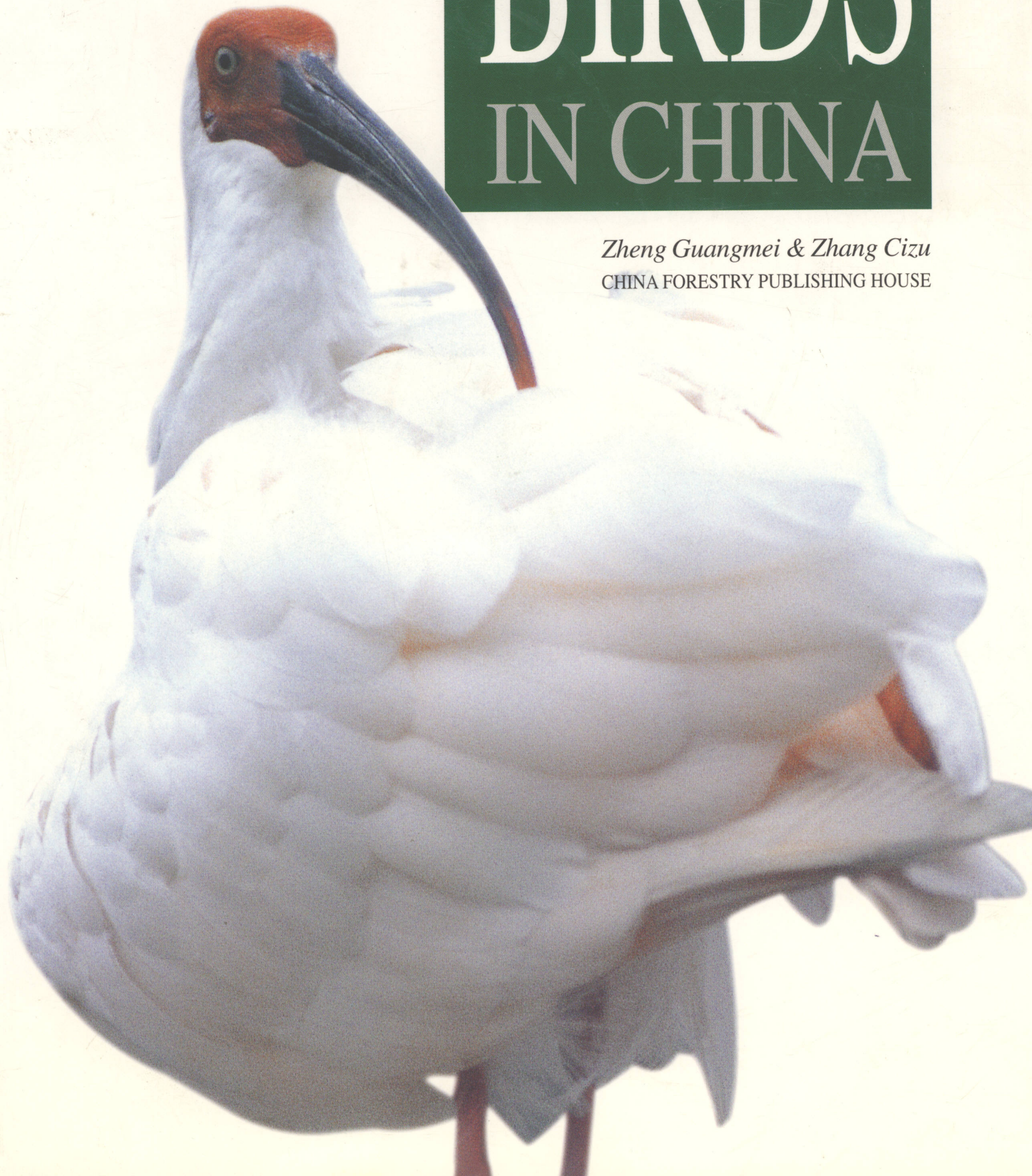


BIRDS IN CHINA

Zheng Guangmei & Zhang Cizu
CHINA FORESTRY PUBLISHING HOUSE



BIRDS IN CHINA

By Zheng Guangmei & Zhang Cizu



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图书在版编目(CIP)数据

中国野鸟 / 郑光美, 张词祖主编. —北京: 中国林业出版社, 2002.7

ISBN 7-5038-3087-5

I. 中… II. ①郑…②张… III. 野禽 - 中国 - 英文 IV. Q959.7

中国版本图书馆 CIP 数据核字(2002)第 034378 号

Printed in the People's Republic of China

Archives Library of Chinese Publications Number 2002-034378

ISBN 7-5038-3087-5

Birds in China: Zheng Guangmei, Zhang Cizu, et al., 2002

Includes reference and index

1. Birds... 2. Zheng..., Zhang... 3. Birds-China-English

4. Q959.7

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Beijing, P. R. China, 100009

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Price: RMB 260.00, \$ 48.00



International Fund
for Animal Welfare





FOREWORD

Birds are the friends of human being, who play a very important role in maintaining the stability of ecosystems and are a sensitive index of the healthful environment. People love birds with their colorful feathers, gentler and lightsome bodies, and dulcet tweets, which produce many idyllic pictures for our world. Chinese pay a tribute to nice recent life and longing the future with “birds talking and flowers sweet-smelling” and “oriole singing and swallow dancing” since ancient times.

China has a vast area, complex geographical landforms, diverse climates, rich vegetations, and many endemic and different species. Her biodiversity is the eighth in the world and the first in Northern Hemisphere. The rich natural geographical conditions form her diverse ecosystems, which provide different survival rooms for wildlife. China is rich in birds diversity and her various natural conditions have gestated many colorful and different birds, which is an excellent regions for birds researches and observations. According to the records, there are 21 orders, 81 families and 1,294 species of birds, including many endemic and rare birds in the world, such as Crested Ibis, Black-necked Crane, Cabot's Tragopan, Rufous-tailed Babbler and Flamecrest. Why we edit this book is for bird researchers, conservationists, educationists and bird lovers in China and abroad to know the status of Chinese birds further.

BIRDS IN CHINA includes 8 parts: Summary, Natatores, Grallatores, Terrestores, Raptators, Scansores, Passeres and index of bird names in Latin, Chinese and English. Chinese main and rare birds, 633 species, are briefly described in morphology, distribution, life habits, and protected status in China. Its 700 colorful pictures show their style and features. It is a very important book to know the birds in China, and is an important reference book to identify and observe birds in the field too.

The moment when the book is published meets that the 23rd International Ornithological Congress will be convened at Beijing. We wish this book could help birds researchers, conservationists, educationists and bird lovers to know the wild birds in China.

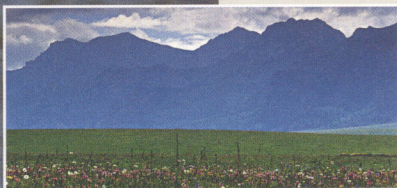
All pictures selected in the book are shot from the wild by Chinese birds photographers. Mr. Chen, Jiasheng, the famous photographer from Taiwan, replied us on sickbed and allowed us to use his pictures of endemic species of birds in Taiwan even he wounded in the field, which improve the quality of the book. Mr. Chen Ling from National Nature Science Foundation of China, and the graduate students, Bi Zhonglin and Zhang Xiaohui participate in writing some first draft, Wang Ning, Xu Jiliang and Li Wei, help a lot in edition and collation and heartily acknowledge them.

Editors

June 2002, Beijing



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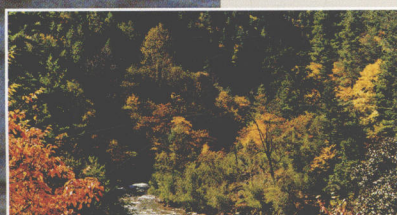
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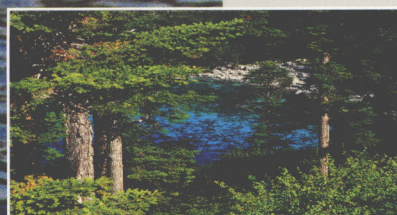
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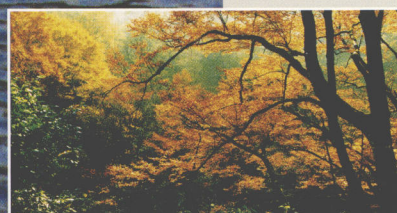
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Summary

China is located in the eastern part of Asia, which is a nation with a vast territory, suitable situation, quite complex topographies and climates, diverse natural environment as well as rich biodiversities.

The terrestrial area of China covers 9.6 million km², which is approximately equivalent to one fourth of that of entire Asia. The 8,848 m high Everest above the sea, the highest peak in the world, lies within the territory of China's Tibet. Also, the lowest land throughout the world is in China's Northwest Xinjiang Uygur Autonomous Region, which is the Aiding Lake at an elevation of minus 154 m. From uninterrupted mountainous regions and plateaus in the west to immense plains in the east, and from deserts, grasslands and cold-temperate coniferous forests in the north to tropical rainforests in the south, all locations not only represent unique natural landscape but also provide birds with a variety of inhabiting and breeding sites.

OVERVIEW OF NATURAL CONDITIONS

China is located in the eastern part of Asia, which is a nation with a vast territory, suitable situation, quite complex topographies and climates, diverse natural environment as well as rich biodiversities.

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East China and Southeast China own more than 18,000 km long coastline and disseminates over 5,000 islands. The broad continental shelf and maritime resources are the heaven of marine birds. Among these islands, nine tenth lie in East China

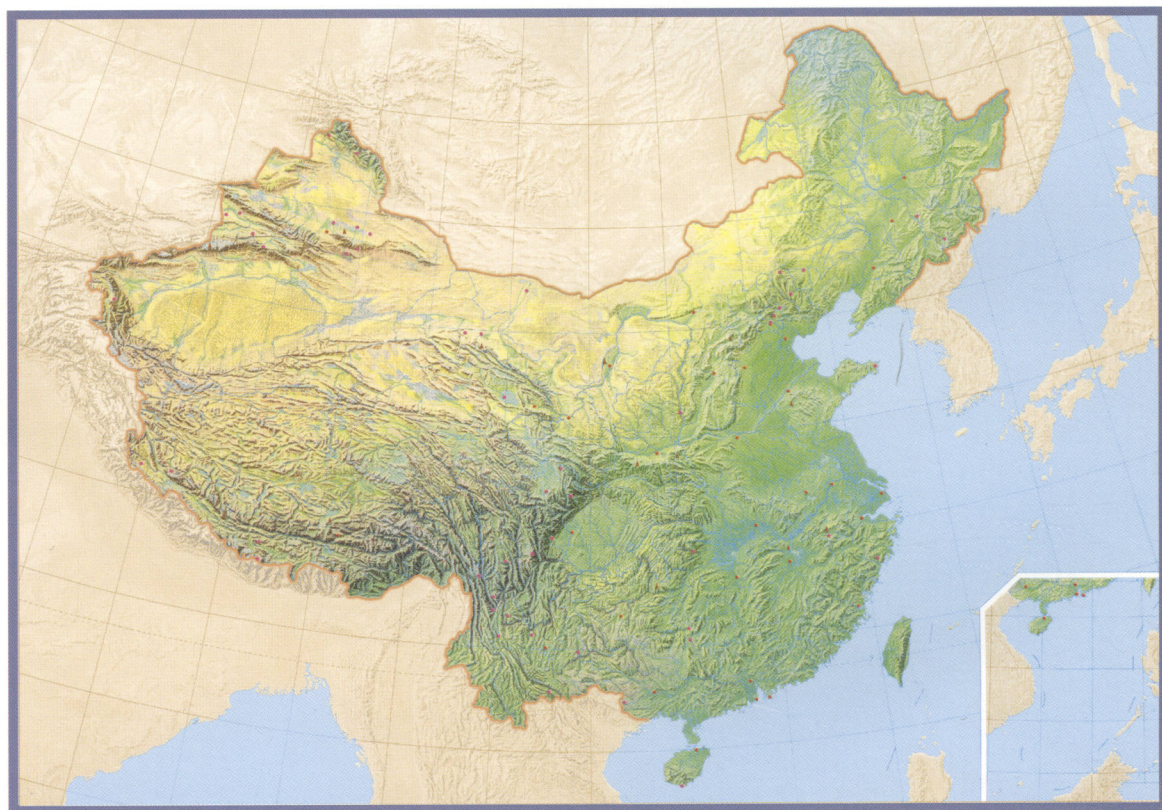
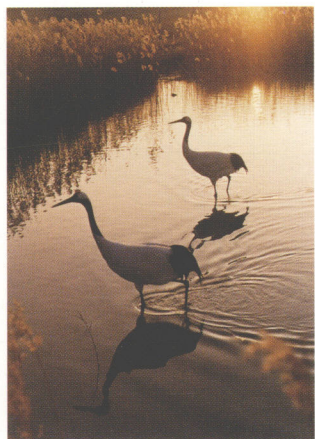
Sea and South China Sea, the largest one is Taiwan Island, and the second largest is Hainan Island. The inland rivers that are represented by the Yangtze River and the Yellow River, moisten lands and gestate lives, are also the paradise for waterfowls.

The entire territory of China may be classified as 3 major physical-geographic regions in accordance with significant differences of landform, temperature and humidity, which are the Monsoon Region of East China and Drought Region of Northwest China as well as the Qinghai-Tibet Plateau of Southwest China.

1. Monsoon Region of East China

This region is the largest one of the 3 physical-geographic regions comprising the territory of entire eastern and southeastern parts of China, and accounting for about 47% of the national area. The topography in the region is relatively low, whose altitude is usually below 1000 m above the sea, and the altitude in all coastal provinces is mostly below 500 m. Most of areas in this region belong to alluvial plain with fertile soil. The maritime monsoons in summer from East and South Asia have a strong influence on the region. The climate here is humid. The temperature difference between south and north in summer is relatively small, and that in winter is remarkable. The kind of natural conditions is quite suitable for crops' growing, so

China is a nation with a vast territory, diverse topographies and quite differences in temperature and humidity, which can be divided into Monsoon Region of East China, Drought Region of Northwest China and Qinghai-Tibet Plateau of Southwest China (The below right is a topographical map of China). Its diverse natural geographical conditions provide birds with a variety of habitats. The below is Red-crowned Crane (*Grus japonensis*) at Heilongjiang Zhalong Nature Reserve in Northeast China.



here had already been the inhabiting and reclaiming areas for our ancestors since ancient times. The natural vegetation in most areas has not existed, only a minority of natural forests remained and the most parts of the rest are forest-steppe. The present population around occupies 94% of that of the whole country.

The northernmost part of the Monsoon Region in East China including the northern part of Daxinganling Mountains belongs to the cold temperate zone, which is the coldest area of China, its air temperature in January is below minus 30°C and the period of snow coverage reaches over 200 days annually. On the west of this part, the Xiaoxinganling Mountains, the Changbai Mountains and the Sanjiang Plain and the Songhuajiang-Liaohe Plain pertain to humid temperate zone. In this area, the height of mountains is averagely 1,000 m above the sea, and the vegetation is predominated by coniferous forest and coniferous-broadleaf mixed forest, taking as the largest production base for forestry.

The Sanjiang Plain and Songhuajiang-Liaohe Plain in humid temperate zone are both alluvial plains with low altitudes that the lowest point is merely 50 m. Although it is lengthy and cold in winter, temperature in summer is so high that the average temperature exceeds 20°C in July, which is quite conducive to the growing of plants. The two plains are entitled to “Black Earth” due to its



fertile soil and the main production base of grains in China. Some wide swampy areas are disseminated in the plain, becoming the breeding sites and immigrating stopovers for waterfowls, such as *Grus japonensis*. The whole eastern parts from the south of Liaodong Peninsula to the north of the Huaihe River including the Loess Plateau belong to the temperate zone. The topography in the east of this part is relatively low, but the Loess Plateau in the west can reach an elevation of 1,000~1,500 m. The alluvial plain comprising the east of this part, the Yellow River, the Huaihe River and the Haihe River is suitable for crop's growing and the main production area of grains and cottons thanks to fertile soil and high temperature in summer. The natural vegetation is considerably sparse as a result of the long-term agricultural development, and predominated by secondary deciduous forest, coniferous-broadleaf mixed forest and scrub. The subtropical zone almost occupies the major area on the south of the Yangtze River, including

There are many types of birds in China, including temperate, sub-cold temperate, subtropical, marine, drought and desert bird. Qinghai-Tibet Plateau has a special high and cold landscape, where many high and cold temperate birds live. Above: Coniferous-broadleaf mixed forest landscape in Southwest China. Below: Desert landscape in Northwest China. Left: Subtropical and tropical birds — Grey Treepie (*Dendrocitta formosae*).



The southwest China is the habitats for many rare and endangered birds, with high elevates and big difference in vertical climate. The below is natural landscape of Nujiang Natures Reserve in Yunnan. The right is Himalayan Griffon (*Gyps himalayensis*).

Right page: Forest area in west part of Tibet (above left). Forest area in south part of Tibet (middle left). Himalayan Snowcock (*Tetraogallus himalayensis*) in Qinghai-Tibet Plateau (below left). Landscape of Weixi Samage Nature Reserve (above right).



Sichuan Basin and Yunnan-Guizhou Plateau and the northern part of Taiwan Province. The climate is humid and hot, growing period for plants over 8 to 9 months, evergreen broadleaf forest is the dominant natural vegetation. The climate and vegetation vary greatly attributing to differences of landform and topography. The area is the inhabiting and breeding sites for lots of birds of the south and the major wintering sites for birds of China and Northeast Asia. The tropical zone consisting the southernmost edge of Yunnan Province, Guangdong Province and Guangxi Zhuang Autonomous Region, Hainan Province, southern part of Taiwan Province and various islands of South China Sea belongs to high-temperature and pluvial climate, growing period for plants nearly covers the whole year, where tropical forest is the dominant vegetation of this area and mangroves occur in coastal area. The natural forests have been replaced by the secondary monsoon forests, sparse-forest grasslands and scrubs due to the human beings' long-term exploitation. The area is the chief production base for latexes and eucalyptuses of China.

2. Drought Region of Northwest China

Also named Mongol-Xinjiang Plateau Region. It is a part of Eurasia's prairies and deserts, comprising Inner Mongolia Autonomous Region, Xinjiang Uygur Autonomous Region, Ningxia Hui Autonomous Region and partial areas of Gansu Province, Shanxi Province and Shaanxi Province. The area and population of the region account for 30% and 4.5% of those of the whole nation respectively. The precipitation is scarce and climate is dry. The temperature difference between day and night is significant. Strong and dry gale

constantly occurs. A large area of gravel and desert are present on the ground surface. The soil is barren containing high content of limestone and mineral substance and relatively low organic substance. The eastern part of the region is grassland belts with broad and flat topography, where the altitude ranges from 1,000 to 1,300 m. It is lengthy and cold in winter, and the precipitation in summer varies with the influence degree of the Pacific monsoon, annual precipitation ranging from 150 to 350 mm. The climate for The Hulun Buir-Xilin Gol Plateau in the east is relatively humid, which is the main pasture and an important base of livestock husbandry in China. Westwards, the grassland belts are gradually replaced by semi-deserts and deserts, making biodiversities degraded. The desert belts include the wide area from the west of the Helan Mountains to the southern edge of the West Kunlun Mountains, the Altun Mountains and the Qilian Mountains. The Junggar Basin and the Tarim Basin in Xinjiang Uygur Autonomous Region are the western boundary of this region, occupying 22% and 75% of the national area and the Drought Region of Northwest China respectively. In desert belts, the climate is extremely droughty, gravels and deserts spread all over, and sparse grasses and scrubs scatters. The thawed ice and melted snow in high mountains are the water source of some basins and oasis, which can irrigate farmlands.

3. Qinghai-Tibet Plateau Region

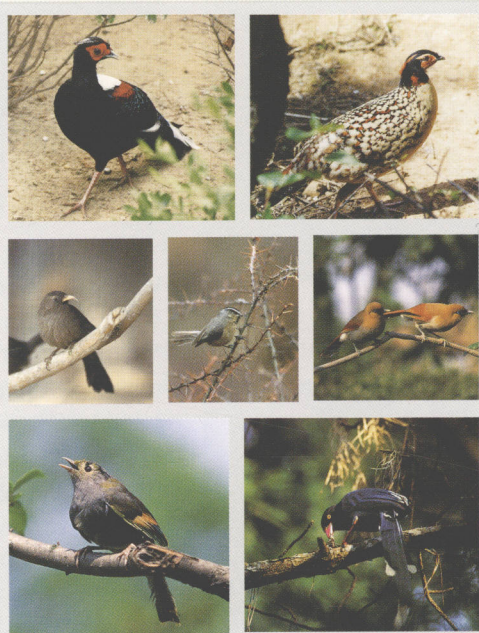
The Qinghai-Tibet Plateau, north from the Kunlun-Altun-Qilian Mountains and south to the Himalayas, is the largest in area and highest in elevation plateau in the world, accounting for 23% of the national area, and all elevations over 4,000m



with many peaks at 5,000 to 7,000 m. Atmosphere is thin and average air-temperature low. Wind force is strong, glacier and pergelisol extensively distributed. Unfrozen ground is rather barren. The vast majority of vegetations are grasslands, mountainous scrubs and small patch of deserts. Forests are sparse and dispersed. The population density is very small. The most part of lands are virgin soil. Because of the violent incision and scour of rivers, the southeastern verge of the plateau forms gorges. Vertical landscapes are diversiform.

The Southern Tibet Gorges is the south incline of the Qinghai-Tibet Plateau. Some gorges' elevation is only 1,000 m. Influenced by southwestern monsoon, climate is warm and humid and air-temperature around 10°C, and annual precipitation in many places can reach 1,000 mm, so it is a continuation of the tropical zone and the south subtropical zone in China. Evergreen broadleaf forests thrive and gradually present coniferous-broadleaf mixed forests, coniferous forests, alpine scrubs and meadows, tundra and snow belts from lowliness to highness, it is a wonder of the world. In North and Central Tibet, the annual precipitation is less than 200 mm and temperature difference fairly significant, alpine grasslands are the main vegetation. *Bos grunniens*, *Procapra picticaudata*, *Panthelops hodgsoni*, *Equus hemionus* and *Grus nigricollis* are indigenous species of the areas. The Caidam Basin at an altitude of 2,500 to 3,000 m is the broadest lowlands of the northern part of the Qinghai-Tibet Plateau, surrounded by alpiners and plateaus at an elevation of over 4,000 m. Climate is quite dry and annual precipitation less than 100 mm. The basin used to be a saline lake, but fully vaporized now, remaining immense salty deserts and dotted salt lakes as well as salt swamps. Desert vegetation is predominated

| Location | Species Number of Birds |
|--------------------------------------|-------------------------|
| China | 1,294 |
| Indian Subcontinent | 1,300 |
| Europe, Middle East and North Africa | 722 |
| Oceania | 756 |
| North America | 810 |

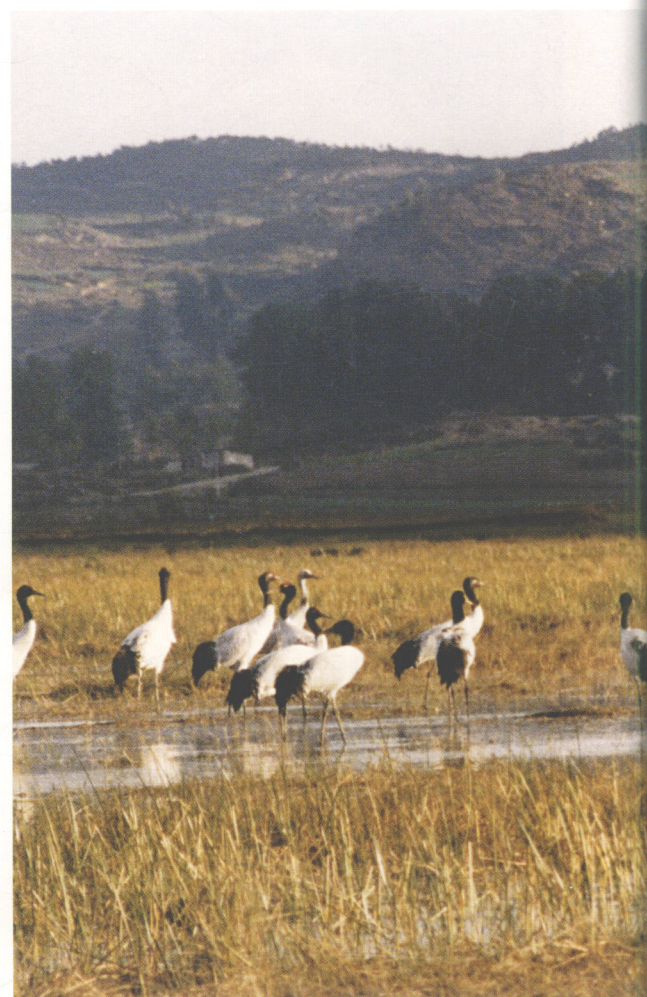


China is rich in bird diversity and has two different zoogeographical realms in a nation with rich endemic bird species (right). The below is a valley landscape of Hengduan Mountains in Southwest China, where many species of Babblers' inhabit.



by xerophilous scrubs and semi-scrubs.

Above-mentioned Monsoon Region of East China, Drought Region of Northwest China and Qinghai-Tibet Plateau constitute the essential outline of China's terrestrial landscapes. In principle, West China mainly consists of alpiners, plateaus and wide inland basins, and East China comprises low mountains and plains. It is through the following 3 stairways to gradually transit landforms from high and steep west to low and plain east, which shapes the major characteristic of natural terrain of China. The Qinghai-Tibet Plateau is also entitled "Ridge of World", a majority of peaks at an altitude of 5,000 to 6,000 m, the Himalayas in southern edge of the Plateau owning the highest peak in the world, the region forms the first stairway. The mean highness of lands northward and eastward declines significantly, a serial of plateaus and basins at an elevation of 1,000 to 2,000 m constituting the second stairway, including the Junggar Basin and Tarim Basin of northwest, the Inner Mongolia Plateau and Loess Plateau of north as well as the Sichuan Basin and Yunnan-Guizhou Plateau of southwest. The Daxinganling Mountains in Northeast China mov-



ing from northeast towards central south, the Taihang Mountains in North China and the Xuefeng Mountains in South China form the boundary between the third stairway and eastern lowlands. The mean altitude of eastern lowlands is below 500 m, which is made up of the Northeast Plain, Northern China Plain and the alluvial plains of the Yellow River and the lower reaches of the Yangtze River.

BIODIVERSITY AND DISTRIBUTION OF BIRDS IN CHINA

1. Biodiversity of Birds in China

China is quite abundant in biological resources, and it is estimated that China ranks the third in biodiversity richness in the world, excelling all of other countries in Asia and Temperate Zone. Also, China stands a world-leading position in biodiversity of birds. Taking species number as an example, China ranks the fourth in the world only inferior to Brazil (2,000), Peru (1,678) and Columbia (1,567) in South America.

Statistics from Monroe and Sibley (1993)



Cranes, Pheasants and Babblers are well-known among Chinese birds. The left is Black-necked Crane (*Grus nigricollis*) inhabiting highland wetland in Yunnan. The below left is Golden Pheasant (*Chrysolophus pictus*) (above) and Silver Pheasant (*Lophura nycthemera*) (below). The below right is White-collared Yuhina (*Yuhina diademata*).



show that species number of birds around the world amounts to 9,702, and the number has been approaching 9,800 by the year 2000 according to Clements's figure. The number increase is primarily because that many "Subspecies" used to be considered are upgraded as "Species" with the extensive application of new technologies, such as molecular biology, acoustic etc. and in-depth study of ornithological taxonomy, apart from some new findings and nomenclature. Similar tendencies are also reflected in ornithological study of China. For instance, De Schauensee (1984) recorded 1,195 species of Chinese birds, Cheng Tso-Hsin (1994) registered 1,244, later both Yan Chongwei *et al* (1995) and Cheng Tso-Hsin reported 1,253, moreover, 1,329 bird species were recorded by Mackinon (2000). It is acknowledged that the biodiversity and richness of Chinese birds remains top in the world in despite of some differences of taxonomic statistics existing, which can be shown from the following comparison:

The geographic regionalization of birds in China is listed in below table, and China is divided into 7 geographic regions and 19 subregions. The right is vegetation landscape in Southwest China, which is the habitat for subtropical alpine forest birds.

| | | | | |
|---------------------|-------------------------------|--|--|--|
| Palearctic Realm | North of Monsoon Region | Northeast China Region | Daxinganling Moun- tains Subregion (Altai Mountains affiliated) | Birds of Cold Temperate Conif- erous Forest |
| | | | Changbai Mountains Subregion Songhuajiang-Liaohe Subregion | Birds of Medium Temperate Forest, Forest-steppe and farm- land |
| | | North China Region | Huanghuai Plateau Subregion Loess Plateau Subre- gion | Birds of Warm Temperate Forest, Forest-steppe and farmland |
| | Western Drought Region | Inner Mongolia- Xinjiang Region | Eastern Steppe Sub- region | Birds of Temperate Steppe |
| | | | Western Desert Subregion | Birds of Temperate Desert and semi-desert |
| | | | Tianshan Mountains Subregion | Birds of Alpine Forest-steppe and desert |
| | High and Cold Region | Qinghai-Tibet Region | Qiangtang Plateau Sub- region | Birds of Plateau-Alpine Desert |
| | | | Qinghai-South Tibet Subregion | Birds of Plateau Steppe and Meadow |
| Oriental Realm | South of Monsoon Region | Southwest China Region | Southwest Mountains Subregion | Birds of Southern Sub-alpine Forest-steppe and Meadow |
| | | | Himalayas Subregion | Birds of Subtropical Mountain Forest |
| | | Central China Region | Eastern Hill-Plateau Subregion Western Mountain- Plateau Subregion | Birds of Subtropical Forest- scrub, grassland and farmland |
| | | South China Region | Fujian-Guangdong Coast Subregion Southern Yuannan Mountain Subregion Hainan Islands Subre- gion Taiwan Subregion South China Sea Islands Subregion | Birds of Tropical Forest, Forest- scrub, grassland and farmland |
| | | | | |

Not only the species of Chinese birds is numerous, but also the species composition is complex. Temperate birds, subfrigid birds, frigid birds, and tropical birds, seabirds as well as drought birds, desert birds all occur in China. The Qinghai-Tibet is the typical high-and-cold spectacle of

