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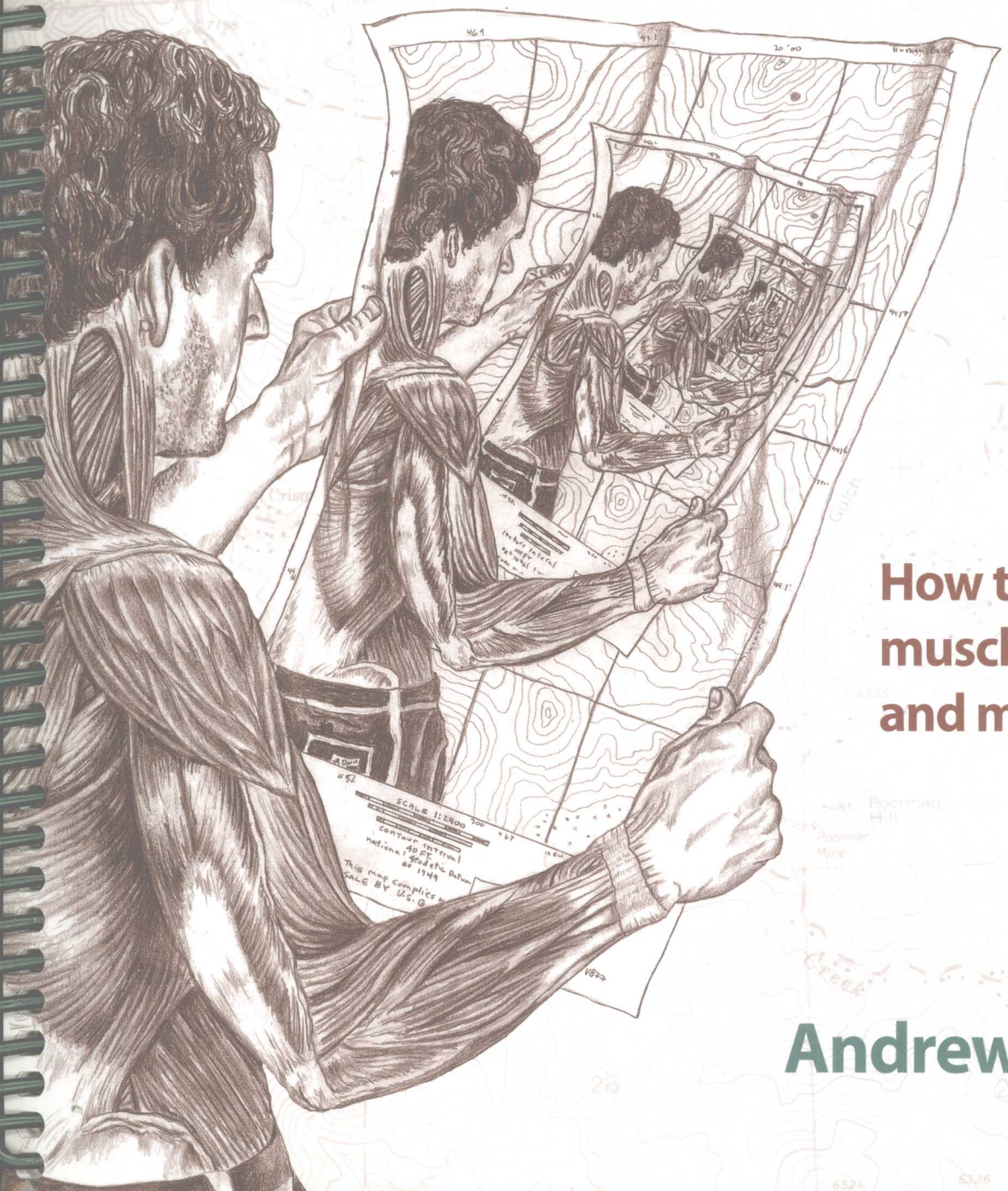
Second Edition



How to locate muscles, bones, and more

Andrew Biel

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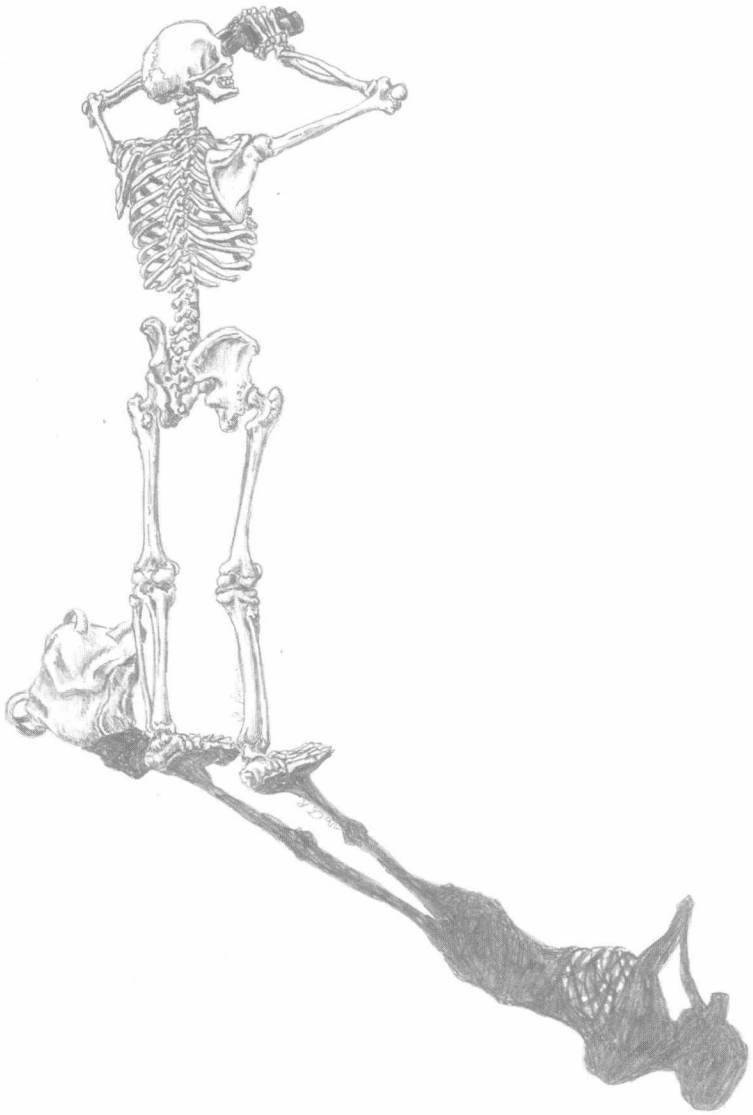
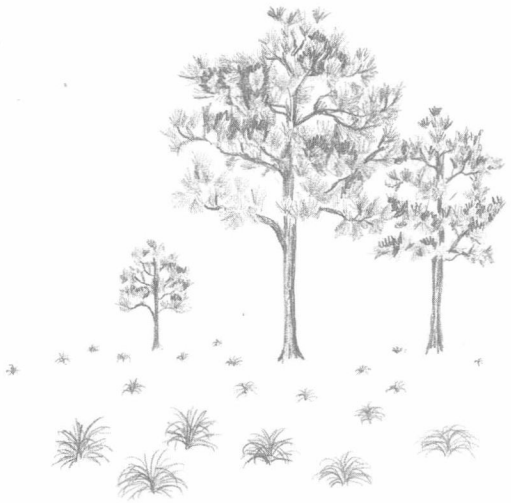


Trail Guide to the Body

Order and simplification are the first steps toward the mastery of a subject - the actual enemy is the unknown.

Thomas Mann, *The Magic Mountain*



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Trail Guide to the Body

How to locate muscles, bones, and more

Second Edition

Andrew Biel, LMP
Licensed Massage Practitioner

Illustrations by Robin Dorn, LMP
Licensed Massage Practitioner

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2539 Spruce St., Boulder, CO 80302, USA
www.booksofdiscovery.com
info@booksofdiscovery.com
800.775.9227

Associate Editors:
Marty Ryan, LMP
Kate Bromley, MA, LMP
Lauriann Greene, LMP
Clint Chandler, LMP

Graphic coloring by Rupert Grange, Esq.
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made to reprint an excerpt from:

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Disclaimer
The purpose of this book is to provide information for hands-on therapists on the subject of palpatory anatomy. This book does not offer medical advice to the reader and is not intended as a replacement for appropriate health care and treatment. For such advice, readers should consult a licensed physician.

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Preface

We shall not cease from exploration.
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

T.S. Eliot, *Four Quartets*

Many years ago, as a skinny ten-year old, I remember pinching the flesh under my armpit only to accidentally locate a muscle. When I moved my arm in a certain way, the flesh would harden and slip into my fingers. "Wow," I thought, "I didn't think I *had* any muscles!"

I told my parents about my discovery, and they suggested that I check the encyclopedia to see which muscle I had found. The Latin names I encountered only confused me, but for months I showed everyone I met my one and only muscle.

I continued to be fascinated with the parts and pieces of the body and with how these all seemed to work together to produce movement, breath, even life itself. During my training as a bodyworker, I learned that the mysterious muscle of my armpit was the *latissimus dorsi*. Soon I learned how to palpate other muscles as well as the various tendons, bones, and tissues located throughout the body. I also realized the importance of palpation for tissue assessment and for performing safe and effective manual therapy techniques.

Later, as an instructor of bodywork and palpatory anatomy, I became familiar with many books describing and illustrating the anatomy of the body. I found few, however, that demonstrated how to locate and explore the body's structures manually. *Trail Guide to the Body* is designed to do just that: to teach you to map, navigate, and "gain your bearings" on the human body.

In preparation for any journey, it helps if you know the lay of the land you will be traveling. For every health care provider, a thorough understanding of the location and interrelationship of the body's structures is essential. The "hands-on" practitioner, however, cannot merely take a guided bus tour of the body, viewing it from afar and only hearing of its amazing qualities. She must undertake instead the actual/physical exploration through a geography that is never exactly the same on any two individuals. Rolling up her sleeves, she must rely on her hands and her senses to learn about the most challenging and fascinating of all terrains - the human body.

So welcome! You are about to embark on the journey of a lifetime with this book as your trusty guide.

Acknowledgments

The long and winding path of creativity is often strewn with boulders, lacking in sign posts, and intersected by dead end trails. Luckily my path to the second edition was cleared by the sharp machetes and skilled help of many expert field guides and hiking partners.

It was a pleasure, once again, to work with an artist as committed and talented as Robin Dorn. A heartfelt thanks to Lyn Gregory for her encouragement, patience and suggestions; Jennifer 'JJ' Booksh for being a rock in the office and maintaining the daily operations, and Marty Ryan for his editing, numerous ideas, and voice of confidence.

I was blessed to have a wonderful support team for the second edition: Many thanks to Chris Maisto for her detailed editing and her knowledge of Greek and Latin, Jessica Xavier for her design concepts, Robert Karman for fixing the computers, Val Phelps and the team at T & R Graphic Imaging for the scans, Jill and Ron Ellis at One World Arts for their printing guidance, Alan Nolan at Printcrafters for his patience, Anthony Sayre for the arrows, and a big thanks to Summer Westfall for the financial management.

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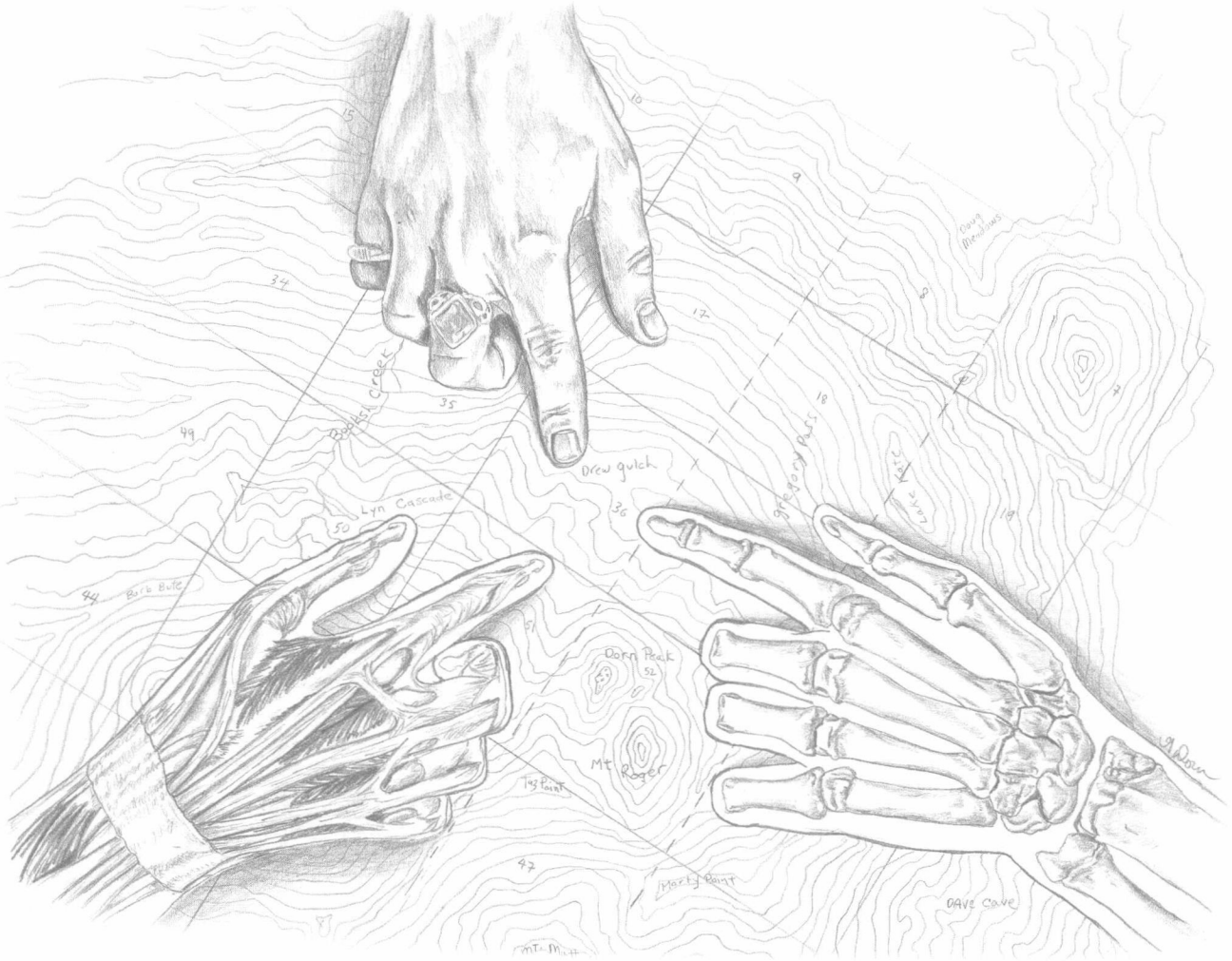
Special thanks to my family for their support and encouragement. The second edition of *Trail Guide to the Body* is dedicated to the students of bodywork and manual therapy around the world - past, present, and future.

Introduction
Tour Guide Tips



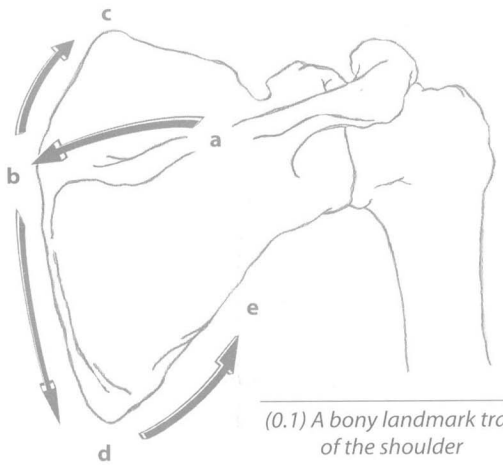
How To Use This Book

Trail Guide to the Body has six chapters, each focusing on a different region of the body. The topographical contours that can be seen on the surface of the skin and exercises to explore the skin and fascia are outlined first. These are followed by the bones and bony landmarks (the bone's hills, dips, and ridges). The bony landmarks can be thought of as "trail markers." They are used as stepping off points to locate muscles and tendons. Finally, other structures, such as ligaments, nerves, arteries, and lymph nodes, are accessed.

Wherever possible, a region's bony landmarks have been strung together to form a trail (0.1). These trails are designed to help you understand the connections between structures. Without a path to follow, you, the traveler, would be lost in a jungle of flesh and bones with no idea of your trail's location. You and your travel partner will find the journey more enjoyable and valuable if you have a trail to lead you to your destination point.

Since bodies come in a variety of sizes and shapes, it may seem unrealistic that one trail guide could apply to all of them. If the terrain is never the same, what is the use of a map? Even though the topography, shape, and proportion of each person is unique, the body's composition and structures are virtually identical on all individuals. The differences are simply qualitative: It is easy to find many structures on a person with a slender build and more challenging on a physique with bulky muscles or a large amount of adipose (fatty) tissue (0.2).

Trail Guide to the Body is designed around the following scenario: You follow along with the text and palpate on a partner (friend or classmate) who is on a bodywork table or seated in a chair. If you are a student, you are advised to proceed step-by-step, repeat certain methods when necessary, and explore the body along the way. If you are a more experienced practitioner, you may want to pick and choose your destinations.



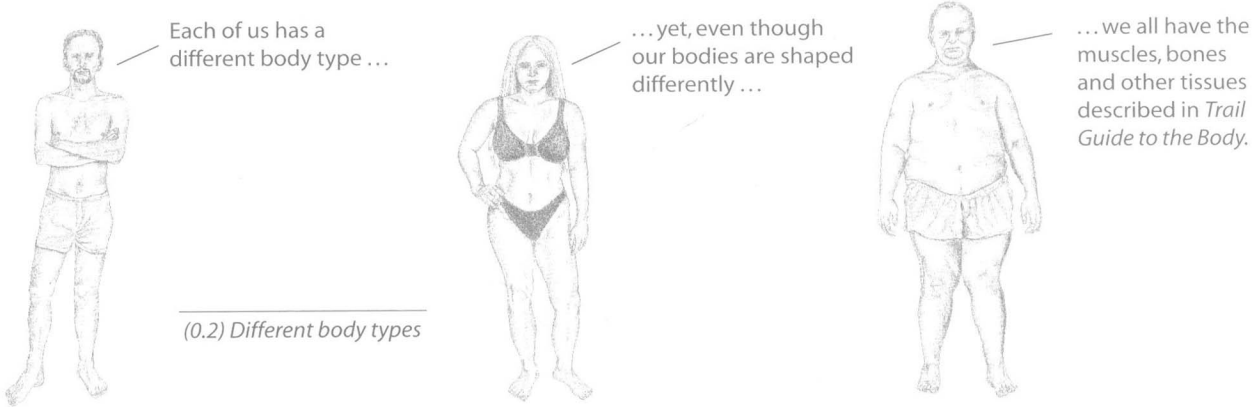
(0.1) A bony landmark trail of the shoulder

a) Spine of the scapula
b) Medial border
c) Superior angle
d) Inferior angle
e) Lateral border

The procedures outlined in *Trail Guide to the Body* are gentle and rarely uncomfortable, yet it is best to practice on an individual with no serious health conditions. Your partner may either wear loose, thin clothing or be undressed and draped under a sheet to enable you to palpate more easily.

Sometimes your partner will be asked to lie or sit passively on the table. At other times, she may be asked to move a limb, bend a joint, or contract a group of muscles. These movements should be done smoothly and according to the specific instructions of the text to enable you to explore the region thoroughly.

Talk to your partner before palpating so she will understand her role. Also, clarify beforehand which areas of the body you would like to palpate and explore so she will know what to expect.



(0.2) Different body types

Key

Name of structure

Introduction describing a structure's function, depth, and relationship to other structures

Action,
Origin and **I**nsertion sites,
Nerve innervation of the muscle

Step-by-step instructions how to palpate a structure

"Check It" questions will confirm your location. They may ask you about your location in relationship to a nearby structure or ask you or your partner to create a movement. Unless otherwise indicated, the answers to the questions should be "Yes!"

Alternative palpatory routes

After you have become familiar with a muscle, look for the compass to give you the essential location and bony landmarks to palpate it. The action refers to a movement your partner can perform to feel the muscle contract.

Sternocleidomastoid

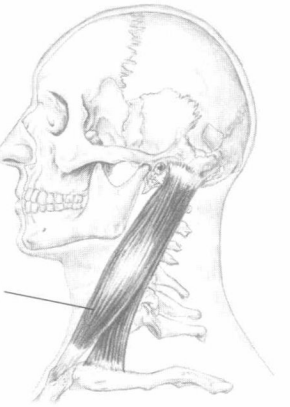
The sternocleidomastoid (SCM) is located on the lateral and anterior aspects of the neck. It has a large belly composed of two heads: a flat, clavicular head and a slender, sternal head (5.30). Both heads merge to attach behind the ear at the mastoid process. The carotid artery passes deep and medial to the SCM; the external jugular lies superficial to it.

A *Unilateral:*
Laterally flex the head to the same side
Rotate the head to the opposite side
Bilateral:
Extend the neck
Flex the neck
Assist in inhalation

O Sternal head: Top of manubrium
Clavicular head: Medial one third of the clavicle

I Mastoid process of temporal bone, lateral superior nuchal line of occiput

N Spinal accessory



(5.30)

1) Supine with practitioner at head of table. Locate the mastoid process of the temporal bone, the medial clavicle and the top of the sternum.
2) Draw a line between these landmarks to delineate the location of the SCM. Note how the two SCMs form a "V" on the front of the neck.
3) Ask your partner to raise her head very slightly off the table as you palpate the SCM. It will usually protrude visibly.

(5.31) Partner supine

With your partner relaxed, can you grasp the SCM between your fingers and outline its shape?

Location Superficial, anterior neck
Bony Landmarks Mastoid process, clavicle
Action "Flex your head"

sternocleidomastoid **ster**-no-**kli**-do-**mas**-toyd

Pronunciation and etymology of anatomical terms

Look for Mr. Bones sharing cautionary advice or other helpful hints

Check out the boxes for palpation tips, comparative anatomy, and other curiosities

The techniques described in *Trail Guide to the Body* should be viewed as helpful tour guides. When first palpating, it is best to follow the specific instructions. After you have located a structure, it is recommended that you adapt and explore other methods to find the approach that works best for you. Wherever possible, an optional method for locating a structure has been included. As with any worthwhile journey, veering off course to explore other areas often leads to wonderful discoveries. Please feel free to veer.

etymology **et**-i-**mol**-o-gee the science of the origin and development of a word