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Sun Yat-sen University

中国天牛(1406种)彩色图鉴

Iconography of Chinese Longicorn Beetles (1406 Species) in Color

华立中 [日]奈良一 [美]G. A. 塞缪尔森 [美]S. W. 林格费尔特 编
by
Hua Li-zhong [Japan] Nara Hajime [USA] G. A. Saemulson [USA] S. W. Lingafelter



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我们的同行挚友
美国著名天牛分类学家
J. A. 开姆萨克博士

In Memory of
Our Colleague Bosom Friend
the Famous US Longicorn Beetles Taxonomist
Dr. John Andrew Chemsak



1932.2.19—2007.8.26

J. A. 开姆萨克博士生平简介

美国著名的天牛分类学家 J. A. 开姆萨克博士, 1932 年 2 月 19 日出生于美国宾夕法尼亚, 2007 年 8 月 26 日在加利福尼亚逝世, 享年 75 岁。

开姆萨克博士在加州大学(伯克利)埃西格昆虫博物馆工作, 曾任该馆馆长, 以及太平洋岸区昆虫学会主席, 《泛太平洋昆虫学家》杂志主编。

开姆萨克博士从事西半球特别是墨西哥和中美洲天牛科分类研究, 发表论著约 170 篇(本), 记述天牛新种 550 余种, 约 63 新属, 1 新族, 出版巨著《北美天牛》5 卷, 并与 E. G. 林斯黎博士合编北美天牛目录。在 1957 - 2002 年间他前往墨西哥、洪都拉斯、哥斯达黎加、法属圭亚那、巴西、夏威夷和巴布亚新几内亚进行 50 次科学考察, 采集了大量天牛标本供分类研究之用。他还慷慨地赠送了 141 种天牛标本给本书第一作者。

A Brief Biographical Note on Dr. John Andrew Chemsak

The famous US taxonomist of longicorn beetles, Dr. John Andrew Chemsak was born in Pennsylvania, USA at February 19th 1932, and at August 26th 2007 died at his age of 75 in El Cerrito, California.

He worked in the Essig Museum of Entomology at the University of California, Berkeley. He was a curator in this Museum, and president of the *Pacific Coast Entomological Society*, also served as editor in chief of the *Pan - Pacific Entomologist*.

He worked on taxonomy of longicorn beetles (Cerambycidae) in the *Western Hemisphere*, especially the beetles of Mexico and Central America, published about 170 publications, and described more than 550 new species of longicorn beetles, and proposed about 63 new genera and one new tribe, published the fundamental work *The Cerambycidae of North America* five volumes and catalogues of longicorn beetles of North America in co-authorship with Dr. E. Gorton Linsley. During 1957 - 2002, he made 50 times expeditions to Mexico, Honduras, Costa Rica, French Guiana, Brazil, Hawaii and Papua New Guinea and collected abundant specimens of longicorn beetles for research of classification. He has been impassioned presented 141 species of specimens of longicorn beetles as a gift to the first author of this book.

本书受

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前 言

全世界天牛约有 45000 种记录。据本书第一作者统计,到 2005 年止,中国天牛记录已有 3100 余种。绝大多数天牛取食植物,其中不少种类是森林、果木的重要害虫,有些是毁灭性害虫,如:松墨天牛 *Monochamus alternatus* Hope, 因携带松材线虫 *Bursaphelenchus xylophilus* 的个体自国外传入我国,引起松树萎蔫病 pine wild disease, 致使江苏、安徽、广东等省部分马尾松 *Pinus massoniana* 林被毁,该种害虫已被列入中国进口病虫检疫对象名单,而光肩星天牛 *Anoplophora glabripennis* (Motschulsky) 在河南、陕西等省及美国东部地区为害行道树,而被风吹折毁坏;双条杉天牛 *Semanotus bifasciatus* (Motschulsky) 严重为害杉树等等;有些种类为害房屋建筑和家具,如:长角凿点天牛 *Stromatium longicorne* Newman 和家茸天牛 *Trichoferus campestris* (Faldermann), 这些虫害使国民经济遭受重大损失。但美国的三脊天牛属 *Elytroleptus* 等少数种类取食红萤 (Lycidae) 的肌肉和体液,属肉食性种类;而原产于阿根廷的仙人掌阿天牛 *Alcidion cereicola* Fisher, 1974 年引入到澳大利亚昆士兰,用以防治毛刺仙人掌 *Ereicereus martini* Lab., 在一年内获得成功,这是天牛作为“益虫”应用于生物防治的个别典型例子。

在这里,本人要特别感谢日本天牛分类学家奈良一先生,美国夏威夷比肖普博物馆 (Bishop Museum) 的天牛及叶甲分类学家 G. A. 塞缪尔森博士和美国华盛顿美国国家博物馆的天牛分类学家 S. W. 林格费尔特博士与本人合作编写本图鉴。并衷心感谢奈良一先生,蒙他应允引用他的专著:新版《台湾的天牛》一书中的 400 余种台湾天牛图片及记述资料并赠送 77 种天牛标本;塞缪尔森博士拍摄了 45 种保存于他们博物馆的中国天牛模式标本照片,林格费尔特博士拍摄了保存于他们博物馆的 75 种中国天牛模式标本照片,日本摄影师清水繁幸先生拍摄了 72 种台湾天牛标本的照片,这些照片和资料大大丰富了本图鉴内容,使本书生色不少。书中还采用了本人主编的《广东、海南的天牛》彩色图鉴及本人参加编写的《中国经济昆虫志》鞘翅目天牛科(三)中的图片等。在本书的编写过程中,我们曾邀请同行挚友、美国著名天牛分类学家、《北美天牛》的作者、曾赠送 141 种天牛标本给我的加州大学的 J. A. 开姆萨克博士进行合作,并代拍摄保存于美国加州科学院的 100 余种中国天牛模式标本的照片,但不幸他已于 2007 年 8 月逝世,因而未能如愿,本人在此谨向他致以沉痛的哀悼,并在本书扉页刊登他的遗照,以表缅怀之意。

本书包括 1406 种中国天牛成虫(其中有中国天牛模式标本 204 种及中国新记录 6

种)的彩图和每种的中、英文特征简述、原始文献资料、国内外分布及已知寄主名单;列出了有关重要参考资料 127 篇及中国天牛中文名、拉丁名索引。本书有彩图 125 版,并附有从国外带入中国的 16 种天牛图片,用于防治毛刺仙人掌的仙人掌阿天牛(*Alcidion cereicola* Fisher)、黄猄蚁捕食柑橘害虫星天牛(*Anoplophora chinensis* (Forster))以及天牛生物学的图片,包括卵期和生活史(黄星天牛 *Psacotha hilaris*)等,有助于读者了解天牛生物学各个虫期的形态。本书还列出从 1758 年至 2005 年未包括在本书记述种中的 1767 种中国天牛名录(见附录一),美国著名天牛分类学家 J. A. 开姆萨克博士赠送的 141 种天牛标本名录(见附录二),日本天牛分类学家奈良一先生赠送的 77 种天牛标本名录(见附录三)。

作者感谢中山大学生命科学学院院长徐安龙教授、中山大学生物博物馆馆长李鸣光教授、副馆长庞虹教授、王英永先生对本书出版的热情支持,中山大学生命科学学院、中山大学生物博物馆资助本书的出版。

本书可供农林生产部门、生物、植物保护、海关检疫人员及有关院校教师、大学生、研究生和从事科研人员在识别中国天牛种类时作参考。

本书中谬误之处,敬请读者批评指正。

华立中

昆虫学教授

中山大学

广州, 510275

2008 年 8 月 1 日

Preface

There are record about 45000 species of longicorn beetles in the whole world. According to the statistics by the first author of this book, based on data up to 2005, the records of Chinese longicorn beetles have been exceeded 3100 species. The absolutely most longicorn beetles are feeding on plants, among them many species are important pests of forest and fruit trees, for examples, the pine longicorn beetle *Monochamus alternatus* Hope, because some individuals of this species harboring the pine wood nematodes *Bursaphelenus xilophilus* have been introduced into our country from abroad, resulting pine wild disease, parts of the pine forest *Pinus massoniana* of Jiangsu, Anhui and Guangdong Provinces were damaged, the name of this pest has put into the list of import pest quarantine of China, and the glabrous spotted willow borer *Anoplophora glabripennis* (Motschulsky) in Henan, Shaanxi and so on provinces and in east area of America injured the road trees, and destroyed by snapped off in the wind, while the Japanese juniperus bark borer *Semanotus bifasciatus* Motschulsky heavily injured the China fir etc. There are some species cause harmed to house buildings and furnitures, for instance, kulsu teak borer *Stromatium longicorne* (Newman) and *Trichoferus campestris* (Faldermann). These insect pests caused heavy losses in the national economy. But the minority species of the Genus *Elytroleptus* from America are feeding on muscles and fluits of body of net - winged beetles *Lycidae*, they are belonging to carnivorous species. However, the Harris cactus longicorn beetles *Alcidion cereicola* Fisher original habitat in Argentina introduced to Queensland of Australia in 1974 for liberation to control Harris cactus *Eriocereus martini* Lab., acquired success in one year. This is an individual typical example as a "beneficial insect" used to biological control.

I am especially indebted here to the Japanese taxonomist of longicorn beetles, Mr. Nara Hajime, the taxonomist of leaf beetles and longicorn beetles of Bishop Museum in Hawaii, USA, Dr. G. A. Saemulson and, the taxonomist of longicorn beetles of US National Museum, Wahsington D. C., Dr. S. W. Lingafelter in cooperation with me compiled this iconography. And I would express heartfelt thanks to Mr. Nara Hajime, he has kindness agreed to use more than 400 species pictures and descriptive materials of longicorn beetles of Taiwan from his monograph: New Edition of *The Longicorn Beetles of Taiwan* and presented 77 species specimens of longicorn beetles to me. Dr. G. A. Saemulson, he has taken 45 photoes of type specimens of Chinese Longicorn Beetles deposited in their Museum. Dr. S. W. Lingafelter, he has taken 77 photoes of type specimens of Chinese Longicorn Beetles kept in their Museum. And the Japanese photographer, Mr. Shimizu Shigeyuku, he has photoed 72 species specimens of longicorn beetles of Taiwan, these photoes and materials greatly enriched the contents of this Iconography and they added most lustre to this book. In this book we also adopted pictures from the book *Longicorn beetles of Hainan and Guangdong* in color which edited by me and I have joined the compile work of *Economic Inset Fauna of China Coleoptera: Cerambycidae (III)*. In the course of compiling this book, we have invited colleague bosom, Dr. J. A. Chemsak of California University, the famous taxonomist of longicorn beetles of America, author of five volumed of *The Cerambycidae of North America*, he has presented 141 species specimens of longicorn beetles to me, worked together with us and instead of me taken photoes of more than 100 species of type specimens of Chinese longicorn beetles deposited in Cali-

ifornia Sciences Academy. Unfortunately, he died in August, 1987, so this task can't be done as our wishes. At here I cautiously express my profound condolences to him, and we will print his deceased portrait in the title page of this book and express the memory of him in our mind.

This book contains 1406 species color pictures of imago of Chinese longicorn beetles (among them included 204 species type specimens of Chinese longicorn beetles and 6 species are new records in China) and each species with the brief description of characters (in Chinese and in English), original literatures, distributions of domestic and abroad, and list of hosts known to us, listed 127 articles of concerning important literatures and Chinese, Latin index. There are 125 color plates, and enclose herewith 16 species pictures of longicorn beetles imported from abroad, the picture of Harris catius longicorn beetle *Alcidion cereicola* Fisher used to control Harris catius *Eriocereus martini* Lab., the red tree ant *Oecophyllus smaragdina* (Fabricius) hunting on the pest of orange — citrus trunk borer *Anoplophora chinensis* (Forster) and pictures of biology of longicorn beetles, included egg stage and life history (yellow-spotted mulberry borer *Psacotha hilaris*) etc., these may help that the readers understand the morphology in various biological stages of longicorn beetles. There also enumerated List of 1767 species of Chinese longicorn beetles not included in this book from 1758 to 2005 (See Appendix 1), List of 141 species specimens of longicorn beetles presented by the US famous taxonomist of longicorn beetles, Dr. J. A. Chemsak, California University of America, Berkeley (See Appendix 2), List of 77 species specimens of longicorn beetles presented by Japanese taxonomist of longicorn beetles, Mr. Nara Hajime (See Appendix 3).

The author is grateful to Prof. Xu An-long, Director of the School of Life Sciences, Sun Yat-sen University, Prof. Li Min-guang, Director of Museum of Biology Sun Yat-sen, and Associate Director Prof. Pang Hong and Mr. Wang Yin-yon, for their enthusiastic support to the publication of this book, and the sponsor for this book, School of Life Sciences Sun Yat-sen University, Museum of Biology Sun Yat-sen University.

This iconography may be referring to differentiation the species of Chinese longicorn beetles for agriculture, forestry production units, biology, protection of plant and quarantine customs officers and teacher, student, postgraduate of concerning college and university and people who work on research of science.

Concerning the errors in this book, I hope the readers criticize and print out the mistakes so that we can be corrected.

Hua Li-zhong
Professor of Entomology
Sun Yat-sen University
Guangzhou, China 510275
August 1st 2008

目 录

一、中国天牛 (1406 种) 彩色图版 I - CXXV	1
二、种的记述	126
三、种的记述 (英文)	262
四、参考资料	407
五、中名索引	410
六、拉丁学名索引	424
附录一 未包括在本书记述种中的中国天牛名录 (1758 - 2005)	448
附录二 美国加州大学 (伯克利) 开姆萨克 (J. A. Chemsak) 博士赠送给本书 第一作者的天牛标本名录	471
附录三 日本奈良一 (Nara Hajime) 先生赠送给本书第一作者的天牛标本名录	473

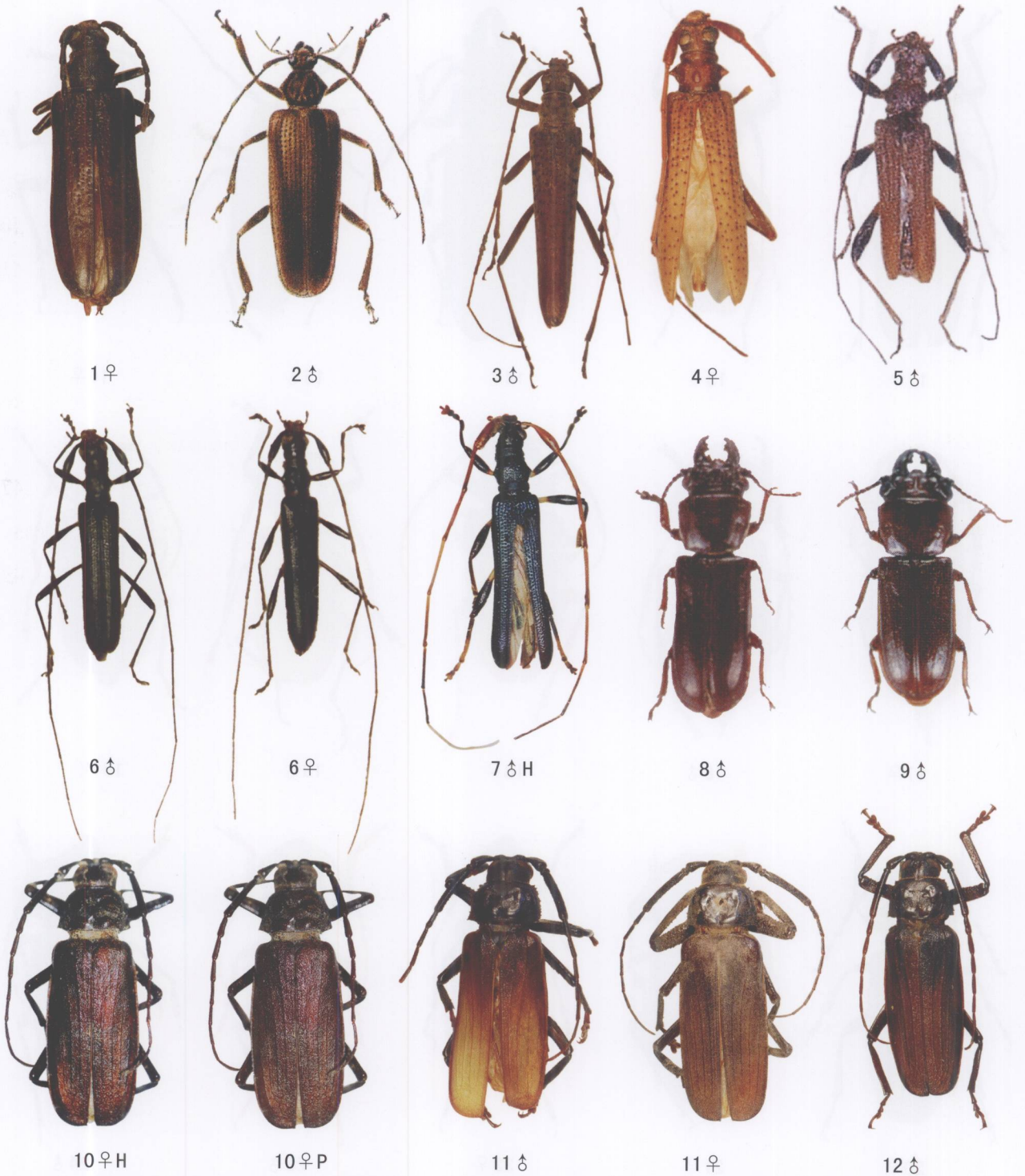
Contents

1. Chinese Longicorn Beetles (1406 Species) in Color Plates I – CXXV	1
2. Descriptions of Species	126
3. Descriptions of Species (in English)	262
4. Bibliography	407
5. Index of Chinese Name	410
6. Index of Latin Names	424
Appendix 1 List of Chinese Longicorn Beetles not included in the Descriptions of Species in this book (1758 – 2005)	448
Appendix 2 List of Specimens of Longicorn Beetles presented by Dr. John A. Chemsak, California University (Berkeley) USA as a gift to the first author of this book	471
Appendix 3 List of Specimens of Longicorn Beetles presented by Mr. Nara Kojime (Japan) as a gift to the first author of this book	473

一、中国天牛(1406种)彩色图版 I -CXXV

图版 I

1. Chinese Longicorn Beetles (1406 Species) in Color Plates I-CXXV



I. 瘦天牛科 Disteniidae 1. 黑须天牛 *Cyrtanops asahinai* Mitono ♀ 2. 棕须天牛 *Cyrtanops punctipennis* White ♂ 3. 台湾瘦天牛 *Distenia formosana* Mitono ♂ 4. 黑瘦天牛 *Distenia nigrosparsa* Pic ♀ 5. 褐锤腿瘦天牛 *Melegena fulva* Pu ♂ 6. 修瘦天牛 *Noemia incompta* Gressitt ♂ 6. 修瘦天牛 *Noemia incompta* Gressitt ♀ 7. 海南修瘦天牛 *Noemia submetallica* Gressitt ♂ H
 II. 天牛科 Cerambycidae (I) 异天牛亚科 Parandrinae 8. 台湾异天牛 *Parandra formosana* Miwa et Mitono ♂ 9. 兰屿异天牛 *Parandra lanyuana* Hayashi ♂ (II) 锯天牛亚科 Prioninae 10. 海南异胸天牛 *Anomophysis hainana* (Gressitt) ♀ H 10. 海南异胸天牛 *Anomophysis hainana* (Gressitt) ♀ H, ♀ P 11. 台南异胸天牛 *Anomophysis katoi* (Gressitt) ♂ 11. 台南异胸天牛 *Anomophysis katoi* (Gressitt) ♂, ♀ 12. 本天牛(密齿天牛) *Bandar pascoei* (Lansberge) ♂

图版 II



12 ♀



13 ♀



14 ♂



15 ♂



16 ♀



17 ♀



18 ♂



18 ♀



19 ♂



19 ♀



20 ♀



21 ♀



22 ♀

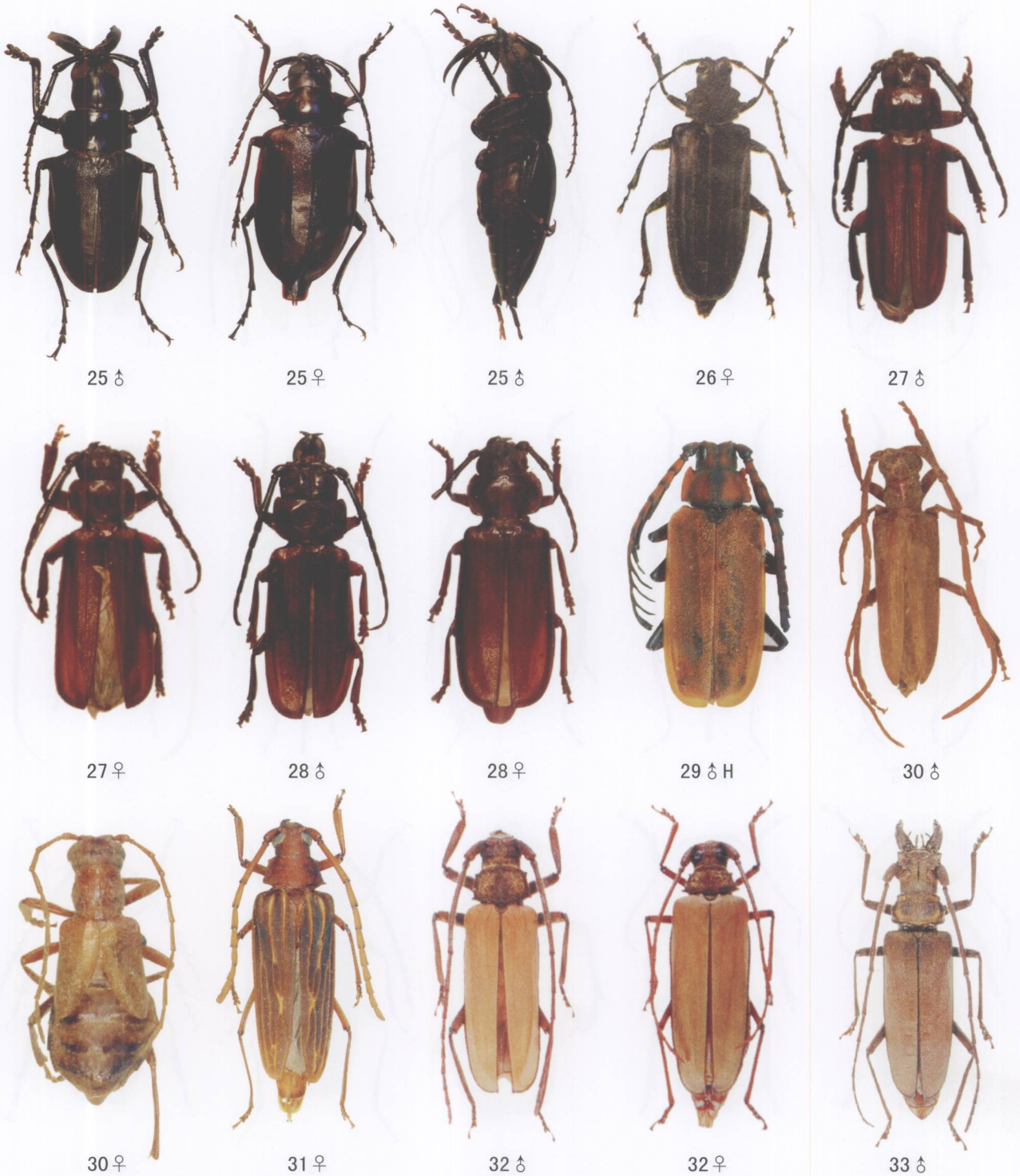


23 ♂



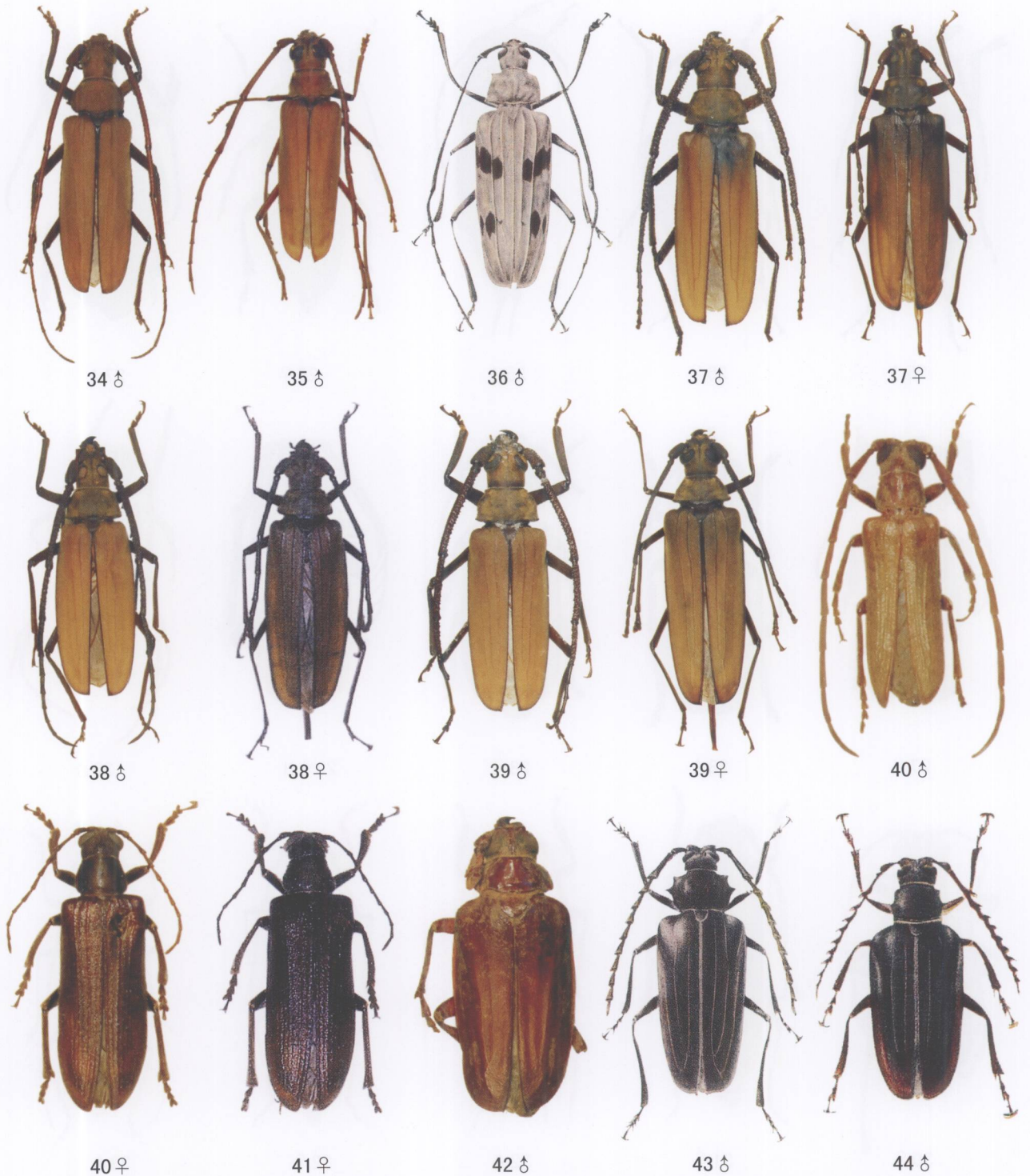
24 ♂

12. 本天牛(密齿天牛) *Bandar pascoei* (Lansberge) ♀ 13. 台湾本天牛 *Bandar pascoei formosae* (Gressitt) ♀ 14. 大山坚天牛 *Callipogon relictus* (Semenov-Tian-Shanski) ♂ 15. 锯角土天牛 *Doresthenes angulicollis* (Fairmaire) ♂ 16. 竹土天牛 *Dorysthenes buqueti* Guerin-Menville ♀ 17. 狭牙土天牛 *Dorysthenes davidis* Fairmaire ♀ 18. 沟翅土天牛 *Dorysthenes fossatus* Pascoe ♂ 18. 沟翅土天牛 *Dorysthenes fossatus* Pascoe ♀ 19. 蔗根土天牛 *Dorysthenes granulosis* (Thomson) ♂ 19. 蔗根土天牛 *Dorysthenes granulosis* (Thomson) ♀ 20. 苹根土天牛 *Dorysthenes hugeli* (Redtenbacher) ♀ 21. 曲牙土天牛 *Dorysthenes hydropicus* (Pascoe) ♀ 22. 台湾土天牛 *Dorysthenes igai* (Matsushita) ♀ 23. 大牙土天牛 *Dorysthenes paradoxus* (Faldermann) ♂ 24. 皱翅土天牛 *Dorysthenes pici* Lameere ♂



25. 长牙土天牛 *Dorysthenes walkeri* (Waterhouse) ♂ 25. 长牙土天牛 *Dorysthenes walkeri* (Waterhouse) ♀ 25. 长牙土天牛 *Dorysthenes walkeri* (Waterhouse) ♂ 侧面观 26. 西藏土天牛 *Dorysthenes zivetta* Thomson ♀ 27. 家扁天牛 *Eurypoda antennata* Saunders ♂ 27. 家扁天牛 *Eurypoda antennata* Saunders ♀ 28. 樟扁天牛 *Eurypoda batesei* Gahan ♂ 28. 樟扁天牛 *Eurypoda batesei* Gahan ♀ 29. 四川栉锯天牛 *Flabelloprionus szechuanus* Heyrovsky ♂H 30. 芫天牛 *Mantitheus pekinensis* Fairmaire ♂ 30. 芫天牛 *Mantitheus pekinensis* Fairmaire ♀ 31. 脊薄翅天牛 *Megopis costipennis* White ♀ 32. 台薄翅天牛 *Megopis form-osana* (Matsushita) ♂ 32. 台薄翅天牛 *Megopis formosana* (Matsushita) ♀ 33. 颚薄翅天牛 *Megopis mandibularis* (Fairmaire) ♂

图版 IV



34. 毛角薄翅天牛 *Megopis marginalis* (Fabricius) ♂ 35. 梯胸薄翅天牛 *Megopis sauteri* Lameere ♂ 36. 褐斑薄翅天牛 *Megopis severini* Lameere ♂ 37. 华薄翅天牛 *Megopis sinica* (White) ♂ 37. 华薄翅天牛 *Megopis sinica* (White) ♀ 38. 海南华薄翅天牛 *Megopis sinica hainanensis* (Gahan) ♂ 38. 海南华薄翅天牛 *Megopis sinica hainanensis* (Gahan) ♀ 39. 隐脊华薄翅天牛 *Megopis sinica ornaticollis* (White) ♂ 39. 隐脊华薄翅天牛 *Megopis sinica ornaticollis* (White) ♀ 40. 桔狭胸天牛 *Philus antennatus* (Gyllenhal) ♂ 40. 桔狭胸天牛 *Philus antennatus* (Gyllenhal) ♀ 41. 蔗狭胸天牛 *Philus pallescens* Bates ♀ 42. 多节锯天牛 *Prionus boppei* Lameere ♂ 43. 宽齿短翅锯天牛 *Prionus brachypterus latidens* (Motschulsky) ♂ 44. 尖跗锯天牛 *Prionus heros* (Semenov-Tian-Shanskij) ♂