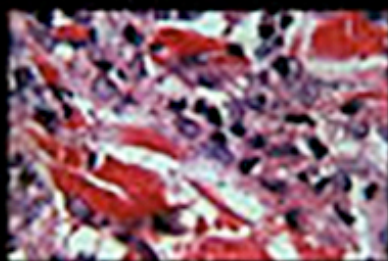
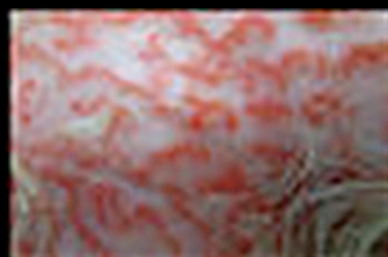


Blackwell's Five-Minute Veterinary Consult
Clinical Companion



Small Animal Dermatology

Third Edition



Karen Helton Rhodes
Alexander H. Werner



WILEY Blackwell

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This text is dedicated to:

To the eternal student
Karen Helton Rhodes

Mike
Alexander H. Werner

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Preface



This third edition of *Blackwell's Five-Minute Veterinary Consult Clinical Companion: Small Animal Dermatology* has been revised in both content and format.

The content is a compilation of current scientific literature and “state of the art” clinical specialty medicine in a compact handbook. This third edition presents a new body of work intended to complement but not duplicate the information found in *Blackwell's Five-Minute Veterinary Consult: Canine and Feline*. The *living epidermis* is briefly explored in relationship to clinical disorders. An introductory *lesional and regional differentials* chapter is formatted to act as a “symptom checker” to help direct the clinician. Diagnostic plans and therapeutic options are specifically outlined for each disorder. When appropriate, clinical and therapeutic myths are countered with scientific information to aid in daily clinician/client conversations.

We have retained the “easy to scan” bullet layout and included even more clinical color photographs to illustrate the text. The majority of photographs have been replaced or updated from previous editions. The chapters have been arranged in an alphabetical format for quick reference. An appendix of common canine genodermatoses is included with a listing of genetic reference labs for diagnostic purposes. A formulary of common dermatologic therapeutics is provided.

This dermatology *Clinical Companion* was written for both the veterinary clinician and the student of veterinary medicine. It is intended as a quick informative reference and vital clinical resource. The large number of clinical photographs and simplistic style also make this text a valuable addition to your client library in the examination room or reception area.

Karen Helton Rhodes and Alexander H. Werner

About the Companion Website



This book is accompanied by a companion website:

www.fiveminutevet.com/dermatology

The website includes:

- Client education handouts

BASICS

section **1**



Epidermis in Clinical Dermatology



DEFINITION/OVERVIEW

- The skin is the largest organ in the body.
- Functions of the skin include (among others):
 - Physical barrier
 - Thermoregulation
 - Environmental protection
 - Immunoregulation
 - Sensory perception
 - Antimicrobial activity.
- The skin can renew itself and thus respond to a variety of hostile factors.
- The process of cell migration within the epidermis from the stratum basale to the stratum corneum (epidermal renewal) takes approximately 22 days.
- Epidermal renewal time line can be useful when discussing duration necessary for clinical improvement.
- A helpful correlation for the client may be to compare epidermal renewal to the short length of time that a suntan will last.
- The process of renewing the epidermis is a series of complex organized steps of:
 - Controlled cell renewal
 - Cell death
 - Cell removal.
- The epidermis – more specifically, the stratum corneum or “skin barrier” – has recently been the focus of research regarding the pathobiomechanisms of disease as well as for therapeutic advances.

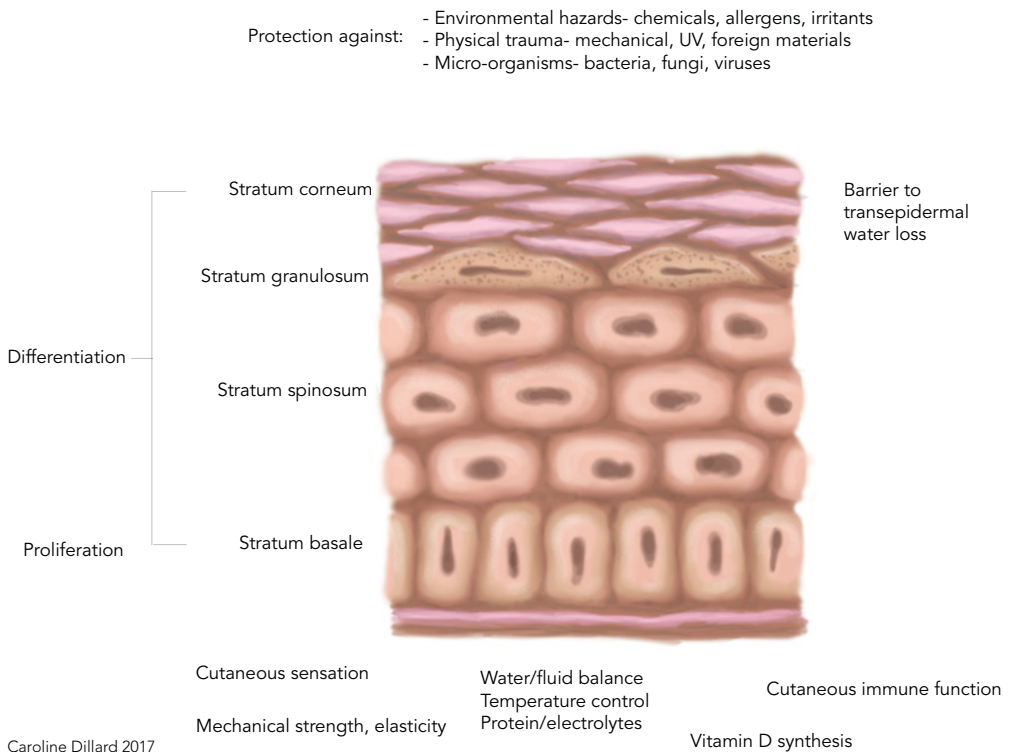
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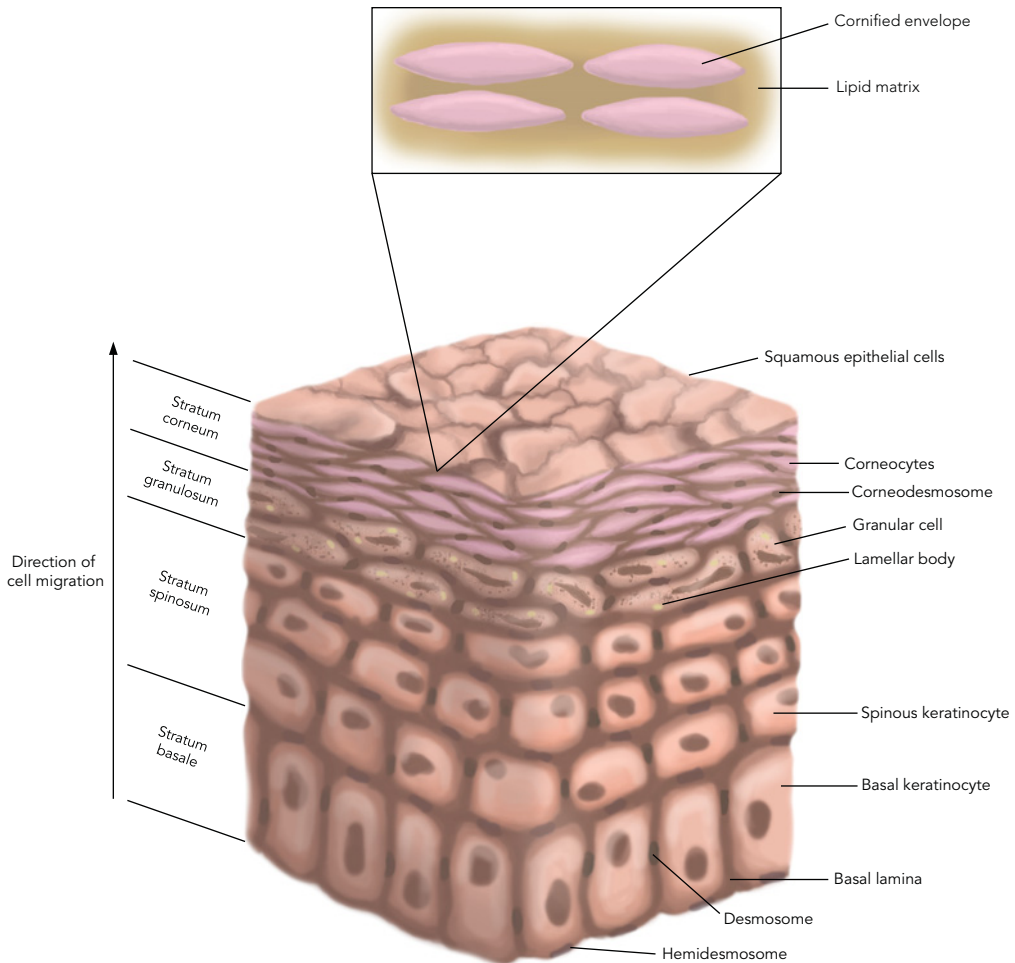
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STRATUM CORNEUM BARRIER

- The outer portion of the epidermis, the stratum corneum, is composed of approximately 20 overlapping layers and is considered the skin's barrier. The stratum corneum layer (Figures 1.1, 1.2):
- Controls hydration by restricting water movement into and out of the skin. (i.e., 0.5 mL water vapor is lost through the normal stratum corneum per day in human skin)
- Is the primary defense against environmental hazards such as allergens, pollutants, and irritants by continuous desquamation (renewal and removal)
- Maintains homeostasis with commensal organisms via the production of antimicrobial peptides
- Absorbs UV light to protect sensitive underlying tissue.



■ **Fig. 1.1.** Epidermal influence on homeostasis. Courtesy of Caroline Dillard.



■ **Fig. 1.2.** Layers of the epidermis. Courtesy of Caroline Dillard.

PROCESS OF CORNIFICATION/KERATINIZATION

- Outline of basic steps in the cornification process to form the skin barrier (Figure 1.3).
 - Step 1: bundling of keratin within the corneocyte (keratinocyte) (Figure 1.4).
 - Step 2: replacement of the cell membrane with a thick cornified envelope (Figure 1.5).
 - Step 3: formation of lamellar lipid bilayers (Figure 1.6).
 - Step 4: desquamation (Figure 1.7).