

普通高等中医药院校
英汉对照中医本科系列教材

北京中医药大学 主编

The Chinese Materia Medica

中 药 学



学苑出版社

A C A D E M Y P R E S S

English-Chinese Collegiate Textbooks in Traditional
Chinese Medicine for Institutions of Traditional
Chinese Medicine of Higher Learning
Edited by Beijing University of Traditional Chinese Medicine

普通高等中医药院校
英汉对照中医本科系列教材

北京中医药大学 主编

Basic Theories of Traditional Chinese Medicine

中医基础理论

Diagnostics of Traditional Chinese Medicine

中医诊断学

The Chinese Materia Medica

中药学

Formulas of Traditional Chinese Medicine

方剂学

Traditional Chinese Internal Medicine

中医内科学

Acupuncture and Moxibustion

针灸学

Chinese-English Dictionary of Traditional Chinese Medicine

汉英中医药学词典

责任编辑：东青 陈辉

封面设计：李叶 李戎

ISBN 7-5077-1269-9



9 787507 712698 >

定价：65.00元（\$）

**English-Chinese Collegiate Textbooks in Traditional
Chinese Medicine for Institutions of Traditional
Chinese Medicine of Higher Learning
Edited by Beijing University of Traditional
Chinese Medicine**

普通高等中医药院校英汉对照中医本科系列教材
北京中医药大学 主编

**THE CHINESE
MATERIA MEDICA**

中 药 学

Academy Press [Xue Yuan]
学苑出版社

图书在版编目(CIP)数据

中药学/贺兴东,邹建华主编.-北京:学苑出版社,1998
普通高等中医药院校英汉对照中医本科系列教材
ISBN 7-5077-1269-9

I. 中… II. ①贺…②邹… III. 中药学-医学院校-教材
-英、汉 IV. R28

中国版本图书馆 CIP 数据核字(97)第 13608 号

责任编辑:东青 陈辉

学苑出版社出版 发行
社址:北京市万寿路西街 11 号 邮政编码:100036
北京市广内印刷厂印刷 新华书店经销
787×1092 1/16 36.75 印张 805 千字
1998 年 9 月北京第 1 版 1998 年 9 月北京第 1 次印刷
印数:0001—5000 册
定价:65 元(\$)

**English-Chinese Collegiate Textbooks in Traditional
Chinese Medicine for Institutions of Traditional
Chinese Medicine of Higher Learning
Edited by Beijing University of Traditional
Chinese Medicine**

**普通高等中医药院校
英汉对照中医本科系列教材
北京中医药大学 主编**

General Chief Editor : Long Zhixian

Associate Chief Editors : Zheng Shouzeng

He Min

He Xingdong

Suo Runtang

Liu Jinsheng

Gao Baozhong

Chen Jing

Chief Reviewers of Chinese : Wang Yuchuan

Yan Zhenghua

总主编：龙致贤

副总主编：郑守曾 何 琨

贺兴东 索润堂

刘金生 高宝忠

陈 静

中文主审：王玉川 颜正华

THE CHINESE MATERIA MEDICA

中 药 学

Chief Editor of Chinese: He Xingdong

Chief Editor of English: Zou Jianhua

Translators: (In the order of the number of
Chinese strokes in the surnames)

Ding Ruqing Tian Zhenming

Liu Guangzhi Liu Linxiang

Liu Junling Sun Mingzhen

Li Yuanmin Li Chunmei

Li Zongyou Zou Jianhua

Duan Shumin WenLi

中文主编: 贺兴东

英文主编: 邹建华

译 者: (以下按姓氏笔画为序)

丁汝庆 田振明 刘广智

刘林祥 刘俊岭 孙明珍

李元敏 李春梅 李宗友

邹建华 段树民 温丽

Specially Invited International Editors

Chief Reviewer: Nengyu Fang

Associate Reviewer: Concetta Maria Pirrone

Advisor: George Francis Mclean

特邀外籍审校人员

英文主审校: 方能御

协 校: 康西特·玛丽亚·皮罗尼

顾 问: 乔治·弗郎西斯·麦克林

Preface

Beijing University of Chinese Medicine and Pharmacology, under the auspices of the Department of Science and Education for the State Administration of Traditional Chinese Medicine, has compiled the English—Chinese Textbook Series in traditional Chinese medicine (TCM) for undergraduate of college. These textbooks include Basic Theories of Traditional Chinese Medicine, Diagnostics of Traditional Chinese Medicine, Chinese Materia Medica, Formulas of Traditional Chinese Medicine, Traditional Chinese Internal Medicine, Acupuncture & Moxibustion and an English—Chinese Dictionary of Traditional Chinese Medicine. This project is very scholarstic and now is coming into publication for the first time domestically and abroad.

Traditional Chinese medicine possesses a unique theoretical system, rich clinical experience and excellent clinical effects. It has made great contributions to the health of mankind. Either now or future, based on its own potential, TCM will play increasingly important role in promoting the development of a world medicine, and more attention of peoples in the world. More and more international friends are interested in TCM and they are studying and practicing TCM throughout the world. In order to overcome the language barrier and to understand TCM correctly, they are eager for a set of TCM textbooks. They want these textbooks to be suitable for use in colleges of higher learning and accurate in English translation.

Beijing University of Chinese Medicine and Pharmacology is a key university among the TCM teaching institutions of higher learning in China. The university began to enroll foreing students in 1957. Since then, about one thousand foreign students coming from more than 70 countries and regions in the world graduated form it. At present, there are nearly 300 foreign students from 41 countries and regions studying at the niiversity. Our university has accumulated rich experience in teaching foreign students and understands their special needs in the study of TCM. These years of practice in teaching has greatly helped the compilation of the TCM textbooks.

The authorities at our university highly evaluate the task of compilating and translating the TCM textbook series and organized a special working group of

experienced professors and other professionals to compile the series. Based on the fifth edition of relevant all—China TCM textbooks of higher learning, the TCM textbooks absorb the latest achievements of scientific research in TCM, lay more stress on logicality, scientificality and practicality, make every effort to contain more information and to build a rational framework of the content in an understandable and readable manner. This TCM textbook series is suitable for both foreign and Chinese students and all those who are interested in TCM, both at home and abroad.

In order to ensure academic standards and an accurate English translation of this textbook series, we invited well — known TCM experts Prof. Wang Yuchuan and Prof. Yan Zhenghua to examine and review the Chinese language part of the series, and invited American medical and English language experts Nengyu Fang , George Francis Mclean and Concetta Maria Pirrone to review the English translation.

The Chinese Materia Medica is divided into three parts: General Theory, Systematic Discussion and Appendix.

In General Discussion, emphasis is laid on theory on properties, compatibility and contraindications of drugs, and brief introduction is given to the fundamental knowledge of Chinese drugs, including their producing areas, collection, preparation, dosage and administration.

277 commonly used Chinese drugs (including 15 appendant drugs) are dealt with in Systematic Discussion, which is divided into 19 chapters according to drug concepts, effects, compatibility and precautions of a type of drugs are generally described at the beginning of each chapter, Concrete introduction of drugs includes sources, properties, effects, indications, dosage, administration, precautions and modern researches. Some contents (such as precautions and modern researches) are not given to some drugs. Stress is put on effects and indications of every drug.

Appendix consists of index of drug names and compilation of prescriptions, enabling students to look up them easily.

Finally, any correction to errors and suggestions concerning its contents and format will be appreciated. We will take them into careful consideration in the next edition, and we believe that with such help, these TCM textbooks will be much improved in the next edition.

During the compilation of the TCM textbooks series, we have been greatly

the relevant official departments and experts and we would like to express our profound thanks to them.

The compiler and translator

前　　言

北京中医药大学受国家中医药管理局科技教育司的委托,编译高等中医院校英汉对照中医本科系列教材,包括《中医基础理论》、《中医诊断学》、《中药学》、《方剂学》、《中医内科学》、《针灸学》及《汉英中医药学词典》7种。这是中医高等教材汉译英方面空前盛大的工程,是一项大型科研活动。

中国医药学以其独特的理论体系、丰富的医疗实践、卓越的临床疗效,为人类的健康事业作出了巨大贡献。当今和未来,中医药学将发挥出更大的潜力,推动世界医学向前发展,引起世界人民更多更大的重视与关注。近年来,外国朋友中学习、研究、应用中医中药的人越来越多,但由于语言文字的差异,给学习带来一定的困难,他们迫切需要一套专业层次高、翻译准确的英汉对照教材,以便更好地学习中医中药。

北京中医药大学是唯一的中国重点中医药大学,自1957年接受外国留学生以来,已为世界70多个国家和地区培养了近千名留学生。目前在校外国留学生近300人,分别来自41个国家和地区。多年来,北京中医药大学积累了丰富的培养外国留学生的教学经验,了解他们学习的规律和特点,为编写这套教材打下良好的基础。

北京中医药大学领导十分重视这套教材,专门组织了教学经验丰富的专家、教授和专业骨干从事编写工作。全套教材在全国高等中医院校五版教材的基础上,扬长避短,吸收了中医药的最新科研成果,强调逻辑性、科学性、实用性,努力做到内容充实,重点突出,通俗易懂。

为保证这套教材的学术与翻译水平,中文内容特请全国著名中医学专家王玉川教授、颜正华教授审定,英文译文特邀美籍专家Fang Nengyu(方能御),Concetta Maria Pirrone, George Francis Mclean审校。

全书分总论、各论和附篇三部分。

总论重点阐述药性理论及配伍、禁忌;简要介绍中药的产地、采集、炮制、剂量、用法等基本知识。

各论收载常用中药277种(其中附药15种),按药物功用分为十九章。每章之首,概述本类药物的概念、功用、配伍及使用注意事项。具体药物的介绍,包括来源、药性说明、药物功效、临床应用、用量用法、使用注意事项、现代研究等项内容。部分内容(如使用注意事项、现代研究)并非每药悉具。功效和应用是每药的重点。

附篇包括药名索引和引用方剂汇编,便于学员学习时查阅。

由于时间紧迫,水平有限,不妥之处在所难免,真诚地欢迎国内外同道提出批评意见,以便再版时进行修改补充,使这套教材更加完善。

编译工作过程中,得到有关部门和专家的大力支持与协助,在此深表谢意。

编译者

CONTENTS

General Discussion

Chapter 1 Producing Areas, Collection and Preparation	(3)
Section 1 Producing Areas	(3)
Section 2 Collection	(3)
Section 3 Preparation	(4)
Chapter 2 Theory on Drug Properties	(7)
Section 1 Four Natures and Five Flavours	(7)
Section 2 Effects of Lifting, Lowering, Floating and Sinking	(10)
Section 3 Channel Tropism	(11)
Section 4 Toxicity	(12)
Chapter 3 Applications of Chinese Drugs	(14)
Section 1 Compatibility	(14)
Section 2 Contraindications	(15)
Section 3 Dosage	(16)
Section 4 Administration	(17)

Systematic Considerations

Chapter 1 Drugs for Relieving Exterior Syndromes	(20)
Section 1 Drugs Pungent in Flavour and Warm in Nature for Relieving Exterior Syndromes	(21)
Ephedra (<i>Herba Ephedrae</i>)	(21)
Cinnamom Twig (<i>Ramulus Cinnamomi</i>)	(22)
Asarum Herb (<i>Herba Asari</i>)	(24)
Purple Perilla Leaf (<i>Folium Perillae</i>)	(25)
Schizonepeta (<i>Herba Schizonepetae</i>)	(26)
Ledebouriella Root (<i>Radix Ledebouriellae</i>)	(27)
Dahurian Angelica Root (<i>Radix Angelicae Dahuricae</i>)	(29)
Magnolia Flower (<i>Flos Magnoliae</i>)	(30)
Fresh Ginger (<i>Rhizoma Zingiberis Recens</i>)	(30)
Elscholtzia, Mosla (<i>Herba Elscholtziae seu Moslae</i>)	(31)

Xanthium (<i>Fructus Xanthii</i>)	(32)
Section 2 Drugs Pungent in Flavour and Cool in Nature for Relieving Exterior Syndromes	(33)
Peppermint (<i>Herba Menthae</i>)	(34)
Arctium Fruit (<i>Fructus Arctii</i>)	(35)
Cicada Slough (<i>Periostracum Cicadae</i>)	(36)
Prepared Soybean (<i>Semen Sojae Praeparatum</i>).....	(37)
Pueraria Root (<i>Radix Puerariae</i>)	(37)
Cimicifuga Rhizome (<i>Rhizoma Cimicifugae</i>)	(39)
Mulberry Leaf (<i>Folium Mori</i>)	(40)
Chrysanthemum Flower (<i>Flos Chrysanthemi</i>)	(41)
Bupleurum Root (<i>Radix Bupleuri</i>)	(42)
Chapter 2 Heat-Clearing Drugs	(44)
Section 1 Heat-Clearing and Fire-Purging Drugs	(45)
Gypsum (<i>Gypsum Fibrosum</i>)	(45)
Anemarrhena Rhizome (<i>Rhizoma Anemarrhenae</i>).....	(46)
Reed Rhizome (<i>Rhizoma Phragmitis</i>).....	(47)
Trichosanthes Root (<i>Radix Trichosanthis</i>)	(49)
Capejasmine Fruit (<i>Fructus Gardeniae</i>)	(50)
Prunella Spike (<i>Spica Prunellae</i>)	(51)
Cassia Seed (<i>Semen Cassias</i>)	(52)
Section 2 Heat-Clearing and Dampness-Drying Drugs	(53)
Scutellaria Root (<i>Radix Scutellariae</i>).....	(53)
Coptis Root (<i>Rhizoma Coptidis</i>)	(54)
Phellodendron Bark (<i>Cortex Phellodendri</i>)	(56)
Gentian Root (<i>Radix Gentianae</i>)	(57)
Flavescent Sophora Root (<i>Radix Sophorae Flavescentis</i>)	(58)
Ash Bark (<i>Cortex Fraxini</i>)	(59)
Section 3 Heat-Clearing and Blood-Cooling Drugs	(60)
Rhinoceros Horn (<i>Cornu Rhinocerotis</i>)	(61)
Buffalo Horn(<i>Cornu Bubali</i>).....	(62)
Dried Rehmannia Root (<i>Radix Rehmanniae</i>).....	(62)
Scrophularia Root (<i>Radix Scrophulariae</i>)	(64)
Mutan Bark (<i>Cortex Moutan Radicis</i>).....	(65)
Red Peony Root (<i>Radix Paeoniae Rubra</i>)	(66)

Arnebia (or Lithosperm) Root (<i>Radix Arnebiae seu Lithospermi</i>)	... (67)
Section 4 Heat-Clearing and Detoxication Drugs	... (68)
Honeysuckle Flower (<i>Flos Lonicerae</i>)	... (69)
Forsythia Fruit (<i>Fructus Forsythiae</i>)	... (70)
Dandelion Herb (<i>Herba Taraxaci</i>)	... (71)
Viola Herb (<i>Herba Violae</i>)	... (72)
Isatis Leaf (<i>Folium Isatidis</i>)	... (73)
Natural Indigo (<i>Indigo Naturalis</i>)	... (74)
Houttuynia (<i>Herba Houttuyniae</i>)	... (75)
Sargentgloryvine (<i>Caulis Sargentodoxae</i>)	... (77)
Patrinia (<i>Herba Patriniae</i>)	... (78)
Portulaca (<i>Herba Portulaceae</i>)	... (79)
Pulsatilla Root (<i>Radix Pulsatillae</i>)	... (79)
Belamcanda Rhizome (<i>Rhizoma Belamcandae</i>)	... (80)
Subprostrate Sophora Root (<i>Radix Sophorae Subprostratae</i>)	... (81)
Green Chiretta (<i>Herba Andrographitis</i>)	... (82)
Section 5 Drugs for Clearing Heat of Deficiency Type	... (83)
Sweet Wormwood (<i>Herba Artemisiae</i>)	... (83)
Swallowwort Root (<i>Radix Cynanchi Atrati</i>)	... (84)
Wolfberry Bark (<i>Cortex Lycii Radicis</i>)	... (85)
Stellaria Root (<i>Radix Stellariae</i>)	... (86)
Chapter 3 Purgative Drugs	... (88)
Section 1 Purgatives	... (88)
Rhubarb (<i>Radix et Rhizoma Rhei</i>)	... (89)
Mirabilite (<i>Natrii Sulphas</i>)	... (91)
Senna Leaf (<i>Folium Cassiae</i>)	... (92)
Section 2 Laxatives	... (93)
Hemp Seed (<i>Fructus Cannabis</i>)	... (93)
Bush-Cherry Seed (<i>Semen Pruni</i>)	... (94)
Section 3 Drastic Hydragogues	... (95)
Kansui Root (<i>Radix Euphorbia Kansui</i>)	... (95)
Knoxia Root (<i>Radix Knoxiae</i>)	... (96)
Genkwa (<i>Flos Genkwa</i>)	... (97)
Morning Glory Seed (<i>Semen Pharbitidis</i>)	... (98)
Chapter 4 Anti-Rheumatics	... (100)

Notopterygium Root (<i>Rhizoma seu Radix Notopterygii</i>)	(100)
Pubescent Angelica Root (<i>Radix Angelicae Pubescens</i>)	(101)
Clematis Root (<i>Radix Clematidis</i>)	(102)
Tetrandra Root (<i>Radix Stephaniae Tetrandrae</i>)	(103)
Large-Leaf Gentian Root (<i>Radix Gentiane Macrophyllae</i>)	(104)
Chaenomeles Fruit (<i>Fructus Chaenomelis</i>)	(105)
Loranthus Mulberry Mistletoe (<i>Ramulus Loranthis</i>)	(106)
Acanthopanax Bark (<i>Cortex Acanthopanacis</i>)	(107)
Tiger Bone (<i>Os Tigris</i>)	(108)
Agkistrodon Snake (<i>Agkistrodon Acutus</i>)	(109)
Chapter 5 Aromatic Drugs for Resolving Dampness	(111)
Atractylodes Rhizome (<i>Rhizoma Atractylodis</i>)	(111)
Magnolia Bark (<i>Cortex Magnoliae Officinalis</i>)	(113)
Agastache (<i>Herba Agastachis</i>)	(114)
Eupatorium (<i>Herba Eupatorii</i>)	(115)
Amomum Fruit (<i>Fructus Amomi</i>)	(116)
Round Cardamon Seed (<i>Semen Amomi Cardamomi</i>)	(117)
Tsaoko (Cardamon) (<i>Frutus Tsaoko</i>)	(118)
Chapter 6 Drugs for Inducing Diuresis and Excreting Dampness	(119)
Poria (<i>Poria</i>)	(119)
Umbellate Pore-Fungus (<i>Polyporus Umbellatus</i>)	(121)
Coix Seed (<i>Semen Coicis</i>)	(121)
Oriental Water Plantain Rhizom (<i>Rhizoma Alismatis</i>)	(123)
Plantain Seed (<i>Semen Plantaginis</i>)	(124)
Talc (<i>Talcum</i>)	(125)
Manchurian Aristolochia Stem (<i>Caulis Aristolochiae Manshurie</i>) ...	(126)
Ricepaper Pith (<i>Medulla Tetrapanacis</i>)	(127)
Yam Rhizome (<i>Rhizoma Dioscoreae</i>)	(128)
Oriental Wormwood (<i>Herba Artemisiae Capillaris</i>)	(129)
Pyrrosia Leaf (<i>Folium Pyrrosiae</i>)	(130)
Climbing Fern Spore (<i>Spora Lygodii</i>)	(131)
Lysimachia (<i>Herba Lysimachiae</i>)	(132)
Chapter 7 Drugs for Warming the Interior	(134)
Prepared Aconite Root (<i>Radix Aconiti Praeparata</i>)	(134)
Chinese Cassia Bark (<i>Cortex Cinnamomi</i>)	(136)

Dried Ginger (<i>Rhizoma Zingiberis</i>)	(138)
Clove (<i>Flos Caryophylli</i>)	(139)
Common Fennel Fruit (<i>Fructus Foenicului</i>)	(140)
Galangal Rhizome (<i>Rhizoma Galangae</i>)	(141)
Evodia Fruit (<i>Fructus Evodiae</i>)	(142)
Pricklyash Peel (<i>Pericarpium Zanthoxyli</i>)	(143)
Chapter 8 Drugs for Regulating Qi	(145)
Tangerine Peel (<i>Pericarpium Citri Reticulatae</i>)	(145)
Green Tangerine Orange Peel (<i>Pericarpium Citri Reticulatae</i>)	(147)
Immature Bitter Orange (<i>Fructus Aurantii Immaturus</i>)	(148)
Citron Fruit (<i>Fructus Citri</i>)	(150)
Aucklandia Root (<i>Radix Aucklandiae</i>)	(151)
Nutgrass Flatsedge Rhizome (<i>Rhizome Cyperi</i>)	(152)
Lindera Root (<i>Radix Linderae</i>)	(153)
Eagle Wood (<i>Lignum Aquilariae Resinatum</i>)	(154)
Sichuan Chinaberry (<i>Furctus Meliae Toosendan</i>)	(155)
Macrostem Onion (<i>Bulbus Allii Macrostemi</i>)	(157)
Chapter 9 Drugs for Removing Food Stagnation	(158)
Radish Seed (<i>Semen Raphani</i>)	(158)
Germinated Barley (<i>Fructus Hordei Germinatus</i>)	(159)
Medicated Leaven (<i>Massa Fermentata Medicinalis</i>)	(160)
Hawthorn Fruit (<i>Fructus Crataegi</i>)	(161)
Chicken's Gizzard-Skin (<i>Endothelium Corneum Gigeriae Galli</i>)	(162)
Chapter 10 Anthelmintics	(164)
Quisqualis Fruit (<i>Fructus Quisqualis</i>)	(164)
Chinaberry Bark (<i>Cortex Meliae</i>)	(165)
Carpesium Fruit (<i>Fructus Carpelii</i>)	(166)
Areca Seed (<i>Semen Arecae</i>)	(167)
Pumpkin Seed (<i>Semen Cucurbitae</i>)	(168)
Agrimony Bud (<i>Gemma Arimoniae</i>)	(169)
Omphalia (<i>Omphalia</i>)	(170)
Torreya Seed (<i>Semen Torreyae</i>)	(170)
Chapter 11 Hemostatics	(172)
Japanese Thistle (<i>Herba seu Radix Cirsii Japonic</i>)	(172)
Field Thistle (<i>Herba Cephalanoploris</i>)	(173)

Biota Tops (<i>Cacumen Biotae</i>)	(174)
Cogongrass Rhizome (<i>Rhizoma Imperatae</i>)	(175)
Ramie Root (<i>Radix Boehmeriae Ramie</i>)	(176)
Japanese Beauty-Berry (<i>Folium Callicarpae Nudiflorae</i>)	(177)
Sophora Flower (<i>Flos Sophorae</i>)	(178)
Sanguisorba Root (<i>Radix Sanguisorbae</i>)	(179)
Hyacinth Bletilla (<i>Rhizoma Bletillae</i>)	(181)
Hairy Vein Agrimony (<i>Herba Agrimoniae</i>)	(182)
Charred Palm (<i>Petiolus Trachycarpi</i>)	(183)
Notoginseng (<i>Radix Notoginseng</i>)	(183)
Cat-Tail Pollen (<i>Pollen Typhae</i>)	(185)
Rubia Root (<i>Radix Rubiae</i>)	(186)
Argyi Leaf (<i>Folium Artemisiae Argyi</i>)	(187)
Chapter 12 Drugs for Promoting Blood Circulation and Relieving Blood Stasis	(189)
Chuanxiong Rhizome (<i>Rhizoma Ligustici Chuangxiong</i>)	(189)
Red Sage Root (<i>Radix Salviae Miltiorrhiae</i>)	(191)
Motherwort (<i>Herba Leonuri</i>)	(192)
Peach Kernel (<i>Semen Persicae</i>)	(194)
Safflower (<i>Flos Carthami</i>)	(195)
Achyranthes Root (<i>Radix Achyranthis Bidentatae</i>)	(196)
Pongolin Scales (<i>Squama Manitis</i>)	(198)
Curcuma Root (<i>Radix Curcumae</i>)	(199)
Giant Knotweed Rhizome (<i>Rhizoma Polygoni Cuspidati</i>)	(200)
Trogopterus Dung (<i>Faeces Trogopteronum</i>)	(202)
Corydalis Tuber (<i>Rhizoma Corydalis</i>)	(203)
Frankincense (<i>Resina Olibani</i>)	(204)
Myrrh (<i>Myrrha</i>)	(206)
Burreed Tuber (<i>Rhizoma Sparganii</i>)	(207)
Zedoary (<i>Rhizoma Zedoariae</i>)	(208)
Leech (<i>Hirudo</i>)	(209)
Ground Beetle (<i>Eupolyphaga Seu Steleophaga</i>)	(210)
Chapter 13 Drugs Resolving Phlegm and Relieving Cough and Asthma	(212)
Section 1 Drugs Relieving Cold-Phlegm by Warming	(212)