

大黄

RHUBARB

一种奇特的中药

AN EXTRAORDINARY
TRADITIONAL
CHINESE
MEDICATION



焦东海 王祖武 编著

Edited by Jiao Dong-hai and Wang Zu-wu

东方出版中心

作者介绍

焦东海于 1962 年毕业于上海第一医学院(现复旦大学医学院),1962~1975 年间在第二军医大学附属长海医院任内科军医,1972 年参加卫生部在中医研究院主办的西医学习中医班。1975 年在上海市卢湾区中心医院,稍后在上海香山中医院任职。目前是香山中医院中西医结合科主任及大黄研究室主任。对中药大黄的发展作出了突出贡献,发表了 160 篇论文,出版了 12 本有关大黄及其他中医方面的书。所主持的课题曾获 16 项科学技术成果(或进步)奖及 5 项新产品成果。曾被评为 1990 年全国优秀医务工作者,并被授予“五一”劳动奖章,1991 年起享受政府特殊津贴。还获得 1994 年国家级有突出贡献的中青年专家证书和 1995 年全国劳动模范称号。

王祖武于 1962 年毕业于上海第一医学院(现复旦大学医学院),而后在中国科学院药物研究所完成了研究生学习,并在英国癌症基金会研究所完成博士后训练。近 20 余年来,在美国数个著名癌症中心和医学中心进行生物医学研究和管理,曾获得 10 余个美国国家研究基金,并以此发展和主导了 20 多个研究课题。曾对肿瘤化学治疗和诊断两方面都作出了开创性的科学研究。也发展了光学及计算机新技术在肿瘤诊断中的应用。曾任美国西宾夕法尼亚医学基金会的代理科学所长,主管所属研究所,并兼任基金会内科研究室主任。目前在美国洛杉矶任主任研究员,主管生物医学研究和开发。他还是中国科学院上海药物研究所的客座教授,并在国内担任数个生物医学和中医药研究单位的科学顾问。

Writer Introduction

Jiao Dong - hai graduated from Shanghai First Medical College (now the Medical college of Fudan University) in 1962. He served as a military physician in internal medicine at Changhai Hospital affiliated with the Second Military Medical University from 1962 to 1975. He earned a diploma for the advanced training course in traditional Chinese medicine, which was organized by the Ministry of Health in 1972 for physicians with a background in western medicine. Since 1975, he has worked at Shanghai Luwan District Central Hospital, and subsequently at Xiangshan Hospital of Traditional Chinese Medicine. Currently, he is Chairman of the Department of Combined Traditional Chinese Medicine and Western Medicine, and also the Chief of the Division of Rhubarb Research at Xiangshan Hospital. He has made remarkable contributions to the development of rhubarb with over 160 articles and 12 books reporting the accomplishments in rhubarb and Chinese medicine. The projects headed by Jiao Dong - hai have received 16 awards for the achievement and advancement of science and technology and five new marketable products. He personally earned the 1990 Award for National Excellent Medical Worker, plus the "May Day" Labor Medal with a special annual compensation paid by the government since 1991, a 1994 Honor Diploma for the Middle - aged and Young Experts for Outstanding Contributions, and a 1995 Honor as a National Model Worker.

Wang Zu - wu graduated from Shanghai First Medical College (now

the Medical College of Fudan University) in 1962. After graduating from medical college, he completed post - graduate study at the Institute of Materia Medica, Chinese Academy of Sciences, and then a post - doctoral fellowship with the Imperial Cancer Research Fund in the U. K. He has been conducting and supervising biomedical research in several reputable cancer or medical centers in the U. S. for more than twenty years. He has received more than ten government grants; thereby he has developed and managed more than twenty research programs in the U. S. He has made outstanding contributions to creative and innovative research in both cancer chemotherapy and diagnosis. He has also developed novel optical and computer techniques for cancer diagnosis. He has been the Acting Scientific Director of the Western Pennsylvania Medical Foundation in charge of the affiliated Research Institute, and also the Research Director, the Department of Medicine of the Foundation. He is currently a Principal Scientist in charge of the biomedical research in Los Angeles, U. S. He has been being a guest professor or advisor to Shanghai Institute of Materia Medica, Chinese Academy of Sciences and several other biomedical and traditional Chinese medical institutions in China.

序 一

有幸为此书作序令人高兴。这是一本有价值的书。两位编者又都是我在上海第一医学院(现复旦大学医学院)的同学。记得1962年大学毕业后,我与焦东海教授一起到第二军医大学工作。他曾在二军大附属长海医院任西医内科军医,10年后参加了卫生部在中医研究院举办的西医学习中医班。1975年他复员,先后到上海市卢湾区中心医院、香山中医院工作,现任香山中医院中西医结合科及大黄研究室主任。焦教授在以中药大黄为主防治多种疾病,特别是胃出血、急性胰腺炎、胆囊炎、肥胖症、高脂血症与胆汁郁积性黄疸等方面作出了出色的贡献。他发表论文160余篇,还出版了12部书。以他为组长的课题先后获得16项科技成果(进步)奖及5项新产品成果。1990年他被评为全国优秀医务工作者,并获“五一”劳动奖章,1991年起享受政府特殊津贴,1994年国家人事部授予他有突出贡献的中青年专家证书,1995年被评为全国劳动模范。他曾往美国、日本、意大利、澳大利亚等10余个国家和中国香港、澳门、台湾等地区作学术讲演或诊疗演示。

王祖武教授更是我的同班学友。毕业后他进入中国科学院药物研究所作为研究生深造。他在英国完成了博士后研究,而后在美国进行科学研究和管理工作二十年。他曾获得十余个美国研究基金并以此发展和管理了20多个研究课题。先后发表了150多篇文章,获得2个专利发明权。他在肿瘤细胞和亚细胞病理学及药理学方面作出创造性的研究,特别在癌细胞浸润和转移、血管新生、及肿瘤化疗细胞动力学等方面的研究。他为发展新的光学和

计算机技术在肿瘤诊断中的应用,作了开拓性的工作。他虽在美国工作,但很关心和支持祖国的医药事业,曾担任国内数个生物医学和中医药研究单位的顾问或客座教授。

这本专著是根据焦教授和他的同道 20 多年来应用和研究大黄治疗作用的重要成果写成的。王教授则以他在现代医学和药理学方面的丰富经验,对大黄的研究结果作了客观的科学评估和审编,并将之译成英文以供国外学者了解和评定大黄在中国的应用和发展。当然这对国内学者们学习大黄的临床治疗作用及原理更是很有用的。

中国医药学是个伟大的宝库,应当努力发掘,加以提高。本书在大黄的临床应用和机理研究方面作了充分的阐述,可以说,对中医药的继承和发展创新作了成功的探索,也为中医药走向世界,发展中医药国际合作作了有价值的工作,可喜可贺。祝愿两位编者继续合作,作出更大的贡献。

张文康

(现任中华人民共和国卫生部部长)

2001 年 10 月

PREFACE I

It is my great pleasure to write a preface for this valuable book. It is of interest that both editors were my classmates in Shanghai First Medical College (now the Medical College of Fudan University). After graduating from medical college in 1962, Professor Jiao Dong - hai was my colleague when we worked at the Second Military Medical University in Shanghai. He served as a military physician in internal medicine at Changhai Hospital affiliated with the Second Military Medical University. He earned a diploma for the advanced training course in traditional Chinese medicine, which was organized by the Ministry of Health in 1972 for physicians with a background in western medicine. After demobilization from the military system in 1975, He worked at Shanghai Luwan District Central Hospital, and subsequently at Xiangshan Hospital of Traditional Chinese Medicine. Currently, he is Chairman of the Department of Combined Traditional Chinese Medicine and Western Medicine, and also Chief of the Division of Rhubarb Research at Xiangshan Hospital. By using traditional Chinese medications, mainly rhubarb, Professor Jiao has made remarkable contributions to the treatment of a variety of diseases, especially gastric bleeding, acute pancreatitis, cholecystitis, obesity, hyperlipemia, and cholestatic jaundice. He has published over 160 articles and 12 books reporting the accomplishments in the treatment of these diseases using rhubarb and other Chinese medications. The projects headed by Jiao have received 16 awards for the achievement and

advancement of science and technology and five new marketable products. He earned the 1990 Award for National Excellent Medical Worker, plus the "May Day" Labor Medal with a special annual compensation paid by the government since 1991; a 1994 Honor Diploma for the Middle - aged and Young Experts for Outstanding Contributions, and a 1995 Honor as a National Model Worker. He has lectured and/or demonstrated his skills in the diagnosis and treatment of diseases in more than ten countries, including the U.S., Japan, Italy, and Australia, and several districts in China, including Hong Kong, Aomen, and Taiwan.

Professor Wang Zu - wu and I were in the same class at Shanghai First Medical College. After graduating from medical college, he continued post - graduate study at the Institute of Materia Medica, Chinese Academy of Sciences. After completing a post - doctoral fellowship in the U. K., Professor Wang has been conducting and supervising biomedical studies in the U. S. for twenty years. He has received more than ten grants in the U. S., thereby; he developed and managed more than twenty research programs. He has published more than 150 articles and holds two patents. He has made contributions in the creative and innovative research in tumor cellular and subcellular pathology and pharmacology, especially, in tumor cell invasion and metastasis, angiogenesis, and tumor cell kinetics during chemotherapy. He has also developed novel optical and computer techniques for cancer diagnosis. Although he works in the U. S., he is always concerned about and supports the development of medical and pharmacological sciences in his fatherland. He has been an advisor or guest professor to several biomedical and traditional Chinese medical institutions in China.

This book documents the important achievements of Professor Jiao and his colleagues and collaborators in over twenty years' application and

study of rhubarb for treating a variety of diseases. Professor Wang objectively evaluated the results of rhubarb study based on his extensive experience in modern medicine and pharmacology. He helped edit and translate the book from Chinese to English to assist scientists and physicians worldwide to understand and evaluate the application and development of rhubarb in China. Certainly, it will be most useful for Chinese scholars to learn the clinical therapeutic effects and mechanisms of rhubarb.

Traditional Chinese medicine is a great treasure house, which is worth of being further explored and improved. This book fully describes rhubarb's clinical applications and studies of its mechanisms. I would like to say, the editors have successfully explored how to inherit and carry forward traditional Chinese medicine. They have also done valuable work for the worldwide application and development of traditional Chinese medicine, and for international collaboration on traditional Chinese medicine. This is gratifying and praiseworthy. I hope these two editors continue to collaborate to make even greater contributions.

Zhang Wen-kang

(Minister of Health, the People's Republic of China)

October 2001

序 二

非常高兴能为《大黄——一种奇特的中药》作序。中药大黄的研究在近 20 年来有了前所未有的发展,本书的出版便是明证。本书作者焦东海主任医师是我在上海第一医学院医疗系学习时的同学。入学时我们都是班干部,常在一起开会。毕业实习时,我们又在一个实习小组,朝夕相见。大学毕业后我们仍保持联系,他在开始搞大黄研究时曾来找过我咨询数次,要求我帮助他作基础研究。同学们都知道他性格爽直,待人诚恳,生活简朴,学习刻苦。参加工作后他是有名的工作狂,废寝忘食,乐此不疲。他依靠领导,团结同事,在院内外诸多同仁、学友及专家们的帮助下,组织协作研究,充分发挥团队的优势互补作用,抓住机遇,奋发图强,不断创新。以他为组长的研究课题已获得卫生部甲级科技成果奖及部级科技进步二、三等奖 5 项,厅局级奖 11 项,他先后发表论文 160 余篇,出版书 12 本,曾应邀去美国、日本、意大利、澳大利亚等 10 余个国家和我国香港、澳门、台湾讲学或作诊疗演示。他十分重视科技成果转化工作,以市场为导向,以企业为主体,研制成功了 5 种大黄为主体的新产品。他的工作业绩得到了政府的高度重视与充分肯定:1990 年被评为全国优秀医务工作者并获“五一”劳动奖章,1991 年起享受国务院特殊津贴,1994 年国家人事部授予他有突出贡献的中青年专家称号,1995 年被评为全国劳动模范。

这本书的出版也有赖于我的另一位大学同学——王祖武教授。他医学院毕业后进入中国科学院药物研究所就读肿瘤药理专业研究生,在肿瘤细胞生物学和实验病理学方面颇有造诣,是我国

著名的生物医学科学家。近 20 年来他在美国进行医学研究和管理工作,曾任西宾夕法尼亚医学基金会研究所的内科研究室主任和代理所长,现在美国任生物医学主管和主任研究员。他在国内外杂志上发表了 150 多篇论文,并获 2 个专利发明权,他的经验和才干十分有助于此书的翻译和对大黄研究作客观评价。

我衷心祝贺在这两位著名专家的合作下,总结大黄研究的成果并出版此书,把大黄的研究和临床应用经验介绍给国内外医药界,这不仅有益于广大的患者,也有益于我国西北地区的开发战略(因为大黄主要产在我国大西北)。我期望通过对中药大黄的不断探索和研究,为全人类的健康事业作出更大的贡献。

左焕琛

(上海市人民政府副市长,

中国农工民主党副主席)

2001 年 10 月

PREFACE II

It is my great pleasure to write a preface for the book *Rhubarb - An Extraordinary Traditional Chinese Medication*. The rapid progress in the study and clinical application of rhubarb in recent two decades is an unheard of miracle, which has been well documented by the publication of this book. One editor of this book, Jiao Dong - hai, a Principal Physician, was my classmate at the Department of Medicine, Shanghai First Medical College. We often had meetings together, since we both were the members of the class student union when we were freshmen in medical college. We were also in the same group and met every day when we were interns. We have kept in contact after graduation. He consulted me several times, requesting that I participated in some pre - clinical studies when he started studying rhubarb. Dong - hai impresses his classmates as straight, sincere and simple, and studied hard. He is a workaholic, and so absorbed in working as to sometimes forget to eat and sleep. He views everything optimistically. He always works closely with the administrative officials, gets along well with colleagues, and organizes effective collaborations with the assistance of co - workers, schoolmates, and experts. He is adept in the teamwork for the mutual advantage of team members, catching all available opportunities, working hard, making great efforts for success, and constantly innovating. The Ministry of Public Health has awarded the projects headed by Jiao five second or third prizes for the Class A Scientific Achievement or Science and Technology Advancement

and the national or provincial bureaus has awarded eleven prizes for these achievements. He has published more than 160 articles and twelve books. He has been invited to lecture or demonstrate his skills in the diagnosis and treatment of diseases in over ten countries, including the U. S. , Japan, Italy, and Australia, and in several districts of China, including Hong Kong, Aomen, and Taiwan. He has focused very much on commercializing the scientific and technological accomplishments. His marketing efforts are always supported by enterprises. As a result, he has developed five new products, in which rhubarb is a principal drug. His achievements have received government attention and high recognition. He earned the 1990 Award for National Excellent Medical Worker plus the "May Day" Labor Medal with a special annual compensation paid by the government since 1991, a 1994 Honor diploma for Middle - aged and Young Experts for Outstanding Contributions, and a 1995 Honor as a National Model Worker.

The publication of this book also reflects contributions of Professor Wang Zu - wu, another classmate in the Department of Medicine. After graduating from medical college, he completed post - graduate study majoring in tumor pharmacology at the Institute of Materia Medica, Chinese Academy of Sciences. He is an expert in tumor cell biology and experimental pathology and is a renowned biomedical scientist of this country. He has been conducting and supervising biomedical research in the U.S. for twenty years. He has been the Director of Research at the Department of Medicine, the Western Pennsylvania Medical Foundation, and also the Acting Scientific Director of the Foundation in charge of the affiliated Research Institute. Currently, he is a Principal Scientist in charge of biomedical research in the U.S. He has published more than 150 articles in worldwide and nationwide peer - reviewed journals and holds two

patents. His experience and talent have contributed a great deal to editing and translating this book, and also to an objective evaluation of rhubarb study.

I sincerely laud the success of the collaboration of these two reputable scholars, editing the results of rhubarb studies, and publishing this book. This introduces experience in rhubarb study and medical application to both domestic and overseas medical fields. Thus, it will not only benefit numerous patients, but also the development of the northwestern area of China, the major area of rhubarb production. I expect the continuous exploration and study of rhubarb to make great contributions to the health care of humankind.

Zuo Huan-chen

(Vice Mayor of Shanghai,

Vice - Chairman of Chinese Peasant's and

Worker's Democratic Party)

October 2001

前 言 一

中医和中药唇齿相依,是我国人民的伟大宝库,而大黄、人参、附子、生地被人们誉为宝库中的四大金刚(四大金刚乃是佛教中的四大天王)。明代伟大医学家张景岳把上述四味药比喻为四维,指出这四味药与国民的健康紧密相关。用药如用兵,其中大黄有尖锐攻击、无坚不破、荡涤积垢、犁庭扫穴之功,故名之曰将军。在金元时代葛可久所写的《肘后备急方》一书中第一味常用的备急救药即为大黄。它是中医药治疗急症的最重要药物之一,对中华民族的繁衍昌盛立下了不可磨灭的功勋,至今不仅久盛不衰而且还在开辟新的治疗领域。我国所产大黄数量之多,质量之优,均居世界之首而誉满全球。我国卫生部于1982年第86号文件中曾把大黄的研究列为重点研究项目。近20年来在我国出现了持续的大黄研究热潮,大黄的研究成果已取得了多项国家级科技进步奖。大黄研究的论文,其发表数量之多,已领先于其他中药。单味大黄或以大黄为主药的一批新药,已崭露头角,并走向临床和市场。据不完全统计,含大黄的复方或单味大黄申报的新药至少有20种以上。新近国家科委评审的申报单味大黄二类新药的基金就有6种,根据药食同源原则,大黄作为保健品制剂也有10余种,其中有一种产品在2000~2001年两年的国内外总销售额已达11亿人民币。大黄研究的累累硕果,其应用和开发的诱人前景为世人所瞩目。

我在学习前人成果的基础上,从1976年起将单味大黄应用于治疗急性胃、十二指肠出血,取得了较好的疗效,曾获1985年卫生

部甲级重大科技成果奖。这一突破,大大鼓舞了我和同事们。此后又将其逐渐应用于治疗急性胰腺炎等 11 种病症(详见第一章表 1-1 和表 1-2)。经过长期的探索、实践、总结、再实践、再总结,获得了丰硕的成果,先后在国内外专业杂志上发表论文 160 余篇,出版了《焦东海论文选》、《大黄研究》、《焦大黄减肥术》等 12 本著作,获得科技进步(成果)奖 16 项(详见附录 1),并且努力把这些科研成果转化为产品成果,至今已研制完成了大黄新产品 5 项。能取得上述成果的主要原因除各级领导的扶植、专家们的指导外,还有本人强烈的创新精神,以临床为中心,以实践为根本,严谨的科研设计和统计分析,并及时地进行横向联系,组织跨学科的协作研究,固定地道生药品种供研究所用,比较敏感地将从临床与实验研究中发现的新苗头马上应用于实践中,不断开创新课题,不断吸取国内外的最新信息,将生药、制剂、临床、药理及药化等不同专业的人员组织起来,坚持综合研究的方法,及时总结经验,扬长避短,团结奋斗。

本书的内容从上述 12 本著作中精选而来,其内容主要包括:(1)如何想到用单味大黄治疗 11 种病症的;(2)药理及药化研究;(3)临床研究;(4)概括地介绍了自古至今热爱大黄、研究大黄的名医与院士;(5)大黄在国外的应用和研究。

新近,我十分荣幸地遇到医科大学的王祖武学友,他在英国完成博士后研究,接着又在美国工作 20 年,目前是世界著名的生物医药专家。当他了解到我开发大黄的初衷后,毅然答应由他负责将我写的这本书进行审定,并翻译成英文向全世界发表,为致力于振兴中医药事业的同道们提供一份精神食粮。

大黄研究工作凝聚了我们二十余年的辛勤劳动与甘苦。在这艰难的跋涉中,我有幸获得了各级领导、诸多同事、同道,新闻界的朋友们,以及无数病人的支持、帮助和鼓励,没有他们,我不可能有不断的创新与今天的成果。我也曾遇到过许多责难,甚至诽谤。

曾有 10 个第一次通不过,如第一次开题报告通不过,第一笔科研费被挪作它用,第一篇论文不能发表,还曾 2 次非因大黄导致的死亡病例而打官司,此后又有什么制备假大黄制剂等等而被审查 1 月余。当澄清了事实,区分了真伪,谣言不攻自破,这些反而成了我前进道路上的动力,锻炼了我的意志,增强了我的信心,不断激励我用顽强的毅力去执著追求、锲而不舍、不断创新、不断进取。最后,当这些困难都被克服了时我真正尝到了有志者事竟成的甜头与欢乐。可以自豪地说,对单味大黄的综合研究历时这么长,成果这么多,历经坎坷曲折之多在大黄研究的历史上当属第一人。这本书中的许多内容都是我的学友、朋友及老师们做的工作,如金惠铭教授(他是我医科大学的同班同学,现在是复旦大学医学院病理生理教研室主任,他在我开始研究大黄至今的 24 年时间里一直帮助我作大黄的基础研究工作,特别在近年为金多靶减肥机理研究作了大量工作,完成了 10 篇论文)。钱耀贤教授(他是我患难与共的挚友)、王鸿利教授、梁子钧老师、张启元老师、魏开元老师等都帮助我作了大量的实验研究工作,杜上鉴教授等帮助我作了药化分析,杨涵铭教授、景炳文教授和许国铭教授帮助我作了临床研究工作,郭济贤教授等帮助我作了生药鉴定,章启尧教授等帮助我作了剂型改革,我院王梅莉院长给了我出书的经费支持,在此一并致于崇高的敬礼和由衷的感谢。最后我还要感谢卫生部张文康部长和上海市副市长、中国农工民主党的副主席、上海市政协副主席左焕琛学友为本书撰写了序言,对我的工作业绩给予了充分的评价和肯定。并欢迎各界读者的评论和指正。

焦东海

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