

大连自然博物馆

DALIAN NATURAL HISTORY MUSEUM

孟庆金 主编



文物出版社

大連自然博物館

DALIAN NATURAL HISTORY MUSEUM

孟庆金 主编



文物出版社

北京·2006

主 编：孟庆金
副 主 编：姜学品 刘兴和 栾淑君
撰 稿：刘金远 孙 峰 李 梅 张淑梅
孟庆金 赵永波 胡玉晶 高春玲
黄文娟 程晓冬
图 片：刘勤学 王暑杭
封面设计：隗 伟
图版摄影：郑 华
责任印制：张道奇
责任编辑：段书安

图书在版编目 (CIP) 数据

大连自然博物馆 / 孟庆金主编. —北京：文物出版社，
2006.5

ISBN 7-5010-1757-3

I. 大... II. 孟... III. 自然历史博物馆—简介—

大连市 IV. N282.313

中国版本图书馆 CIP 数据核字 (2005) 第 053377 号

大连自然博物馆

孟庆金 主编

文物出版社出版发行

(北京五四大街 29 号 邮政编码 100009)

<http://www.wenwu.com>

E-mail: web@wenwu.com

北京圣彩虹制版印刷技术有限公司制版印刷

新华书店经销

开本：889 × 1194 1/16 印张：14.5

2006 年 5 月第一版 2006 年 5 月第一次印刷

ISBN 7-5010-1757-3/N.3

定价：220 元

目 录

序 Preface	单霁翔
前言 Foreword	孟庆金
大连自然博物馆概况 Dalian Natural History Museum Introduction	10
建筑 Architecture	10
沿革 Evolution	12
展示 Exhibition	14
教育 Education	16
藏品 Collection	18
科研 Scientific Research	20
交流 Exchange	21
地球：宇宙的骄子 Earth: The Pride of the Universe	22
宇宙遨游 Travel in the universe	22
陨石 Aerolites	23
地球漫步 Walk on the Earth	24
地球年龄的推断 An Inference of the Age of the Earth	24
古老的岩石 Old Rocks	24
生命的见证 Testimony for the Life	24
地下宝藏 Underground Treasure	25
金属矿产 Metal Minerals	25
特种非金属矿产 Special Nonmetal Minerals	25
非金属矿产 Nonmetal Minerals	26
药用矿产 Officinal Minerals	26
工艺美术原料矿产 Industrial Arts Raw Material Minerals	28
观赏石 Decoration Stones	29
大地沧桑 Great Changes of the Ground	30
火山活动 Volcano Activities	30
构造运动 Conformation Movements	31
鬼斧神工 The Wonderfulness of the Nature	31
人地和谐 The Harmony between Human and the Earth	32
化石：遥远的生命 Fossils: The Ancient Life	34
生命的出现与演化 The appearance and evolution of life	34
哺乳类 Mammals	37

鸟类 Aves	39
爬行类 reptiles	43
恐龙 Dinosaurs	43
翼龙 Pterosaurus	56
龟 Turtles	57
离龙 Choristoderes	58
两栖类 Amphibians	60
鱼类 Fishes	61
无脊椎动物 Invertebrates	63
虾类 Shrimps	63
蜘蛛类 Araneids	63
昆虫类 Insects	64
植物 Plants	65
模式标本 Type specimens	72
海洋：生命的摇篮 Ocean: The Cradle of Life	76
海洋哺乳动物 Marine Mammals	77
海洋巨兽——鲸 Huge Animals in the Ocean-Whale	78
灵巧活泼的鳍脚类 Agile and Active Pinnipeds	99
美人鱼儒艮 Mermaid Dugong	103
海洋鱼类 Ocean Fishes	104
海洋软骨鱼类 Ocean Elasmobranch	105
海洋硬骨鱼类 Ocean Teleostean	117
海洋无脊椎动物 Ocean Invertebrates	134
多孔动物——海绵 Poriferan-Sponges	135
美丽的珊瑚 Beautiful Corals	136
多姿多彩的海洋贝类 Rich and Colorful Seashells	137
身穿“盔甲”的动物——甲壳动物 Animals with “Corselet”-Shellfish	145
海龟 Marine Turtles	146
藻类 Algae	147
美丽一族——红藻 Beautiful Group-Red Algae	147
经济植物之家——褐藻 Economic Plant Family-Brown Algae	149
潮间带的“绿金”——绿藻 Tidal Zone “Green Gold”-Green Algae	151
生物：多彩的世界 Biology: A Colorful World	152
哺乳动物 Mammals	152
哺乳动物的繁殖 Reproducing of Mammals	155

哺乳动物的自卫	Self-defense of Mammals	157
哺乳动物的尾巴	Tails of Mammals	158
哺乳动物的牙齿	Teeth of Mammals	160
哺乳动物的飞行	The Flying of Mammals	161
高度进化的灵长类动物	Advanced Primates	161
食肉类哺乳动物	Flesh-eating Mammals	163
有蹄类哺乳动物	Ungulate Mammals	173
鸟类	Birds	178
鸟类的主要特征	Main Features of Birds	179
形形色色的鸟类	Various Birds	182
神奇的湿地	Amazing Wetland	193
鸟类的迁徙	The Migration of Birds	196
两栖动物	Amphibians	197
有尾两栖类	Amphibians with Tails	197
无尾两栖类	Amphibians without Tails	199
无足两栖类	Amphibians without Feet	199
爬行动物	Reptiles	200
蛇	Snakes	200
蜥蜴	Lizards	201
鳄	Crocodiles	201
龟	Tortoises	202
珍稀淡水鱼类	Rare Freshwater Fishes	203
鲟	Huso dauricus	203
肺鱼	Lungfish	203
其它淡水鱼类	Other Freshwater Fishes	204
昆虫	Insects	205
蝶与蛾	Butterflies and Moths	206
甲虫	Beetles	212
植物	Plants	217
蕨	Ferns	218
裸子植物	Gymnosperm	219
被子植物	Angiosperm	220

序

自1905年实业家张謇先生创办南通博物苑开始，中国博物馆的发展已经走过一百年的路程。伴随着历史的沧桑巨变，博物馆事业发展迅速。全国现有博物馆2300多座，馆藏标本和文物2000多万件，每年举办陈列展览近10000个，接待观众1.5亿人次。这些辉煌成就，令世界瞩目。

自然史博物馆作为收藏、保护、研究和展示人类环境物证的文化教育机构，是一个国家宣传其文明成就和发展水平的重要窗口；是一个地区经济、社会进步的形象标志；是普及科学文化知识，提高公众科学文化素养和思想道德水平的教育基地。因此，自然史博物馆在区域社会中的影响越来越大，而随着人们文化需求的不断增长，博物馆为社会和社会发展服务的作用也越来越重要。

大连自然博物馆前身始建于1907年，是中国建馆最早的综合自然史博物馆。其历史悠久，馆藏丰富，新馆1998年对外开放，陈列荣获国家文物局“全国十大陈列精品奖”及“最佳新材料、新技术运用奖”。

本书从20多万件馆藏中精选出1000多件标本，并配以30多幅陈列照片，以科普知识为线索，从地球、化石、海洋和生物四个方面，系统地介绍了大连自然博物馆的藏品和展示，思想新颖，图文并茂，是博物馆界不可或缺的又一部好书。

我衷心地祝贺这一新书的出版，并预祝大连自然博物馆为全国的博物馆事业做出新的、更大的贡献。

国家文物局局长

2006年4月8日



Preface

Chinese museum has experienced 100 years' development history since the industrialist Mr. Zhang Jian began to found Nantong Museum in 1905. With many great vicissitudes of history, the museum cause develops very fast. At present the whole country has more than 2000 museums with over 12 million specimens and cultural relics, and each year more than 8000 exhibitions are held, receiving 0.2 billion audiences/times. These splendor achievements obtained attracted the sight of the world.

As the cultural and educational institution that collects, conservations, researches and displays the material evidence of human being environment, natural history museum is an important window for a country to propaganda its civilization achievement and development level, an educational base to improve people's scientific and cultural accomplishment and thought and moral level. Therefore the influence of natural history museum in area society is getting bigger and bigger, and with the constantly increasing people's cultural needs, the role for museum to serve the society and the development of society becomes more and more important.

The former of Dalian Natural History Museum was founded in 1907, which is the earliest comprehensive natural history museum in China. It has a long history and rich collections. The new museum was opened in 1998, displaying "National Top 10 Display Exquisite Articles Prize" and "Best New Material, New Technology Application Prize" awarded by State Cultural Relics Bureau.

This book selected more than 1000 specimens from over 200,000 collections of the museum and illustrated with more than 30 display photos. Taking scientific popularization knowledge as a clue, it systematically introduces the collections and displays of Dalian Natural History Museum from four aspects of earth, fossil, ocean and biology, the thought is novel and both pictures and words are very attractive, really a good book that could not be ignored in museum industry.

I sincerely congratulate the publishing of this new book, and pre-congratulate that Dalian Natural History Museum would make new and greater contribution to the national museum cause.

Director general of State Cultural Relics Bureau

Shan Jixiang

April 8, 2006

前言

世界上的发达国家，都拥有多个历史悠久的自然史博物馆。它不仅记录了一个国家，包括人类在内的生物界及其所生存的环境、演化与发展的真实情况，而且也是这个国家普及科学文化知识，提高公众科学文化素养和思想道德水平的教育基地。客观地说，中国的自然史博物馆不论在规模、数量上，还是在展示水平、教育职能的发挥上，都无法与国外的博物馆相比。就是在国内，自然史博物馆与其他类型的博物馆相比发展也相对滞后。随着社会、经济、文化的发展，自然史博物馆一方面要用收藏的标本为民族、历史、城市做文化的诠释，另一方面要满足社会和公众对教育、休闲、学习等方面的需求，所以自然史博物馆在区域社会中的地位以及在公众中的形象越来越重要。

自然史博物馆与其他类型的博物馆一样，其藏品是博物馆进行研究、展示和教育活动的基础，也是衡量博物馆规模和地位的重要标志之一。自然史博物馆的藏品主要是生物标本，标本的来源在二十世纪八十年代以前，主要是深入产地的广泛采集和动物园等相关机构及社会人士的友好捐赠，而目前则主要是靠征集。标本征集是受很多因素制约的。除了野生动物保护外，还要有资金、藏品来源信息、政策保障、高水平的征集人员、即时的价值判断，甚至还要有社会各界朋友的帮助。

自然史博物馆利用藏品进行的学术研究成果，可以为生命科学研究提供具体的佐证，形成知识与论点，也可以在自然资源调查、环境保护和文化交流方面做出贡献。把研究成果利用现代技术手段，通过标本和相关资料进行多元的展示，使知识得到推广和传播，这便是自然史博物馆所肩负的使命。

正因为藏品对于一个博物馆来说如此重要，所以，编撰这本以藏品为主要内容的图鉴，系统全面和生动地介绍大连自然博物馆近百年的收藏，这也是全国博物馆界和历代大连自然博物馆工作人员所期盼的。

大连自然博物馆有近百年的历史，经过历代博物馆人的不懈努力，在收藏、研究、展示和教育方面都取得了可喜的成果。本书从20多万件馆藏标本中，精选出1000多件各个时期具有收藏和研究价值的、保存完好的岩矿、古生物化石、植物、昆虫、两栖爬行类、鸟类、哺乳动物等珍稀标本，从地球、恐龙、海洋生物、东北森林、湿地等11个展厅中拍摄30多幅陈列照片，以照片、图形、文字相结合的表现形式，详细介绍了各种生物的形态、产地、分布、生态等方面的内容。在内容上，重点突出了海洋生物和“热河生物群化石”两大藏品特色，典型标本还辅以复原图、分布图等加以介绍，力求做到构图新颖、文字精练、表达准确、艺术性和可读性强，使读者能够系统地了解大连自然博物馆的藏品和“人与自然和谐”的展示主题。

愿本书能够成为各界人士了解大连自然博物馆的一个窗口，并给有志于从事博物馆研究的专家、学者提供有益的帮助，同时，也奉献给为本馆发展而呕心沥血的同仁们。

大连自然博物馆馆长 孟庆金

2006年4月8日

Foreword

All the developed countries in the world have several natural history museums with a long history, which not only records the true conditions of a country, the biological society including human being and their living environment, evolvement and development, but also the educational base for the country to popularize scientific and cultural knowledge, improve the people's scientific and cultural accomplishment and thought and moral level. Objectively speaking, Chinese museums could not compare with the museums abroad no matter form scale, quantity, or display level and exerting educational function. Even within the country, the development of natural history museums is backward than the development of other types of museums. With the development of society, economy and culture, on one hand the natural history museum would collect specimens to make an notation for the nation, history and city, on the other hand it should also meet the requirements and needs of the society and the people for education, leisure, study and so on, so the position of natural history museum in area society and its image among the people is getting more and more important.

Like the other types of museums the collection of natural history museums is the base for the museum to carry out researches, displays and educational activities, also one of the important marks to measure the scale and position of the museum. Mainly the collections of a natural history museum are the life-form specimens. Before 1980s the source of specimens are mainly to go to the origin to collect and the friendly donation of zoos and other relevant organs and social personalities, but at present it mainly relies on collecting. The specimen collecting is limited by many factors. Besides protection of wild animals, it also needs fund, collection source information, policy security, collecting persons with high level, immediate value judgment, even needs the help of friends from all circles of the society.

The learning research achievements obtained by natural history museum through collections study could supply concrete evidences for life science research, forming knowledge and lemma, as well as make contributions to natural resource survey, environment protection and cultural exchange. With the modern technical measures and through specimens and the relevant materials make the multi-display of the research achievements, making knowledge popularized and transmitted, which is the mission that a natural history museum shoulders.

Just as the collections are so important for a museum, so we composed this illustrated handbook with collections as its main contents, systematically, wholly and vividly introducing the collections of Dalian Natural History Museum for nearly hundred years, which is also what expected by the nation's museum's industry and the staff of Dalian Natural History Museum.

The history of Dalian Natural History Museum is nearly 100 years, through the constant efforts of the staff of the museum for several generations, we have made outstanding achievements in collection, research, display and education. From over 200,000 specimens of the museum this book carefully selected more than 1000 rare specimens of rocks, ancient life-form fossils, plants, insects, amphibians, birds, mammals and so on of each stage, which have the value of collection and research and also protected perfectly, takes more than 30 photos displayed from 11 exhibition halls mainly including earth, dinosaur, ocean life-form, Northeast forest, wetland and so on, in the combination form of photo, graph and words concretely introduced the contents of form, origin, distribution, zoology and so on of various kinds of life-forms. Regarding contents it mainly introduced the features of the two great collections of ocean life-form and "Jehol Biota Fossil", the typical specimens are also introduced with recovered pictures and distributive pictures and so on, so as to possibly make the pictures novel, words exquisite, expressions correct, strong artistry and readable, which enables readers to systematically realize the collections of Dalian Natural History Museum and the display theme of "Harmony of People and Nature".

We wish this book could become a window for personalities of all circles to understand Dalian Natural History Museum, and give a beneficial help to the experts and scholars who is willing to conduct the research of museum, meanwhile we also dedicate this book to our colleagues who work very hard for the development of our museum.

Curator of Dalian Natural History Museum
Meng QingJin
April 8, 2006

建筑 (Architecture)

大连自然博物馆是联合国教科文组织登记注册的大型自然史博物馆，是中国著名的自然史博物馆之一，其前身始建于1907年。旧址建筑是1898年沙俄修建的，具有浓郁俄罗斯风格，是大连市初建时期的代表性建筑之一，1997年被国务院列为国家重点文物保护单位。

新馆建筑为典型的现代欧式风格，建筑面积15000平方米，1998年建成。坐落于风景秀丽的黑石礁海滨公园内，三面环海，礁石环绕，与著名的星海公园相邻。蓝色的屋顶与碧海、蓝天、白云相互辉映，景色怡人。在这里可以聆听大海与礁石的“对话”，可以垂钓、戏水……人与自然和谐的真谛，在这里得到了最好的诠释。

Dalian Natural History Museum is a large natural history museum first built in 1907 and registered at the UNESCO, which is one of the most famous natural museums in China.

The building at the original site of Dalian Natural History Museum was built by Russia in 1898 in a Russian



style, it is one of the masterpieces in the early stage of Dalian city, and the building was listed as one of the national key culture relic protection buildings by the state council in 1997.

The new building is in modern European style with a construction area of 15,000 square meters, the construction was completed in 1998. It is located in the scenic Heishijiao Costal Park, the museum is facing the sea in three directions and is embraced by reefs, and it is just next to the famous Xinghai Park. The blue roof is reflecting with the blue sea, azure sky and white clouds, and the scenery is marvelous. You can listen to the "dialogue" between the sea and the reef, you can go fishing and play in the sea... The true meaning of the harmony between human and nature is best embodied here.



大连自然博物馆旧馆
Dalian Natural History Museum Old Hall



沿革 (Evolution)

1907年，日本“南满洲铁道株式会社”在中国创办“地质调查所”，其是大连自然博物馆的前身。

1923年，“地质调查所”大量收集东北地区的自然标本和资料后，增设了陈列室，主要展示岩矿和部分古生物标本，并注明标本的产地、藏量、开采价值和用途等。

1926年，由于展示的标本种类增多，陈列内容增加，收集标本的地域不断扩大，涵盖了东北及蒙古等地的多种资源，将陈列室改为“满蒙物质参考馆”。

1928年“满蒙物质参考馆”在原建筑的两翼和后部扩建，又进一步将历年从我国东北、蒙古、西伯利亚、欧美等地搜集的岩矿标本以及农业、畜牧业、林业、水产业的实物标本和图文资料汇集起来，于同年11月份成立了供科学研究和观赏的“满蒙资源馆”。

1932年在展示原有资源标本外，还增加了东北、蒙古等地的民俗陈列内容，并将馆名改为“满洲资源馆”。

1945年大连解放后，8月23日由中国长春铁路公司接管，易名为“东北地方志博物馆”，中长铁路科研所委托苏联地质专家叶果洛夫担任馆长，并对原有的陈列进行修整。

1950年11月，中长铁路局将该馆移交给大连市人民政府文教局管理，同时将馆名改为“东北资源馆”，充实调整了陈列内容，主要展览我国东北地区的自然资源和建国后的新成就，成为向广大人民群众进行爱国主义教育、社会主义教育和普及科学知识的文化阵地。

1959年，正式定名为“大连自然博物馆”，并请中国科学院院长郭沫若先生题写馆名。

1995年，大连市为实施科教兴市战略，保护自然文化遗产，决定移址建设新馆。

1998年10月，新馆建成并对外开放。



In 1907, Japan "Southern Manchuria Railway Corporation" established "Geological Research Institution", which was the initial mold of Dalian Natural History Museum. In 1923, after collecting a large amount of natural specimens and documents in northeastern China, the "Geological Research Institution" added display room mainly for rock ore and part of the ancient biology, the original place, storage amount, exploitation value and usages of the specimens were listed on the label for the visiting and research of a limited number of celebrities.

In 1926, with the increase of the specimens for display and the content of demonstration, the area where the specimens collected expanding to include various resources in northeast China and Mongolia, the display room was changed into "Manchuria and Mongolia Material Display House".

In 1928, "Manchuria and Mongolia Material Display House" expanded its construction by 2,000 square meters at the two sides and back of the original building, thus enriched its collection and took in the rock ore specimens from northeast China, Mongolia, Siberia, Europe and America, the authentic specimens and the graphic and written documents in the fields of agriculture, stock raising, forestry and aquaculture, and the "Manchuria and Mongolia Resources House" was established in November of the same year for scientific research and visiting.

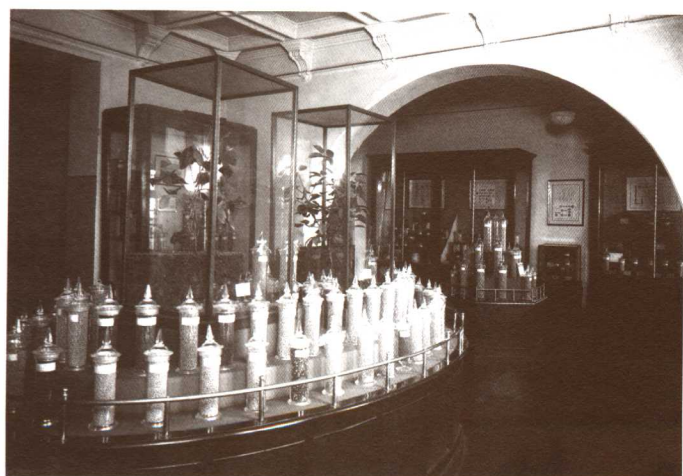
In 1932, the display of folk custom in northeastern China and Mongolia was added to the original resource specimen, and the name of the house was changed into "Manchuria

Resources House".

After the liberation of Dalian in 1945, the museum was taken over by China Changchun Railway Station Company on August 23rd, and the name was changed into "Northeastern China Chorography Museum". Entrusted by the Zhongchang Railway Scientific Research Institution, the geologist (Eropob) from Soviet Union worked as curator and made some alterations to the previous display. In Nov. 1950, Zhongchang Railway Station handed over the museum to the Culture and Education Bureau of Dalian municipality, at the same time the name was changed into "Northeastern China Resources House", the display content was enriched and adjusted, it was mainly for the exhibition of the natural resources of northeastern China and the new achievements made after the establishment of our country, the house became the culture base for patriotism, socialism and scientific knowledge education. In 1959, its name was formally changed into "Dalian Natural History Museum", and the subscription was written by Guo Moruo, the dean of Chinese Academy of Science.

In 1995, with the implementation of the policy of prospering the city by science and education, Dalian City determined to relocate the museum to protect the natural and cultural legacy.

In Oct. 1998, the construction of the new exhibition hall was completed and it was opened to the public.



展示 (Exhibition)

本馆基本陈列共设有地球厅、恐龙厅、巨鲸厅、海洋哺乳动物厅、硬骨鱼厅、软骨鱼厅、海洋无脊椎动物与海藻厅、物种多样性厅、湿地厅、东北森林动物厅、辽西化石厅等11个展厅，共展出标本5,000余件。展示主题为“人与自然”。陈列展览的主要特色如下：

- 采用“主题单元展示法”布展；
- 以展示生物多样性为主要任务；
- 展览紧扣时代脉搏，强调保护环境；
- 陈列体现了最新研究成果；
- 树立“以人为本”的思想；
- 展览形式与内容设计和谐统一；
- 突出地方特色，为社区服务。

新馆陈列2001年荣获“全国十大陈列精品奖”及“最佳新材料、新技术运用奖”。

The demonstration area of the new exhibition hall mainly includes 11 halls: the earth hall, the dinosaur hall, huge whale hall, sea mammal hall, teleostean hall, elasmobranch hall, sea invertebrate animal and alga hall, species diversity hall, swamp hall, northeastern China forest animal hall and west Liaoning fossil hall, etc., the total number of specimens is more than 5,000, the main features of the exhibition are:

- The exhibition is disposed by method of "exhibition of the unit theme";
- We take the exhibition of species diversity as our main task;
- The exhibition is correspondent to the request of our time and lays an emphasis on environmental protection;
- The display embodies the latest research achievements;



湿地展厅
The Hall of Wetlands

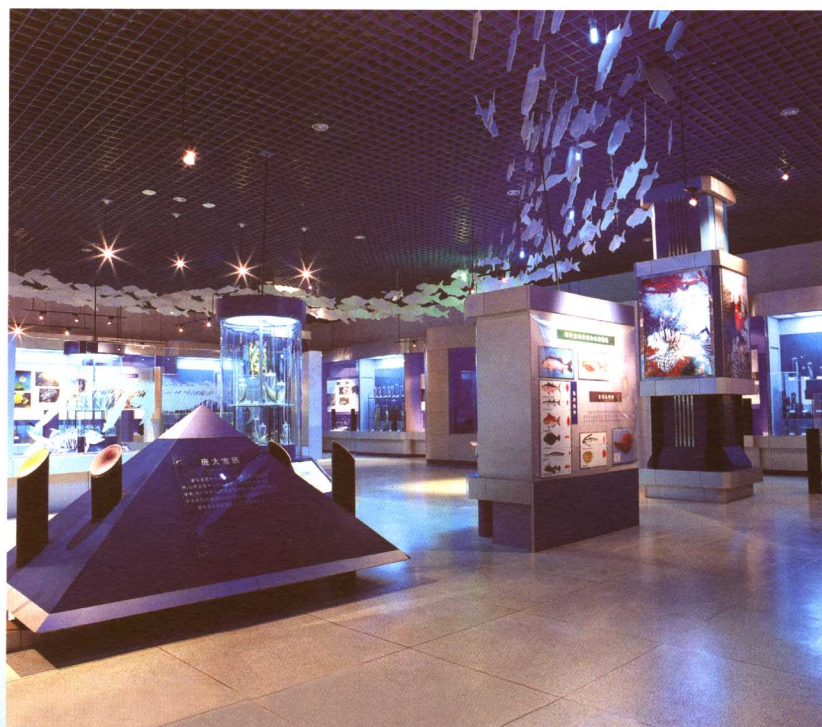
- We hold "human orientation" as our principle;
- The harmony between the exhibition form and content;
- We give prominence to local characteristics and serve for the community.

The display of the new exhibition hall has won "Top Ten National Classic Display Prize" and "The Best Prize for the Utilization of New Material and New Technologies".



全国十大陈列精品奖证书

The certificate of the Top Ten National Classic Display Prize



硬骨鱼展厅

The Hall of Teleost



教育 (Education)

教育服务设施齐全，除了主题展示、解说导览、出版物、巡回展览、特别展览和学校教育推广外，还设有可供学术交流和进行文化活动的多功能厅，可以举办研讨会、演讲、培训、咨询服务、影片播放等；拥有27万平方米的天然海域，可供学生观察、了解海洋生物的行为和习性；配置了语音自动讲解系统、多媒体触摸屏、拼图活动等参与性项目，充分启发了观众的观察与思考；收藏各种专业、科普图书及档案资料9万余册，还有休息厅和观海台，给观众创造了一个方便舒适的学习和欣赏环境。

We have complete educational facilities including the multi-function hall for academic exchange and culture activities, the 270,000 square meters maritime space for students to observe and understand sea animals, the automatic voice explanation system, shop, relaxing room and sea view platform, more than 90,000 scientific books and documents in various specialties, more than 20 participating programs such as multi-media touch panel and jigsaw puzzle. All these will enlighten the observation and thinking of the audience, thus create a convenient and comfortable learning and visiting environment.



博物馆拥有的海域，是学生们的户外课堂。

The maritime space possessed by the museum is a perfect outdoor classroom for students