Technology Information. <http://www.cafs.ac.cn>.
- Hua, D. 2003. Study on the oxygen consumption of *Hyriopsis cumingii*. Database of Chinese Fishery Science and Technology Information. <http://www.cafs.ac.cn>.
- Hua, D. 2003. Determination of the amino acid content in *Hyriopsis cumingii* muscle. Database of Chinese Fishery Science and Technology Information. <http://www.cafs.ac.cn>.
- Hua, D., and R. B. Gu. 2002. Freshwater pearl culture and production in China.

Aquaculture Asia. 7 (1): 6-8.

- Hua, D. 2001. Consultancy Report on Pearl Culture Research (ARMP-TA), 2001, Bangladesh.
- Hua, D., R. J. Neves, and J. Jones. 2001. Age determination of freshwater mussels using the method of thin section, *Journal of Fisheries of China*, 25 (5): 413-418.
- Zhao, Z. Q., Q. L. Wu, P. Xu, J. X. Wang, and D. Hua. The long distance transportation of Jian carp (*Cyprinus carpio var. jian*). *Tibet's Science and Technology*. 2001. 5 (58-63).
- Hua, D., Y. Zhu, S. J. Wu, and Y. J. Yang. 1998. Assessment of pond primary productivity and its relation with fish production. *Integrated Fish Farming*, CRC Press/Lewis Publishers. USA. 195-203.
- Hua, D., Y. J. Yan, and Y. Zhu. 1992. Comparison of the effect of aerators in the integrated fish pond. *The Asian Fisheries Society Third Asian Fisheries Forum*.

CITING PAPERS

- (China) Ji, W., K. J. Wei, G. R. Zhang, and Z. C. Shi. Microsatellite DNA analysis of genetic diversity in five freshwater mussels in Qinglan Lake. Jiangxi Province. *Journal of Agricultural Biotechnology*. 2007. 15 (3):429-433.
- (China) Li, L. R. Chang, Z. X. Sun, Y. L. Li and M. Q. Zhang. Genetic diversity of *Haliotis discus hannai* as revealed by RAPD. *Marine Fisheries Research* 2006. 27(1): 59-63.
- (China) Lou, Y. M., K. J. Wei, L. Hu. The statue of pearl production using *Hyriopsis cumingii*. *Reservoir Fisheries*. 2007. 27 (1):33-35.
- (China) Wang, H., J. L. Li, G. L. Wang, G. F. Zhang and N. Xie. Preliminary studies on morphological change of the glochidia of *Hyriopsis cumingii* in stage of parasiting. *Journal of Shanghai Fisheries University*. 2007. 16 (4): 394-398.
- (China) Wang, G. L., Y. M. Yuan, J. L. Li. SSR analysis of genetic diversity and phylogenetic relationships among different populations of *Hyriopsis cumingii* from the five lakes of China. *Journal of Fisheries of China*. 2007. 31 (2):152-158.
- (China) Yin, S. W., Y. Q. Feng, H. Huang, J. Q. Liao, and L. Gao. Genetic diversity of two cultured populations of *Babylonia areolata* revealed by RAPD analysis. *Journal of Fishery Sciences of China*. 2007. 14(4) 667—671.
- (America) Barnhart, M. C. 2006. A compact system for rearing juvenile freshwater bivalves. *Aquaculture* 254:227-233.
- (China) Chen, Y., H. M. Shen, F. P. Tang, and Y. F. Jin. Study of the correlation among water factors and freshwater mussel (*Hyriopsis cumingii*) growth. *Journal of Zhejiang Agricultural Sciences*. 2006. 3: 338-341.
- (China) Guo, H. Preliminary studies on nutritional quality and genetic characteristics among populations of *Macrobrachium Rosenbergi*. Master's thesis. East China Normal University. 2006.
- (China) Wu, H. S. The Taxonomic status of some species of *Anodonta* (Unionidae) and *Hyriopsis* (Unionidae) based on morphology and molecular phylogeny. Master's thesis. NanChang University. 2006.
- (China) Yu, Q. W., S. B. Yang, and Z. X. Mi. Extraction of DNA from freshwater pearly mussels using aneroid nitrogen. *Reservoir Fisheries*. 2006. 26(2):15-16.
- (China) Zhao, H. T. Effects of Ammonia on haematological and immune parameters of juvenile southern catfish (*Silurus Meridionalis* Chen). Master Thesis. Southwest University. 2006.

- (China) Zhu, X. P., H. J. Du, G. M. Zheng, Z. Y. Jiao, S. Chen, and Z. A. Chen. Genetic diversity analysis of largemouth bass (*Micropterus salmoides*) cultured in ponds. *Journal of Dalian Fisheries University*. 2006. 21(4):341-344.
- (China) Cheng, Q. H. Genetic diversity based on amplified fragment length polymorphism markers of the main pearly mussels in Dongting Lake. Agricultural University of Hunan. 2005. Master's thesis.
- (China) Li, F, Q. Z. Zhang, H. T. Zhao. Effect of ammoniacal nitrogen on two antioxidant enzymes and antibacterial activity of *Silurus meridionalis* Chen. *Freshwater Fisheries*. 2005. 35(6):11-15.
- (China) Li, J. L., R. H. Qian, B. L. Bao, G. L. Wang, and N. D. Qi. RAPD analysis on genetic diversity among the stocks of *Hyriopsis cumingii* from the five large lakes of China. *Journal of Shanghai Fisheries University*. 2005. 14(1)1-5.
- (China) Ling, G. Primary studies on conservation biology of *Lamprotula leai* (Gray). Master's thesis. NanChang University. 2005.
- (China) Ling, G., S. P. Wu, S. Oyan, J. H. Gao, and H. S. Wu. The age and growth of *Lamprotula leai* Gray 1835. *Journal of Nanchang University (Natural Science)*. 2005. 5: 497-499.
- (China) Ma, Z. B., J. L. Li, W. L. Kong, and L. Z. Wang. The effect of the Ammonia on the growth of juveniles of Jian carp. *Journal of Zhengzhou College of Animal Husbandry Engineering*. 2004. 24(2): 93-93.
- (Bangladesh) Hossain, M.A., N. Sultana, K. Azimuddin, M.G. Hussain and M.A. Mazid. Selection of freshwater pearl mussel species for mantle transplantation in Bangladesh. *Bangladesh Journal Fish Research*. 2004. 8(2): 113-116.
- (France) Neil Sims and L'hûître perlière – Bulletin de la CPS n°15 – Janvier 2003. ISSN1025-7470. Section Information, Divison Ressources marines, CPS, B.P. D5, 98848 Nouméa Cedex.
- (China) Cheng, X. Y. Using membrane oxygenation (artificial lung membrane) ammonia exclude aquaculture research. Sichuan University. Master's Thesis. 2001.