

# YEARBOOK®

## YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™ 2001

BRUCE H. THIERS  
PEARON G. LANG, JR

YEAR BOOK  
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CENTENNIAL  
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2001

# The Year Book of DERMATOLOGY AND DERMATOLOGIC SURGERY™

Editor-in-Chief

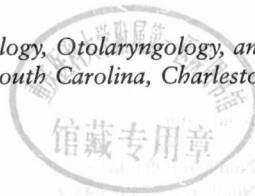
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## Statement of Purpose

### The YEAR BOOK Series

The YEAR BOOK series was devised in 1901 by health professionals who observed that the literature of medicine and related disciplines had become so voluminous that no one individual could read and place in perspective every potential advance in a major specialty. That has never been more true than it is today.

More than merely a series of books, YEAR BOOK volumes are the tangible results of a unique service designed to accomplish the following:

- to *survey* a wide range of journals
- to *select* from those journals papers representing significant advances and statements of important clinical principles
- to provide *abstracts* of those articles that are readable, convenient summaries of their key points
- to provide *informed commentary* about their relevance

These publications grow out of a unique process that draws on the talents of outstanding authorities in clinical and fundamental disciplines, trained literature specialists, and professional writers—all supported by the resources of Mosby, the world's preeminent publisher for the health professions.

### The Literature Base

Mosby and its editors survey approximately 500 journals published worldwide, covering the full range of the health professions. On an annual basis, the publisher examines usage patterns and polls its expert authorities to add new journals to the literature base and to delete journals that are no longer useful as potential YEAR BOOK sources.

### The Literature Survey

More than 250,000 peer-reviewed articles per year are scanned systematically—including title, text, illustrations, tables, and references—by the publisher's team of literature specialists. Each scan is compared, article by article, to the search strategies that the publisher has developed in consultation with the nearly 200 outside experts who form the pool of YEAR BOOK editors. A given article with broad scientific or clinical implications may be reviewed by any number of YEAR BOOK editors, from one to a dozen or more, regardless of the discipline for which the paper was originally published. In turn, each editor who receives the article reviews it to determine whether it should be included in his or her volume. This decision is based on the article's inherent quality, its relevance to readers of that YEAR BOOK, and the editor's goal to represent a comprehensive picture of a given field in each volume of the YEAR BOOK. In addition, the editor indicates when to include figures and tables from the article to help the YEAR BOOK reader better understand the information.

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Of the quarter million articles scanned each year, only 5% are selected for publication within the YEAR BOOK series, thereby assuring readers of the high value of every selection.

### **The Abstract**

The publisher's abstracting staff is headed by a seasoned medical editing professional and includes individuals with extensive experience in writing for the health professions. When an article is selected for inclusion in a YEAR BOOK, it is assigned to a member of the abstracting staff. The abstractor, guided in many cases by notations supplied by the physician editor, writes a structured, condensed summary designed to rapidly communicate to the reader the essential information contained in the article.

### **The Commentary**

The YEAR BOOK editorial boards, sometimes assisted by guest contributors, write comments that place each article in perspective. This provides the reader with insights from authorities in each discipline that point out the value of the article and that often reflect the authority's thought processes in assessing the article.

### **Additional Editorial Features**

The editorial boards of each YEAR BOOK organize the abstracts and comments to provide a logical and satisfying sequence of information. To enhance the organization, editors also provide introductions to sections or individual chapters, comments linking a number of abstracts, citations to additional literature, and other features.

The published YEAR BOOK contains enhanced bibliographic citations for each selected article, including extended listings of multiple authors and identification of author affiliations. Each YEAR BOOK contains a Table of Contents specific to that year's volume. From year to year, the Table of Contents for a given YEAR BOOK may vary, depending on developments within the field.

Every YEAR BOOK contains a list of the journals from which articles have been selected. This list represents a subset of approximately 500 journals surveyed by the publisher and occasionally reflects a particularly pertinent article from a journal that is not surveyed routinely.

Finally, each volume contains a comprehensive subject index and an index to authors of each selected article.

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## The 2001 Year Book Series

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**Year Book of Nuclear Medicine®:** Drs Gottschalk, Blaufox, Coleman, Strauss, and Zubal

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**Year Book of Oncology®:** Drs Loehrer, Eisenberg, Glatstein, Gordon, Johnson, Pratt, and Thigpen

**Year Book of Ophthalmology®:** Drs Wilson, Cohen, Eagle, Grossman, Laibson, Maguire, Nelson, Penne, Rapuano, Sergott, Shields, Spaeth, Steinmann, Tipperman, Ms Gosfield, and Ms Salmon

**Year Book of Orthopedics®:** Drs Morrey, Beauchamp, Currier, Peterson, Swiontkowski, and Trigg

**Year Book of Otolaryngology–Head and Neck Surgery®:** Drs Paparella, Holt, and Otto

**Year Book of Pathology and Laboratory Medicine®:** Drs Raab, Bissell, Dabbs, Silverman, and Stanley

**Year Book of Pediatrics®:** Dr Stockman

**Year Book of Plastic, Reconstructive, and Aesthetic Surgery®:** Drs Miller, Bartlett, Garner, McKinney, Ruberg, Salisbury, and Smith

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## Journals Represented

Mosby and its editors survey approximately 500 journals for its abstract and commentary publications. From these journals, the editors select the articles to be abstracted. Journals represented in this YEAR BOOK are listed below.

Acta Dermato-Venereologica  
Acta Obstetricia et Gynecologica Scandinavica  
Acta Oto-Laryngologica  
Acta Radiologica  
Aesthetic Plastic Surgery  
Allergy  
American Journal of Contact Dermatitis  
American Journal of Kidney Diseases  
American Journal of Medicine  
American Journal of Pathology  
American Journal of Physiology  
American Journal of Surgery  
American Journal of Surgical Pathology  
Annals of Plastic Surgery  
Annals of Surgery  
Annals of Surgical Oncology  
Annals of Thoracic Surgery  
Archives of Dermatology  
Archives of Disease in Childhood  
Archives of Otolaryngology-Head and Neck Surgery  
Archives of Pediatrics and Adolescent Medicine  
Archives of Surgery  
Arthritis and Rheumatism  
Blood  
Bone Marrow Transplantation  
British Journal of Cancer  
British Journal of Dermatology  
British Journal of Plastic Surgery  
British Journal of Surgery  
British Medical Journal  
Canadian Medical Association Journal  
Cancer  
Cancer Research  
Circulation  
Clinical Cancer Research  
Clinical Journal of Pain  
Contact Dermatitis  
Cutis  
Dermatologic Surgery  
Dermatology  
Diabetes Care  
European Journal of Nuclear Medicine  
European Journal of Plastic Surgery  
Gynecologic Oncology  
Human Pathology  
Infection Control and Hospital Epidemiology  
International Journal of Cancer

International Journal of Dermatology  
Journal of Allergy and Clinical Immunology  
Journal of Burn Care and Rehabilitation  
Journal of Clinical Investigation  
Journal of Clinical Microbiology  
Journal of Clinical Oncology  
Journal of Clinical Pathology  
Journal of Cutaneous Medicine and Surgery  
Journal of Cutaneous Pathology  
Journal of Immunology  
Journal of Investigative Dermatology  
Journal of Nuclear Medicine  
Journal of Pathology  
Journal of Pediatric Gastroenterology and Nutrition  
Journal of Reproductive Medicine  
Journal of Rheumatology  
Journal of the American Academy of Dermatology  
Journal of the American College of Surgeons  
Journal of the American Medical Association  
Journal of the American Society of Nephrology  
Journal of the National Cancer Institute  
Lancet  
Medicine  
Modern Pathology  
Nature  
Nature Medicine  
New England Journal of Medicine  
Ophthalmology  
Otolaryngology - Head and Neck Surgery  
Pediatric Dermatology  
Pediatric Infectious Disease Journal  
Pediatrics  
Plastic and Reconstructive Surgery  
Proceedings of the National Academy of Sciences  
Surgery  
Urology  
World Journal of Surgery

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#### STANDARD ABBREVIATIONS

The following terms are abbreviated in this edition: acquired immunodeficiency syndrome (AIDS), cardiopulmonary resuscitation (CPR), central nervous system (CNS), cerebrospinal fluid (CSF), computed tomography (CT), deoxyribonucleic acid (DNA), electrocardiography (ECG), health maintenance organization (HMO), human immunodeficiency virus (HIV), intensive care unit (ICU), intramuscular (IM), intravenous (IV), magnetic resonance (MR) imaging (MRI), ribonucleic acid (RNA), ultrasound (US), and ultraviolet (UV).

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#### NOTE

The YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™ is a literature survey service providing abstracts of articles published in the professional literature. Every effort is made to assure the accuracy of the information presented

in these pages. Neither the editors nor the publisher of the YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™ can be responsible for errors in the original materials. The editors' comments are their own opinions. Mention of specific products within this publication does not constitute endorsement.

To facilitate the use of the YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™ as a reference tool, all illustrations and tables included in this publication are now identified as they appear in the original article. This change is meant to help the reader recognize that any illustration or table appearing in the YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™ may be only one of many in the original article. For this reason, figure and table numbers will often appear to be out of sequence within the YEAR BOOK OF DERMATOLOGY AND DERMATOLOGIC SURGERY™.

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## Publisher's Preface

The publication of the 2001 YEAR BOOK series marks the 100th anniversary of the original Practical Medicine Series of Year Books. To commemorate this milestone, each 2001 Year Book includes an anniversary seal on the cover. The content and format of the Year Books remain unchanged from the beginning of the last century—each volume consists of abstracts of the best scholarly articles of the year, accompanied by expert critical commentaries.

The first Year Book appeared in 1900 when Gustavus P. Head, MD, produced the first *Year Book of the Nose, Throat and Ear*, a volume consisting of highlights from the previous year's best literature, enhanced by expert observations. Dr Head assembled a small group of distinguished physicians to serve as editors, and the first series of Year Books was published in 1901. The first volumes of the Year Book series—*General Medicine*, *General Surgery*, *The Eye*, *Gynecology*, *Obstetrics*, *Materia Medica and Therapeutics*, *Pediatrics*, *Physiology*, and *Skin and Venereal Diseases*—appeared at monthly intervals, with 10 volumes published in 1 year. The entire series was met with critical enthusiasm.

In 1904, Dr Head's brother, Cloyd, assumed responsibility for the management of the Year Books. In 1905, the volumes began to appear at regular intervals during the calendar year instead of on a monthly basis. By World War I, the Year Books had been established as an authority on medical and surgical progress.

The postwar period brought about a significant change in the practice of medicine: specialization. To accommodate the rise of specialization in medicine, the Year Books were now sold as individual volumes rather than only as a complete set. This change brought about a tremendous response and sales of the books increased. In 1922, the Year Books became even more specialized, as the books now had different editors for the different medical specialties covered in each volume. Later, in 1933, the title of the series changed from the Practical Medicine Series of Year Books to the Practical Medicine Year Books to reflect these new designs.

The Year Books have grown significantly from the first 10-volume series in 1901 to a diversified series of 32 volumes in 2001. That the Year Book series is the only series of their kind to have survived is a testament to the vision and commitment of its founders. Some minor changes in format and design have occurred throughout the years, but the mission of the Year Book series—to provide a record of exceptional medical achievements distinguished by the reflections of many of the great names in medicine today—has remained constant.

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## Special Techniques in Diagnostic Dermatopathology

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This section addresses recent technical developments in diagnostic dermatopathology. As in all fields of medicine, the last decade has seen an explosion in the technologies available to dermatologists and dermatopathologists in diagnostic medicine. Polymerase chain reaction (PCR)s, *in situ* hybridization, and a variety of T-cell gene rearrangement studies have become standard techniques in the workup of various dermatologic conditions. In addition, there have been new developments in more traditional laboratory tests such as routine histologic sectioning and immunofluorescence analyses. Immunoperoxidase technology continues to play a central role in the analysis of tumors, and is continuing to improve as better probes become available. In subsequent sections I will address the newer developments in these fields. Within each section, I will attempt to delineate the sensitivities and specificities of each of these tests and to provide the clinical contexts in which each test should be considered and interpreted.

### Routine Histology

Routine histology remains the gold standard for establishing diagnoses in dermatopathology. Although special techniques have added valuable new insights into our abilities to distinguish between similar entities, these must all be interpreted carefully within the context of the patient's clinical history and routine histologic sections. Failure to observe this caveat will result in possibly egregious errors. This word of caution applies to each of the techniques and additional tests that will be discussed in the body of this article.

Within the last decade, an unorthodox method for processing scalp biopsies has become the standard method within many dermatopathology laboratories. The technique was first promulgated by Headington et al<sup>1</sup> and has become widely accepted because of the increased information yielded by the interpretation of scalp biopsies with this method. A routinely processed punch biopsy is bisected through the superficial reticular dermis, parallel to the surface of the skin. The tissue is then embedded so that the cut surfaces are represented on the first of multiple levels through the tissue; subsequent cuts allow visualization of progressively higher and lower planes through the skin. By processing tissue in this manner, approximately 30 hair follicles are seen on a standard 4-mm punch biopsy, as opposed to the 4 to 5 follicles seen in a punch biopsy from the scalp sectioned in the traditional manner.<sup>2</sup>

Horizontally oriented sections allow the pathologist the opportunity to assess the location and degree of inflammatory infiltrate at all levels of the follicular epithelium.<sup>3</sup> Because all levels of the follicle from the dermal-

epidermal junction to the follicular bulb are seen on one of the many cuts, it is possible to characterize the distribution of the perifollicular infiltrate. Thus, the typical "swarm of bees" pattern of lymphocytic infiltrate seen in alopecia areata is still seen, although from a different perspective, and the lichenoid infiltrate characteristic of lichen planopilaris is still apparent.<sup>4</sup> These changes are far more likely to be discovered because up to 10 times as many hairs are examined with this method (Fig 1). Involvement of the dermal-epidermal junction and of the eccrine structures and dermal blood vessels can be seen to establish a diagnosis of lupus erythematosus.

Evaluation for the presence of a scarring process is also easier to accomplish when multiple pilosebaceous units are viewed.<sup>3</sup> It is much easier to see "drop out" of entire units and disruption of the overall scalp architecture when one is looking at horizontal sections. A loss of entire pilosebaceous units at the level of the follicular infundibulum is easily noted in cases of pseudopelade of Brocq, lichen planopilaris, and lupus erythematosus. Disruption of individual follicles, with distortion of the epithelium and damage to the hair shafts, is seen in traction alopecia and follicular degeneration syndrome. A dense mixed infiltrate of inflammatory cells that overruns follicular epithelia and leads to marked scarring is seen in folliculitis decalvans. It is also easier to notice miniaturization of the follicles in patients with androgenetic alopecia when they are examined in cross section and in direct proximity to other dermal structures and sebaceous glands.<sup>5</sup>

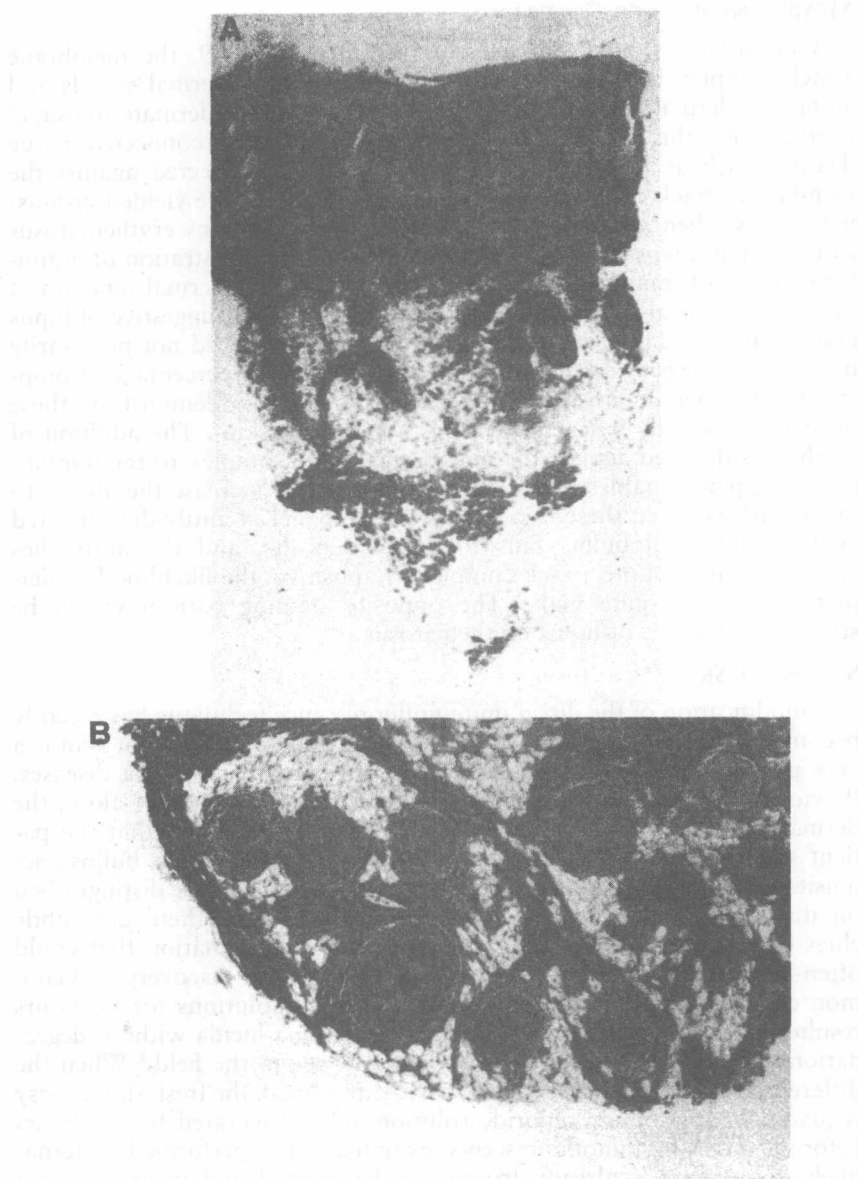
Finally, evaluation of the growth phase of hair follicles, and detection of alterations in the normal sequence is much simpler (and more accurate) when 30 hairs are examined than the 4 to 5 seen in traditionally cut histologic sections. The presence of many telogen-phase hairs in such a specimen is more likely to represent true disease and not a sampling problem based on analysis of a very few hairs.

Some authors have advocated the use of transverse and horizontal sectioning in order to maximize diagnostic yield.<sup>2,5</sup> These authors recommend processing two biopsies in parallel, one cut in the traditional method and a second cut with horizontal sections. In our laboratory, we recommended this procedure for a period of several years; however, we now recommend only a single-punch biopsy that is sectioned with horizontal sections as described above.

## Immunofluorescence

Direct immunofluorescence has retained its important place in diagnostic dermatopathology. It serves as a useful adjunct in the diagnosis of lupus erythematosus, vasculitides, and the autoimmune blistering diseases. As these procedures have been well described and reviewed in the literature,<sup>6</sup> I will not discuss them further in this chapter. There have been some relatively recent developments within the field that will be further described in the remainder of this section.





**FIGURE 1.**—A, Traditional perpendicular sections of alopecia areata demonstrate 3-4 hair follicles that can be examined for inflammatory infiltrates. B, The same patient had another biopsy processed with transverse sections through the punch biopsy revealing a pronounced peribulbar lymphocytic infiltrate characteristic of alopecia areata.