II. THE BONES AND MUSCLES

The further you go in the study of anatomy, the more interesting it becomes. Made of soft and pliable material, elastic yet strong, capable of unlimited movement and of performing countless tasks, operating on self-generated power, and repairing or renewing itself over a period of time in which the strongest of steel parts would wear out—the human body is indeed an engineering miracle.

On the opposite page the male and female skeletons have been set up. I have kept the head units alongside so that you may relate the bones to the figure in correct proportion.

The skeleton, though strong, is really not so rigid as it appears. Though the spine has a rigid base in the pelvis, it possesses great flexibility; and the ribs, too, though they are fastened firmly into the spine, are flexible. All the bones are held together and upright by cartilage and muscle, and the joints operate on a ball-and-socket plan with a "stop" for stability. The whole structure collapses with a loss of consciousness.

Strain upon the muscles can usually be transferred to the bony structure. The weight of a heavy load, for example, is largely taken over by the bones, leaving the muscles free to propel the limbs. Bones also form a protection to delicate organs and parts. The skull protects the eyes, the brain, and the delicate inner parts of the throat. The ribs and pelvis protect the heart, lungs, and other organs. Where protection is most needed, the bone comes closest to the surface.

It is very important for the artist to know that no bone is perfectly straight. An arm or a leg drawn with a perfectly straight bone will be rigid and stiff-looking. Curvature in the bones has much to do with the rhythm and action of a figure. It helps make it appear alive.

The chief differences between the male and female skeletons are the proportionately larger pelvis in the female and the proportionately larger thorax, or rib case, in the male. These differences account for the wider shoulders and narrower hips of the male; the longer waistline, lower buttocks, and wider hips of the female. They also cause the female arms to flare out wider when they are swinging back and forth and the femur, or thigh bone, to be a little more oblique. The hair and breasts, of course, distinguish the female figure, but they are merely its most obvious characteristics. The female is different from head to toe. The jaw is less developed. The neck is more slender. The hands are smaller and much more delicate. The muscles of the arms are smaller and much less in evidence. The waistline is higher. The great trochanter of the femur extends out farther; the buttocks are fuller, rounder, and lower. The thighs are flatter and wider. The calf is much less developed. The ankles and wrists are smaller. The feet are smaller and more arched. The muscles, in general, are less prominent, more straplike—all but those of the thighs and buttocks, which are proportionately larger and stronger in the female. This extra strength is, like the larger pelvis, designed to carry the extra burden of the unborn child. Concentrate upon these fundamental differences until you can set up an unmistakable male or female figure at will.

Note the black squares on the male skeleton. These are bony prominences where the bones are so near the surface that they affect the contour. When the body becomes fat, these spots become dimples or recessions in the surface. In thin or aged figures, these bones protrude.

Working from life or photographs will not eliminate the necessity of knowing anatomy and proportion. You should recognize what the

humps and bumps are—and why they are there. Otherwise your drawing will have the look of inflated rubber, or a wax department-store dummy. The final work on any commission of importance should be drawn from a model or good copy of some kind, since it must compete with the work of men who use models and good copy. Most artists own and operate a camera as a help. But it will not do the whole job. Outlines traced from a photograph, because of the exaggerated foreshortening by the lenses, have a wide and dumpy look. Limbs look short and heavy. Hands and feet appear too large. If these distortions are not corrected, your drawing will simply look photographic.

It might be well to mention here some of the requirements of successful figure drawing. The "smart" female figure has some mannish contours. The shoulders are drawn a little wider than normal, without much slope, the hips a little narrower. The thighs and legs are made longer and more slender, with tapering calves. When the legs are together, they should touch at the thigh, knee, and ankle. The knees should be small. The leg is elongated from the knee down with small ankles. It is merely a waste of time to show an art director a figure that looks large-headed, narrow-shouldered, short-armed or -legged, wide-hipped, short, fat, dumpy, or pudgy. But a figure may be actually bony and unusually tall and still please a fashion editor.

Slimness in figure drawing has become almost a cult. What the artists of the Middle Ages considered voluptuous appeal would be plain fat today. Nothing will kill a sale so quickly as fatness or shortness. (It is a curious fact that short people are apt to draw short figures. A man with a short wife will tend to draw short women.) If my figures seem absurdly tall, remember that I am giving you the conception accepted as a standard. They will not look too tall to the art buyer. In fact, some of my figures here are even shorter than I would instinctively draw them.

The essence of successful male figure drawing is that it be kept masculine—plenty of bone and muscle. The face should be lean, the cheeks slightly hollowed, the eyebrows fairly thick (never in a thin line), the mouth full, the chin prominent and well defined. The figure is, of course, wide shouldered and at least six feet (eight or more heads) tall. Unfortunately, it is not easy to find these lean-faced, hard-muscled male models. They are usually at harder work.

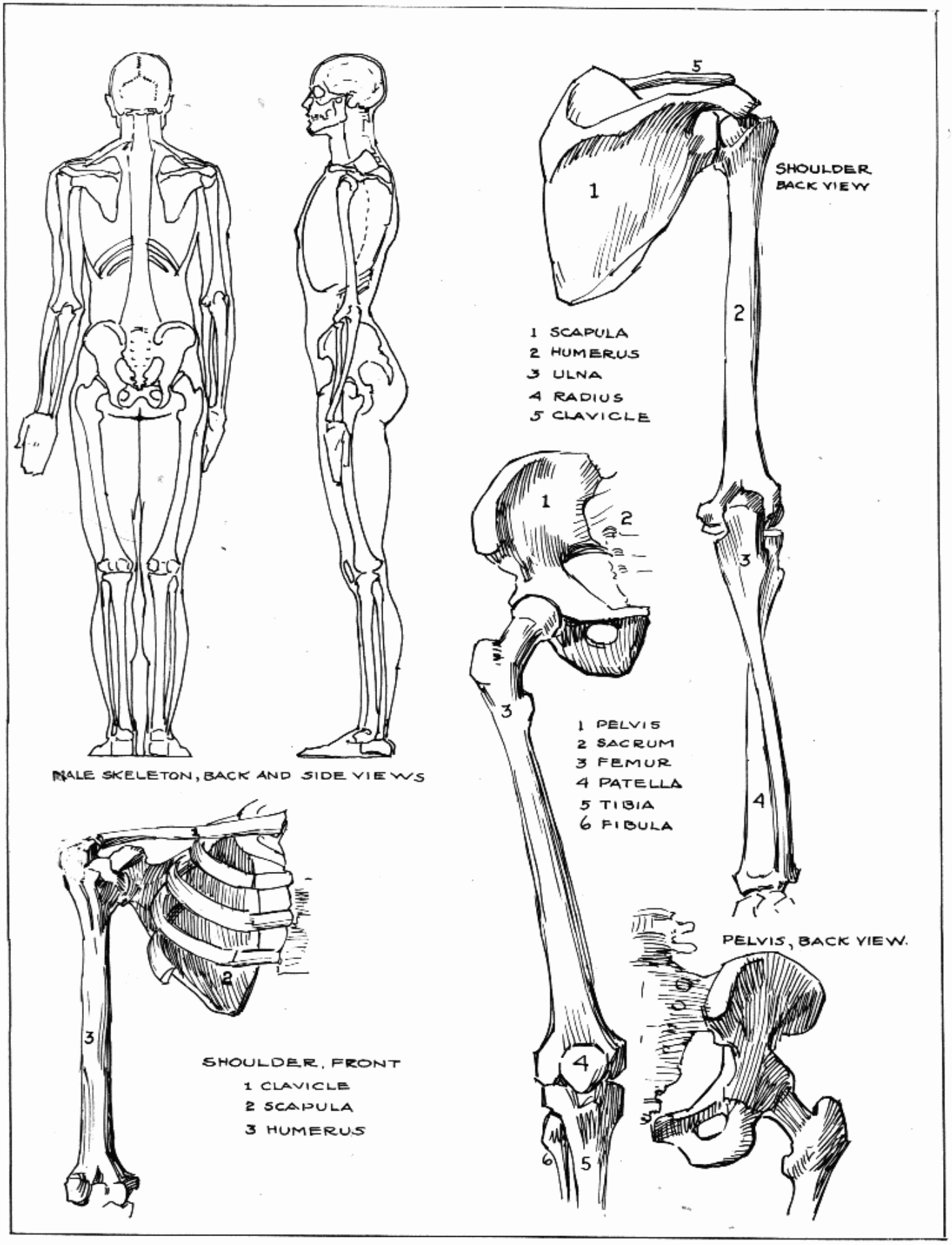
Children should be drawn fairly close to the scale of proportions given in this book. Babies obviously should be plump, dimpled, and healthy. Special study should be given to the folds and creases at the neck, wrists, and ankles. The cheeks are full and round, the chin is well under. The upper lip protrudes somewhat. The nose is round and small and concave at the bridge. The ears are small, thick, and round. The eyes practically fill the openings. The hands are fat and dimpled and there is considerable taper to the short fingers. Until the structure of babies is well understood it is almost fatal to try to draw them without good working material.

Keep all children up to six or eight years quite chubby. From eight to twelve they can be drawn very much as they appear, though the relative size of the head should be a little larger than normal.

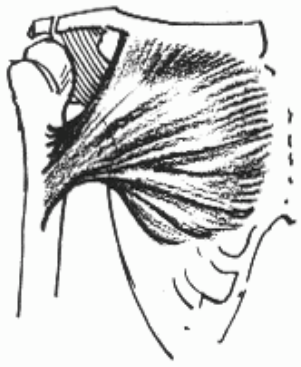
If you get into character drawing, you may do a fat fellow—but don't make him too young. Do not draw ears too large or protruding in any male drawing. The male hands should be exaggerated a little in size and in the ideal type must look bony and muscular. Soft, round hands on a man simply won't go.

The art director seldom points out your faults. He simply says he does not like your drawing. Any one of the above mistakes may account for his dislike. Ignorance of the demands upon you is as great a handicap as ignorance of anatomy.

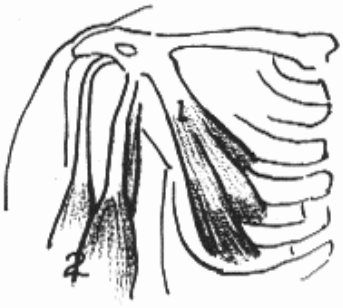
IMPORTANT BONES



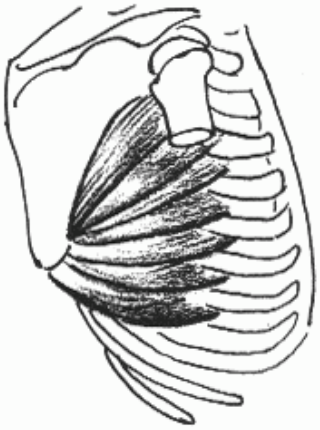
MUSCLES ON THE FRONT OF THE FIGURE



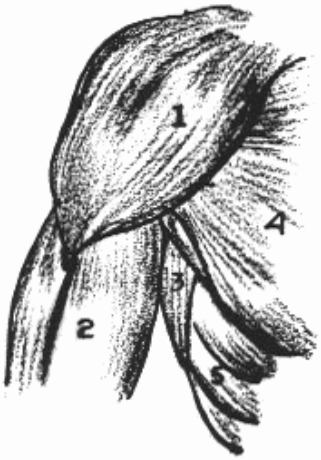
PECTORALIS MAJOR



1 PECTORALIS MINOR
2 BICEPS

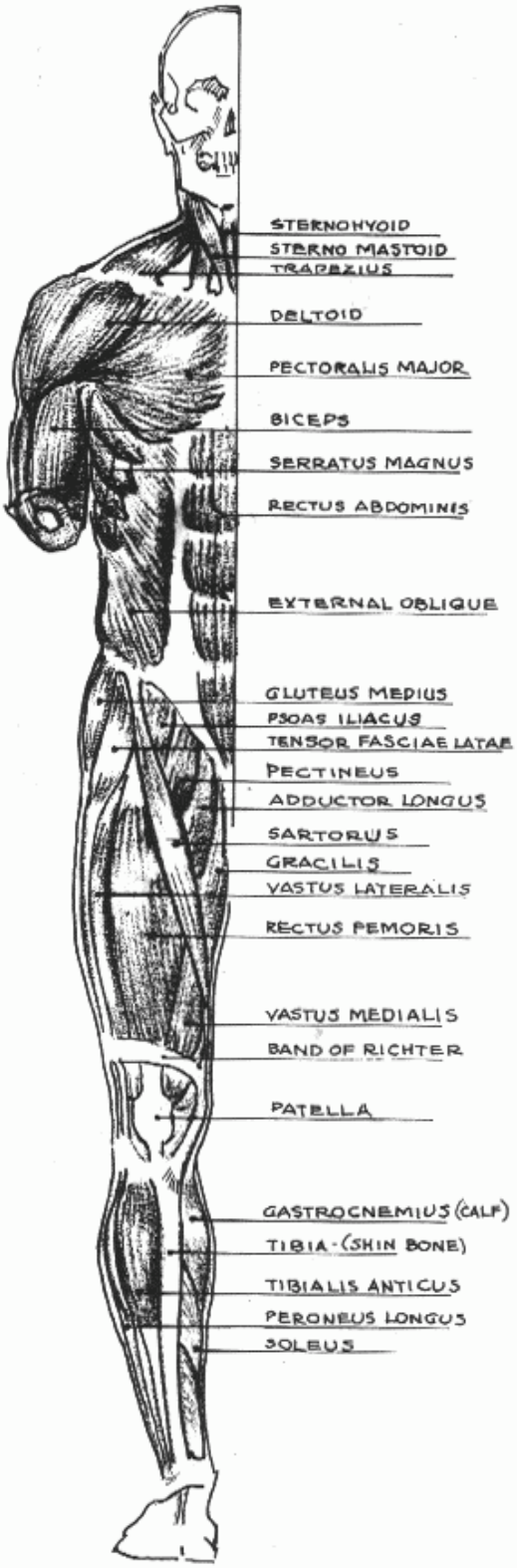


SERRATUS MAGNUS

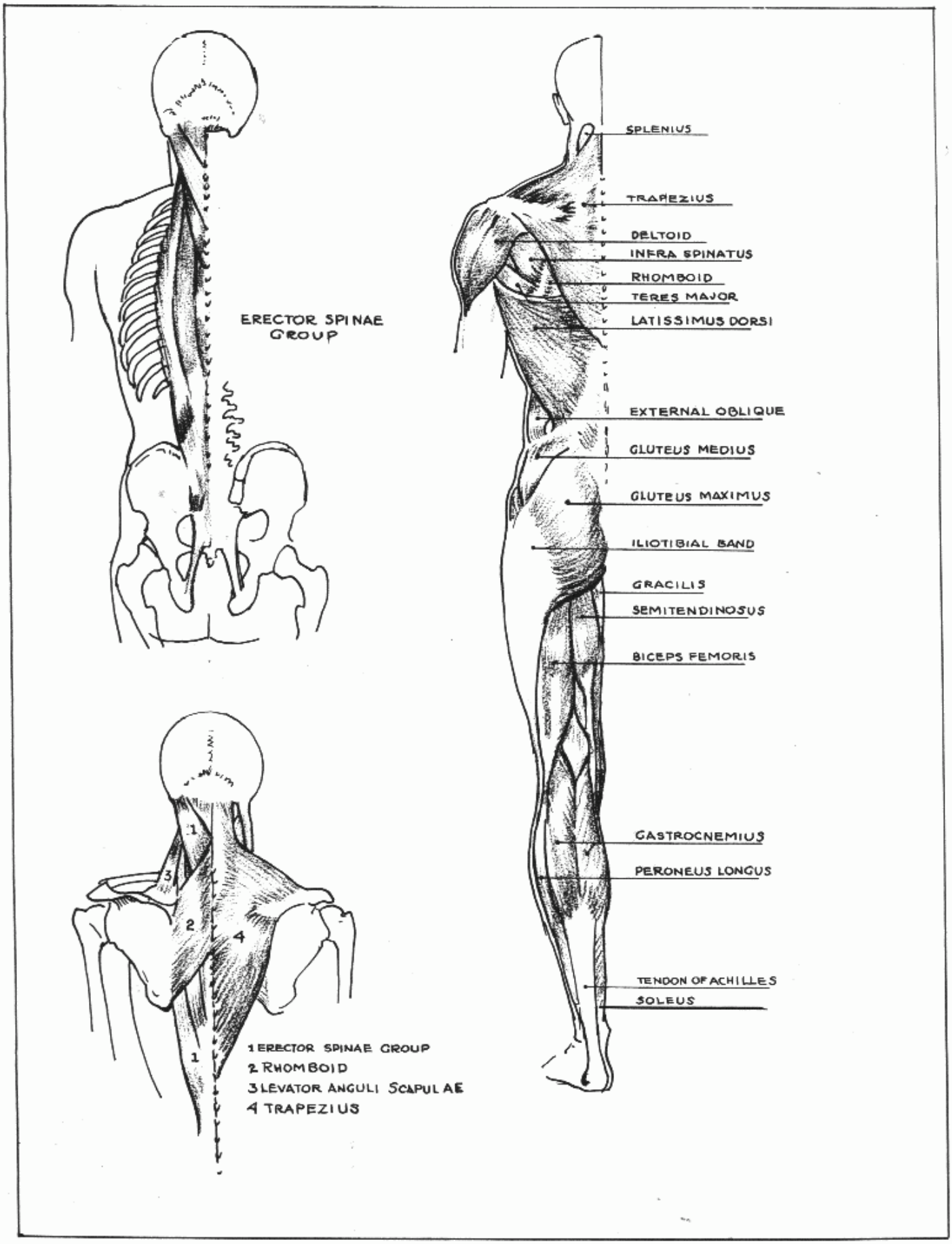


1 DELTOID
2 BICEPS
3 PECTORALIS MAJOR
4 LATISSIMUS DORSI
5 SERRATUS MAGNUS

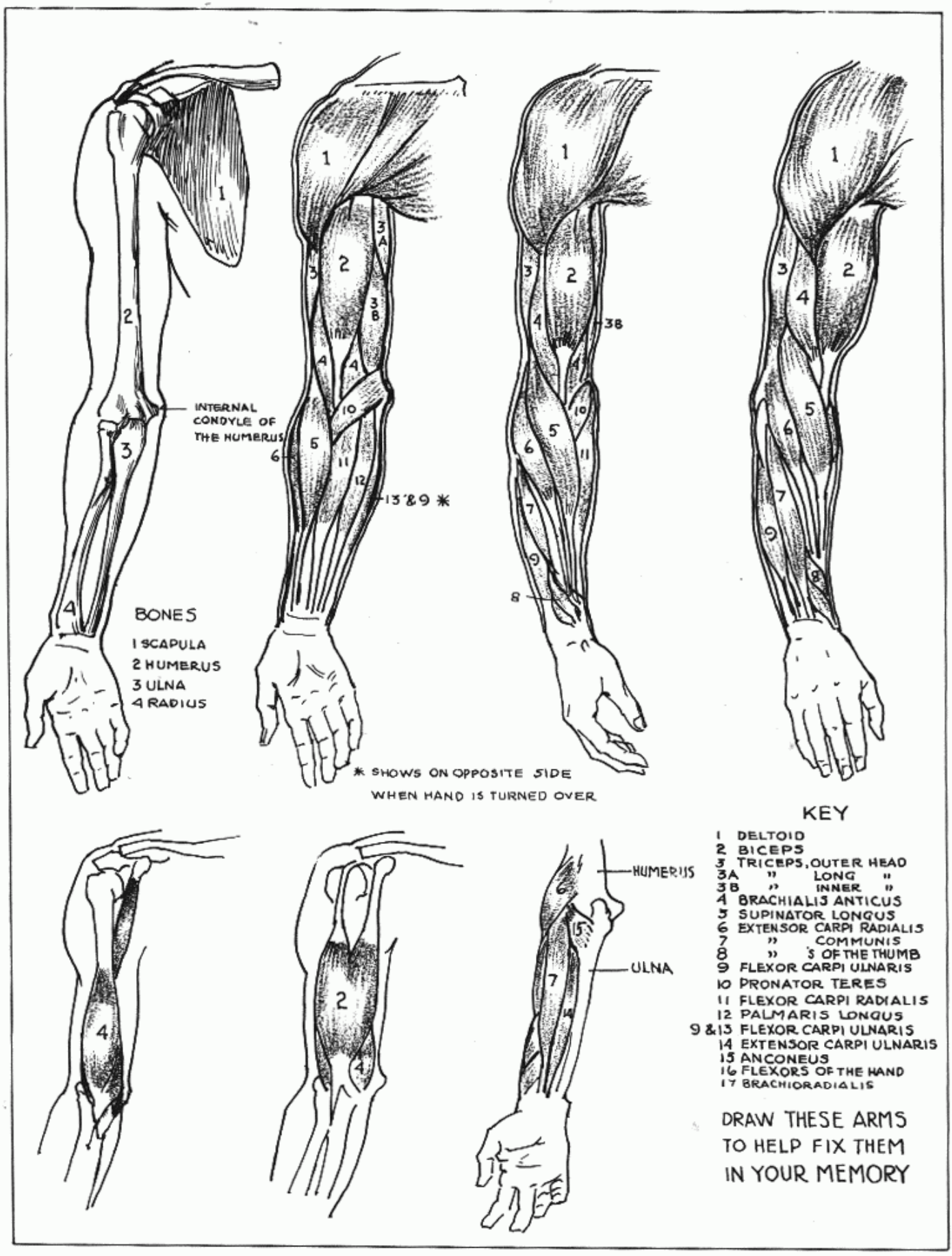
1 STERNO MASTOID
2 TRAPEZIUS
3 STERNOHYOID



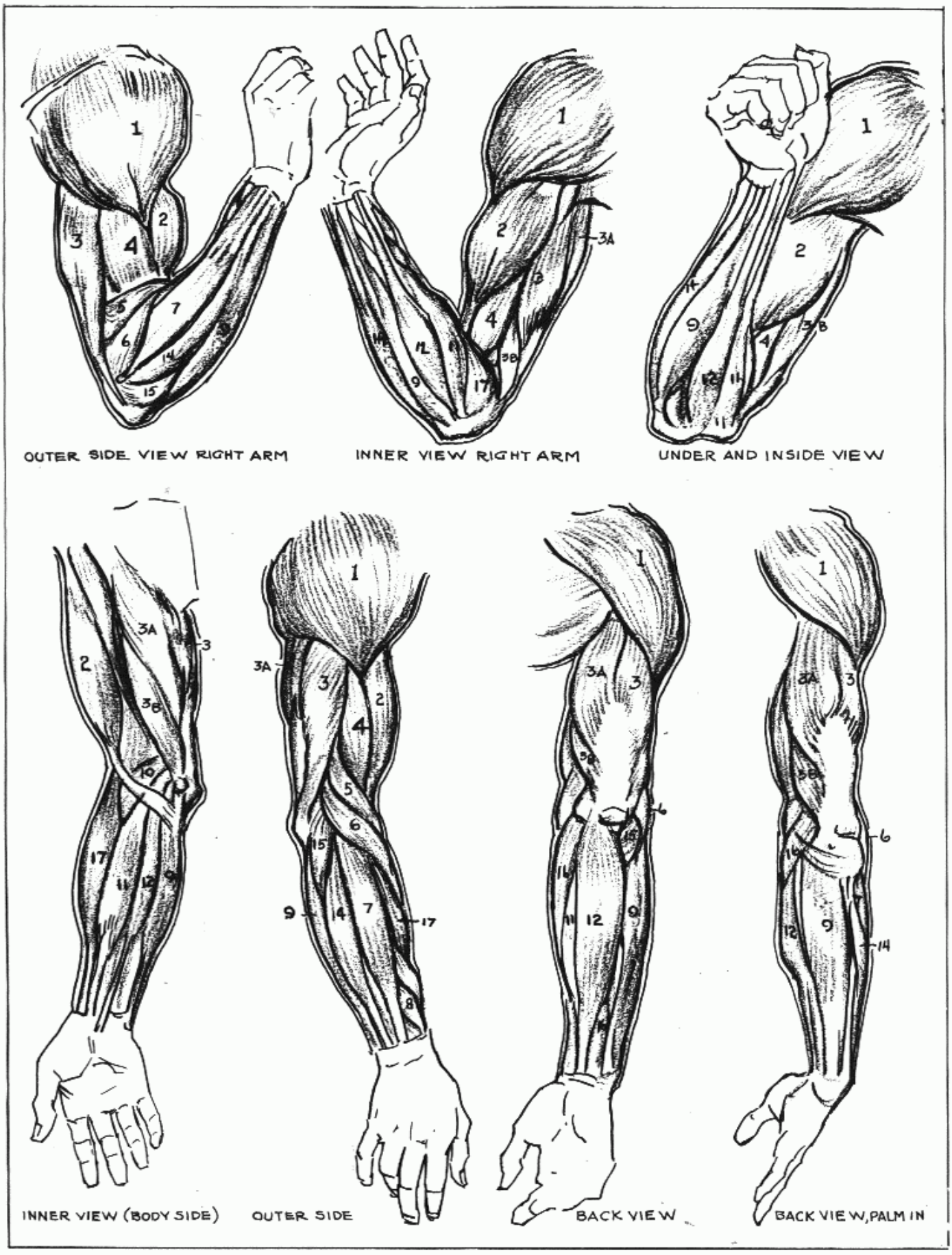
MUSCLES ON THE BACK OF THE FIGURE



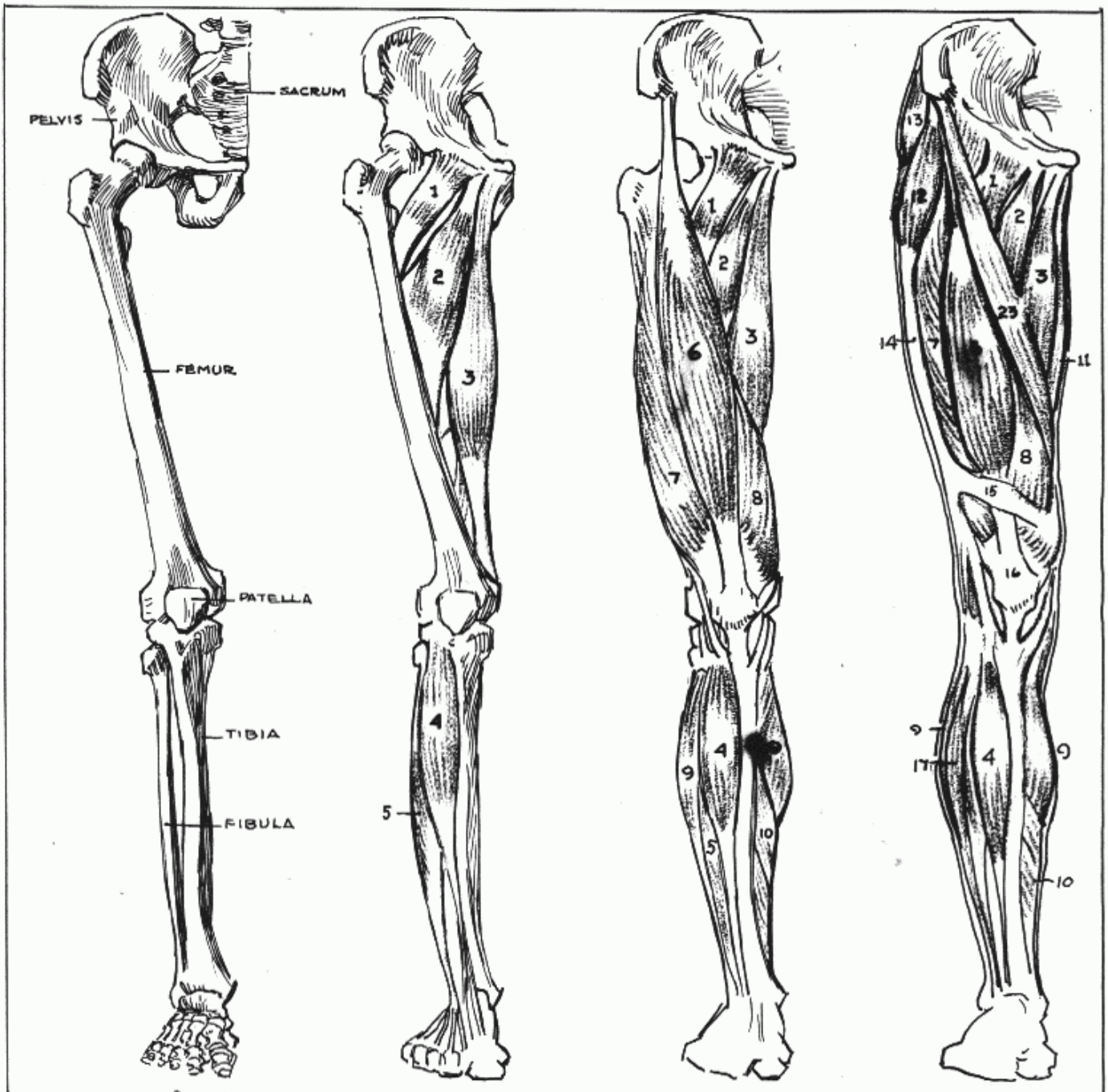
MUSCLES OF THE ARM, FRONT VIEW



MUSCLES OF THE ARM, VARIED VIEWS



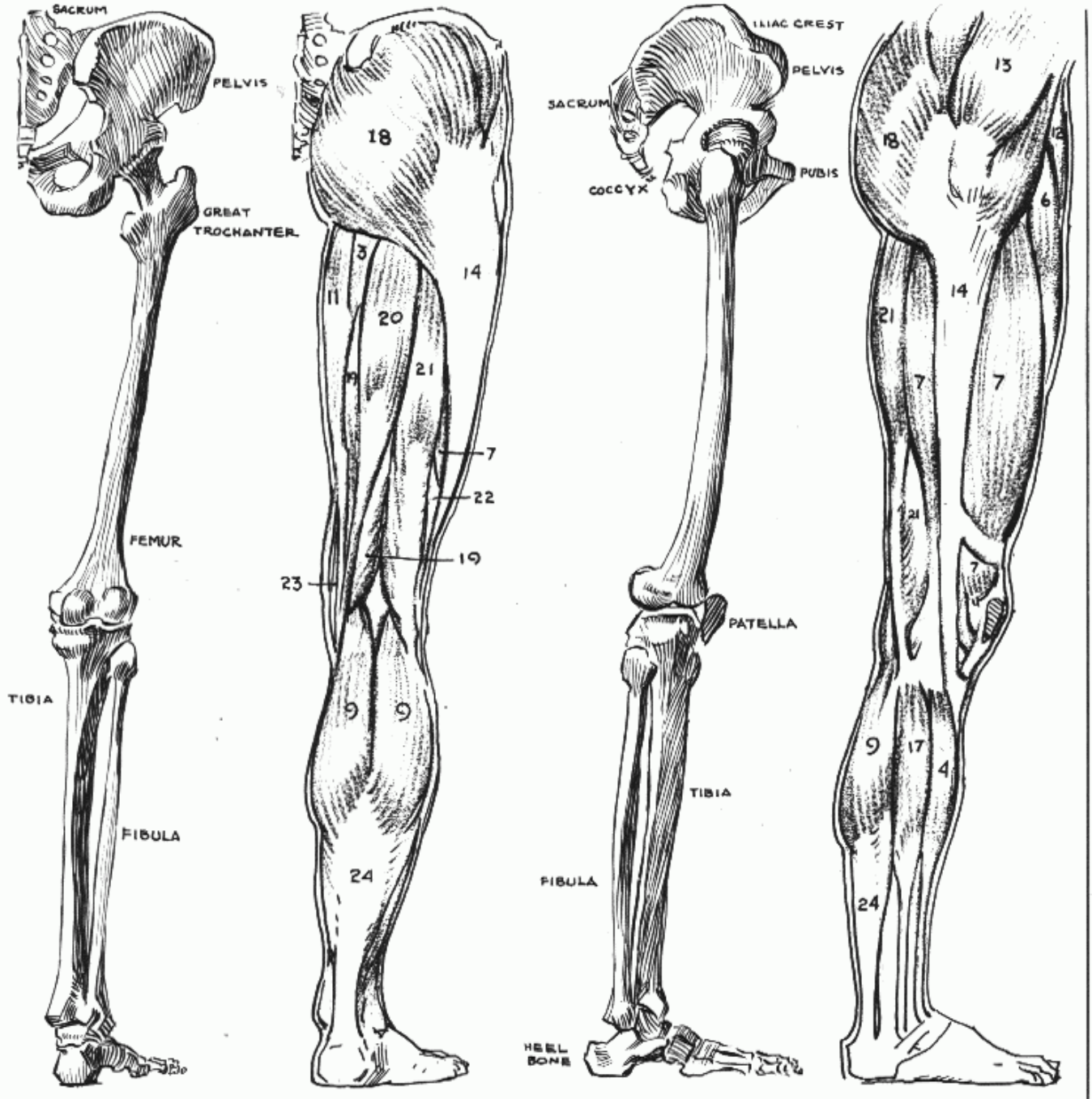
MUSCLES OF THE LEG. FRONT VIEW



MUSCLES OF THE LEG

1. PSOAS ILIACUS
2. PECTINEUS
3 ADDUCTOR MAGNUS
4. TIBIALIS ANTICUS
5 EXTENSOR LONGUS DIGITORUM
6 RECTUS FEMORIS
7 VASTUS LATERALIS
8 VASTUS MEDIALIS
9 GASTROCNEMIUS
10 SOLEUS
11. GRACILIS
12. TENSOR FASCIAE LATAE
13 GLUTEUS MEDIUS
14 ILIOTIBIAL BAND
15 BAND OF RICHTER
16 PATELLAR LIGAMENT
17 PERONEUS LONGUS
18 GLUTEUS MAXIMUS
19 SEMIMEMBRANOSUS
20 SEMITENDINOSUS
21 BICEPS FEMORIS
22 VASTUS INTERMEDIUS
23 SARTORIS
24 TENDON OF ACHILLES

MUSCLES OF THE LEG BACK AND SIDE VIEW



BACK VIEW

OUTER SIDE VIEW

THERE IS NO OTHER WAY TO ACQUIRE A KNOWLEDGE OF ANATOMY THAN TO "DIG IT OUT." STAY WITH IT UNTIL YOU CAN DRAW THE MUSCLES FROM MEMORY. GET FURTHER BOOKS ON THE SUBJECT. THE AUTHOR RECOMMENDS THE BOOKS BY GEORGE BRIDGMAN AS EXCELLENT. THERE IS ALSO A VERY FINE BOOK OF DIAGRAMS, "ARTISTIC ANATOMY" BY WALTER F. MOSES. IN THESE BOOKS, THE SUBJECT IS MORE EXPERTLY COVERED, AND MUCH MORE COMPLETE. "IT PAYS TO KNOW", SO STAY WITH IT!