

中华人民共和国濒危物种进出口管理办公室 主编

# 中国哺乳动物分布

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中华人民共和国濒危物种进出口管理办公室 主编

张荣祖等 著



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# 序



近 代 兽类学在我国虽然在 20 年代、30 年代有些起步，但力量很弱，经过抗日战争，这一脆弱的基础全被破坏，所以我们不得不在 50 年代重新建立我国的兽类学。它的发展尽管很快，但还缺乏许多基础的工作，象系统地分布资料，一直是需要而缺如的。《中国哺乳动物分布》填补了这一空缺。

系统的分布研究应建立在系统的分类研究基础上，没有准确的分类鉴定，谈到可靠的分布。但是我们还没有一部全国性的全部兽类的公开发表的分类资料，因而不得不借助于《中国兽类系统检索》的底稿，这部系统检索的初稿完成于 60 年代，当时在兽类学界的分类工作者中，曾广为流传并使用，并不时有所增补修正，但毕竟是有些过时了，更兼没有正式出版，有些近期的研究论著没有包括进去，这也为本专集的编著带来困难。

《中国哺乳动物分布》在编著过程中，不得不尽力增加一些后来发表的新内容，如大型兽类补入黑麝 (*Moschus fuscus*)、补入原麝的安徽亚种 (*Moschus moschiferus anhuiensis*)、补入梅花鹿的四川亚种 (*Cervus nippon sichuanensis*) 等。小型兽类的资料，近年来增加较多，增补工作量更大，如四川毛睡鼠 (*Chaetocauda sichuanensis*)，以新属、新种发表，分布区对睡鼠科来说，是很特殊的，作者给予了重视，其他如鼫鼠属 (*Myospalax*)、姬鼠属 (*Apodemus*) 和鼠兔属 (*Ochotona*) 等，均有较多的变化，作者均吸收到专集中，当然也不排除因学术观点的不同，而有所取舍。

作为兽类学的基础资料，本书用途广泛。首先，可以根据本专集所提供的分布的目录和地图，就以分析兽类分布的规律，特别应结合植被、温度、降水等探讨，如过去有人认为黄胸鼠 (*Rattus flavipectus*) 分布在年降水 800mm 以上的地区，中华鼫鼠的高原亚种 (*Myospalax fontanieri baileyi*) 主要分布在高寒草甸地区等，因此，图文对照就比较容易看清楚。当然从兽类区系分析，对动物地理区划的研究会有更大的帮助。

其次，对分类工作也可能有所启示，如黑线姬鼠 (*Apodemus agrarius*) 的分布，在东北有一个集中区，在长江中下游又有一个集中区，前者说明东北亚种 (*A. a. mantchuricus*) 应该成立，后者说明华北亚种 (*A. a. pallidior*) 与宁波亚种 (*A. a. ningpoensis*) 二者比较混乱，这正是分类上有争议的问题，华北亚种因其模式标本产于烟台 (芝罘 *Chefoo*)，而名为华北亚种，但实际上，由图可见，其集中分布区在四川、陕西等地，研究它与宁波亚种的关系，应更重视四川、陕西等地的材料，山东看来可能处于其分布区的边缘地区，至少是数量不太高的地区。

本专集的分布点，有不少地方取材于历史性的记录，现时有了变化，特别是那些濒危兽类，在人类经济活动影响下，分布区正在不断地缩小，这是使用时应该注意的，如虎的华南亚种 (*Panthera tigris amoyensis*) 从图上看还有不少分布点，但实际上已处于极度的濒危状态下，西北亚种 (*P. t. lecoqi*) 实际上已不复存在。又如大熊猫 (*Ailuropoda melanoleuca*) 图上看分布区还不算小，但已是一些孤立的，彼此隔离的分布点，故这种动物仍处于濒危状态，梅花鹿可能也有相似的情况，这些是本书所不能反映的情况，使用时不得忽视。当然，了解某物种的历史分布情况，对其发展变化的估计，也是有帮助的。


张荣祖等同志都是多年从事兽类学工作的，并研究动物地理问题，以其多年的积累完成了这本专集，为我国的兽类学作出了宝贵的贡献。负责本专集地图绘制的周熙澄等同志有多年的制图经验，绘图规范准确，也是本集的一个特点。愿能早日出版，以饕读者。

中国兽类学会理事长 夏武平

1996 年 4 月 26 日



# FOREWORD

 Although the advanced study of mammalogy in China made some progress in the 1920s and 1930s, it had a very weak base and, unfortunately, was disrupted during the Anti-Japanese War. It was not until the 1950s, after the founding of the People's Republic of China, that mammalogy was established soundly and developed rapidly. However, much fundamental work is still deficient, such as systematic information on mammal distribution, which is essential for many aspects of study. Publication of *Distribution of Mammalian Species in China* will meet the need.

The systematic study of distribution must be based on a sound taxonomic foundation. Without correct identification of species it would be impossible to deal with accurate distribution. Since no systematic taxonomic materials on Chinese mammals have been published, the compilation of this volume has been based on an unpublished manuscript, "Key to the Chinese Species of Mammals," written in the 1960s. Although it was used and revised frequently by Chinese mammalogists, the manuscript is still out of date in view of current taxonomic progress. The compilation of the work has thus faced some difficulty.

Therefore, in the course of compilation, the authors have made every efforts to add new data published since, such as a new record of Black Musk Deer (*Moschus fuscus*), subspecies of Musk Deer (*Moschus moschiferus anhuiensis*) and Sika Deer (*Cervus nippon sichuanensis*). Recently, among small mammals, quite a lot of new data has been added, such as the Sichuan Dormouse (*Chaetocauda sichuanensis*), which was designated a new species of a new genus. It is significant to the distribution of the family Muscardinidae in a particular case of zoogeography and has been paid much attention by the authors. Modification in taxonomy has been made to varying degree as to genera, such as Zokors (*Myospalax*), Wood Mice (*Apodemus*), and Pikas (*Ochotona*). The authors have made use of revised data.

As basic information this book has many uses. First, the distribution patterns can be analyzed based on the data provided, particularly in pattern and distribution of vegetation, temperature, precipitation, etc. For example, it was recognized that the Yellow-bellied Mouse (*Rattus flavipectus*) coincided with areas with an annual of more than 800 mm, and the Plateau Zokor (*Myospalax fontanieri baileyi*) is distributed mainly on alpine meadows. Comparison studies of species distribution and environmental parameters will be much facilitated by using

the maps provided. The book will also aid the study of zoogeographical regions based on analyses of faunal particularity.

Secondarily, the distribution data can enlighten the study of taxonomy, such as showing on the map that there are two areas of concentrated distribution of the Striped Field Mouse (*Apodemus agrarius*), one in northeast China, the other along the middle and lower reaches of the Yangtze River. It is indicated that *A. a. manchuricus* in the former is a valid subspecies, but the two subspecies *A. a. pallidior* and *A. a. ningpoensis* in the latter must be confused. That is the main cause for controversy among Chinese mammalogists. The name *pallidior* was given to the subspecies of north China because it was located at Zhibo (Chefoo), Shandong, but the map indicates that the distribution of the species also includes a large area of Sichuan and Shaanxi, etc. To study the relationship between *pallidior* and *ningpoensis*, the data from those areas should be more important than that from Shandong, which is a marginal area at least, an area with a low population of the subspecies.

On the maps in this volume, the distribution data are shown by dots and quite a few are derived from historical information. The current situation must be changing, especially the endangered species. Their distribution areas are being reduced under impact of human activities. For example, many dots of the south China tiger (*Panthera tigris amoyensis*) represent former records. Actually, this subspecies is threatened. The northwestern subspecies, *P. t. lecoqi*, is definitely extinct. The distribution area of the Giant Panda (*Ailuropoda melanoleuca*) shown on the map in the volume is rather large, but the actual distribution is fragmented and the animal is endangered. Probably the case is the same for the sika deer. Although the book cannot provide a dynamic picture of distribution, it can be a base for understanding and evaluating the historical distribution and possible change.

The authors, Zhang Yongzu and his colleagues, have been engaged in mammalogical and zoogeographical study for a long time. The data published in this volume were collected over a long period of time. The book is a valuable contribution to Chinese mammalogy. The cartographer, Zhou Xicheng and his colleagues used their excellent skills to draw maps of a high standard. I hope the volume will be published soon for students of mammalogy.

Xia Wuping  
President, Mammalogical Society of China  
April 26, 1993



# 前言



中国疆域辽阔,地形复杂,气候多样,植被类型丰富,拥有独特而多种多样的物种资源,其生物资源的多样性,在全世界居第八位,在地球的北半球居第一位。丰富多彩的自然地理条件,形成了多种多样的生态系统类型,这就为野生动物的生存提供了多种选择的生活空间。因而,中国的动物资源组成丰富、特产种类多、区系及生态地理变化明显。就兽类而言,中国有统计和记载的就有14目、52科、220属、500多种。它们之中,有不少是中国的特有种,如大熊猫(*Ailuropoda melanoleuca*)、金丝猴(*Rhinopithecus* spp.)、羚牛(*Budorcas taxicolor*)、毛冠鹿(*Elaphodus cephalophus*)、白唇鹿(*Cervus albirostris*)、梅花鹿(*Cervus nippon*)等。分布于洞庭湖和长江中下游的白鱈豚(*Lipotes vexillifer*),是鲸目中现存5种淡水鲸类之一。这些都是全世界所关注的动物种类。

但是,1949年以前,中国兽类区系和分类的调查研究,大多是由国外学者进行的,大量的标本收藏在国外的博物馆,而有关中国的兽类分类和分布的系统整理与研究工作,亦多在外国进行。由于许许多多客观条件的限制,这些工作多处在较粗糙的水平。当然,国内更是毫无基础。1949年以后,自中华人民共和国成立以来,在中国政府的支持下,通过一大批献身野生动物研究的自然科学家的不懈努力,兽类研究工作得到了迅速地发展,取得了举世瞩目的成就。值得一提的是,自1953年起,在郑作新教授的指导下,中国科学院地理研究所研究员张荣祖先生,就开始将中国兽类分布记录表示在地图上的地理分布记载工作。1954年,在竺可桢教授的主持和积极倡导下,中国开展了大规模的自然区划工作。这工作的开展和实施,大大推动了中国野生动物地理分布的研究工作,进一步促进了中国兽类地理分布资料的搜集和整理。随着中国兽类区系调查和分类研究的进展,张荣祖等通过对原有资料的核对和甄别,在系统分类上和地理分布方面,去粗取精,去伪存真,并于1962年就比较系统、全面地完成了中国兽类自然地理分布的资料收集和记录工作,为《中国哺乳动物分布》的编撰工作,打下了坚实的基础。

80年代以来,随着中国社会的全面进步和发展,自然资源的保护、研究、开发和利用,都迫切需要有一部全面、系统、准确反映中国兽类资源及其地理分布的著作,来指导兽类资源的调查、研究工作。在中华人民共和国林业部的关怀和支持下,经过各有关方面的研究,认为张荣祖等先生的工作已具备了良好的基础,并决定

在此基础上成立编委会,由张荣祖先生负责,聘请专家和学者,对原材料进行全面的整理和补充,完成《中国哺乳动物分布》的编撰工作,同时,邀请有关专家和学者对此书稿进行了全面、认真地审阅,终于于1995年初完成全书的编撰工作。

《中国哺乳动物分布》第一次将中国现已查明的兽类500多个种及亚种的分布情况,全部以地图和文字的形式表述出来。每一种动物都有其分布图及其对应的文字叙述(中英文对照),对学名、亚种名、分布范围、栖息环境以及在国内外的分布简况;少数类群还对其变动情况,等等,都作了全面的阐述。本书为兽类学的研究与应用提供了系统而切实的最基础的资料,对(1)分析研究中国兽类分布规律,进一步探讨中国动物地理区划;(2)从分布上检查和发现并解决动物分类学上的问题;(3)跟踪和研究中国兽类分布与变迁;(4)国家研究制定保护与利用兽类资源;(5)有害动物的防治及自然疫源病的研究;(6)古生物学及历史生物地理学的研究;(7)国家生物多样性保护的政策与行动计划的制订等等,都有极大的参考价值。

《中国哺乳动物分布》一书的出版,既是中国兽类学研究的阶段性成果,又是中国野生动物进一步深入研究的基础。它的问世填补了中国兽类基础研究的一处重要空白,这对于中国和全世界兽类学的研究,以及对中国野生动物保护工作,将具有深远而重大的意义。

在本书的出版之际,更使我们深深感到,中国目前的兽类研究工作尚有许多工作还需要所有的自然科学工作者,同心协力,共同努力,只有这样我们才能完成人类社会发展赋予我们的历史使命,而无愧于我们这个时代。同时,我们在此对中国科学院动物研究所的汪松、高耀亭、陆长坤等先生,对本书提出的许多宝贵的意见,以及无数关心和支持本书编撰出版工作的所有同仁和朋友,致以最诚挚的谢意。


特别是王丕烈、罗蓉、刘振河、胡锦矗及王福麟诸位教授,他们向我们提供了许多尚未发表的资料。我们还要感谢金燕、杨兰芝、梁孟元诸同志协助打印完成文稿。我们要对玛霞女士表示深切的感谢,她为本书的英文翻译作了修改和审定。最后,我们要感谢中国林业出版社的陈利和李惟两位先生对编辑出版本书所付出的劳动与努力。本工作还得到国家自然科学基金会的支持。

中华人民共和国濒危物种进出口管理办公室

1996年4月



# PREFACE

 hina has an extensive land area with highly diverse topography, climate, and vegetation and a wealth of wildlife resources. China ranks eighth in the world and first in the Northern Hemisphere in terms of richness of biodiversity. So far more than 500 species of mammals have been recorded, belonging to 14 orders, 52 families and 220 genera. Among them are many endemic species, such as the Giant Panda (*Ailuropoda melanoleuca*), Snub-nosed Monkey (*Rhinopithecus* spp.), Takin (*Budorcas taxicolor*), Tufted Deer (*Elaphodus cephalophus*), White-lipped Deer (*Cervus albirostris*), and Sika Deer (*Cervus nippon*). The White-flag Dolphin (*Lipotes vexillifer*), which is distributed in the waters of Dongting Lake and the lower reaches of the Yangtze River only, is one of five remaining freshwater species of the order Cetacea in the world.

Before the establishment of the People's Republic of China surveys of mammals in China were carried out mainly by foreigners. Most specimens were in museums abroad. The study of mammal taxonomy and distribution was also made by foreign zoologists. Thus no sound foundation for mammalogy ever formed at home. Since the founding of P. R. China the study of mammalogy has been encouraged and has developed rapidly. Under the guidance of Professor Zheng Zuoxin, the chief author of this volume, Zhang Yongzu (Institute of Geography, Academia Sinica), started in 1953 to collect distribution data of Chinese mammals and showed them on maps. Since 1954 a comprehensive task "Nature Regionalization of China" directed by Professor Zhu Kezhen, it promoted the study of zoogeography in China and thus the collection and compilation of mammal distribution data have been carried out continually. At first most data were quoted largely from foreign publications, but as the reliability and richness of the materials for either taxonomic or distribution study progressed in China, much information was added. As a result, a first draft of this volume was drawn up in 1962.

Since the 1980s, along with the rapid progress of economic development and social construction in China, the task of protection and rational utilization of wildlife resources has required basic biological data, including mammal distribution at species level. Under the instruction and support of the Forestry Ministry of the People's Republic of China, a working group, headed by Zhang Yongzu and joined by mammalogists of the Institute of Zoology, Academia Sinica, was set up for improvement of the first draft of the publication, which had been evaluated as a sound base. After that, a large amount of new data

was gathered for addition to and revision of the work and examined by the editorial committee, composed of famous mammalogists in China. The work has been refined by new data up to 1994. The publication of this volume meets the requirements not only of wildlife resource management, but also of the study of mammalogy in the field of zoogeography and ecology in China. It will contribute to fundamental information for further study in the following fields:

- (1) Distribution patterns and zoogeographical division of mammals;
- (2) Checking and reviewing possible problems in taxonomy;
- (3) Monitoring distribution changes of mammals in China;
- (4) Planning for protection and rational utilization of bioresources;
- (5) Geographical distribution of wildlife epidemic diseases and prevention of wildlife damage;
- (6) Paleontology and historical biogeography.

Since the first attempt at the work decades ago dozens of colleagues have assisted and encouraged us to complete this task. We take this opportunity to express our appreciation for all their support. We must especially thank Professor Zheng Zuoxin and Professor Shou Zhenhuang, who gave encouragement from the beginning, and our colleagues Wang song, Gao Yaoting and Lu Changkun, who checked the first draft of the book. Of the many persons who helped us on information, we should especially like to express our appreciation to Professor Wang Pelie, Professor Lao Rong, Professor Liu Zhenree, Professor Hu Jinchu, and Professor Wang Fuling. We also thank Ms. Jin Yan, Mrs. Yang Lanzhi and Mr. Liang Menyuan, who helped in typing and in much valuable work for finalizing the manuscript. We have to express our deep appreciation to Mrs. Marcia Bliss Marks for checking and improving the English translation of the Foreword, Preface, Introduction and some parts of the Species Distribution of the book. Finally, we thank Mr. Cheng Li and Mrs. Li Wei (China Forestry Publishing House) for their great effort in publication.

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April, 1996



# 导 言



中国是世界人口第一大国，面积约 960 万 km<sup>2</sup>，为亚洲之最。它与 15 个国家接壤，共有 31 个行政单元，其中有 23 个省（包括台湾省在内），5 个自治区，3 个直辖市。中国的地势，西高东低，大约有 33% 的国土是山地。青藏高原是最高亢的地区。高原上雄伟的喜马拉雅山脉，平均海拔约 6000m，被称为“世界屋脊”。它蜿蜒在青藏高原的南缘，与印度、尼泊尔、不丹接壤。大高原的北缘是昆仑山、阿尔金山与祁连山诸山脉。在大高原之北的广阔内陆，是气势雄伟的塔克拉玛干大沙漠所依据的塔里木盆地、天山山地、准噶尔盆地，还有浩瀚的戈壁和内蒙古地。在青藏高原之东，伸展着另一雄伟的山脉，即横断山脉。它北起四川北部，从平均海拔 3000~4000m，向南至云南中部，降为 1000~2000m，最南至与缅甸、老挝、越南的边境，降为 1000m 以下。在横断山脉以东的我国中部与东部地区，大部分是丘陵、盆地与平原，海拔多在 500~1000m，平原地区多在 500m 以下，地貌分区十分明显（见中国地貌分区图）。

中国的气候，从寒冷的东北泰加林寒温带，干旱的西北沙漠，高寒的青藏大高原到最南部的热带，区域差异十分明显。但大部分地区属于温带和亚热带。中国年平均气温图表示了年均温的巨大变化。年雨量最低是在塔克拉玛干大沙漠，低于 25mm，最高年雨量是在台湾，超过 4000mm。中国的植被也十分复杂，包括森林、草原、荒漠和高山植被等，与其相适应，生态地理动物群落也是多种多样的（见中国生态地理动物群落分布图），动物的组成十分丰富。中国在世界动物地理区划中属于古北界（北方）和东洋界（南方）（见世界动物地理区划图），两界的范围，分别为 60% 和 40%。

中国的古北界具有一些代表性的科（或亚科），如跳鼠科、睡鼠科、鼠兔科和鼯鼠亚科等，还有许多温带的类型；东洋界则以树鼯科、懒猴科、大熊猫科、猪尾鼠科和一些热带与亚热的成分为特征。在这两个界之下，我国动物地理区划划分了 7 个区和 19 个亚区（见中国动物地理区划图）。

为使读者对本专集的编辑有一概要的了解，特作以下说明：

一、本专集包括中国现存兽类迄今已知全部种类的分布。分类系统主要依据 Corbet (1991)，部分按有关分类专著和我们的理解作了某些更动；与中国科学院动物研究所编著的《中国兽类系统检索》（未刊）是一致的。分布图以种为单位，图序按分类系统排列。鉴于目前中国兽类地理亚种研究尚不充分，故只在文字记述中列出已知亚种的分布范围，图上则未予标明。

二、种的分布图采用点图法。点表示具体的分布地

点（采集或发现地点）。种的已知分布点的多少，与该种的调查采集充分与否有关。一定数量的分布点在小比例尺图上，可以形成或多或少的“点群”，反映出种的大致分布范围。在点的基础上可以用外缘线或成片涂色表示出种的分布区。但这一工作我们认为留给使用者依据自己的实际工作经验进行，比由编者绘出更好。

三、由于一个种在它的分布区内并非随处可以发现，而是只限于它的生境或栖息地。这在小比例尺的图上显然不可能反映出来，只在文字记述部分简略地列出了每个种的主要栖息环境，可供查考。

四、对少数种类，本专集还注出了目前已局部绝灭的地点，如虎、梅花鹿和灵长类的种类等。获得这种反映分布变迁的完整资料是不容易的，要靠兽类工作者和物种保护工作者不断地积累与监测，本专集主要的任务是提供了一个本底情况，作为这方面工作的底图。

五、本专集附有世界动物地理区划图和中国动物地理区划图各一幅，可供读者研究兽类的分布型。此外还附有多种中国自然地理图，读者可用于研究兽类分布与地理环境的关系。

六、本专集所列各个种的分布点资料来源于四个方面：

（一）早期发表的文献，重要的有：黑田长礼 (1940)，《日本哺乳动物图说》；Allen, G. M. (1938~1940)，*The Mammals of China and Mongolia*；Ellerman, J. R. and J. C. S. Morrison-Scott (1951)，*Check-list of Palaearctic and Indian Mammals*. Loukashkin, A. S. (1939)，《北满野生哺乳类志》；Бобринский, Н. А., Б. А. Кузнецов, А. П. Кузьякин (1944)，*Определитель Млекопитающих СССР*；Огнев, С. И. (1928~1950)，*Эверя СССР и Прилежащих Стран*, Т. 1-7. 寿振黄等 (1958)，《东北兽类调查报告》；寿振黄主编 (1962)，《中国经济动物志——兽类》；钱燕文等 (1965)，《新疆南部的鸟兽：兽类》。

（二）自 50 年代以来，中国科学院历次组织的综合考察队，它们提供了调查资料和标本收藏纪录，最重要的有：云南热带生物资源考察队 (1955~1958)，南水北调综合考察队 (1959~1961)，治沙队 (1959~1961)，青海、甘肃综合考察队 (1958~1960)，华南热带亚热带生物资源考察队 (1958~1960)，新疆综合考察队 (1956~1959)，西藏考察队 (1966~1968)。

（三）近十多年来省级有关兽类的出版物，主要有：《黑龙江省动物志》（马逸清主编 1968），《辽宁省动物志——兽类》（肖增祜等编 1988），《安徽兽类志》（王岐山主编 1990），《浙江动物志——兽类》（诸葛阳主编 1987），《四川资源动物志兽类》（胡锦薰、王晋之



1982、1984),《贵州兽类志》(罗蓉主编 1993),《西藏哺乳类》(冯祚建等 1986),《青海经济动物志:兽类》(郑昌琳等 1989),《甘肃脊椎动物志:兽类部分》(郑涛等 1991),《海南岛的鸟兽:兽类部分》(徐龙辉等 1983),《新疆啮齿动物志》(王思博,杨贻源 1983),《新疆北部地区啮齿动物的分类和分布》(马勇等 1987),《陕西啮齿动物志》(王廷正,许文贤等 1992),《西藏珍稀野生动物与保护》(尹秉高,刘务林等 1993)。此外,还引用了《中国动物志:兽纲第八卷食肉目》(高耀亭等 1987),《西双版纳自然保护区综合考察报告》(徐永椿等 1991)及《云南哀牢山森林生态系统研究》(吴征镒等 1983),等等。

(四)已发表的涉及中国兽类分布的动物学、自然疫

源流行病学及自然保护等方面的论文与报道。此外,还有许多同行提供的未刊报告。

八、本专集为中英文对照,共包括 14 个目,52 个科,220 个属及 500 多种。

最后,有一个重要的问题需要说明。近年来由于中国兽类学研究的进展,有些在分类上一直存在问题的类群,特别是一些小型兽类得到了订正。因此,这些类群在分布上亦需或多或少地予以修改。其中最主要的有鼯鼠(*Myospalax*)、鼠兔(*Ochotona*)、姬鼠(*Apodemus*)、家鼠(*Rattus*)和中国鼯鼠亚科(*Soricinae*)等。不过,要重新检查和核实分散于各地的标本是困难的,故本专集的一些纪录可能仍是旧的,不少分布点,无疑有待进一步更正。



# INTRODUCTION

The People's Republic of China has the largest human population of any country in the world. Its 9 600 000 km<sup>2</sup> of land make it the largest country in Asia, and it shares a border with 15 countries. China's 31 administrative units comprise 23 provinces (including Taiwan Province), 5 autonomous regions and 3 municipalities. Generally speaking, altitudes are highest in the west and lowest in the east, and approximately 33% of the country is mountainous. The highest region is the Tibetan Plateau. The most notable mountain ranges of the plateau are the great Himalayan chain with an average altitude of about 6000m, which is well named the "roof of the world". It extends along the southern margin of the plateau and borders on India, Nepal and Bhutan. Along the plateau's northern edge the Kunlun, Altun and Qilian mountains extend. On the north side of those mountains lies the extensive inland area with the distinct topographical features of the Taklimakan Desert, Tarim Basin, Tian Mountains, Dzungarian Basin, Gobi and Inner Mongolian platform. To the east of the Tibetan Plateau another notable mountain chain is the Hengduan ranges, extending from Sichuan Province in the north, with an average altitude of 3 000 to 4 000 m, to Yunnan Province in the south, with an average altitude of 1 000 to 2 000 m, then below 1000 m bordering Myanmar, Laos and Vietnam. The south-central and eastern half of the country, from the eastern edge of the Hengduan ranges and the Inner Mongolian platform to the east, consists of hills, basins and plains below 1 000 to 500 m above sea level. Geomorphologic regionalization of China is distinct (map).

China's climate is highly diverse, ranging in the northeast from cold taiga and in the northwest from cold, dry deserts and in the Tibetan Plateau from cold, alpine terrain to tropical monsoon in the south. The main part of the country is located in the temperate and subtropical zones. This tremendous difference is shown on the map of annual mean temperature. The amount of annual rainfall also shows much variation. The northwest has an annual precipitation of below 25 mm, while in the southern provinces the rainfall exceeds 1 500 to 2 000 mm in most parts, with a maximum of more than 4 000 mm in certain parts of Taiwan Province. In terms of geoeological division of animals there are 13 groups, corresponding to great diversification of vegetation including humid forests, semiarid steppe, arid desert, alpine meadow and highland tundra (map). Under the system of world zoogeographical regionalization two major zoogeographical divisions are recognized in China, the northern (Palearctic) and the southern (Oriental) realms, accounting for approximately 60% and 40% of the country respectively.

The Palearctic portion of China is characterized by the presence of such families (or subfamilies) as Dipodidae (jerboas), Gliridae (dormice), Ochotonidae (pikas), Myospalacinae (zokors) and many temperate forms. In the Oriental region we have such families as Tupaiidae (tree shrews),

Lorisidae (lorises), Ailuropodidae (pandas), Platanthomyidae (spiny dormice) and also quite a number of other tropical and subtropical elements. Within these realms seven faunal regions and nineteen subregions are recognized (map 4).

This publication is substantially an atlas of distribution maps with detailed records at county level. It includes all the mammals known in China, comprising more than 500 species, which are classified under 220 genera, 52 families and 14 orders.

Following are brief explanations of the contents and compilation of the volume:

1. The book includes all the mammal species distributed in China. It coordinates mostly with the manuscript "Key to Mammals in China" as to nomenclature. Divisions are mainly based on the taxonomic system suggested by Corbet (1991) with some modifications from other authorities. The distribution of all species is indicated on the maps by dots. The ranges of subspecies are not shown on the maps owing to insufficient study, but described with geographical names.

2. On the maps the dots represent localities where specimens were collected and living animal (s) observed. The number of dots depends on the intensity and scope of field surveys.

A cluster of dots on small-scale map can indicate an approximate area of species distribution. A line can be drawn connecting the dots along the edge of the cluster and the space within the line can be colored if users wish to do so. It can be drawn more accurately, based on the experience of users, especially authorities on specific areas. Possible areas of species distribution can be determined by extension of the habitat based on certain ecogeographical conditions. Furthermore, the appendices of physical geographical maps, which are drawn on the same scale as the species distributional maps, can be used for the study of possible correlation between the distribution and environmental conditions.

3. Within a species area, except for a few that are eurytopic, occur only certain habitats, depending on ecological valency. On small-scale maps habitat cannot be shown as to ecological level. The book gives merely a simple description of species habitat in terms of ecogeographical significance.

4. For a few endangered species, such as the tiger, sika deer and primates, localities of extirpation or protection have been marked by different dot. It is hard to obtain information on distributional changes, which must be collected constantly or by monitoring. This volume can be used as a background for study.

5. Maps of zoogeographic regions of China and the world have been appended for study of species distribution patterns.

6. Data for the volume were collected from the following sources:

- (1) Early publications, of which the most important are: N. Kuroda (1940), *Picture Album of Japanese Mammals*; Allen, G. M., *The Mammals of China and Mongolia* (1938-1940); Ellerman, J. R. and J. C. S. Morrison-Scott



(1950), *Checklist of Palaearctic and Indian Mammals*; Loukashkin, A. S. (1937), *Wild Mammals of Northern Manchuria*; Bobrinskii, N. A., B. A. Kuznechov and A. P. Kuzakin (1944), *Identification of Mammals of U. S. S. R.*; Ognev, S. E. (1928-1950), *Beasts of U. S. S. R. and Its Adjacent Countries* (Vol. 1-7), ed. Shou Zhenhaung (1958), *Survey Report of Mammals in Northeast China* chief; Shou Zhenhaung (1962), *Fauna Economica of China-Mammalia*; Qian Yanwen et al (1965), *The Birds and Beasts of Southern Xinjiang*; *Mammals*.

(2) Information on faunal investigations and records of specimens, contributed by integrated scientific expeditions of Academia Sinica since the 1950s. The most important are: Yunnan Tropical Biological Resources Expedition Team (1955-1958), Expedition Team of Water Transportation from South to North (1959-1960), Integrated Scientific Expedition Team of Qinghai-Gansu Area (1958-1960), Investigation Team of Sandy Desert Management (1959-1961), Biological Expedition Team of South China Tropic and Subtropic (1958-1960), Integrated Scientific Expedition Team of Xinjiang (1956-1959), and Integrated Scientific Expedition Team of Xizang (Tibetan) Plateau (1966-1968).

(3) Publications about mammals at provincial level for the past two decades; Ma Yiqing (chief ed.) (1986), *Fauna of Heilongjiang-Mammalia*; Xiao Zhenggu (chief ed.) (1988), *Fauna of Liaoning-Mammalia*; Wang Qishan (chief ed.) (1990), *Mammal Fauna of Anhui*; Zhuge Yang (chief ed.) (1988), *Fauna of Zhejiang-Mammalia*; Hu Jinzhu and Wang Youzi (1982, 1984), *Sichuan Fauna Economica-Mammalia*; Luo Ren (chief ed.) (1993), *The Mammals of Guizhou*; Sheng Lantian et al. (1988), *Vertebrate List of Guangxi-Mammalia*; Feng Zuojian et al (1986), *The mammals of Xizang*; Xu Longhui et al (1983), *The Birds and Beasts of Hainan*; Li Dehao et al (1989), *The Economic Vertebrates of Qinghai*; Wang Xiantin

(chief ed.) (1991), *Vertebrate Fauna of Gansu*; Wang Shibo et al (1983), *Rodentia Fauna of Xinjiang*; Ma Yong et al (1987), *Glires (Rodents and Lagomorphs of Northern Xinjiang and Their Zoogeographical Distribution*; Wang Tingzheng and Xu Wenxian (chief ed.) (1992), *Glires (Rodentia and Lagomorphs) Fauna of Shaanxi Province*; Gao Yaoting et al. (1987), *Fauna Sinica; Mammalia-Vol. 8: Carnivora*; Xu Yongchun et al (1987), *Integrated Scientific Report of Xishuangbanna Nature Reserves*; Yin Binggao et al. (1991), *Wildlife Protection in Tibet*; Wu Zhengyi et al. (1983), *Research of Forest Ecosystems on Ailao Mountains, Yunnan*".

(4) A great number of papers of zoology, wild animal epidemiology and nature conservation, which deal with information of mammal distribution and many unpublished papers provided by our colleagues have also been quoted, etc.

8. This volume is Chinese-English bilingual. The lists and maps are followed by texts arranged in order of taxonomic system. Under each species included in this volume the following items are listed: (1) nomenclature, including scientific names, Chinese names and English names; (2) subspecies and their main ranges; (3) distribution records in China; (4) habitat; (5) brief account of range abroad.

Recently, following mammalogical survey in China, a revision of taxonomic groups in question has been carried out, especially for the small mammals, and modification of their distribution has been made according to different authors. Among them the most important groups are zokors (*Myospalax*), pikas (*Ochotona*), field mice (*Apodemus*), rats (*Rattus*) and Chinese red-toothed shrew (*Soricinae*). However, due to the difficulty of reexamining specimens kept in different institutions, some former data may remain in the volume. No doubt many dots will be found subject to considerable taxonomic correction as more details become known.



概 图

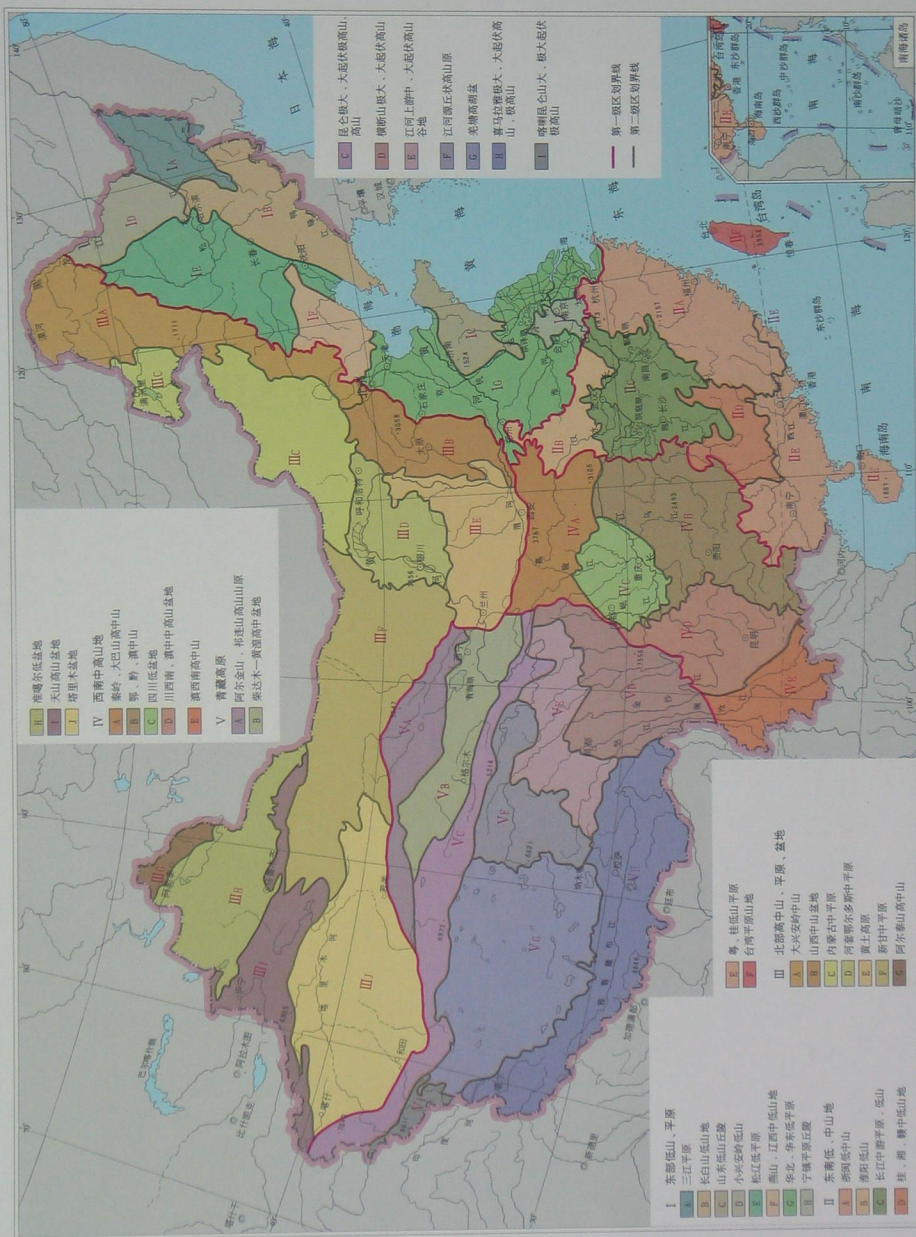
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GEOGRAPHICAL MAPS





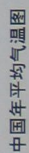


中国地貌区划图  
1:20 000 000 国家自然地图集编辑室设计制图 李树元 供稿





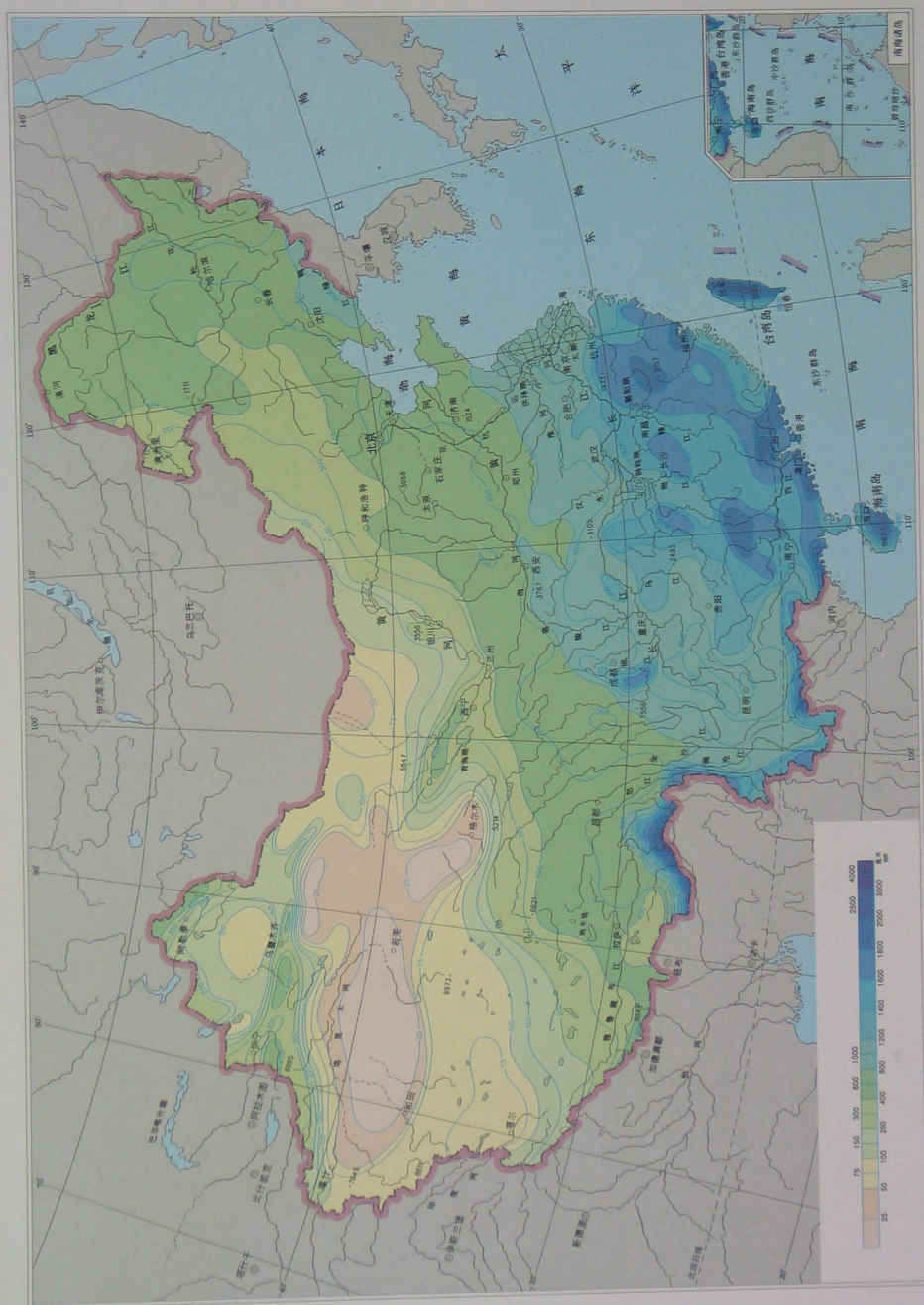




## Annual Average Temperature Map of China

1:20 000 000 国家自然地图集编辑室设计制版 朱兆瑞 供稿 设计 and plate making: Editorial Board of the National Physical Atlas of China 作者ship draft: Ruizhao Zhu





# 中国年降水量图

## Annual Precipitation Map of China

1:20 000 000 国家自然地图集编辑室设计制版 朱兆瑞 供稿 设计 and plate making: Editorial Board of the National Physical Atlas of China Authorship draft: Ruizhao Zhu