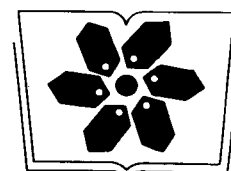


# 实用临床血液细胞学图谱

COLOR ATLAS OF CLINICAL HEMATOLOGY



中国科学院科学出版基金资助项目

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刘志洁 黄文源 主编  
刘方文 田立志 刘海波 副主编

科学出版社

1996

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# COLOR ATLAS OF CLINICAL HEMATOLOGY

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# 序



本书主编中国医科大学教授刘志洁是我的学生,我很了解他并愿为之作序。他是我国著名血液细胞学专家,他主编、主绘的《实用临床血液细胞学图谱》分导论(包括造血理论和各种实验方法)、总论(包括各种细胞形态学)和各论(包括各种血液病、放射病、肿瘤和血液寄生虫病)三部分。

在编著过程中得到了中国医科大学的大力支持,同时也得到了全国血液学工作者的热情支援,除他多年积累的大量标本外,还收到全国 258 个单位提供的 1 123 份珍贵标本,充分体现了我国科学工作者的集体协作精神和高尚无私的科学道德。

初稿完成后,请邓家栋、郁知非、陈文杰和陆道培等三十余位著名专家教授,认真审阅原稿,对本书提出了许多宝贵意见并给予很高评价。1987 年 7 月 6 日在中国医科大学举行了评审会议,郁知非教授任评审委员会主任委员并主持了专家评审工作。评委们认为,本《图谱》立足于实用,理论与实际相结合,它的出版是我国血液细胞学界又一丰硕成果,将对我国血液学的发展、普及与提高有重要影响。它具有国内先进水平,可与国外同类血液学图谱相媲美。

刘志洁教授在学生时代就勤奋好学,是中国医科大学的优秀毕业生。毕业后,他一直任劳任怨,兢兢业业地工作。他通晓三种外语,早在 1950 年就翻译出版了以血液学为主要内容的《卫生化验提要》一书,1951 年修订再版时增加了他精心绘制的血细胞彩图 20 幅。以后又编著、合著与合译了《血液病实验诊断学》等共八部著作。

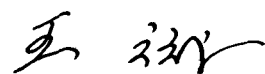
其中以他为主要编著者的《临床血液学及细胞学图谱》一书,于 1967 年在国内发行,1976 年在香港出版以来,深受国内外医学界的欢迎,1978 年荣获全国科学大会重大科技成果奖。关于他在血液学方面的卓越贡献与编绘《临床血液学及细胞学图谱》的曲折经过,《人民日报》等已于 1984 年 7 月 10 日,做过详细报道。

本书出版后,他将在此基础上继续编著,除上述内容外,还增加包括“荧光染色”“位相差显微镜”、“透射电镜”与“扫描电镜”的观察等 600 幅图谱的中、英、日、俄四种文字的高级本——《临床血液学及细胞学彩色图谱》。

本书是一部在临床工作中很有实用价值的工具书,也是一部内容丰富的参考书。适用于临床



医生、检验人员、科研人员和医学院校师生,愿为推荐。

A handwritten signature in black ink, appearing to read '王震' (Wang Zhen), written in a cursive style.

中国医科大学 原校长 名誉教授

中华人民共和国卫生部 原副部长 顾问

1987年7月22日于北京



# FOREWORD

I take pleasure in writing the foreword for this book since I have a thorough knowledge of Mr. Liu Zhijie, a professor at the China Medical University, the chief editor of the book and once my student. He is a well known specialist in hematologic cytology in our country. The book *Color Atlas of Clinical Hematology*, edited and drawn by him, falls into three parts: the introduction, including hematopoietic theory and experimental methods; general hematology, covering various normal and abnormal cytomorphologic drawings and descriptions; and special hematology, comprising the Atlas and diagnoses of various hematologic diseases, radiation diseases, tumours and blood parasites.

In the editing process, he was sincerely supported by the leaders of the China Medical University as well as the hematological workers nation-wide. The contribution of 1,123 copies of valuable specimens from 258 organizations shows the cooperative and unselfish spirit of the Chinese scientists, and with his own many years of collection have enormously enriched the contents of the book.

With the manuscript completed, it was seriously reviewed by more than thirty experts and professors including Deng Jiadong, Yu Zhifei, Chen Wenjie and Lu Daopei, et al. They all spoke highly of the book and offered many helpful suggestions. Theoretically, the book is qualified to match any of its kind internationally.

The Appraisal Conference on the *Atlas* was held at the China Medical University on July 6, 1987. Prof. Yu Zhifei, director of the Appraisal Committee, chaired the appraisal work of the specialists. The members of the Committee believed that the *Atlas* based on practice reflects a combination of theory with practice. Its publication will provide a practical and valuable reference book for vast numbers of hematological workers. It is the splendid fruit of the hematological circle in this country and comes up to advanced domestic level. It can match any book of its kind abroad.

Prof. Liu, a diligent student in his school days, was one of the excellent graduates at the China Medical University. For more than thirty years after graduation, living in the laboratory, working into the night, he's been so completely absorbed in his teaching, medical treatment and scientific research, that he almost never enjoyed his summer or winter vacation. Prof. Liu has a good command of three foreign languages. Early in 1950 he translated and published the *Handbook of Laboratory Medicine* with hematology as its main content. In the second edition, he added 20 color drawings of hematological cytology to this book. In the years that followed he edited, co-edited and co-translated eight books including *Laboratory Diagnostics of Blood Disorders*.

In particular, one of the books mentioned above, *Clinical Hematology and Cytology Atlas*, with Prof. Liu as the main editor, was issued at home in 1967 and published in Hong Kong in

1976. The *Atlas* has been greatly appreciated both at home and abroad. In addition, it was awarded an important scientific and technical prize given by the National Scientific and Technical Conference held in 1978. His remarkable contributions in the field of hematology and the hardship throughout the whole process of editing and illustrating the book *Clinical Hematology and Cytology Atlas* were reported in detail in *The People's Daily*, dated July 10, 1984.

After the publication of this book, the author will continue to work on an advanced publication, of the same name *Color Atlas of Clinical Hematology and Cytology* which, besides its original contents, will add 600 drawings showing the features resulting from the observations using fluorescence microscopy, phase contrast microscopy, transmission electron microscopy and scanning electron microscopy. The explanations will be described in Chinese, English, Japanese and Russian.

This *Atlas* can be used not only as a helpful means of clinical diagnosis, but also as an important reference book for clinicians, laboratory technicians, scientific researchers and medical students. So I'd like to recommend it to the readers.

**Wang Bin**

The former president and honorary professor  
of the China Medical University,

The former vice-minister and advisor  
to the Ministry of Public Health  
of the People's Republic of China

July 22, 1987 in Beijing

# 序



自从 Ehrlich 及 Romanovsky 等发明血细胞染色,开创了血细胞形态学,迄今已有百年左右历史。近年来许多种基于现代细胞学、生物化学、分子生物学、生物物理学和免疫学等多方面的最新知识和技术方法已经广泛应用于血液学的研究和临床实践,促使它成为医学科学中发展非常迅速的学科之一。然而,血细胞形态学至今仍是临床工作中诊断血液病最基本、最常用的方法。许多种血液病,根据其血液或骨髓等造血组织的细胞形态学特点,即可做出可靠的诊断或为明确诊断提供重要的线索。观察形态学的动态改变也可作为某些血液病治疗过程中观察疗效的一个重要指标。因此,血液形态学仍是学习血液学的基础,是很重要的一部分。一本高水平的血液学图谱能帮助血液病临床医师和实验室工作者熟悉各种血细胞和各种血液病的形态学特点,是一本不可缺少的参考书。

中国医科大学刘志洁教授从事于血液病的临床和实验室工作垂三十余年,对血液学理论和实践有较深造诣,对血细胞图谱的编著尤其富有经验。1967年出版的《临床血液学及细胞学图谱》大部分的编著工作即由他执笔,此书于1976年又在香港出版,久已蜚声海内外,博得学术界的好评。为了更新和丰富内容,今又编著《实用临床血液细胞学图谱》。为了编著图谱,刘志洁教授累年收集了大量各种血液病、肿瘤、放射病以及人体血液寄生虫病的血液、骨髓、淋巴结、脾组织、瘤组织以及脑脊液等的涂片、印片等标本。其中有些标本是在全国各地血液学工作者的热心支持下收集来的,大多是较少见和较特殊的标本,弥足珍贵,极大地丰富了本书的内容,只因篇幅有限,只能博观约取,择精选用。书中彩图特地用手工绘制,细胞放大倍数准确,结构清晰,色彩逼真,避免了显微摄影目前尚难以克服的“球面差”和“色相差”造成放大后图像模糊不清的缺点。在编著过程中为了精益求精,作者还到全国各地广泛征求国内著名教授、专家们的意见。这种谦虚谨慎,集思广益的精神,尤其值得赞扬。

本书即将付梓,相信必将成为血液病工作者一本有用的参考书,愿为推荐。纸贵洛阳,自不待言;名播鸡林,固其宜矣。

郝志洁

暨南大学(广州)

# FOREWORD

It has been one century since Ehrlich and Romanovsky first scanned the blood cells in stained smear microscopically. In the last several decades, hematology has developed so rapidly that it now encompasses broad aspects of cytology, biochemistry, molecular biology, biophysics, immunology, etc. Despite the rapid progress in the modern-day knowledge and technology of basic sciences that have enriched and illuminated hematology, morphologic examination of the blood smear and bone marrow is still most fundamental and useful in the clinical diagnosis of hematologic disorders and should never be neglected. For most of the blood diseases, a definite or suggesting diagnosis can usually be made after careful study of the blood and bone marrow smears. Morphologic study of the dynamic changes of the blood and marrow is also important in the assessment of the therapeutic efficacy of certain blood diseases during the course of treatment. Undoubtedly, a good knowledge of morphology is essential in the training of hematology students, and a good hematology atlas will serve the purpose.

Dr. Liu Zhijie, professor of medicine at the China Medical University, has been engaged in the clinical and laboratory work of hematology for more than thirty years, and particularly interested and experienced in the preparation of hematology atlas. He was one of the authors of *Clinical Hematology and Cytology Atlas*, which was published in 1967, and reprinted in Hong Kong in 1976, and for which he has won a high reputation both at home and abroad. He has now prepared another book known as *Color Atlas of Clinical Hematology* with the purpose of keeping with present-day needs with up-to-date contents. It is an arduous task for him indeed, in the long run of many years to collect a great deal of smears imprints of blood, bone marrow, lymph node, spleen, tumor tissue and cerebrospinal fluid from patients with different varieties of hematologic problems including blood diseases, malignant tumors, radiation sickness, and parasitic diseases. Some rare and special specimens were contributed by hematologists throughout China at their generosity and enthusiasm. Owing to limited space, however, only pictures of selected ones are published here. The colored plates were prepared by skillful and meticulous manual drawing rather than photomicrography, because the author believes that certain fine structures of the cells could be better shown by drawing, and the disadvantages of spherical and chromatic aberrations of photomicrography could be avoided. During the preparation of this book the author called on a number of well known professors and hematologists in the country asking for their valuable criticisms and suggestions. His modesty and prudence are praiseworthy.

The book is now ready for publication. It is a special pleasure of mine to recommend it to

the hematology students and workers, who, I am confident, will find it to be a useful and invaluable reference book.

**Yu Zhifei (Chih-Fei Yu), M.D.**

Jinan University,

Guangzhou

# 前 言



我自幼酷爱美术。大学毕业后,从师日本内科学专家关根三郎先生,学习血液细胞学。在这位启蒙老师的指导下,我走进了琳琅满目的“细胞世界”。40年来,我几乎每天都看细胞、画细胞。而且当我看到自己画的细胞时很容易回忆起镜下的细胞形态。我的体会是:画细胞是学好细胞学的捷径。

血液病的诊断,虽然已有荧光显微镜、位相差显微镜、电子显微镜、分子生物学、细胞化学、细胞遗传学、免疫学和活体组织检查等多种手段,但细胞形态学检查仍是最基本、最常用的重要诊断手段。大多数血液病,只靠细胞学检查结合临床资料就可作出正确诊断。

血细胞的识别,要“核、浆兼顾,以核为主”。核的基本结构是一个个组蛋白颗粒,被链状DNA缠绕一又四分之三圈,连结成粒、线状。因此,在看细胞时,要注意原红细胞核染质呈颗粒状、巨核细胞核呈条索感、单核细胞核呈网状结构等等。

本图谱皆绘自实际临床标本。除作者多年积累的大量标本外,国内从事血液学工作的同道们热心地提供了1123份珍贵标本,极大地丰富了本书的内容。

为集思广益,特邀请了几位从事本专业工作多年的专家、教授和经验丰富的实际工作者参加编绘。本书之彩图大部为我的女儿刘方文讲师和我的妻子黄文源教授所绘制。

初稿完成后,我们走访了中国协和医科大学邓家栋教授和张之南教授,暨南大学郁知非教授和冷延家教授,中国医学科学院陈文杰教授和郝玉书教授,同济医科大学王辨明教授和宋善俊教授,北京医科大学陆道培教授、秦振庭教授、王良绪教授和王淑娟教授,中国中医研究院周蔼祥教授,白求恩医科大学宋怡教授,中山医科大学叶彼得教授,军事医学科学院吴祖泽教授,第一军医大学陈铂教授,解放军总医院刘海川教授和阎影教授,北京中日友好医院王凤计教授和娄永新教授,哈尔滨医科大学洪宝源教授,福建医科大学吕联煌教授和黄明清教授,上海医科大学丁训杰教授,上海第二医科大学潘瑞彭教授和王鸿利教授,华西医科大学廖清奎教授、盛尔荃教授和阮惠芳教授,中国医科大学阎佩珩教授和翟明教授等三十余位著名专家教授,虚心征求意见,并进行了深入的探讨。

编绘《图谱》是一件极其费时费力的工作。在编著过程中,刘晓斌、鲁江、陈宇政、马军、孙守良、陈立君、董胜利、荀玉桂、段培亚、郭海鸽、王乃武、张洪盛、孙大椿、陈桂琴、李素霞、于秋菊和李国宣等同志都做了大量工作。

本书在编著和出版过程中,承蒙恩师著名外科专家、医学教育家王斌教授和著名内科血液学

专家郁知非教授热心指导并作序;尤其难得的是中国科学院科学出版基金专家委员会给予资助这一殊荣,在此一并敬致谢忱。

本书是适用于临床医生、检验人员、科研人员和医学院校师生的工具书和参考书。

虽然我们尽了最大努力,但因学识水平有限,仍难免有不少错误和遗漏。恳请读者指正,以便再版时改正与补充。



中国医科大学(沈阳)



# PREFACE

I love art ardently since my childhood. After graduation from college, I learned hematology from Dr. Seikine Saburo who was a Japanese expert of internal medicine. Led by him, I entered the cytological world which to me is a feast for the eyes. For forty years, I have been studying and drawing cells almost everyday. Whenever I see a cell drawn by me, I can easily recall its pattern under the microscope. My experience is that drawing cells is a shortcut to learn cytology well.

Although blood diseases can be diagnosed by many methods, such as fluorescence microscopy, phase contrast microscopy, electron microscopy, molecular biology, cytochemistry, cytogenetics, immunology and biopsy, etc., cytological examination is still the basic and most commonly used diagnostic method. Most of the blood diseases can be correctly diagnosed by cytological examination with clinic manifestation.

When recognizing a blood cell, you should pay attention to both the nucleus and the cytoplasm. The nucleus is more important to the recognition. The basic structure of a nucleus is some histone granules twined one and three fourths circle by chain-shaped DNA. They link up into granules and lines. Therefore you have to pay attention to the granuliform of chromatin of pronormoblasts, the striped-like feeling of nucleus of megakaryocytes, the reticular structure of monocytes, etc.

All the pictures in this *Atlas* are copies of real clinical specimens. In addition to a lot of patterns collected by myself, there are 1,123 copies of valuable patterns contributed by hematology workers throughout the country, which have enormously enriched the contents of the book.

In order to pool the wisdom of the masses, I invited some professors and experts who have been doing blood research work for many years and have practical experience to participate in the editing and drawing of the book. Most of the color pictures were painted by my daughter, lecturer Liu Fangwen and my wife, professor Huang Wenyan.

After having completed the manuscript, we had it reviewed by more than thirty well-known experts and professors. Among them are Prof. Deng Jiadong and Prof. Zhang Zhinan, China Union Medical University, Prof. Yu Zhifei, and Prof. Leng Yanjia, Jinan University, Prof. Chen Wenjie and Prof. Hao yushu, Chinese Academy of Medical Sciences, Prof. Wang Bianming and Prof. Song Shanjun, Tongji Medical University, Prof. Lu Daopei, Prof. Qin Zhenting, Prof. Wang Liangxu and Prof. Wang Shujuan of Beijing Medical University, Prof. Zhou Aixiang, Academy of Traditional Chinese Medicine, Prof. Song Yi, Bethune Medical University, Prof. Yep Peiteh, Sun Yat Sen University of Medical Science, Prof. Chen Bo, First Military Medical University, Prof. Wu Zuze, Chinese Academy of Military Medical Sciences, Prof. Liu Haichuan and Prof. Yan Ying, Chinese People's Liberation Army General

Hospital, Prof. Wang Fengji and Prof. Lou Yongxin of Sino-Japanese Friendship Hospital, Beijing, Prof. Hong Baoyuan, Harbin Medical University, Prof. Lü Lianhuang and Prof. Huang Mingqing, Fujian medical University, Prof. Ding Xunjie, Shanghai Medical University, Prof. Pan Ruipeng and Prof. Wang Hongli, Shanghai Second Medical University, Prof. Liao Qingkui, Prof. Sheng Erquan and Prof. Ruan Huifang of West China University of Medical Science, Prof. Yan Peiheng and Prof. Zhai ming of China medical University, et al. We probed into the manuscript with them and invited them to offer suggestions.

Compiling the *Atlas* was a hard task requiring a lot of time and energy. During the preparation of the book, Liu Xiaobin, Lu Jiang, Chen Yuzheng, Ma Jun, Sun Shouliang, Chen Lijun, Dong Shengli, Xun Yugui, Duan Peiya, Guo Haige, Wang Naiwu, Zhang Hongsheng, Sun Dachun, Chen Guiqin, Li Suxia, Yu Qiuju and Li Guoxuan helped with the compilation. Here I want to express my thanks to them.

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This *Atlas* can be used as a helpful reference book for clinicians, laboratory technicians, scientific reseachers and medical students.

Though we have done our best, mistakes are unavoidable. We hope our readers may point out the mistakes, so we can make corrections and supplements when revising the book.

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