

Burne Hogarth

**DYNAMIC
FIGURE
DRAWING**

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Introduction

Most art students—and too many professional artists—will do anything to avoid drawing the human figure in deep space. Walk through the life drawing classes of any art school and you'll discover that nearly every student is terrified of action poses with torsos tilting toward him or away from him, with arms and legs striding forward or plunging back into the distance; twisting and bending poses in which the forms of the figure overlap and seem to conceal one another; and worst of all, reclining poses, with the figure seen in perspective!

These are all problems in foreshortening, which really means drawing the figure so that it looks like a solid, three dimensional object which is moving through real space—not like a paper doll lying flat on a sheet of paper. Drawing the figure in deep space foreshortening is not a mere technical trick, not a mere problem to be solved; it's the essence of figure drawing as perfected by Leonardo, Michelangelo, Tintoretto, Rubens, and the other great masters of the Renaissance and Baroque eras.

But most art students would greatly prefer to draw the figure as if it were a soldier standing at attention, with the axes of the body and limbs parallel to the surface of the drawing paper, like a building in an architectural elevation. Well, no, they don't *really* prefer to draw it that way, but the dynamic, three dimensional, foreshortened figure is so forbidding that most students are inclined to give up and stick to wooden soldiers—though silently longing for some magic key to the secret of foreshortening.

Burne Hogarth's *Dynamic Figure Drawing* doesn't pretend to be a magic key-to-three-dimensional-figure-drawing

in-ten-easy-lessons, but it is a magical book. Here, for the first time, is a logical, complete system of drawing the figure in deep space, presented in step-by-step pictorial form. I've read every figure drawing book in print (it's my job) and I *know* that there's no book like it. The system and the teaching method have been perfected over the years in the author's classes at the School of Visual Arts in New York, where many of the dazzling drawings in this book — immense, life-size figures which the artist *invents* without a model — were created before the eyes of hundreds of awestruck students.

And surely the most stunning thing about *Dynamic Figure Drawing* is that Burne Hogarth teaches the *reader* to invent figures as the great masters did. After all, Michelangelo didn't ask his models to hang from the ceiling or hover in the air as he drew! He invented them—and this is what the author demonstrates in the carefully programmed series of drawings (with analytical text and captions) that sweep across these pages with the speed and graphic tempo of an animated film.

Dynamic Figure Drawing, in the author's own words, shows the artist "how to fool the eye, how to depress, bend, and warp the two dimensional plane" of the drawing paper so that a figure drawing springs from the page in the same way that the author's remarkable drawings bound from the pages of this book. He demonstrates how to create the illusion of roundness and depth by light and shade, by the overlapping of forms, by the transitions from one form to another, as well as by the accurate rendering of individual body forms. He explains how to visualize the figure from every conceivable angle of view, including the upviews and the downviews that baffle students and professionals alike.

Particularly revealing are the multiphase drawings — like multiple exposure photographs—in which figure movement is dissected, broken down into a series of overlapping views of the body, "frozen" at various stages of movement, so that the reader can see how forms change at each critical phase. Learning to see movement as a *process*, the reader can draw the figure more convincingly because he knows what happens to body forms at each stage of the process. The reader ultimately finds that he can *project* the figure—from any viewpoint and in any stage of any action—as systematically as an architect projects a building in a perspective drawing.

Burne Hogarth's achievement in *Dynamic Figure Drawing* is the creation of a rational system which eliminates the guesswork that plagues every student of the figure. This system isn't a shortcut, a collection of tricks to memorize in order to produce stock solutions to drawing problems—for nothing can make figure drawing *that* easy. The human figure remains the most demanding of all subjects for the artist. What *Dynamic Figure Drawing* reveals is the inherent logic of the figure, and the author proposes a system of study that is built on this logic. The system takes time and patience and lots of drawing. You'll want to reread *Dynamic Figure Drawing* many times. Give this remarkable book the dedication it deserves and the logic of the human figure will finally become second nature to you. Your reward will be that you go beyond merely rendering figures — and begin to invent them.

Donald Holden

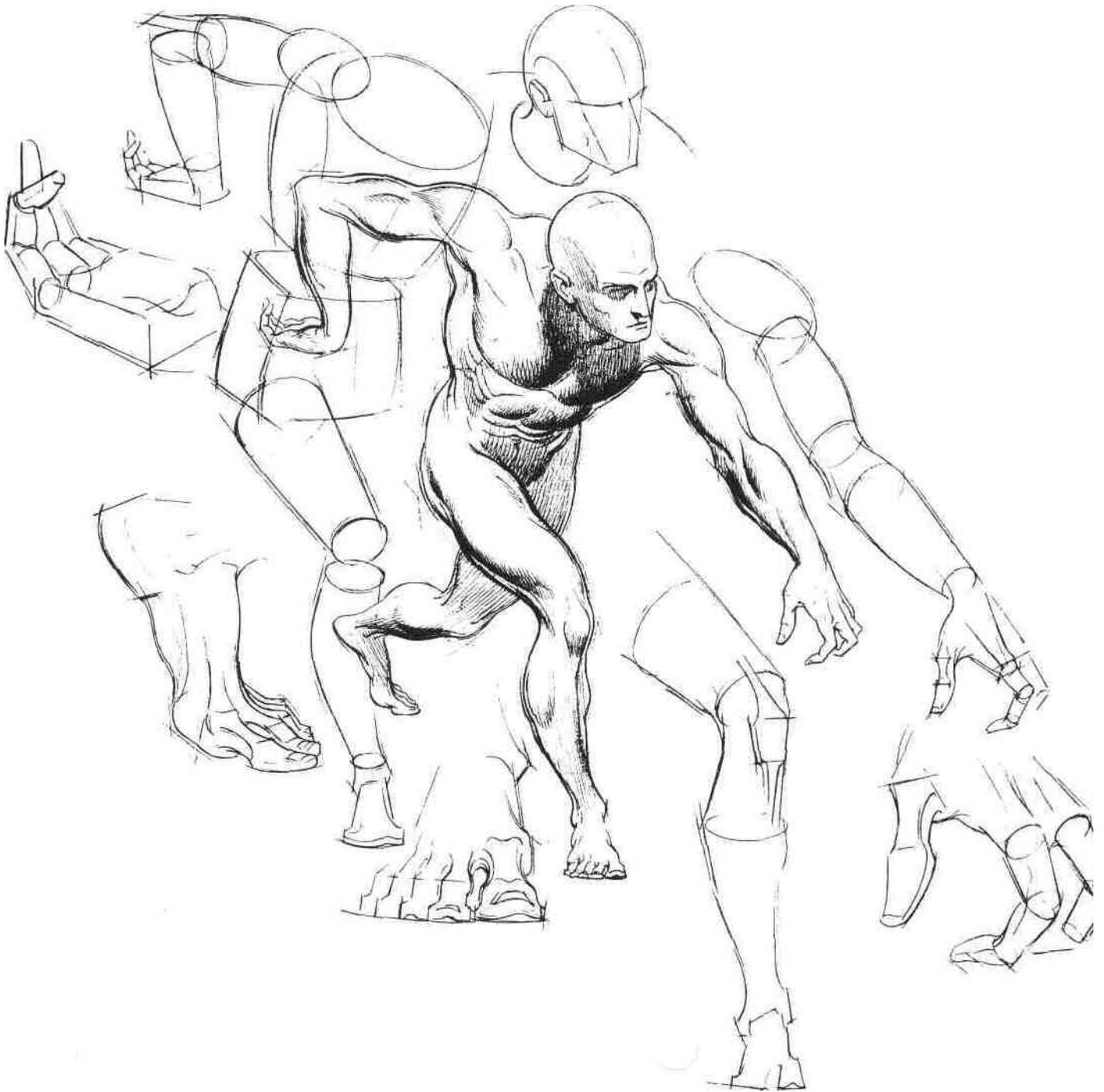


Figure drawing in depth is accomplished with ease and authority only when the student becomes aware of the characteristic body forms. He must train his eye to see three kinds of forms in the human figure: *ovoid* forms (egg, ball, and barrel masses); *column* forms (cylinder and cone structures); and *spatulate* forms (box, slab, and wedge blocks). These three kinds of forms should be distinguished from one an

other and studied separately according to their individual differences. Comparisons should be made with respect to relative shape, width, and length and special emphasis should be placed on variations in bulk, thickness, and volume. This is an approach which seeks to define the body as the harmonious arrangement and interrelationship of its separate and individual defined parts.

The Definitive Body Forms

At some point in the art student's development, figure drawing reaches a stage where better performance becomes the norm. With his work at this level, the student may be able to draw a variety of natural forms (those usually seen in landscape and still life) in space. Capable as his work appears at this point, the student should develop a deeper insight into the forms and interrelationships of the parts of the figure. He may be thoroughly familiar with figure work in conventional attitudes, with depicting the posed movements and gestures of the art class model; but these, if the student is aware, begin to look predictably dull and static.

It takes a different kind of effort to conceive and draw the figure in *deep foreshortening*, in form-over-form spatial recession. If the student is called upon to show the unexpected and unfamiliar actions of the body—those seen from high or low angles he feels taxed to the limit of his resources. At times, in direct confrontation with the live figure, he may do passably well by copying the model in the see-and-draw studio method; but this approach is not always successful or satisfying. To invent, to create at will out of the storehouse of his imagination—that is the challenge which so frequently eludes the most intensive efforts of the art student.

Shape-Masses of the Figure

The significance of foreshortened form lies in describing three dimensional volume rather than in delineating flat shapes. Our approach, therefore, in

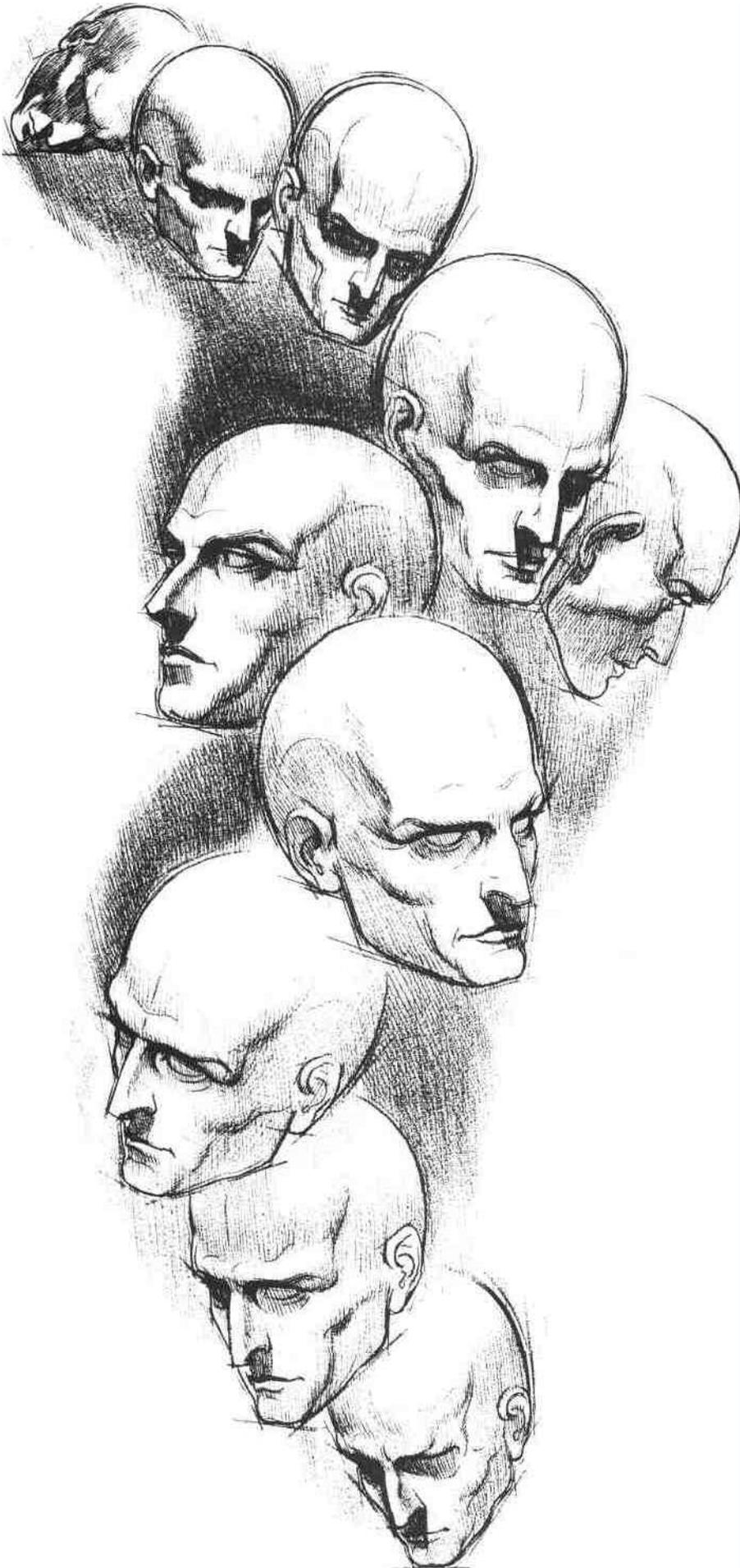
involves more than contour drawing only. Since shape which is delineated only by outline is two dimensional and has no volume, it cannot express form in depth; but when the forms of the figure are visualized as being three dimensional in space, the result is a *three dimensional shape-mass*.

Inherent in the concept of shape-mass is the idea that the body is a defined mass, a three dimensional volume existing in space and depth, which is made up of a number of parts. Each of these parts is also a three dimensional volume existing in space and depth. It follows that the figure is a multiform complex of shape-masses, all independently formed and all related. It will be our first task to research the form properties of each of these shape-masses which go into the formation of the over-all shape-mass of the figure. In observing the parts—the shape-masses — of the human figure, we shall try to look at them from new angles, from a series of changing viewpoints, describing them especially with a "filmic" concept of vision in motion.

Shape-Masses of the Head:

Ball and Wedge

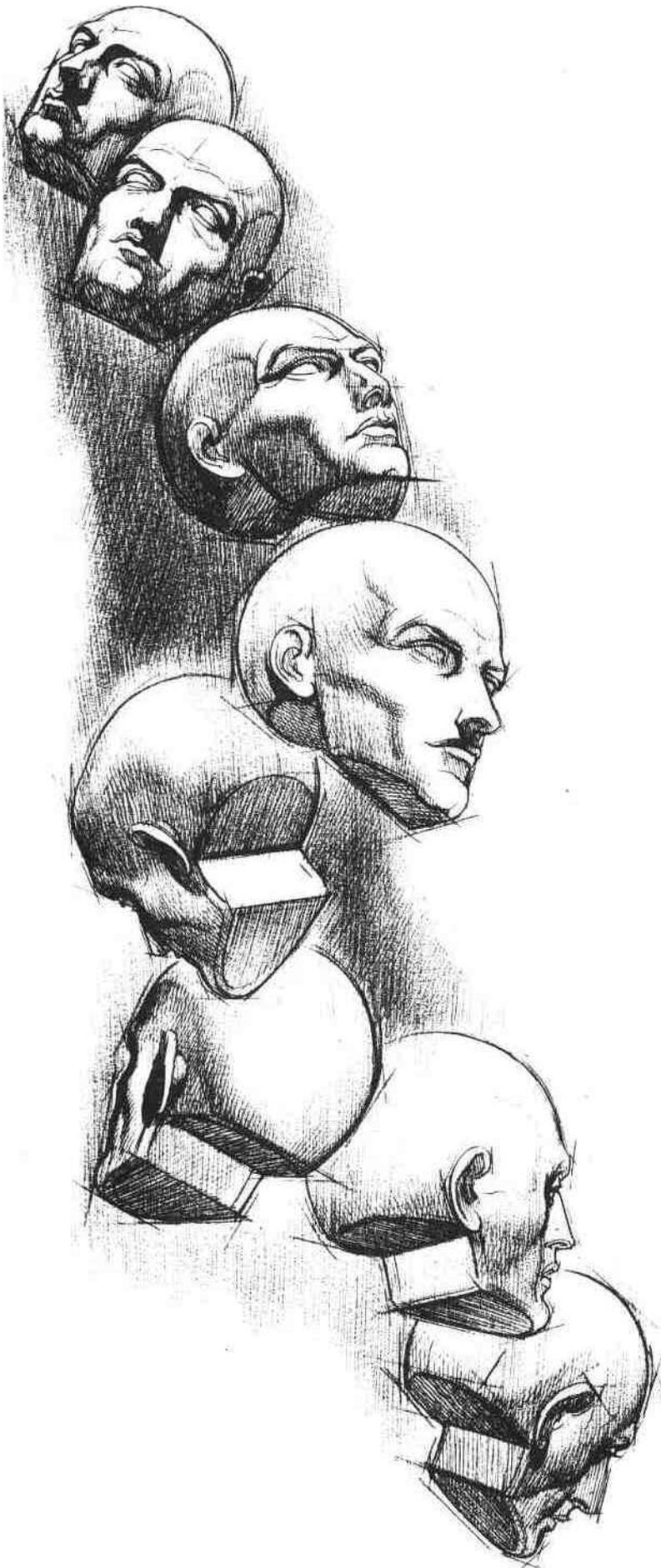
Different views of the head expose different dominant forms. The cranial ball, for instance, is usually considered fairly equal in size to the lower facial wedge. This is especially apparent in straight-on, front views. But when the cranial ball is seen from an overhead angle, it presents a far more impressive bulk than the facial wedge.



As we observe the head from a high position, from the top the crania vault dominates the narrow, constricted mass of the face coming from under the projecting brow arch.

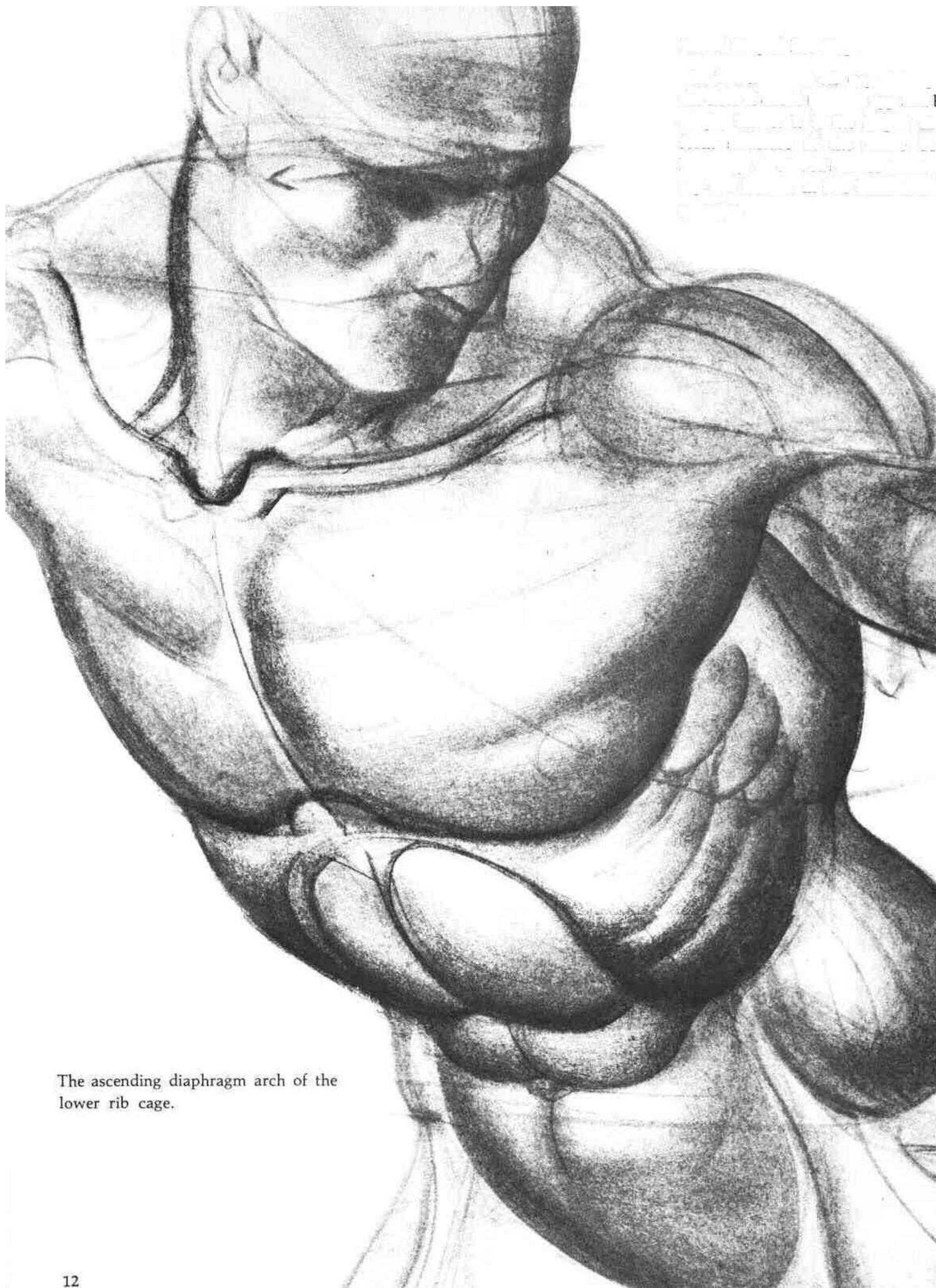
As our viewing angle becomes lower, the facial mass tends to enlarge as the cranial mass recedes.

Then, as our vantage point is raised once more, this time in a right-to-left turn, the cranial mass is once again dominant.



From a bottom view, the wedge of the face takes on a more important appearance in relation to the cranial structure. The features of the face reveal a new aspect: looking upward at the face from underneath, we see the undersurfaces of the jaw, lips, nose, ears, and brow, and these forms assert a commanding presence over the side and frontal planes.

From the rear, the skull case and the facial wedge show their most characteristic differences in shape: the facial wedge, angular and hard-cornered, is small when contrasted with the larger, dome-shaped cranial mass.

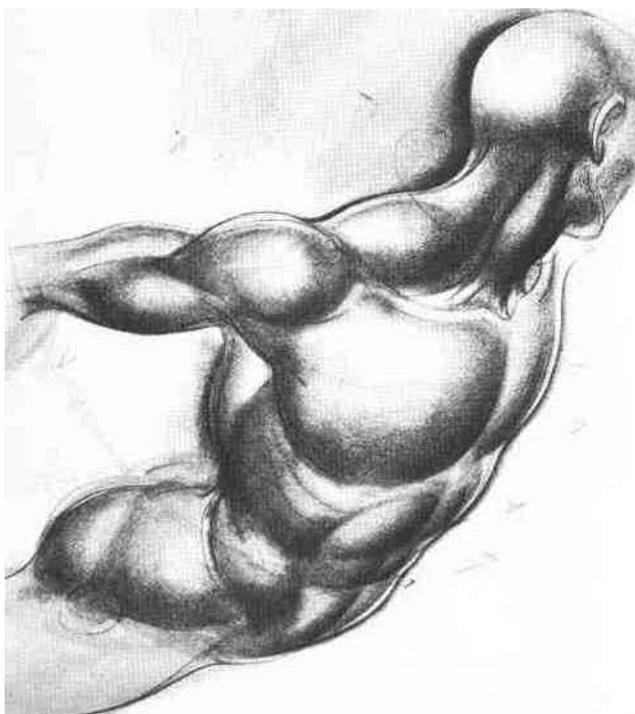


The ascending diaphragm arch of the lower rib cage.



The descending collarbone depression of the upper chest (left).

When the figure is tipped forward into a deep frontal view, the swelling curve of the rib cage, front to rear, is so great that it is able to girdle the head within its encircling contour (below).



The cylindrical column of the neck emerges like a thick, short tree limb growing from within the triangulate hollow of the chest (left).



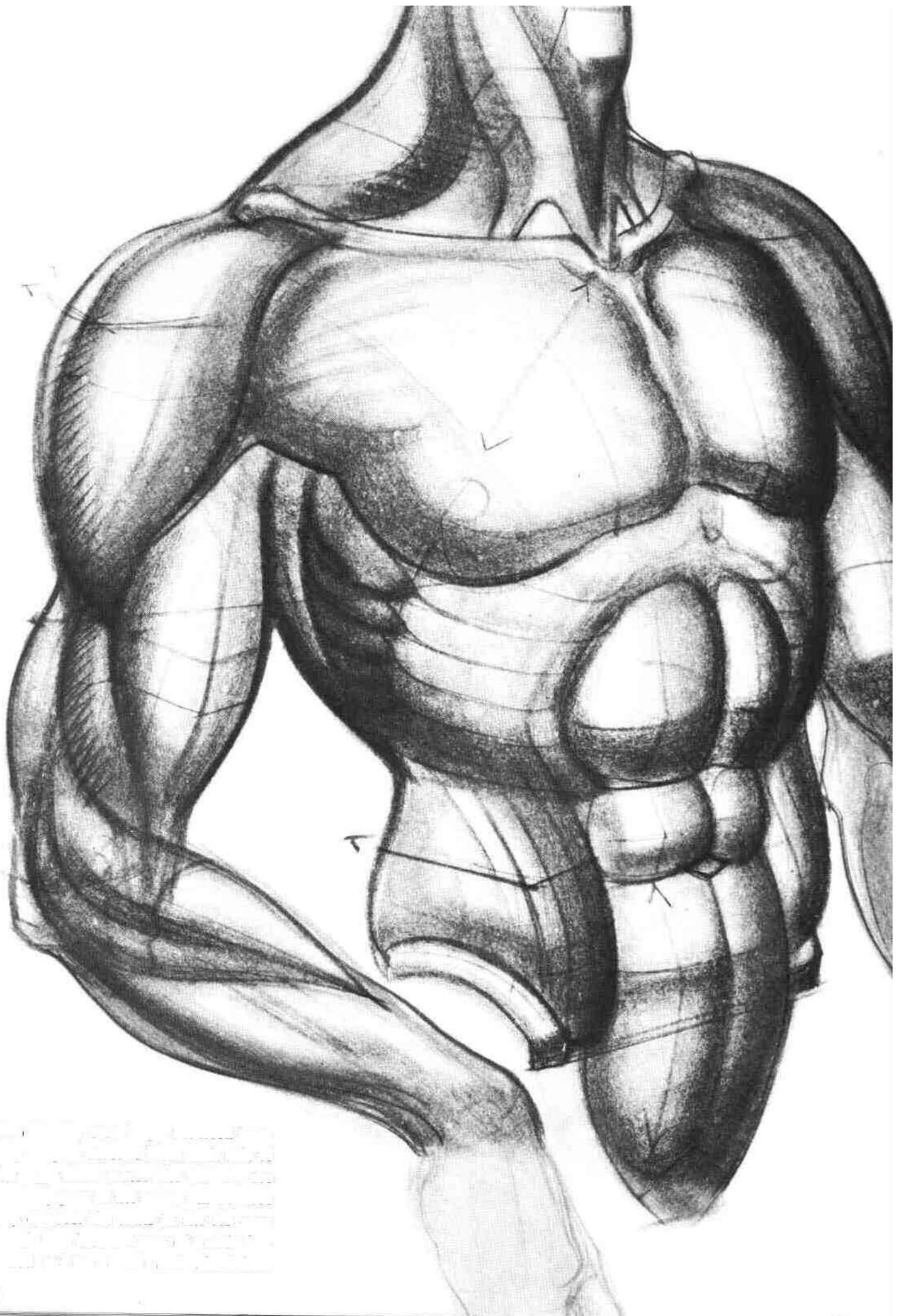
In any view looking upward, the barreling chest mass dominates all other forms; like a curving landscape, the pectoral arch overlaps the neck.



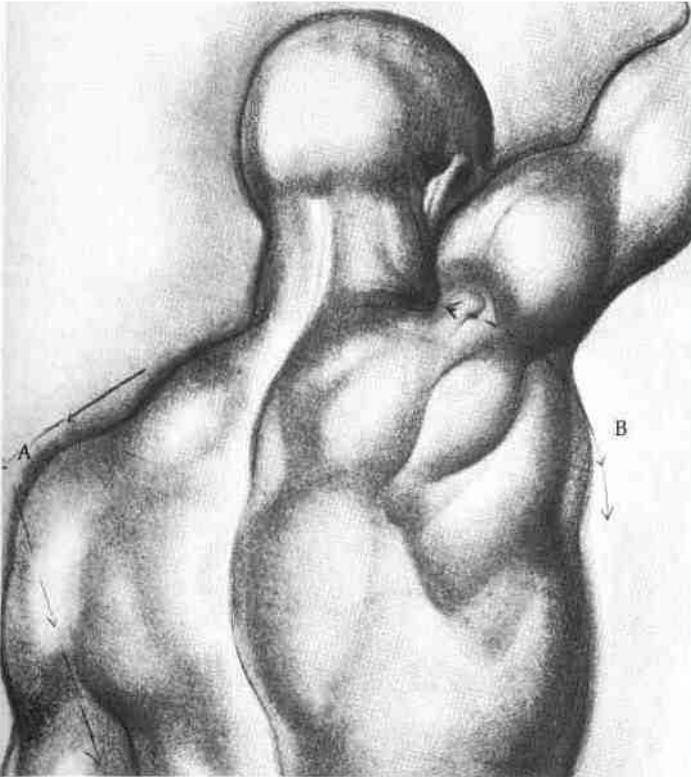
This torso, shown upview front, reveals how much larger the mass of the chest is compared with its attached members, the head and shoulders.



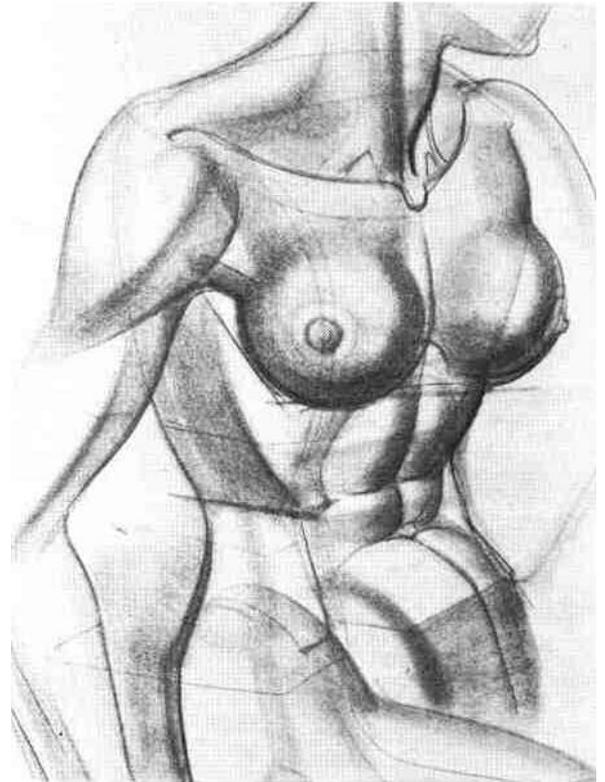
The upper back, shown upview rear, is ample enough to obscure the greater part of the head and conceal the attachment of the neck column to the chest.



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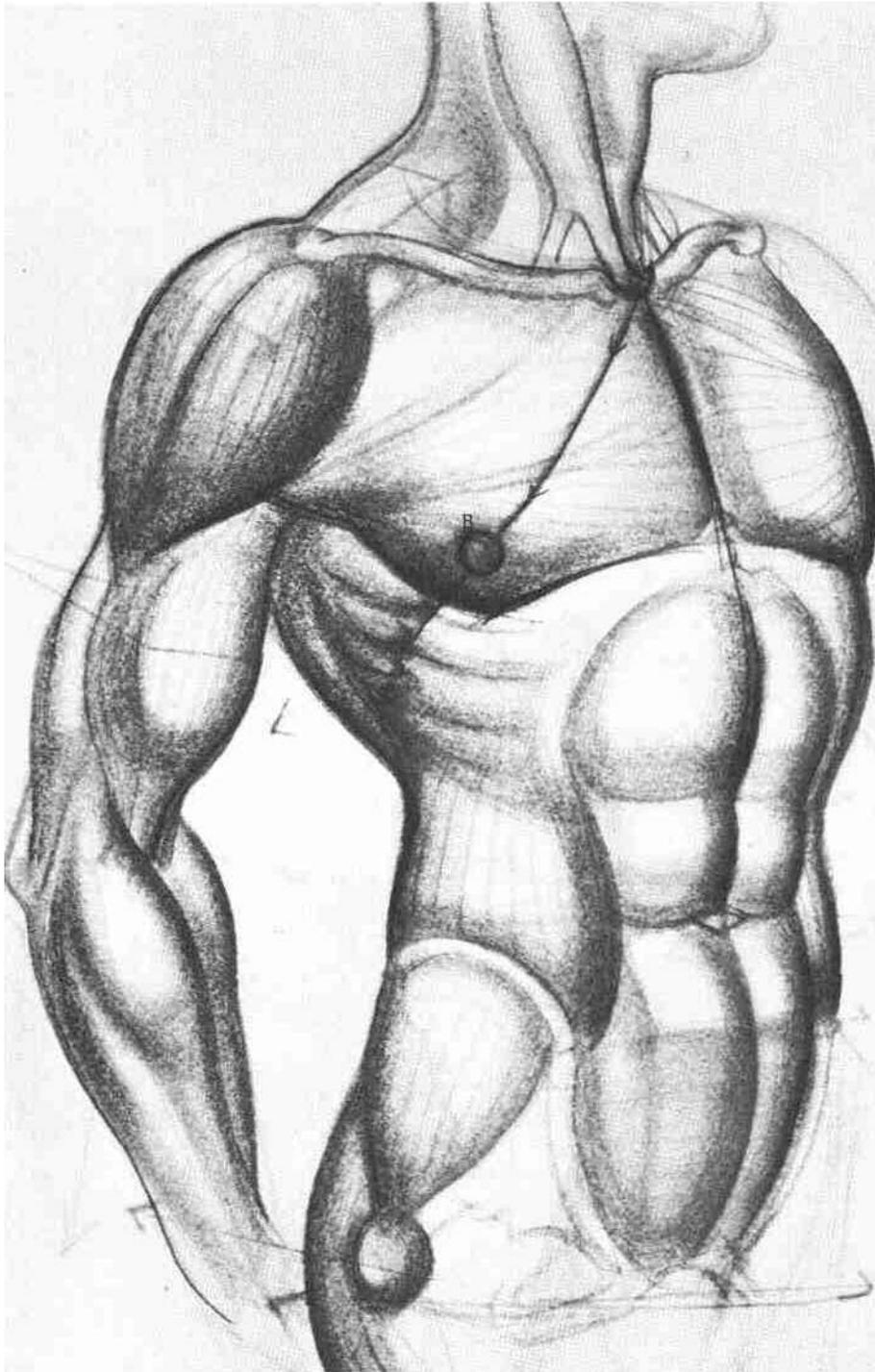
When the *chest and shoulders* are considered as a combined form, we must be aware of a change in appearance in the upper chest mass: with the arm down (A), the shoulder merges with the chest (in this position, the upper torso takes on the qualified appearance of a *wedge*); and with the arm upraised (B), the shoulder lifts from the chest, exposing a *barrel* shape (above).



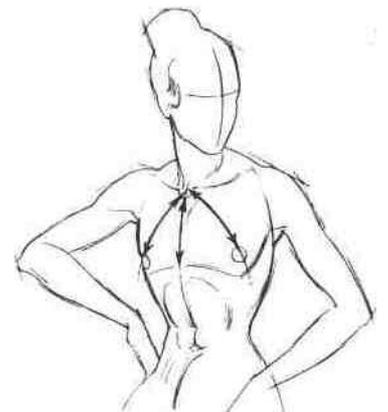
Special note should be made of the drawing of *female breasts* on the rib cage. In general appearance, the young adult female breast has the look of an overturned teacup positioned at the lower angle of the chest (above).



The diaphragm arch appears as a great, vaulting tunnel of bone at the base of the front of the chest. From this opening, like the hollow bottom of a brandy bottle, the long abdominal mass emerges and descends in three undulant stages, or tiers. It should be observed that the terminal belly form (the third tier), starting at the lower level of the navel and compressing to the pubic arch, is not only the largest of the three stages, but is roughly equivalent in size to the frontal head mass of this figure (left).

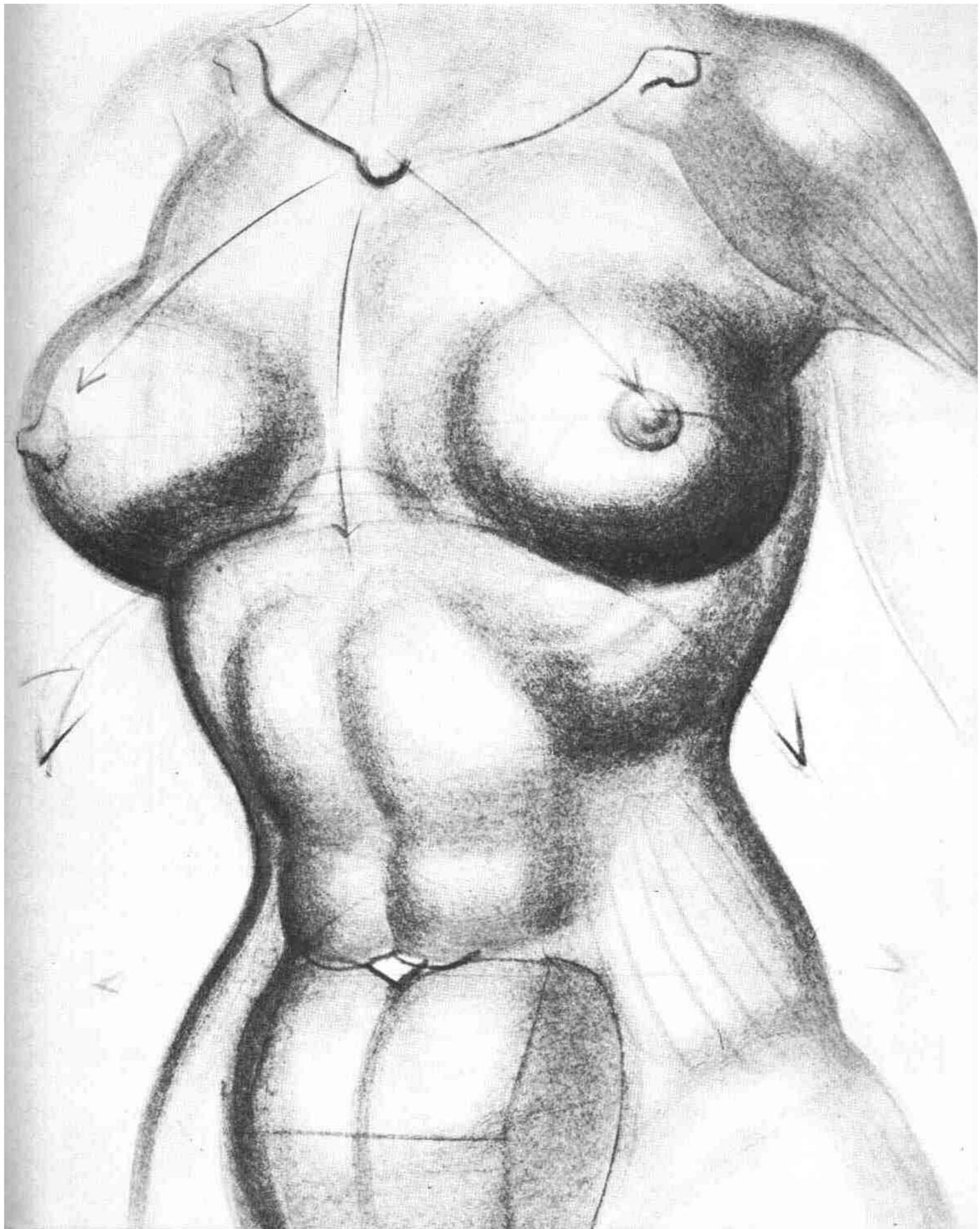


A
 To place the breast correctly, it is necessary first to find the position of the *nipple* on the chest muscle. Using a male figure (for the sake of clarity), we start at the pit of the neck where the collarbones join (A). From this point, we plot a curve at a 45° angle to the vertical, central line of the body, which follows the barrel shape of the rib cage and progresses outward and down across the chest. The nipple disc (B) is located on this line just above the deep corner margin of the chest muscle.



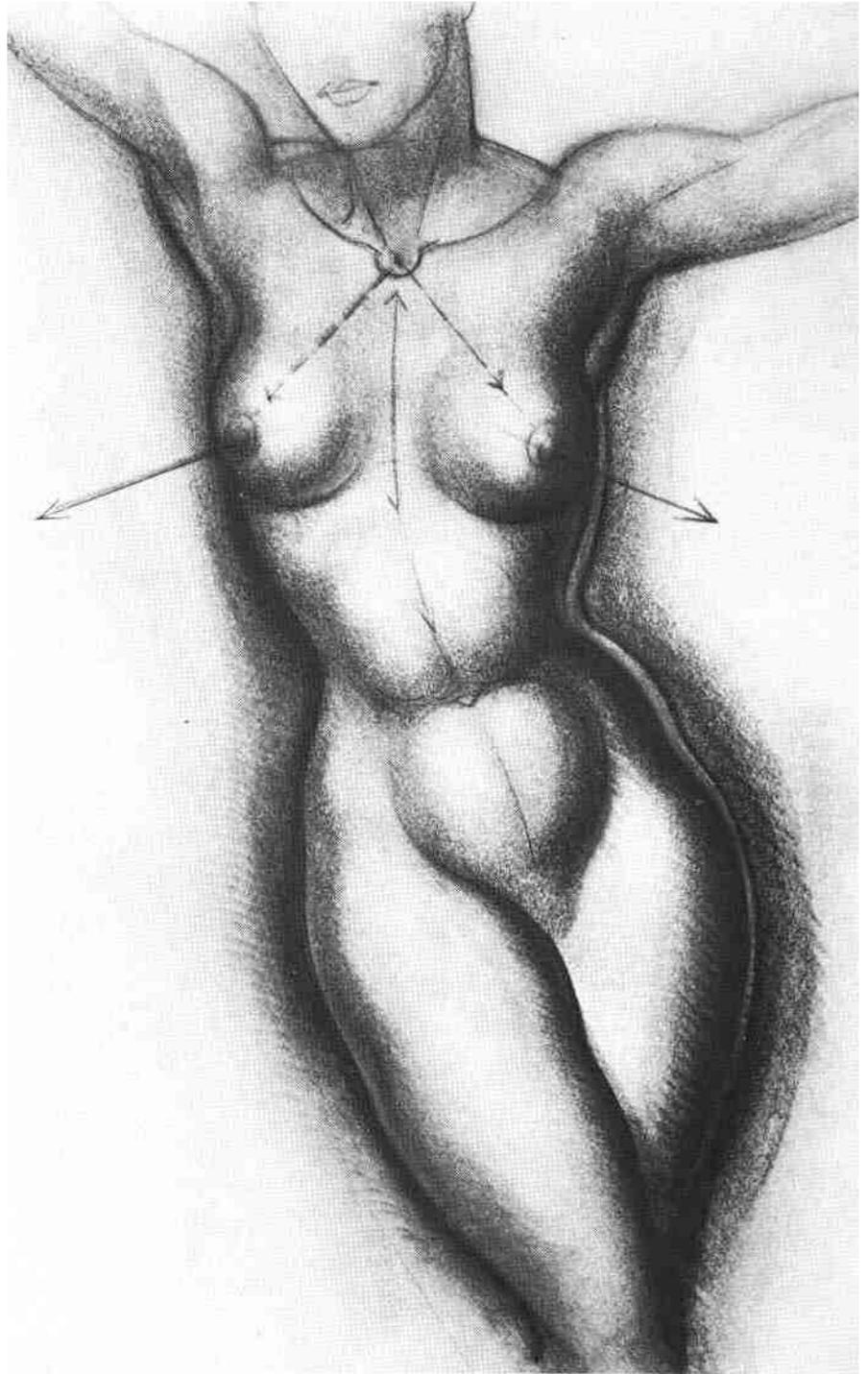
A
 If we draw two 45° lines outward from the center body line to the right and to the left across the chest barrel we can correctly place the nipples of the chest base (above).

When the cuplike breasts are superimposed posed on the nipple positions, and the discs are advanced to the surface of the breast mounds, note that *both* breasts point off the curve of the chest at a *combined* angle of 90° (right).





When both breasts are shown, especially in a three quarter view, they can *never* be seen simultaneously from a direct, frontal position. One breast will be seen with its centrally located nipple disc face on, while the other will be seen in a side view, with its nipple projecting in profile.



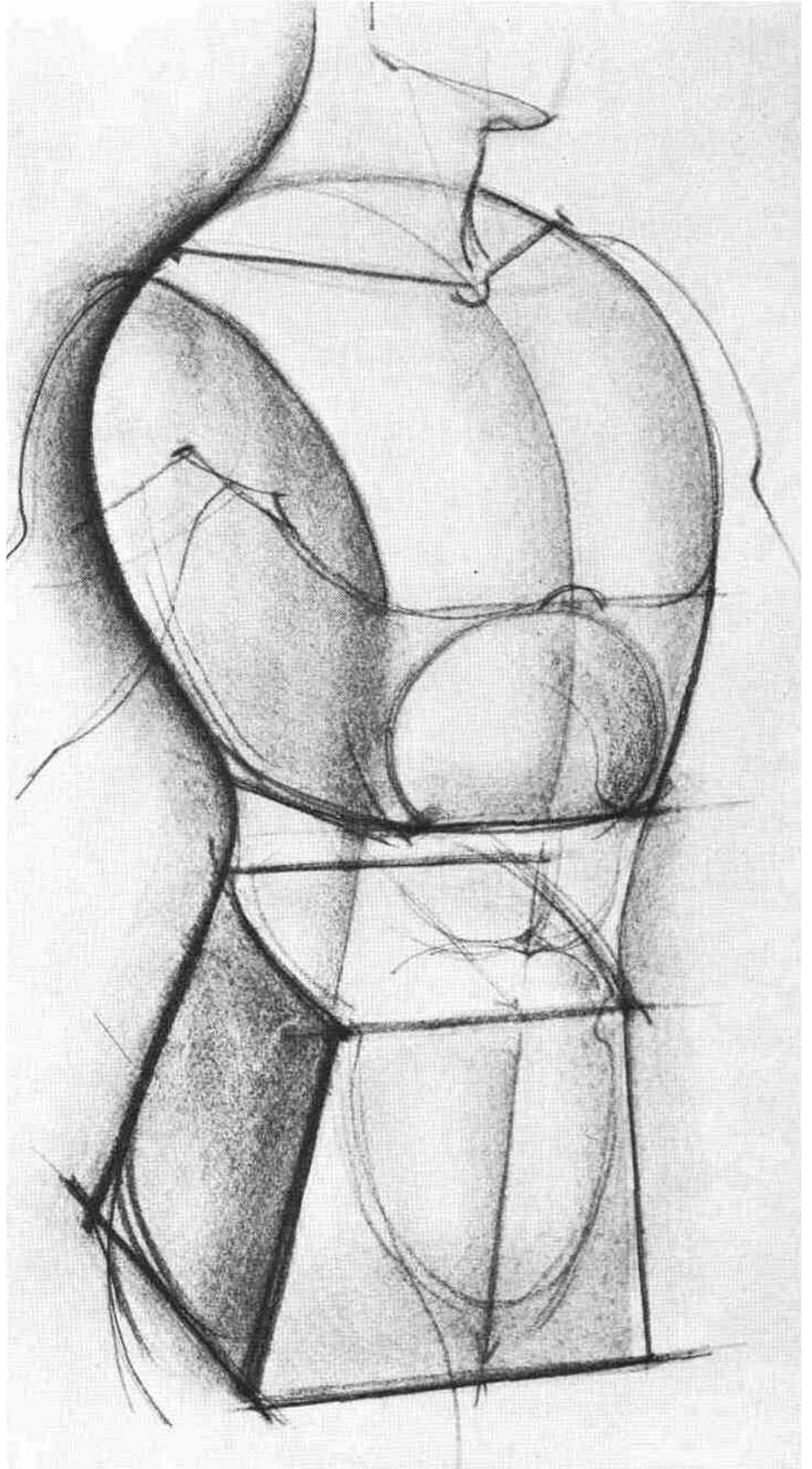
In observing the full front view of the body, note an interesting contradiction *neither* breast is seen frontally; *both* breasts in this case point *away* from the direct line of vision in an off-angle outward direction.



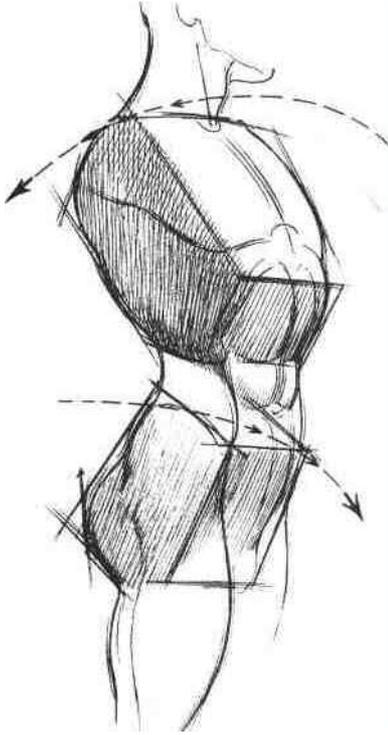
Observe the positioning of the nipple discs; check the 90° angle at the pit of the neck for the correct placement of the nipples.

The Wedge Box of the Pelvis

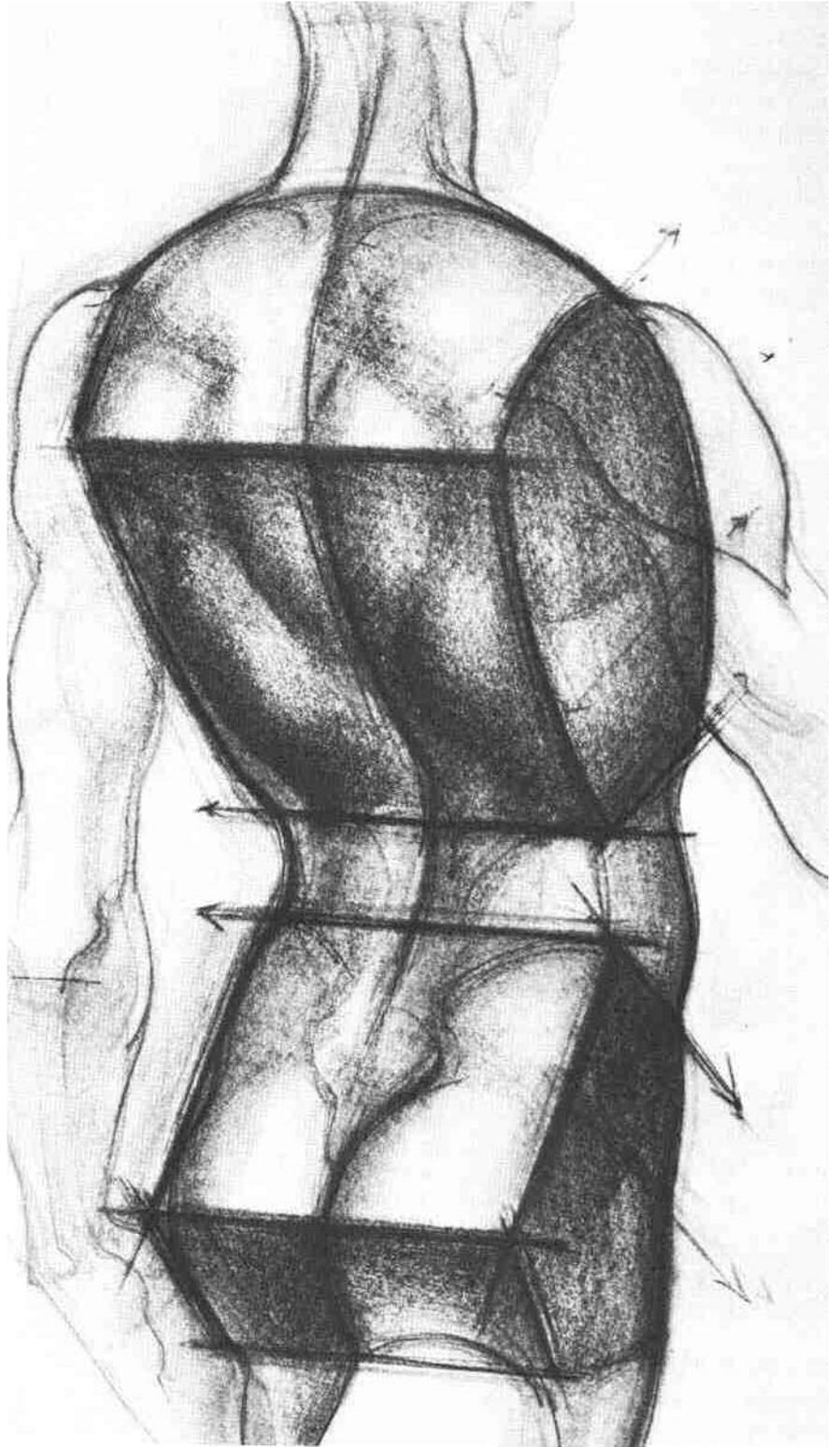
The lower torso (the pelvic mass) has the general shape of a wedge box, in direct contrast to the upper torso (the rotund barrel of the rib cage). After the rib cage, the pelvic wedge is the second largest mass of the body. Locked to the barrel by the tapering muscles of the waist, the wedge box is narrow at the top, broader at the base.



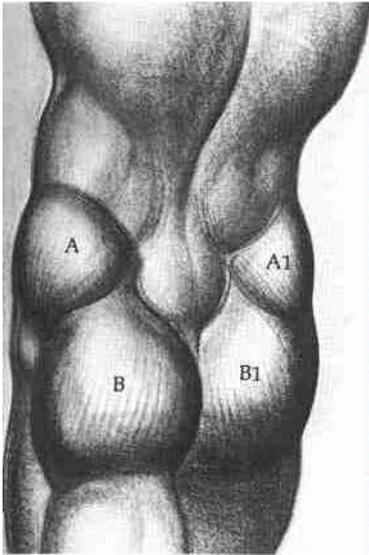
Schematic rendering of the two torso masses: the wedge box of the pelvis and the barrel of the rib cage.



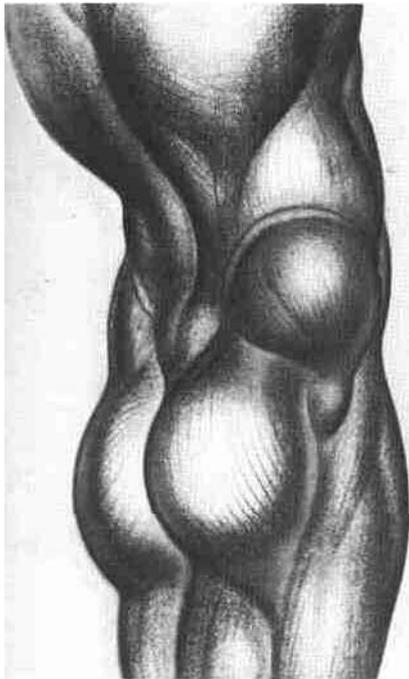
In the normal, erect attitude of the body, the two torso masses express an inverse, counterpoised relationship: the barrel is tipped back, the shoulders are drawn rearward, and the chest facade is exposed.



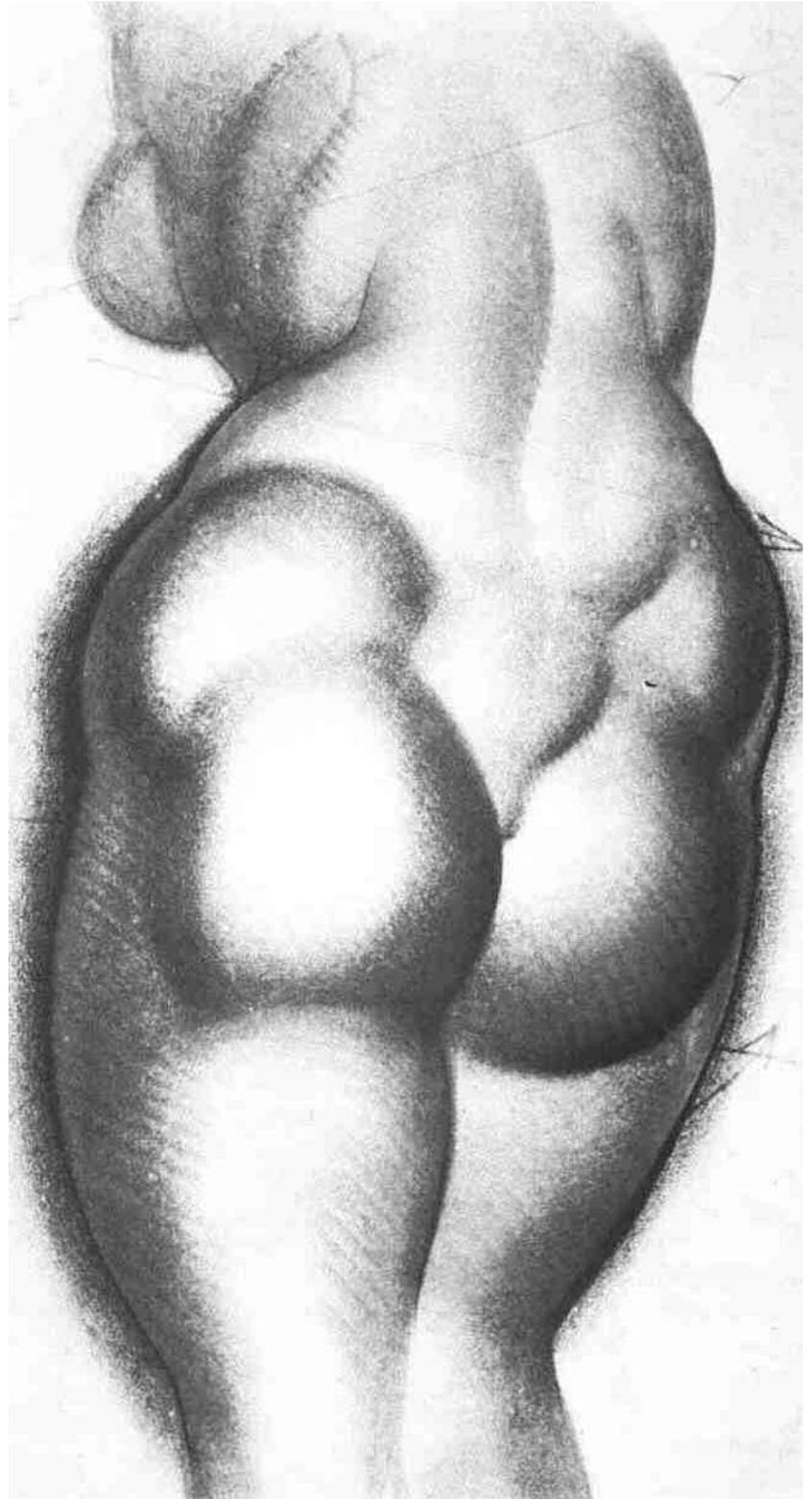
Here, the lower pelvic wedge is tipped forward, the underbelly is recessive, and the rear buttock area arches upward into view.



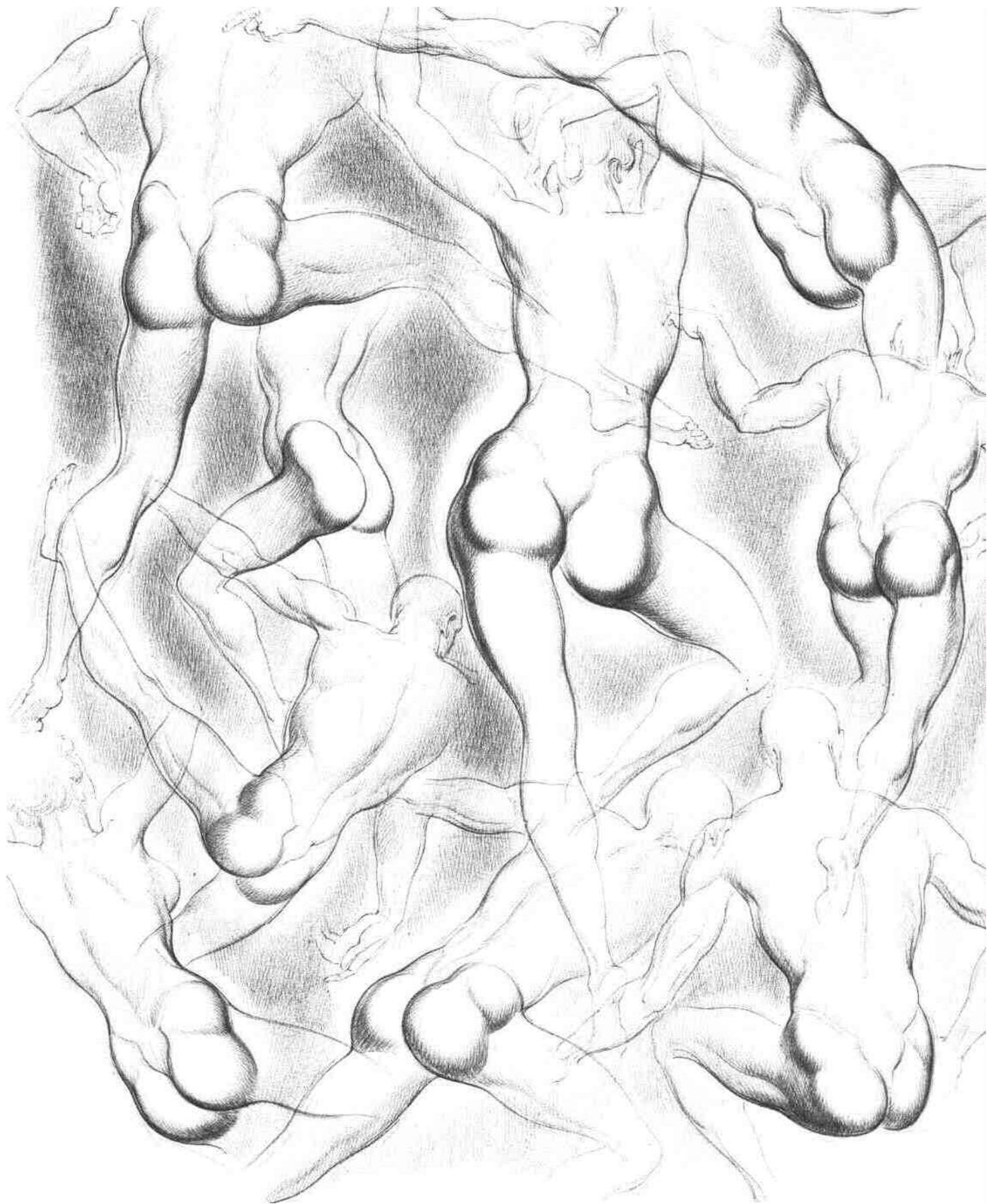
In a rear view of the lower torso wedge, the pelvic region is seen as a compound form with a *butterfly* shape. The wide gluteus medius masses, under the arched hipbones, form the *upper wings* (A, A1), and the thick gluteus maximus masses (the buttocks) form the close-set *under wings* (B, B1).

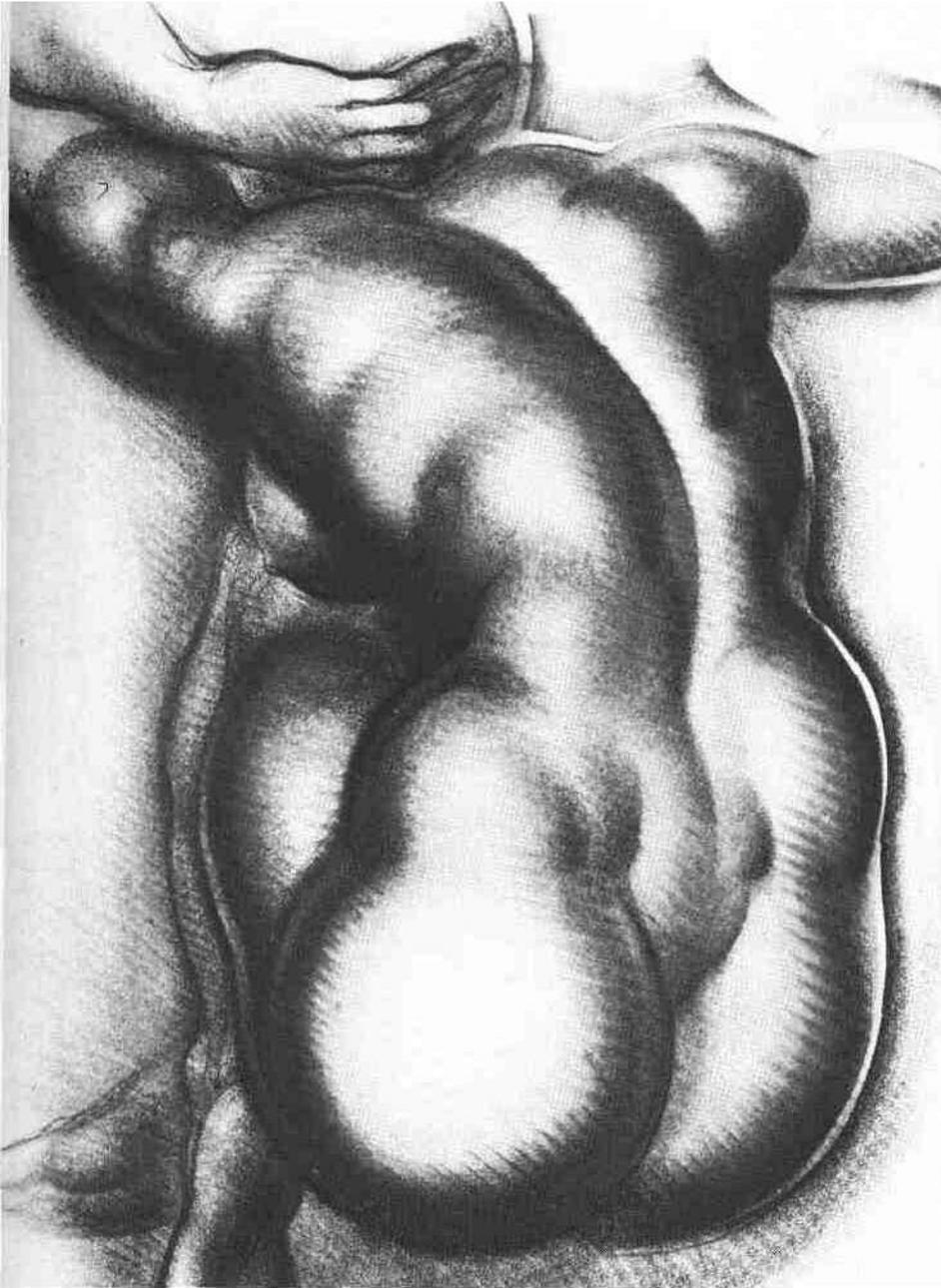


The butterfly wedge easily identifies the pelvic wedge masses in this rear, almost side, view. The wing forms are overlapped and foreshortened from front to back.

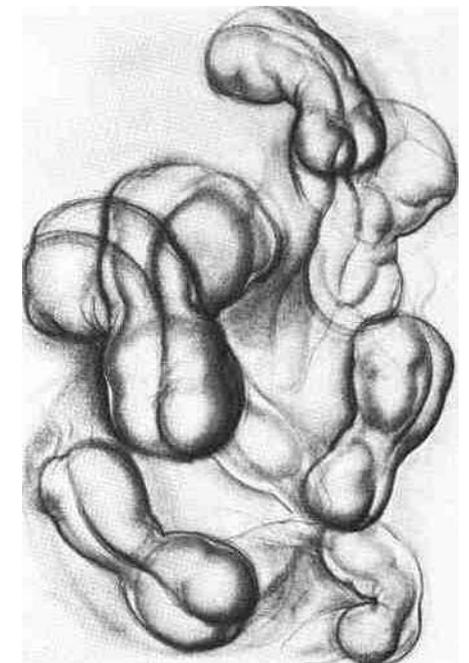
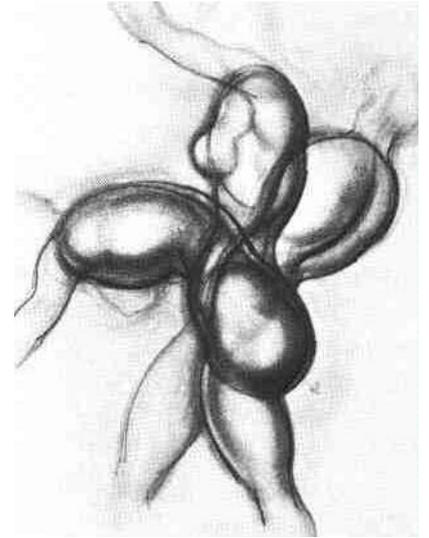


The butterfly configuration is evident in a rear view of the mature female pelvic mass. Note the relatively larger hip structure, both in width and in bulk, compared to the upper chest mass. A narrow rib cage combined with a wide pelvis identifies the female torso and is a distinguishing characteristic of male-female differentiation.





△ When the two torso masses are joined, the result is a compound, torso which assumes the simplified form of a massive *kidney* shape (above).

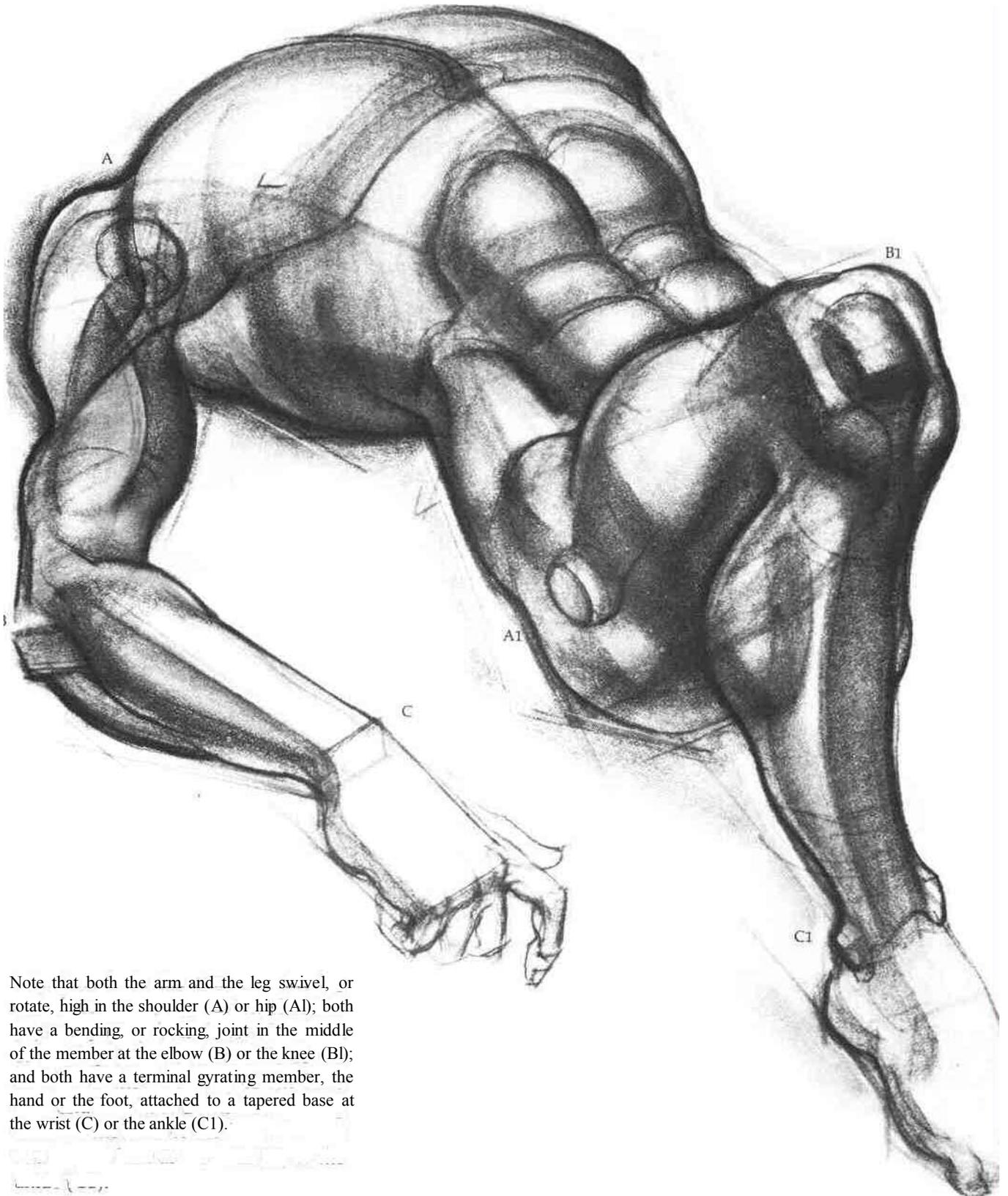


A The kidney shape of the combined torso masses is characterized by the distinctively narrow waist of the body the flexible central axis between the upper torso (the rib cage barrel) and the lower torso (the pelvic wedge). The waist, because of its axis-like quality, is capable of great versatility of movement.

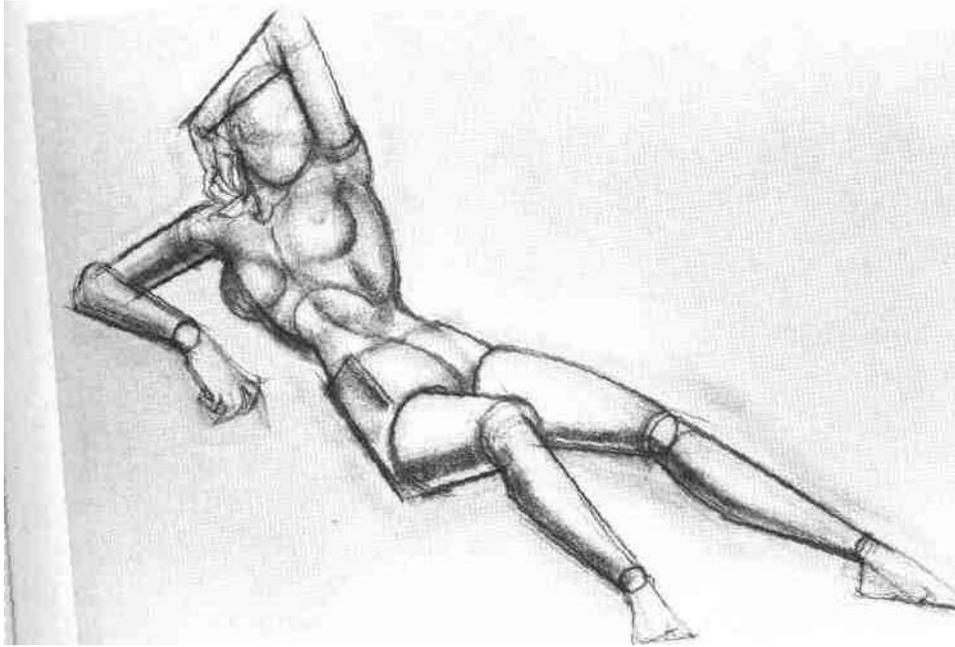
< In this series of sketches, the butterfly device is shown to be an easily established point of reference and an aid in drawing any rear view of the pelvic forms of the lower torso (left).

Column Forms of the Arms and Legs

The arm and leg masses have a general similarity and correlation of form. Described simply, the arm and the leg are elongated, jointed two-part members, each of whose parts has a modified cone or cylinder shape.

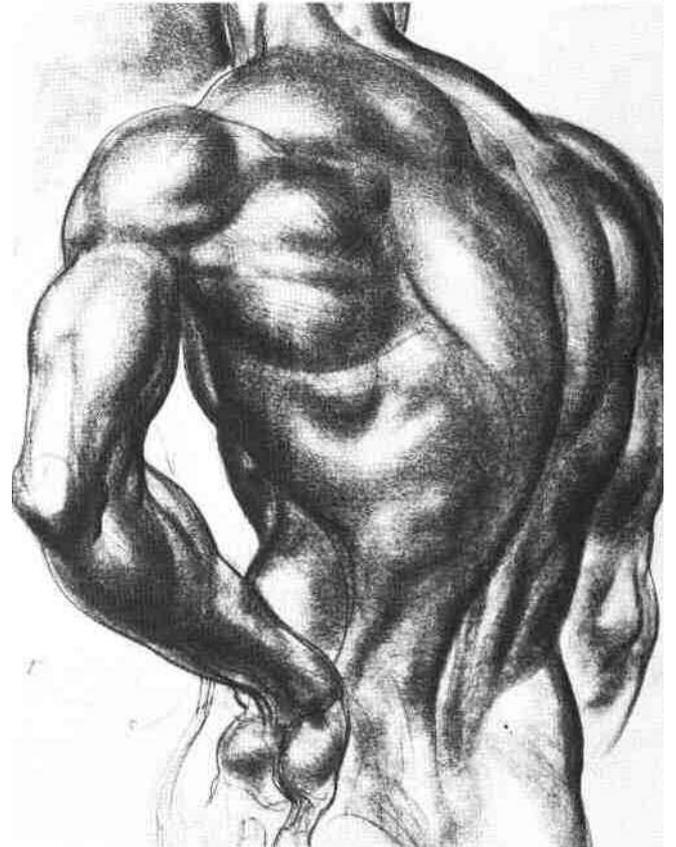


Note that both the arm and the leg swivel, or rotate, high in the shoulder (A) or hip (A1); both have a bending, or rocking, joint in the middle of the member at the elbow (B) or the knee (B1); and both have a terminal gyrating member, the hand or the foot, attached to a tapered base at the wrist (C) or the ankle (C1).

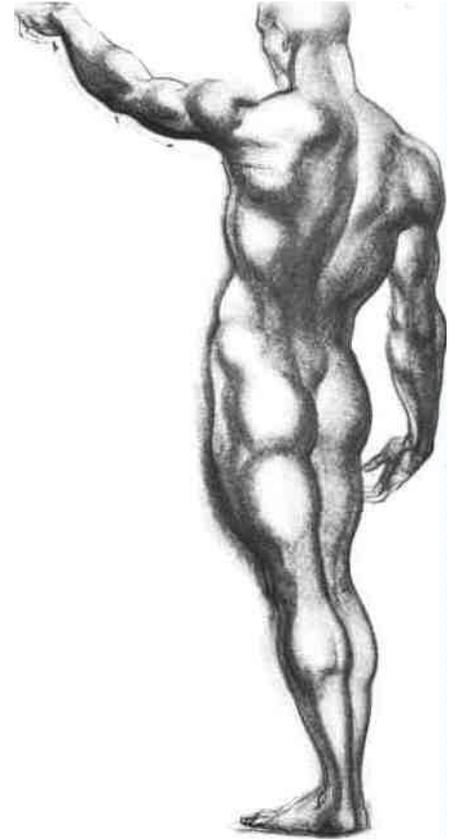




For all their similarity, the arm and the leg have decidedly different structural rhythms. In the arm, for example, a consistent *upward-curving* rhythm is present along the entire *underarm* length from shoulder to elbow, and from elbow to wrist (see arrows).



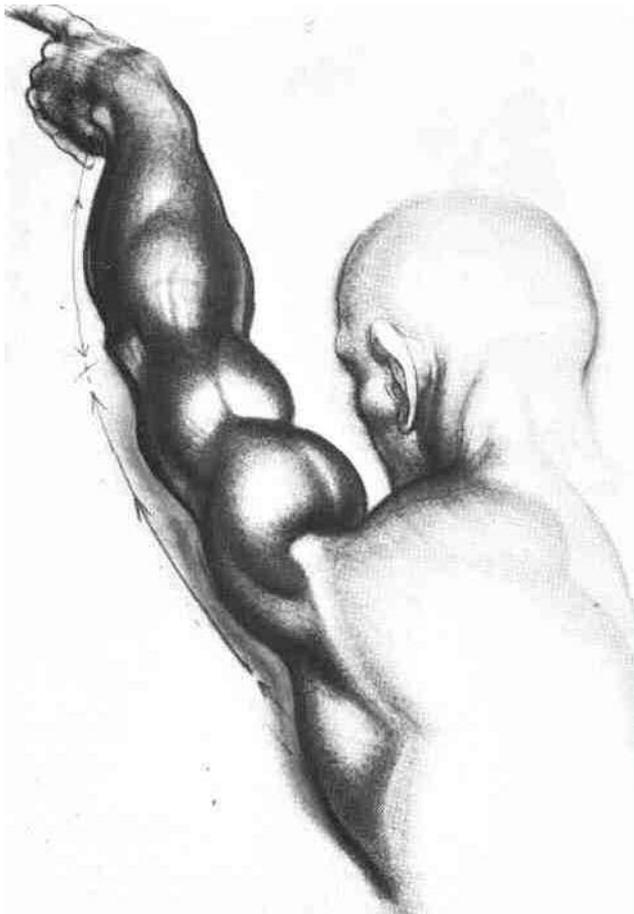
The curving rhythm of the arm in a rear view. The elbow turns out; therefore, the underarm lifts and the line takes a clear *overcurve*.



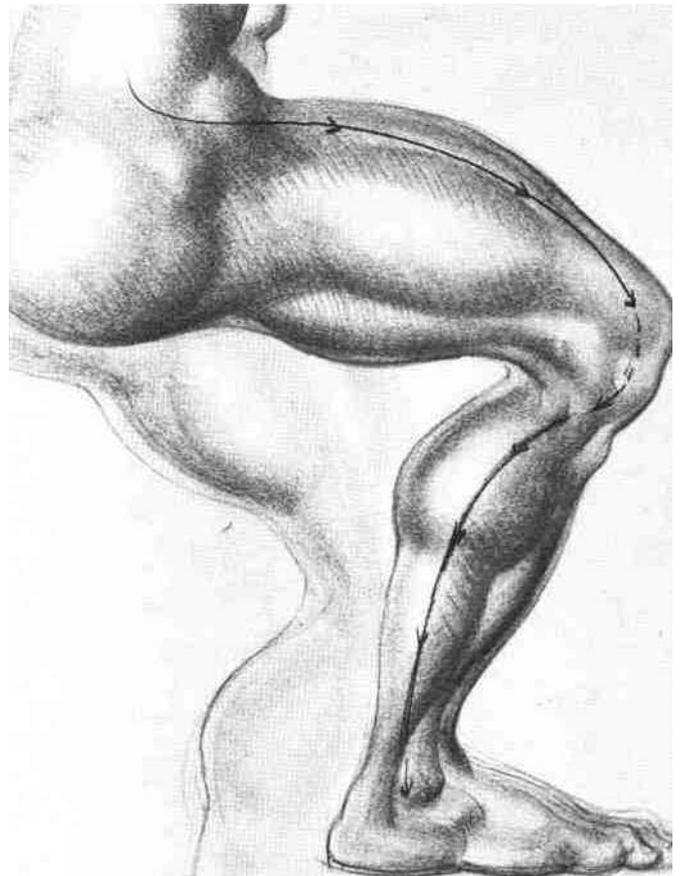
The clue to the underarm curve is found in the position of the *elbow*. Locate the elbow, and you will be able to trace the line upward toward the rear armpit; the lower line can be followed from the elbow down to the base of the outer palm. No matter how the arm moves, from simple positions, such as the two extended arms shown above right, to deep, active bends (left), the consistent undercurve is always present. Invariably, this curve provides the basis for the arm's structural rhythm.



A frontal figure with arms flexed and foreshortened shows the correlation of double curves (see arrows).



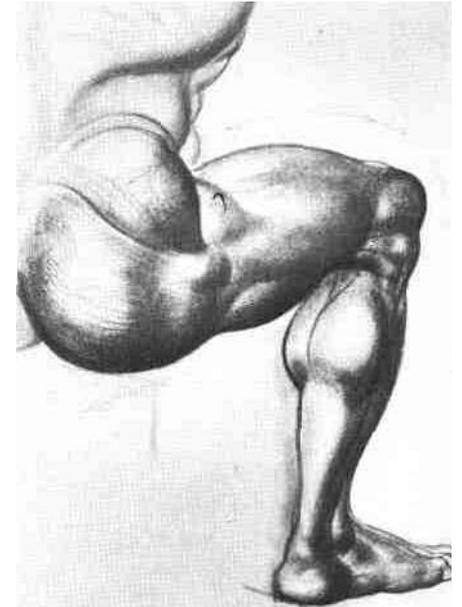
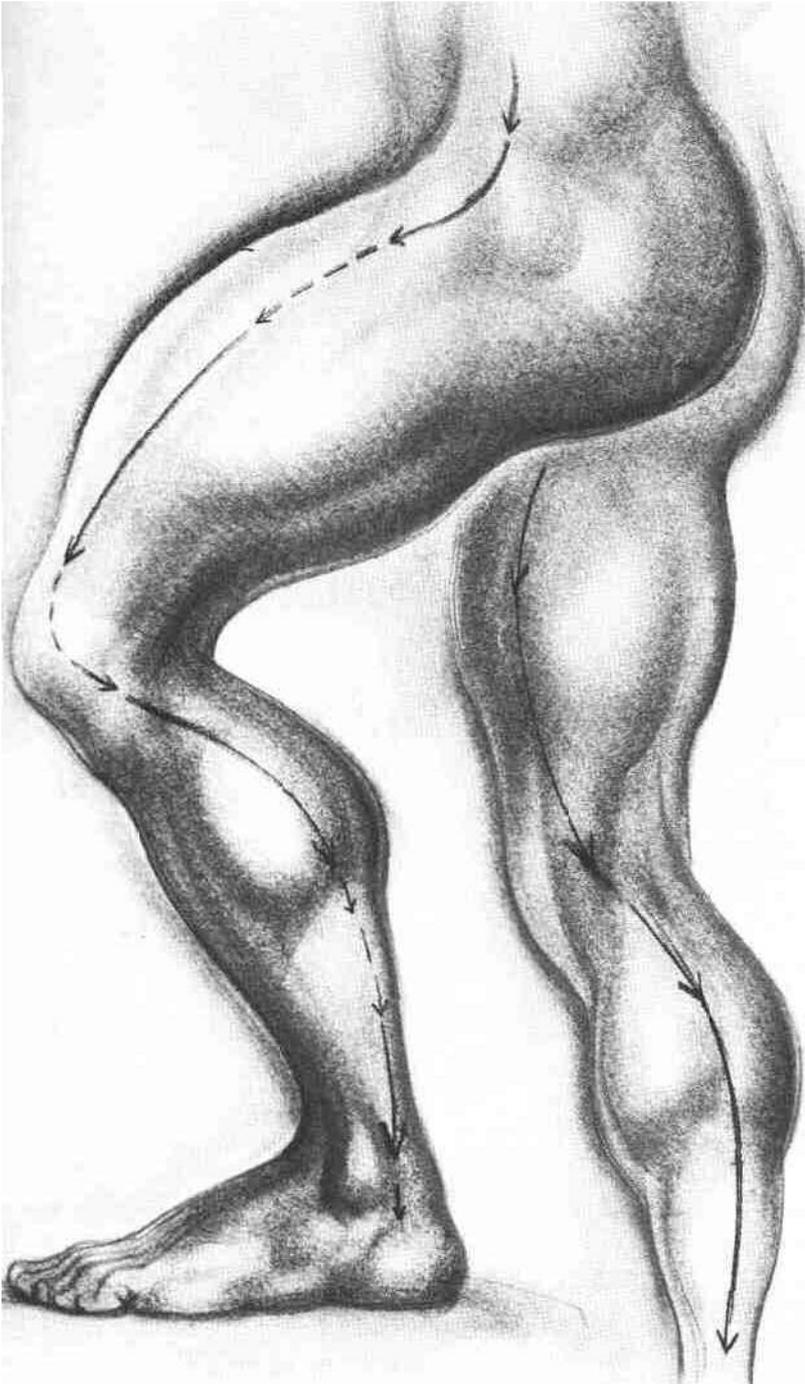
An arm in deep space extension gives us the underarm double curve (see arrows), proof of the arm's unvarying structural rhythm (left).



A
This side view of the right leg, bent at the knee, shows the structural rhythm of the bent leg clearly indicated (see arrows) with an S-line curve (above).

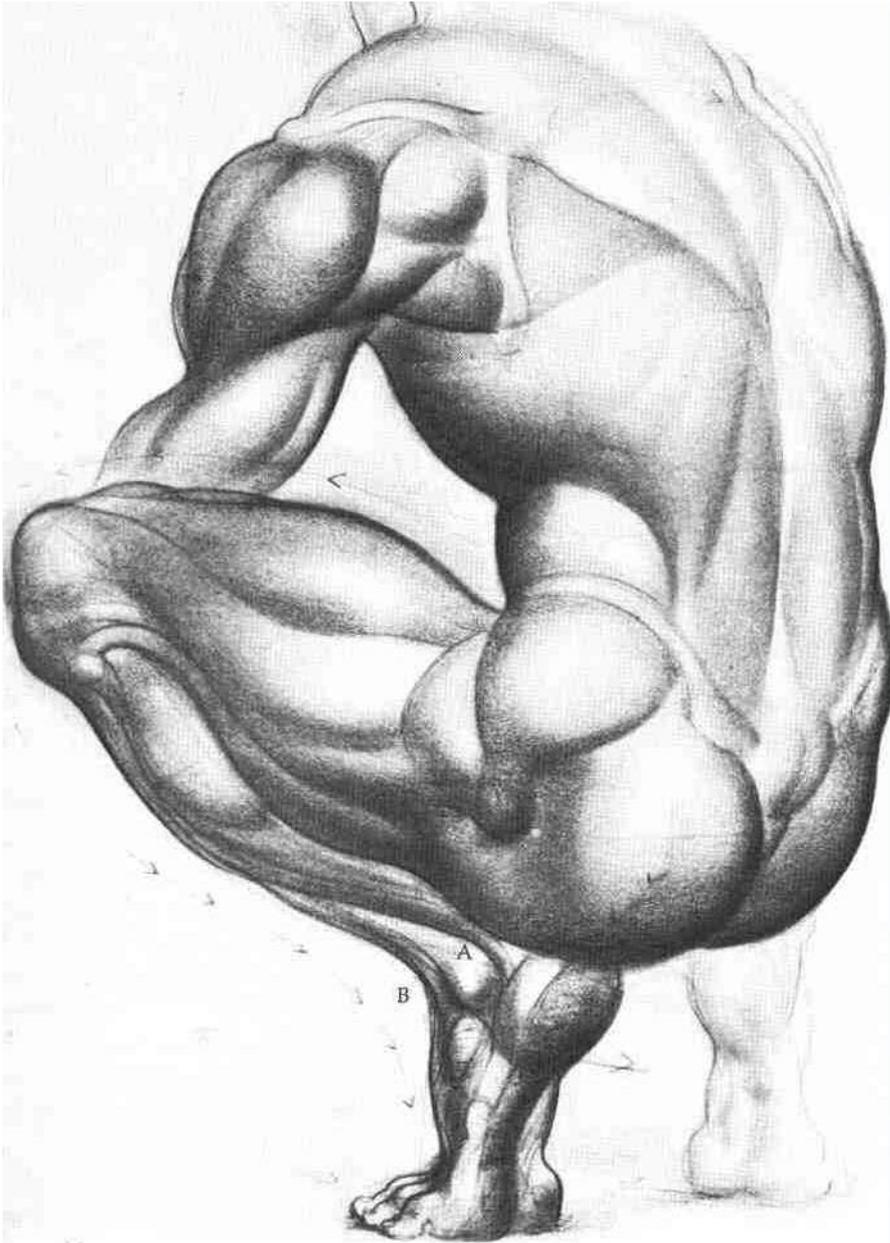


< The leg has *two* structural rhythms, one for the *front* view and one for the *side* view, each of which is decidedly different from the other. This side view of the right leg shows a long S-line curve taken from the active thrusts of the leg muscles (see arrows). This S-line starts high on the front thigh, reverses at the knee, and moves rearward down the calf bulge (left).

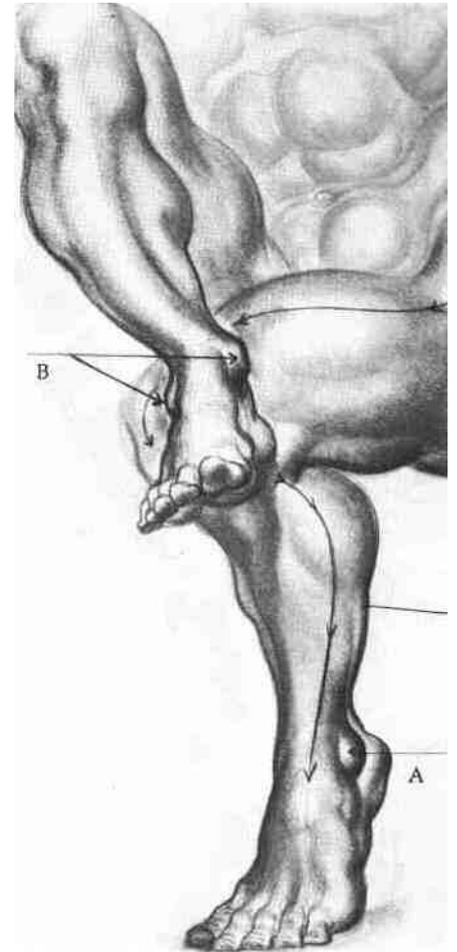


A three quarter view of the leg of a seated figure seen from the rear. The S-line curve of the leg (see arrows) shows how clearly the structural rhythm of the leg can be seen. While the S-line rhythm establishes a guideline for drawing side views of the legs in many different positions and movements, there is a point where we find a *frontal* appearance beginning to overrule the side view position. As our viewpoint changes from indirect *side* to indirect *front* view, how can we know when the critical point of change has been reached? This question is answered by looking at the position of the *anklebone* projections. *The rule of the side view leg is: an anklebone enclosed by the lower leg contours generally represents a side view orientation.*

A side view of the left leg, bent at the knee, shows the S-line curve governing the action of the leg. The erect, far leg (the supporting leg) is in a three quarters position, turned slightly away from side view; but the S-line is still evident in it because the rhythm of the leg structure has a basically side view orientation.



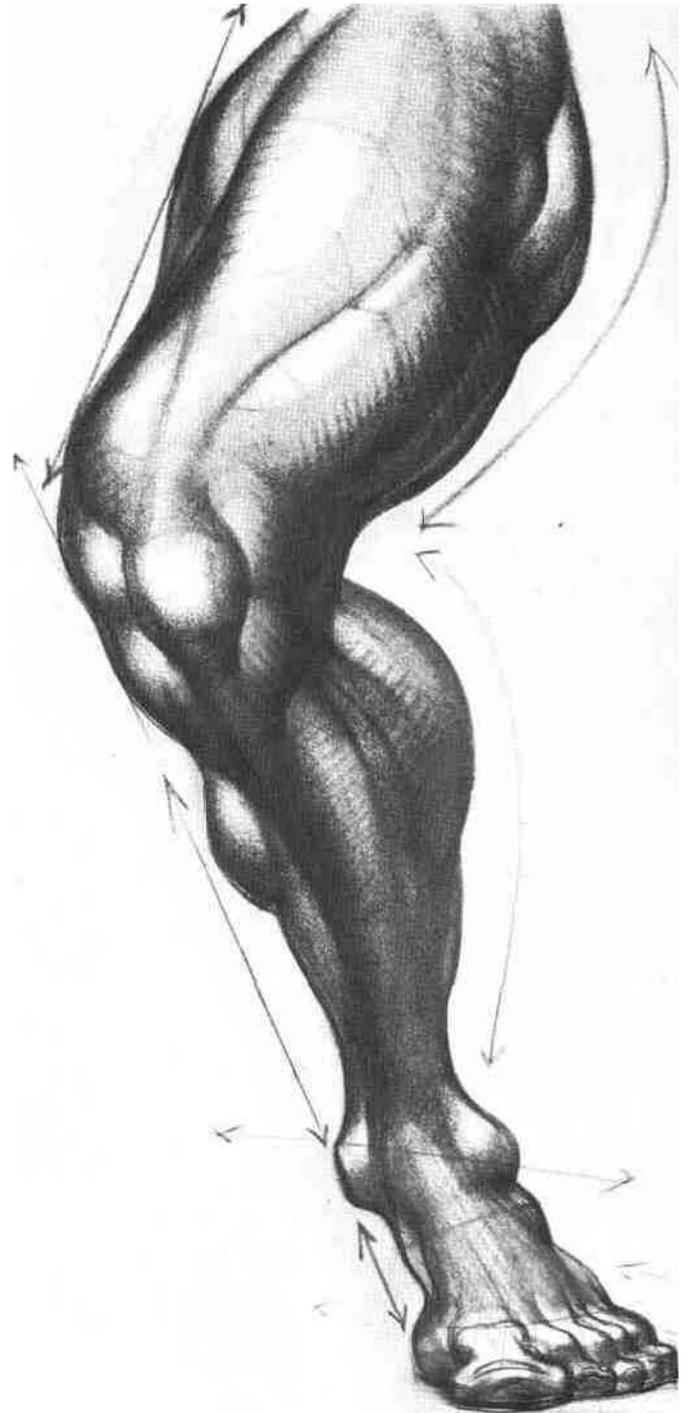
In this figure, the outer anklebone (A) is *inside* the contour of the left leg (B); hence, we take a *side view*, 5-line rhythm approach (see arrows).



In this figure, a dual approach of the *frontal* leg and the *side* leg is dictated by the rule of the anklebone position. The lower (right) leg shows the ankle bone held *inside* the leg outline (A), resulting in a *side view*, S-line curve (see arrows) which moves down on the thigh from hip to knee, then reverses from knee to ankle with a marked lift on the calf bulge. Compare this with the crossed (left) leg. In this leg, the ankle bones are *exposed*, protruding beyond the outlines of the ankle (B); hence, it takes a *front view* orientation.



The structure of the leg when seen from the front takes on the appearance of an elongated B-shape (see diagram to left of drawing). In relating this diagram to the leg, the *straight* line of the B-shape will be seen on the *inside* length of the leg (A), tending to control all form bulges from pubis to knee to ankle, and in most cases the foot as well. The *outer* leg contour consists of a *double curve*, the curved part of the B-shape. This double curve can be seen on the *outside* of the leg (see arrows), moving down from hip to knee (B), and from knee to anklebone. (C). The small line diagram to the left of the drawing shows how the B-shape is applied in the conception of the front view leg as a simple beginning of the final workup beside it. *Here-is the rule of the front view leg:* When the ankle-bones *protrude* beyond the contour of the leg, the entire leg may be thought of as a *front view leg* and can be expressed in an elongated B-shape.

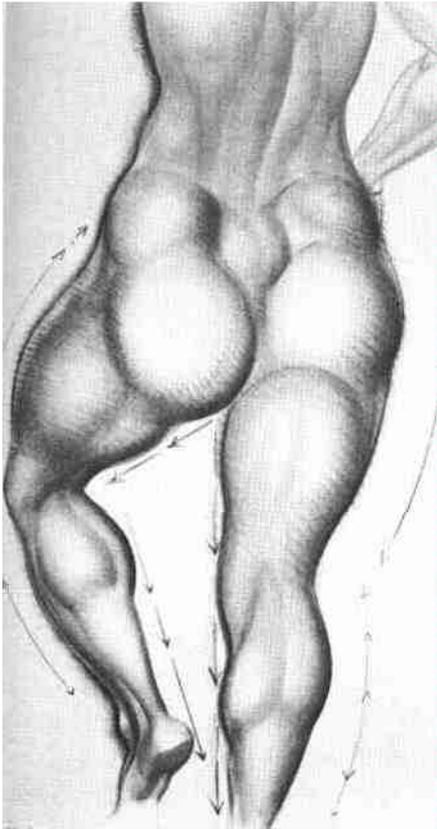


The B-shape rhythm of the front view leg accounts for all manner of leg bends and actions. In this figure, we see a front view leg with a bent knee; the straight B-shape line is given a corresponding break. Note the exposed anklebones. Once again, these protruding anklebones immediately signal a frontal leg approach, and call for a B-shape control of forms (see arrows).

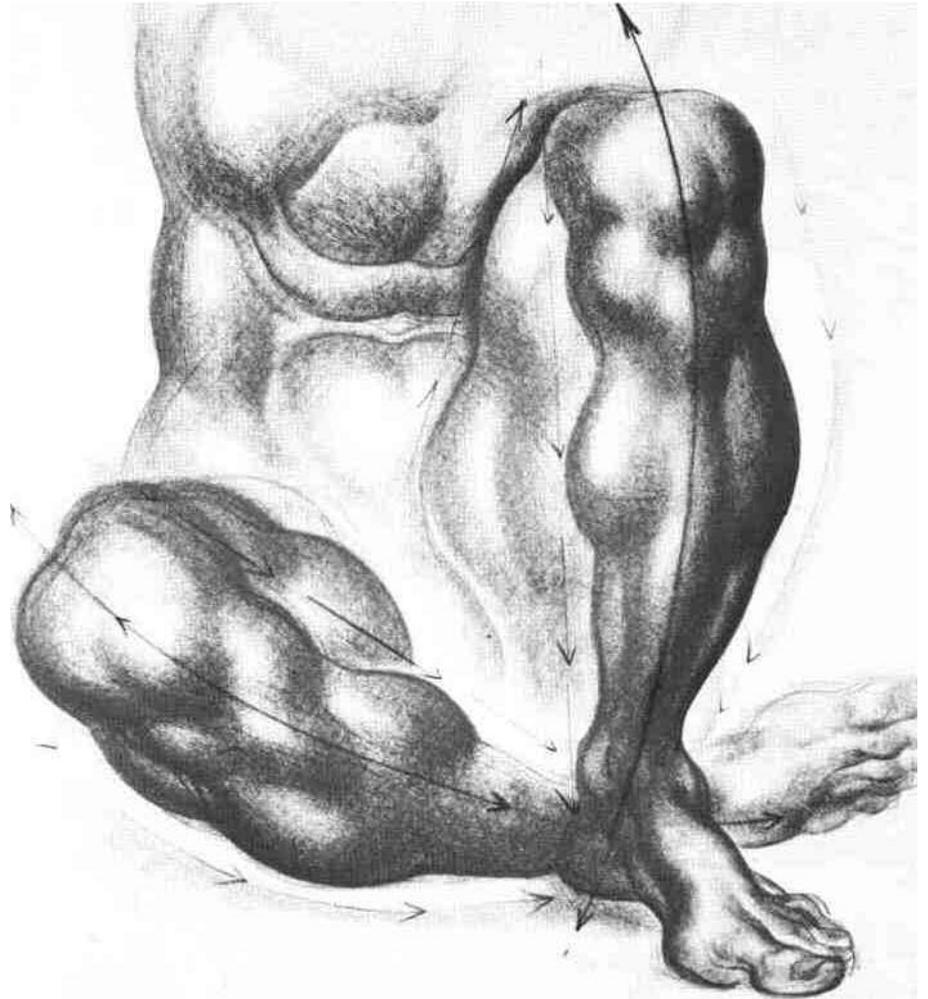


Rear view legs, without exception follow the front view leg rule: exposed anklebones dictate a B-shape approach Note the *reversed B*-shape in this the quarter action, rear view leg.

In these legs, notice the marked *inward* curve to the center of the body line. This inward curve especially applies to *all shinbones* (tibia). In this example, the inward curve of the shinbones has been accentuated (not an uncommon thing in many persons) in order to illustrate a variant of the straight control line of the B-shape formula for the front view leg: the straight line of the can be expressed with a slight over-all curve (as was done here) to hold the inner leg forms in check.



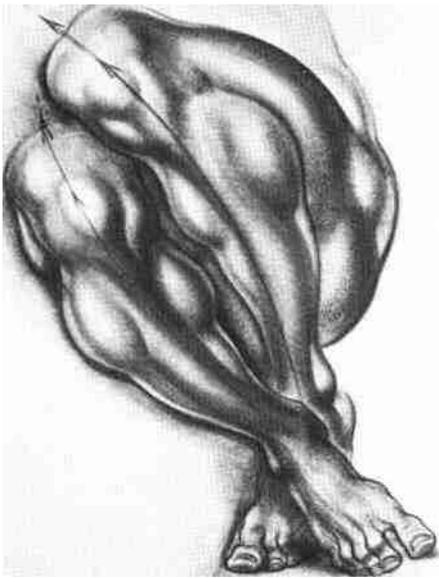
In this example of two rear view legs, the left knee bend produces a corresponding break in the inside line of the B-shape.



In these front view legs in a hunched, crossed-over position, curved accents have been inserted on the line of the shinbones to emphasize their inward curve. The problem of arranging flexed, overlapped legs is easily solved by using B-shape controls.



In looking at this figure projected into deep space, see how easily the B-shape works to orient the legs in this difficult view (see arrows). The position of the anklebones tells us that the approach must be frontal.



Here is another example of crossed front view legs in a cramped position. Only the accented shinbone curves have been drawn in; the B-shape controls have been left out, and the reader is urged to study the drawing and determine them himself.



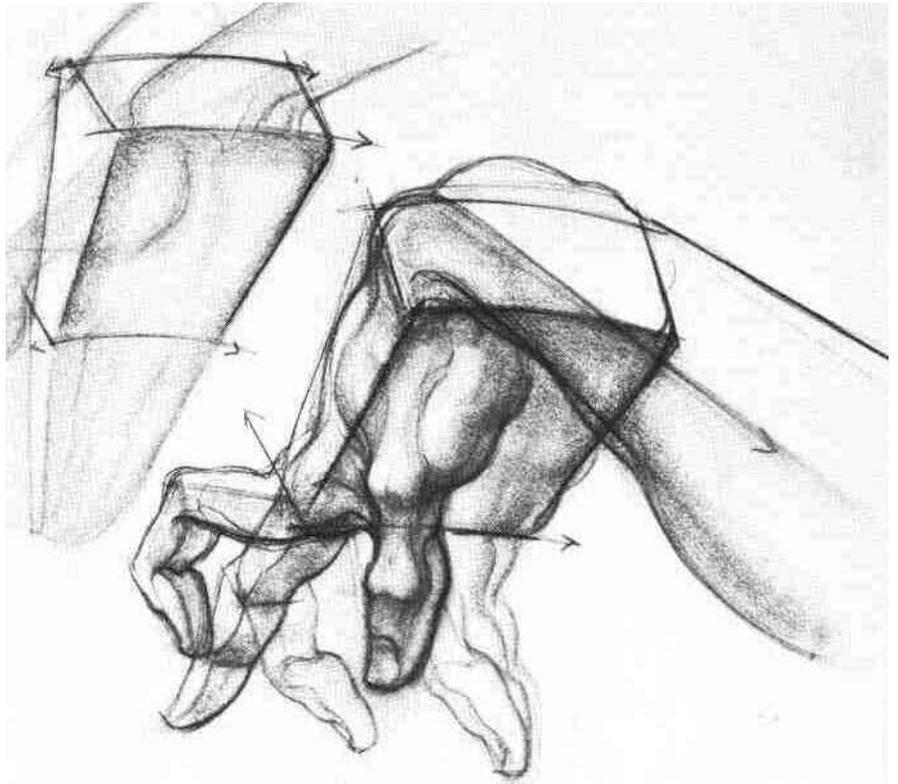
This figure is added here so that we may recapitulate and combine two of the earlier discussions of the different structural rhythms of the extremities:

note the *double curve continuity* of the upper and the lower arms (see arrows);
 the upthrust bent leg is expressed in the 5-line curve of a *side view orientation*, because the anklebone is held *inside* the leg contour.

Wedge Masses of Hand and Foot

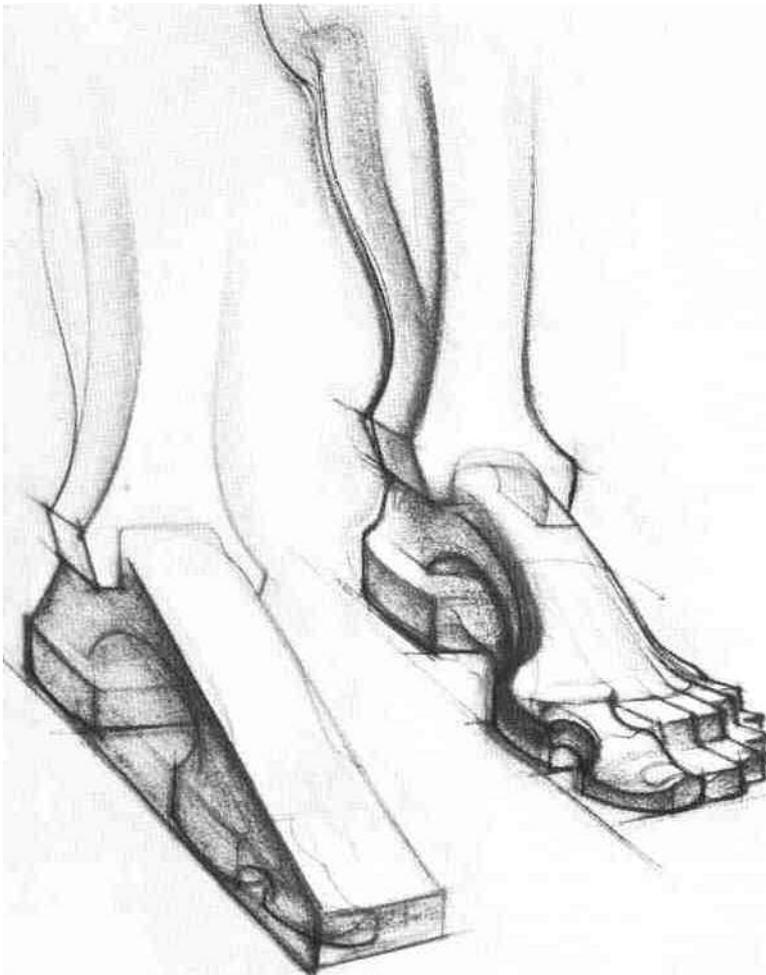
The terminal forms of the extremities, the hand and the foot, are decidedly *wedgelike* in character. These two wedges, however, are very different in structure. In the two examples which follow, the wedge forms of the hand and the foot have been supplemented by companion sketches to show the unique character of each.

The hand in the drawing to the right shows how the fingers *separate* and become extremely active, performing an immense variety of actions. The foot in the drawing below shows its subsidiary toes to be *closed* and compactly arranged. The great toe, different from its opposite member, the thumb, lies *adjacent* to its smaller neighbor toes; the thumb, on the other hand, *opposes* all the fingers of the hand. Thus, we note the basic difference between the hand and the foot: the hand is a *tool*; the foot is a *support*.

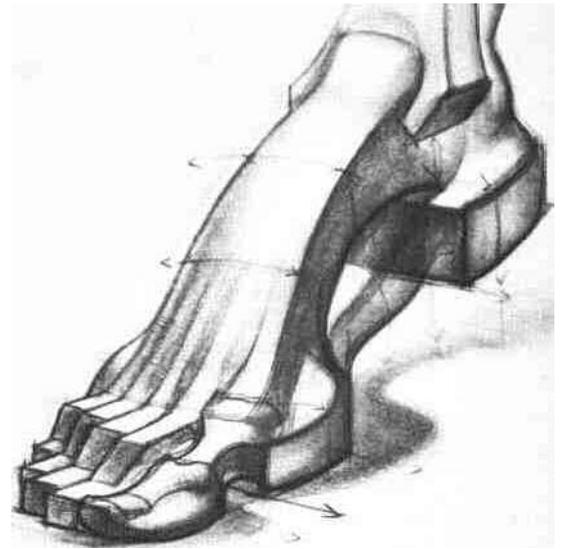
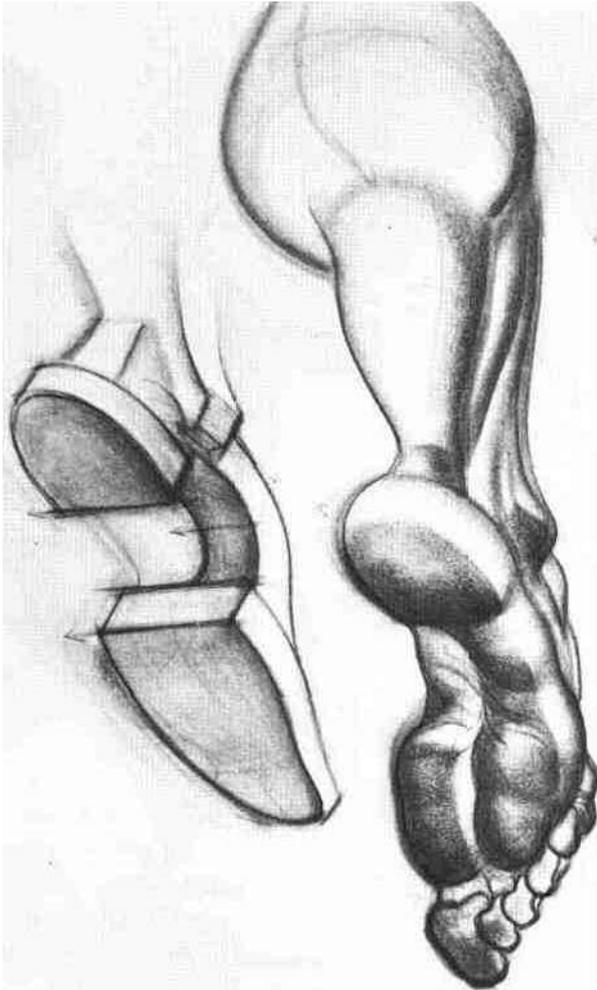


A

The shape-mass of the hand is broad, flat, and generally spatulate; it is thickset and wide at the rear palm where it joins the arm, and narrower and shallower at the fingers.

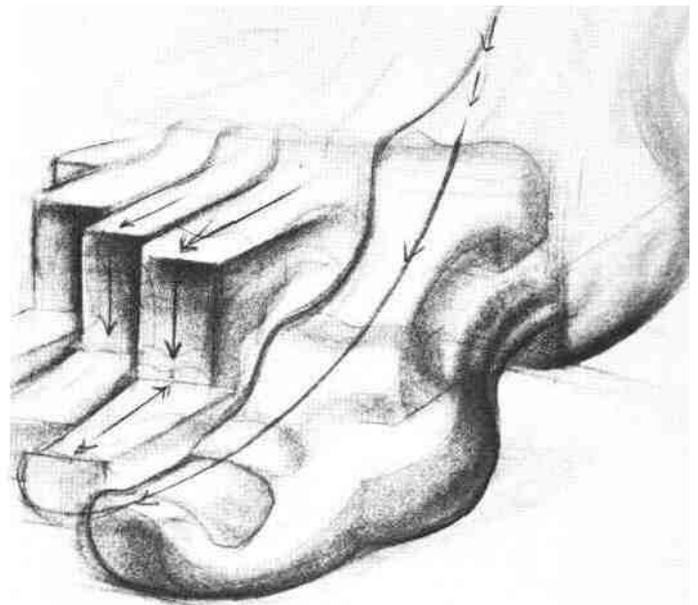


The shape-mass of the foot is a broad-based wedge, showing a remarkably high, triangulate elevation at the rear, from whence a steep diagonal descends to the front.



The front sole divides into two sections:
 (1) a platform support next to the arch;
 and (2) the five close-set toes in front. The toes
 differ from the platform support in their
 function; they act as traction and projection
 devices—gripping and pushing.

The foot wedge is a compound form that
 consists of three main parts: (1) the thick heel
 block in back; (2) the larger ellipsoid sole base
 in front; and (3) the interconnecting span of the
 arch which bridges and holds together the heel
 and the sole.



The toes reveal a high, upthrust rise of the large
 toe tip, contrasting sharply with the downthrust,
 closed pressure of the small toes (see arrows).

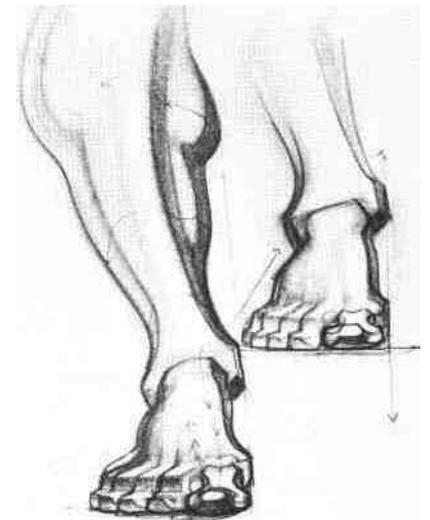


Of major significance in describing the foot is the deeply curved instep formed by the high, open arch (A) connecting the base supports of the heel and the sole. Viewing the instep from the underfoot surface, we see that the foot base supports are connected in another way by the long elliptic ridge (B) of the outer foot. Note the differences between the inner and the outer foot connec

tions: the outer foot gives *continual* surface contact, while the inner foot contact is *interrupted* by the open arch of the instep. *A secondary note:* The great toe (small sketch) shows an arch, effective though small, bridging the front toe pad and the large, rear sole pad—a relationship not unlike that in the great foot arch proper.



< From the front, the foot wedge has the appearance of a wide, high block shape with a steep forward ramp on its top surface. This slope ends in the quick upcurve of the tip of the large toe. This rise, seen from the immediate front, shows the toe tip thrusting up from the base plane of the foot (left).

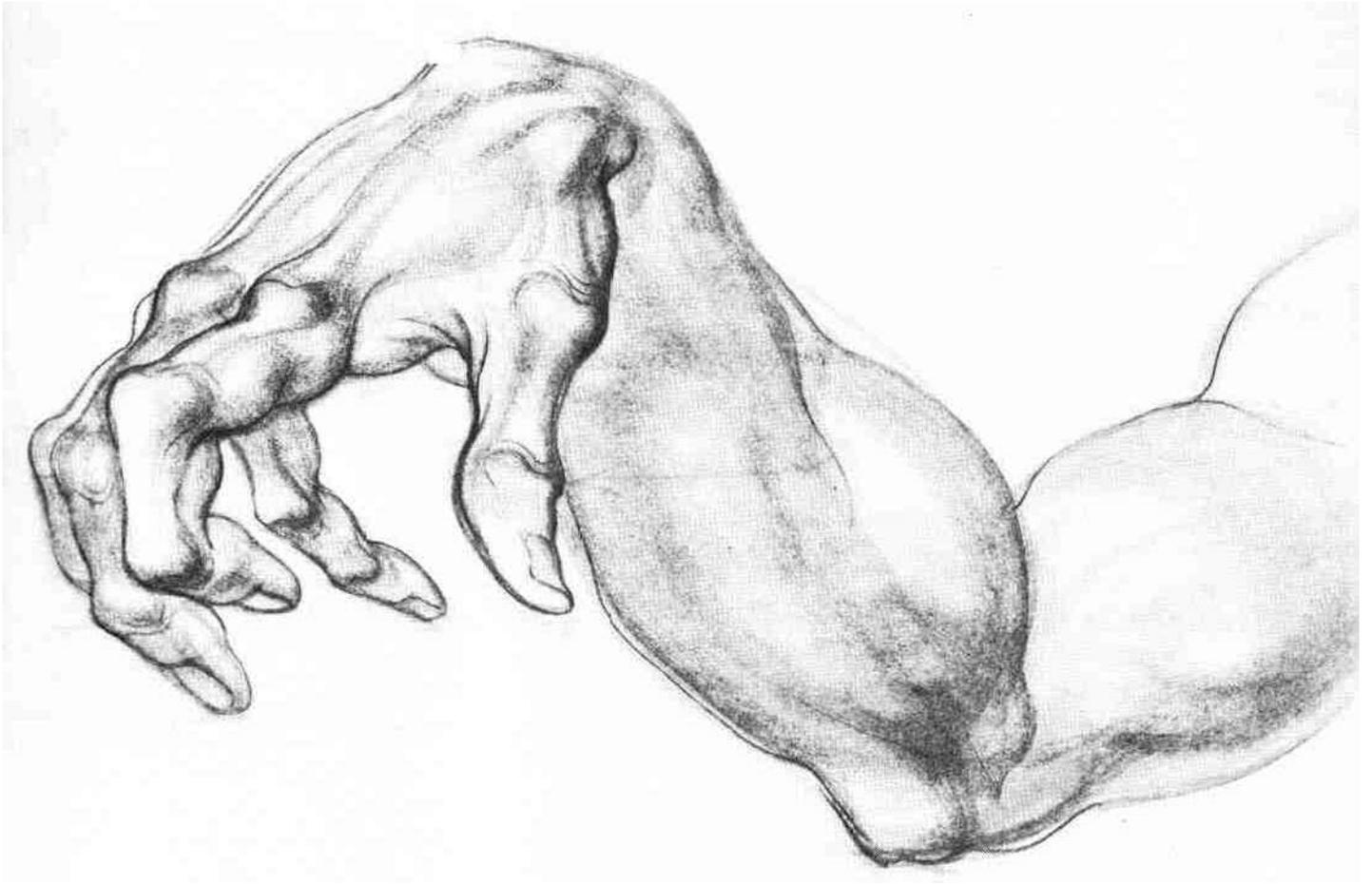


<Toes, like fingers, show miniscule rod and ball construction (small sketch):

the rod forms relate to the narrow shank structure of each digit; the ball forms represent the knuckle capsule arrangement. Because they are quite small and close-set, the toes are frequently difficult to draw without distortion when done in this way. A more agreeable solution, therefore, may be seen in the *step arrangement* (large drawing) of the toes. In the step arrangement, the toes emerge from the sweeping descent of the arch and close down in a three-stage formation which resembles a short flight of steps. There are *two horizontal steps* on each of the small toes with a *vertical riser* in between (left).

A

The wedge of the front foot, showing stepped toes, contrasts with the up-thrust large toe. Note the inside arrow control line which holds inner forms in check (above).



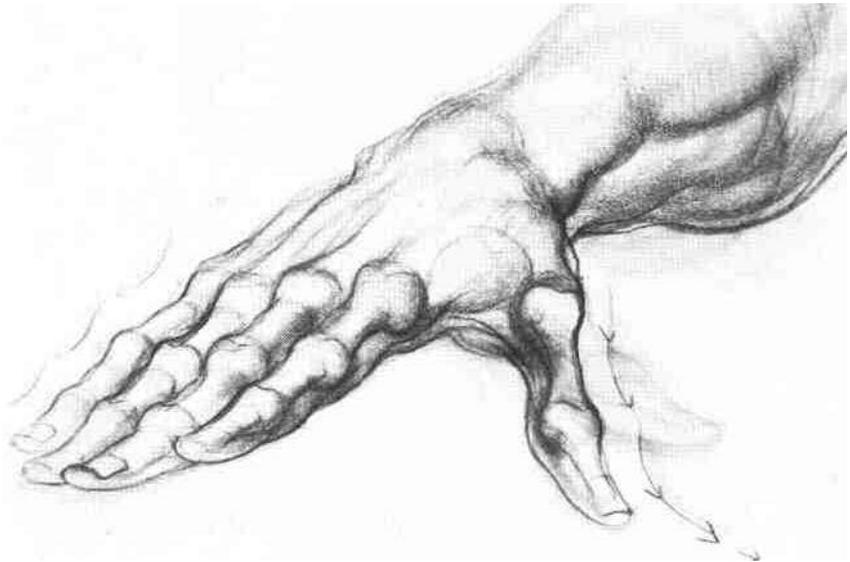
A
The hand, like the foot, gives us a set of rod and ball constructions in the alternating bone shanks and knuckle capsules of the fingers.

A
The rod and ball construction of the hand derives from its internal skeletal structure. It is the skeletal structure which is plainly responsible for the hard, bony surface throughout the upper palm and fingers (above).



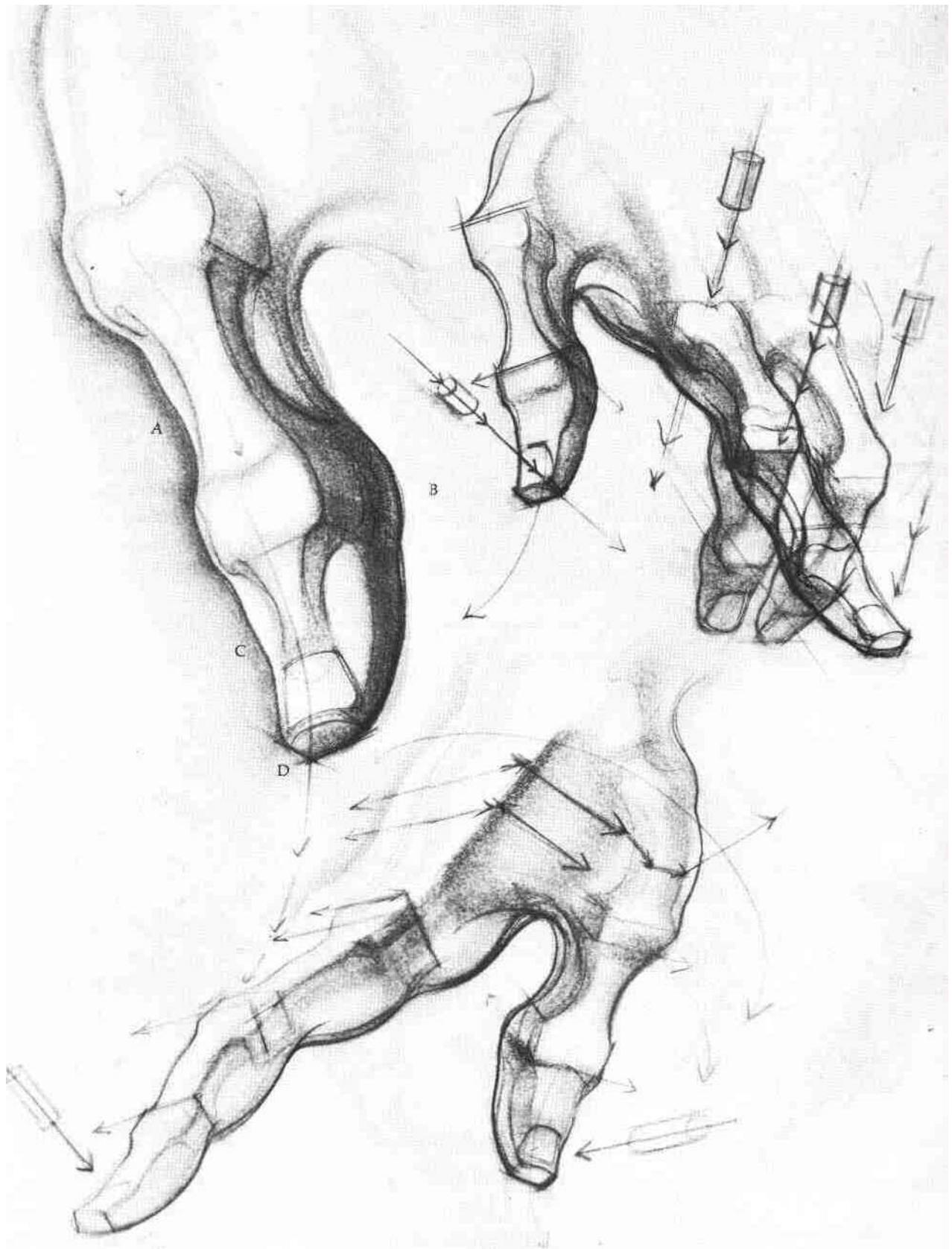
A
The fingers are remarkably longer and more flexible than the toes. They tend to override the plane of the palm easily in active contrapositions which are not possible in the passive, closed toe system of the foot.

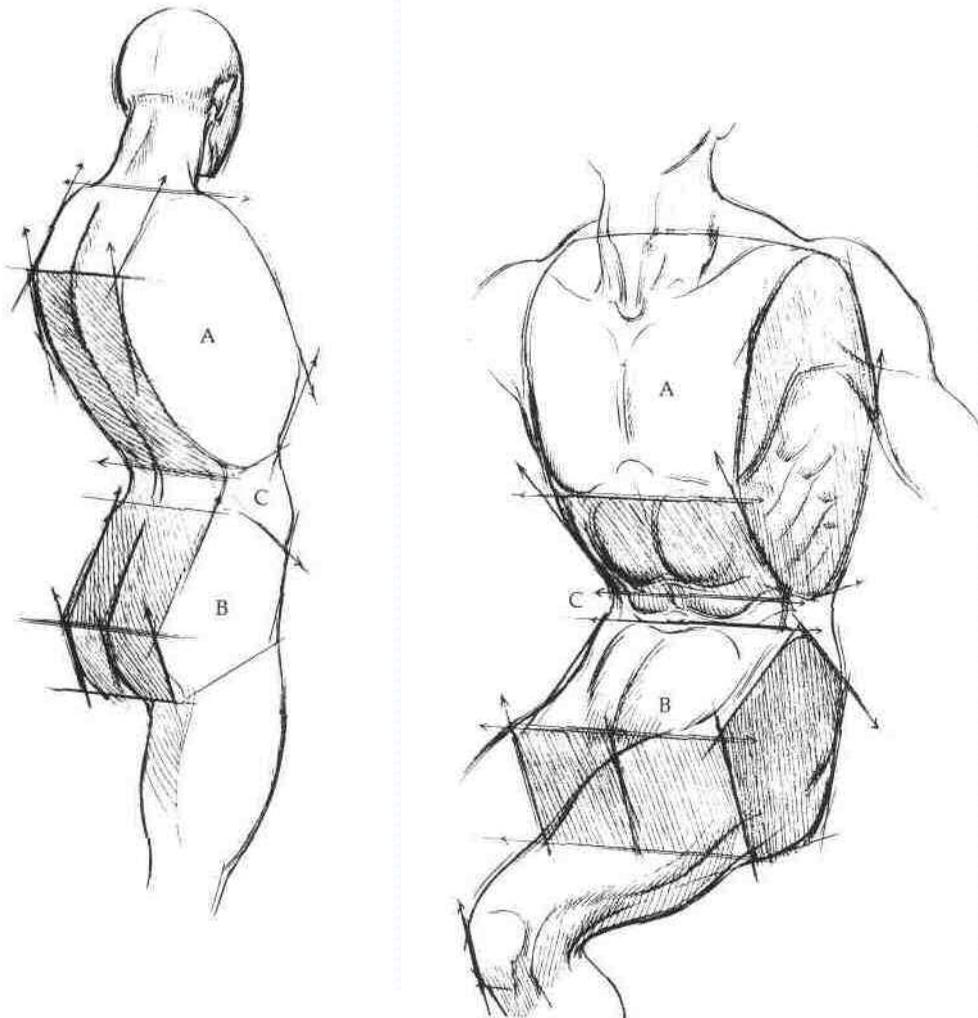
The visible rod and ball forms of the hand develop a rising and falling rhythm which gives a *wavelike* motion to the entire finger system, all the way down to the fingertips.



< The bottom of the hand is soft, fleshy, and cushioned throughout revealing three large padded cushions: (1) the high, ample thumb mound; (2) the tapered, lateral little-finger cushion opposite; and (3) the low, horizontal row of palm pads bordering the fingers. The finger units, too, are thickly protected with a fleshy mantle. *A special note of interest:* The tri-cushion arrangement of the palm leaves a triangular depression in the center region whose apex points upward to the mid forearm (left).

After studying the general rod and ball I finger forms, we must call attention to the thumb. The thumb is the key finger of the hand, and with its striking wedge shape, is built like a thick spade, or spatula. The initial form of the thumb is a narrow length of shank bone topped with a squarish head (A). The thumb narrows, then spreads wide with a heavy pad (B). It tapers to the tip (C), and swings from its base upward in a strong, curved rise (D). The thumb, unlike the other fingers, does *not* lie on a horizontal plane equal to the palm wedge. It assumes a contrary, tipped-over position which is obliquely opposed to the mutual, flat arrangement of the other four fingers. Also, the thumb tends to drop quite far below the level of the palm (right).





Let us start by restating the simplified description of the compound torso shape-masses in two views: an erect torso, back view (left); and a seated torso front view (right). In both sketches, the large chest barrel (A) and the pelvic wedge (B) are joined together by the mid-axial muscles of the waist (C), a region of remarkable flexibility.



When we work with the torso mass as separate entities, we can draw a great variety of movements. The advantage of putting in the essential body planes is that it permits us to see clearly the correct angle of placement and how to attach the secondary forms. In the sketches, the masses are structured firmly, then tipped in greater or less degree, and shown in three-quarter front views. The rudimentary head, arms, and legs are indicated here to help the viewer grasp the over-all working of the total figure.

2

Figure Notation in Deep Space

In Chapter 1, we attempted to show the major body forms as shape-masses, conceiving them according to their differences as *solid objects in space*. This means that we have tried to define form as three dimensional volume, not simply as flat body silhouette.

Seeing the body as a flat silhouette encourages a simplistic description of the figure as a mere *area*, and a drawing of this flat shape commonly assumes the character of an outline, or contour, drawing only. Shape-mass, on the other hand, demands to be understood as volume structure in three dimensions;

this makes it possible to draw the figure in deep space projections, putting the human form into the most inventive and varied conceptions of foreshortening, advancing and receding in space.

Conceiving the figure as shape-mass permits the artist to manipulate the figure creatively, part by part, making changes according to his desire, *without copying* or using file reference material. Like a sculptor working with modeling clay, the artist can structure and compose by building-up. He can alter the actions and projections of separate forms. He can revise and modify his

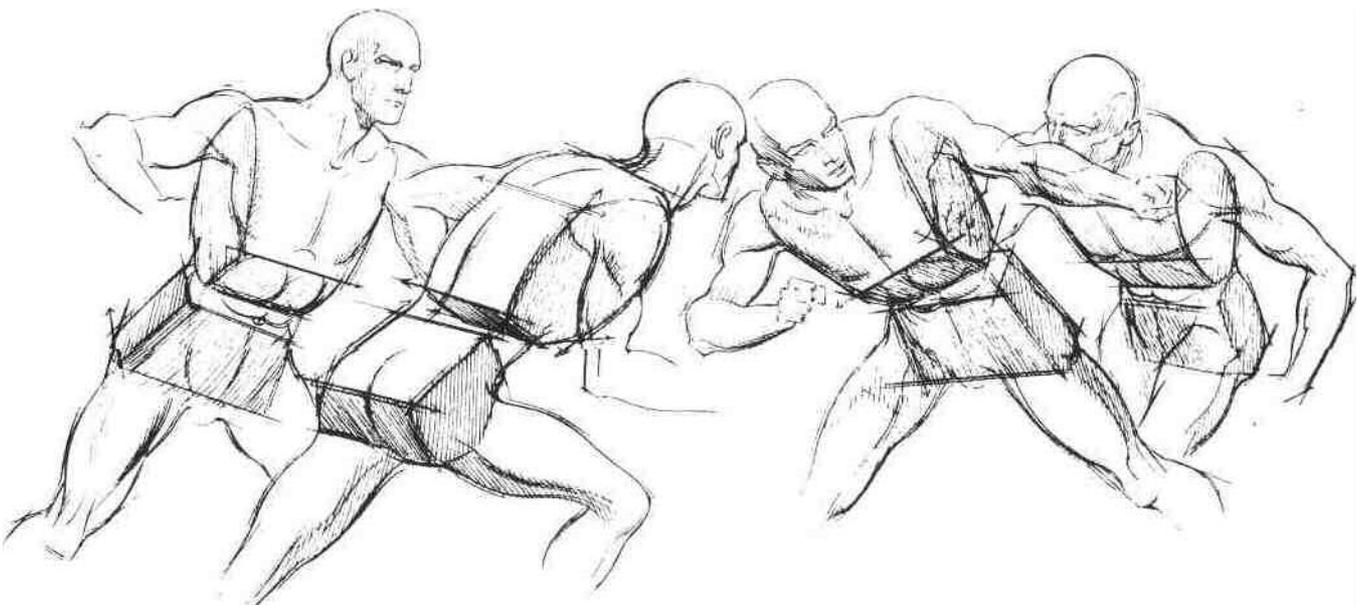
forms at will. But more important, he can choose to introduce radical innovations of form,

To do this, at least experimentally, the artist must approach his drawing with a *new order of form*. He must give up certain uncritical conventions and preconceived notions of figure drawing. For instance, he must put aside starting the figure by sketching in the head. He must give this up, firmly. According to the method which I propose, the *torso*, above any other form, is of primary importance. With this premise, let us initiate the new order of form and assert the opening rule. . .

The Torso is Primary

The reason for this statement will become clear after a few exploratory sketches have been made, and when we work out the following propositions. *The torso mass is the central double form to which all other forms attach.*

Any movement in the upper or lower torso will immediately throw the secondary forms—the legs, arms, and head—out of their previous positions and into a new relationship.

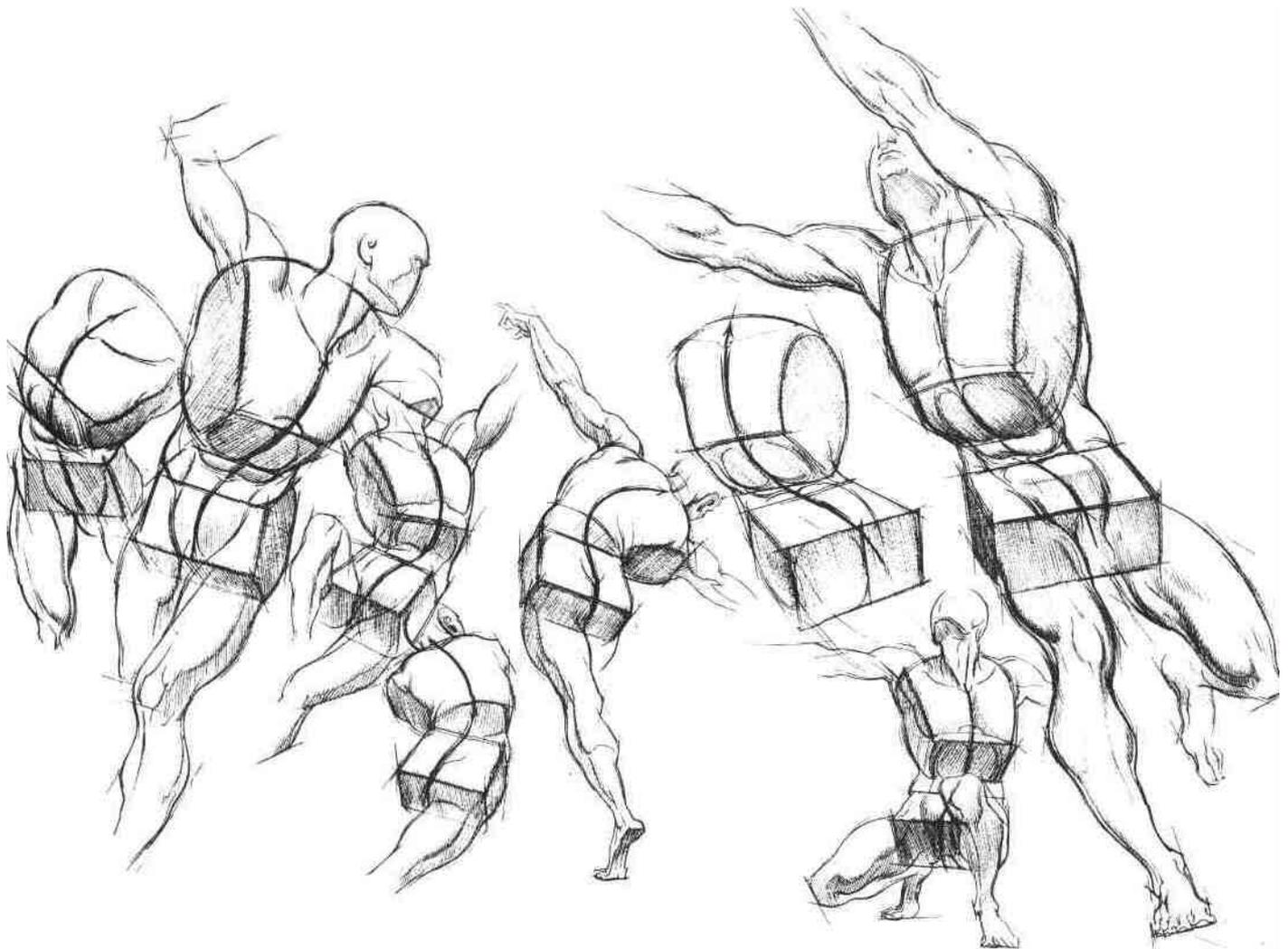
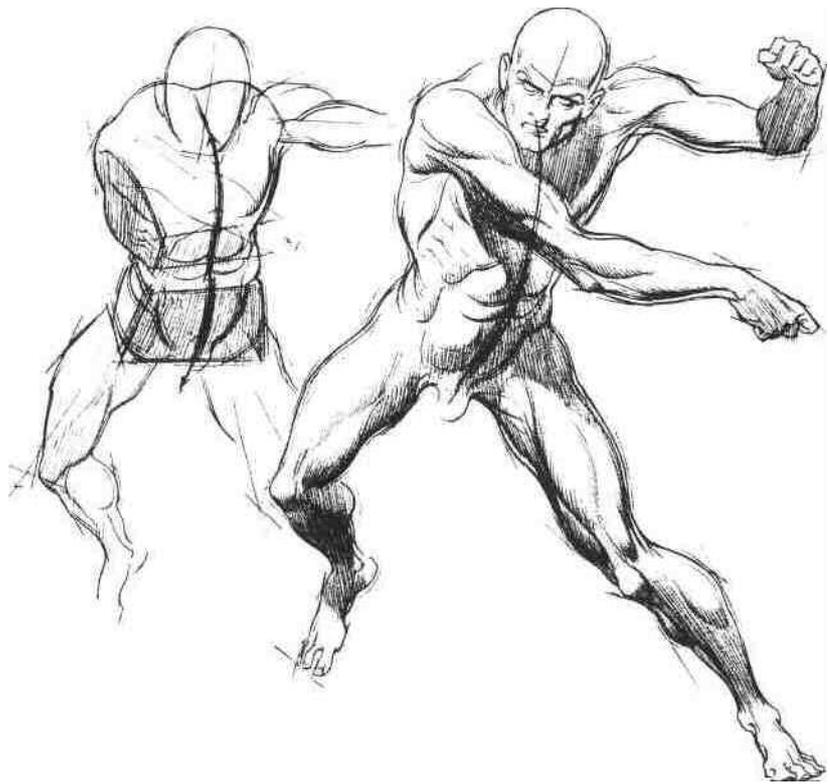


Here are four structured torsos, showing the ease with which figure notation may be indicated in a sequence of movements from left to right, front to back. It must be obvious now why the double

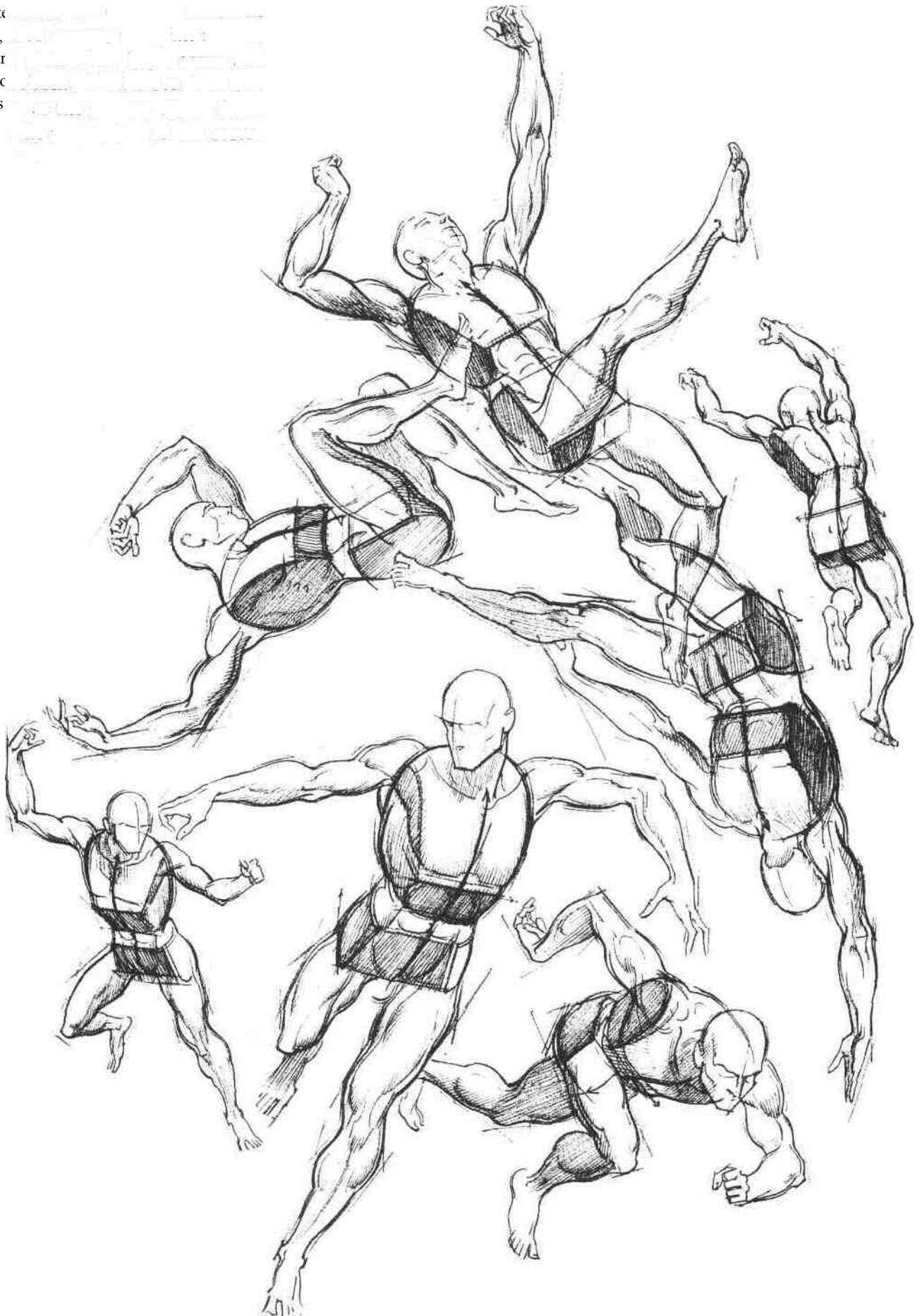
torso mass is instrumental. The merest movement of the rib barrel produces an immediate displacement of arms and head, while a pelvic shift compels total deployment of all the body forms.

An important drawing aid, in accommodating the changes of direction in the two-part torso, is the *center line* of the body. In this two-stage drawing, the primary torso masses are on the left, the completed figure on the right. Of crucial interest here is the insertion of the midline in both figures. Notice how this midline, or center line, gives unity and direction to the independent movements of the separate masses (right).

In movement, the separate torso masses need not face in the same direction. The midline insertion can produce *opposition* between the upper and lower forms. The clue to this opposition is the *spiral*, or S-line connection. Starting with a simple bend only (figure on extreme left), this series of torsos shows an S-line spiral insertion expressing a swivel, or twist, between the contrary views of the body masses: the rib barrel view on one side, the pelvic wedge pivoting to the opposite side (below).



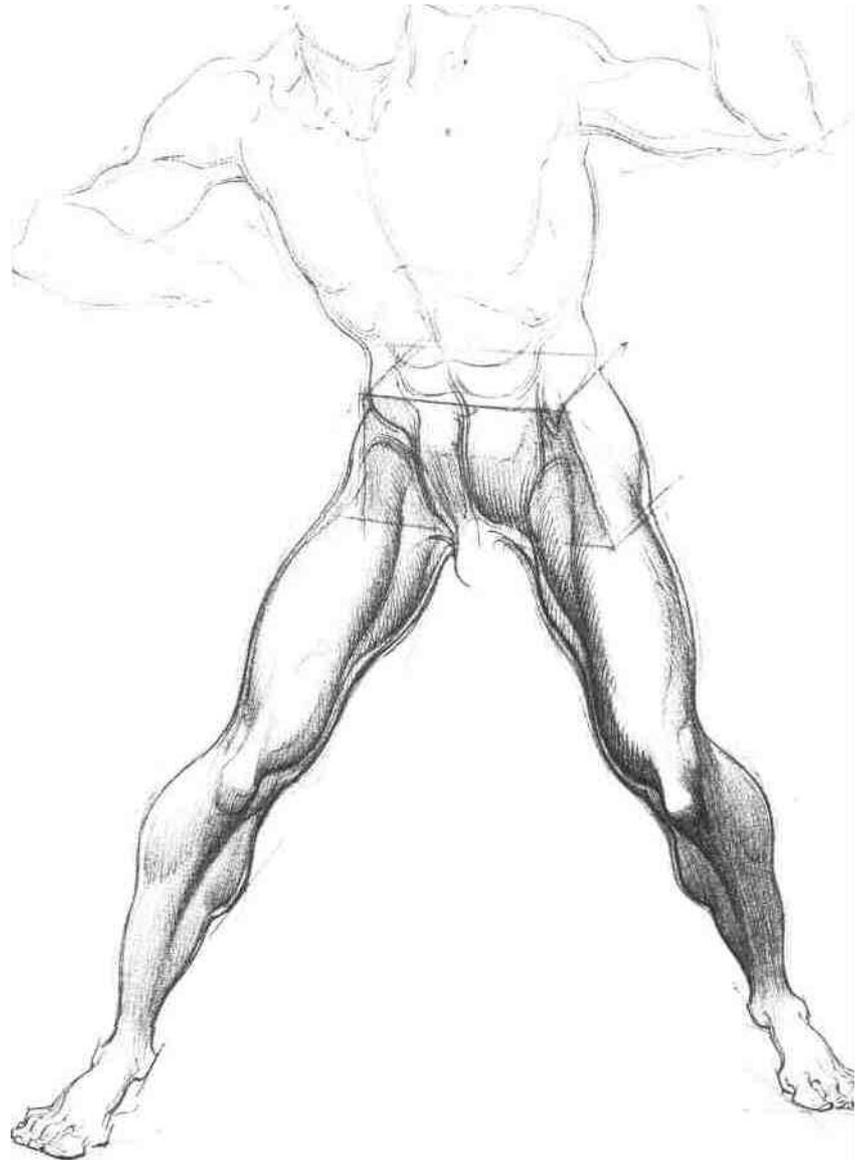
A series of figure variations showing the
correlate
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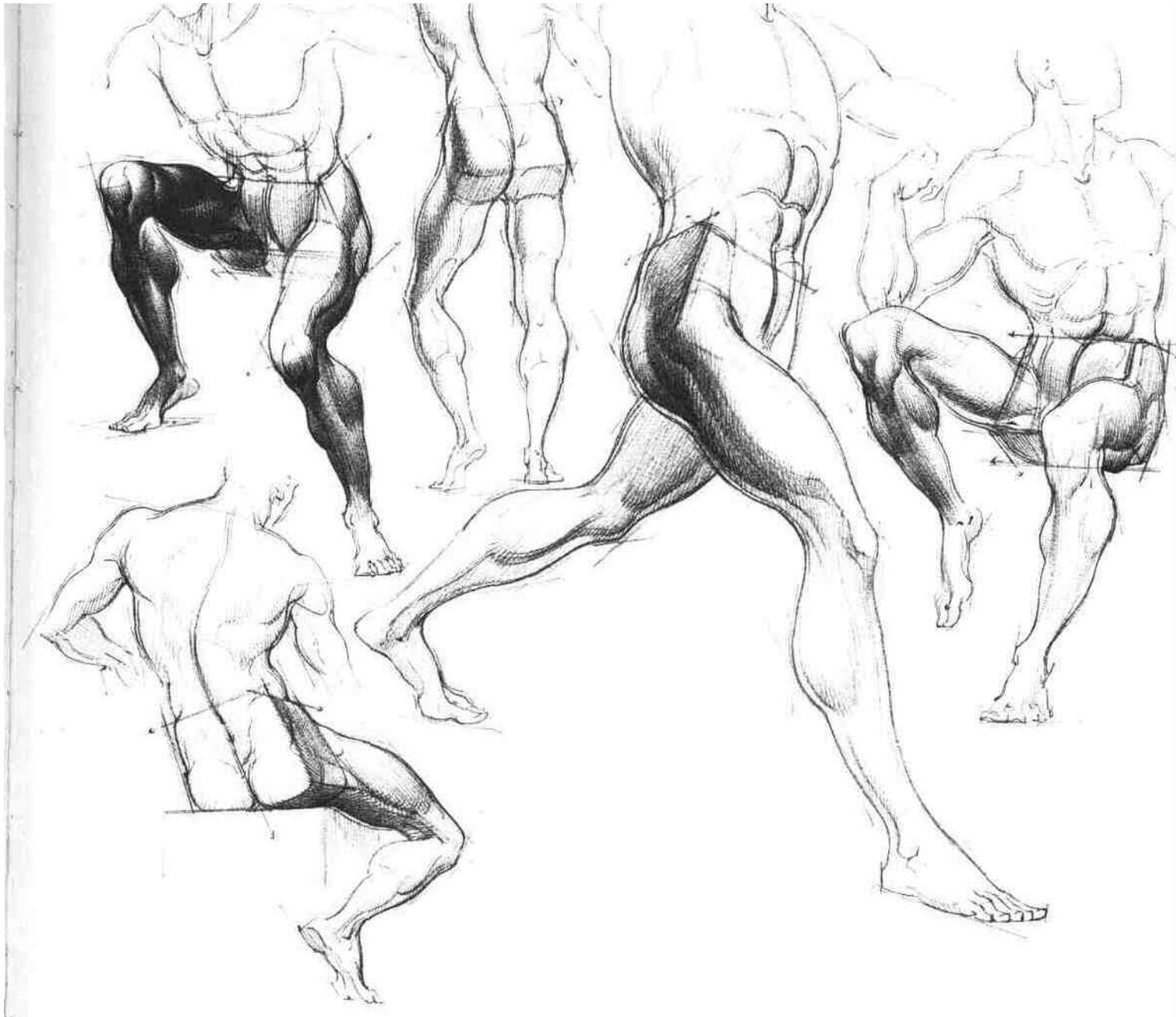
The Legs are Secondary

We have stated the necessity of using a new order of form in drawing the figure in deep space. Our initial assertion has been that the torso is first in importance. Following the primary torso masses in this notational order, our rule proposes that *the legs are secondary*.

The reason that the legs (*not* the arms) come after the torso masses is that the figure, in whatever action it takes, is for the most part related to the ground plane. It works against the pull of gravity, expressing weight, pressure, and tension; it needs leg support to sustain it. Without this support, the figure may not be able to project a convincing demonstration of exertion, effort, and dynamism. This fact also calls for a more emphatic use of the pelvic wedge than has previously been discussed. When the torso forms have been sketched in, the pelvic wedge must be clarified as to structure and direction, with the midline division well laid in so that the legs can be given their relevant attachment.



In this figure, the upper rib cage barrel has been lightly indicated. The lower torso (the pelvic wedge) on the other hand, has been explicitly defined, with the legs set into each side of it.

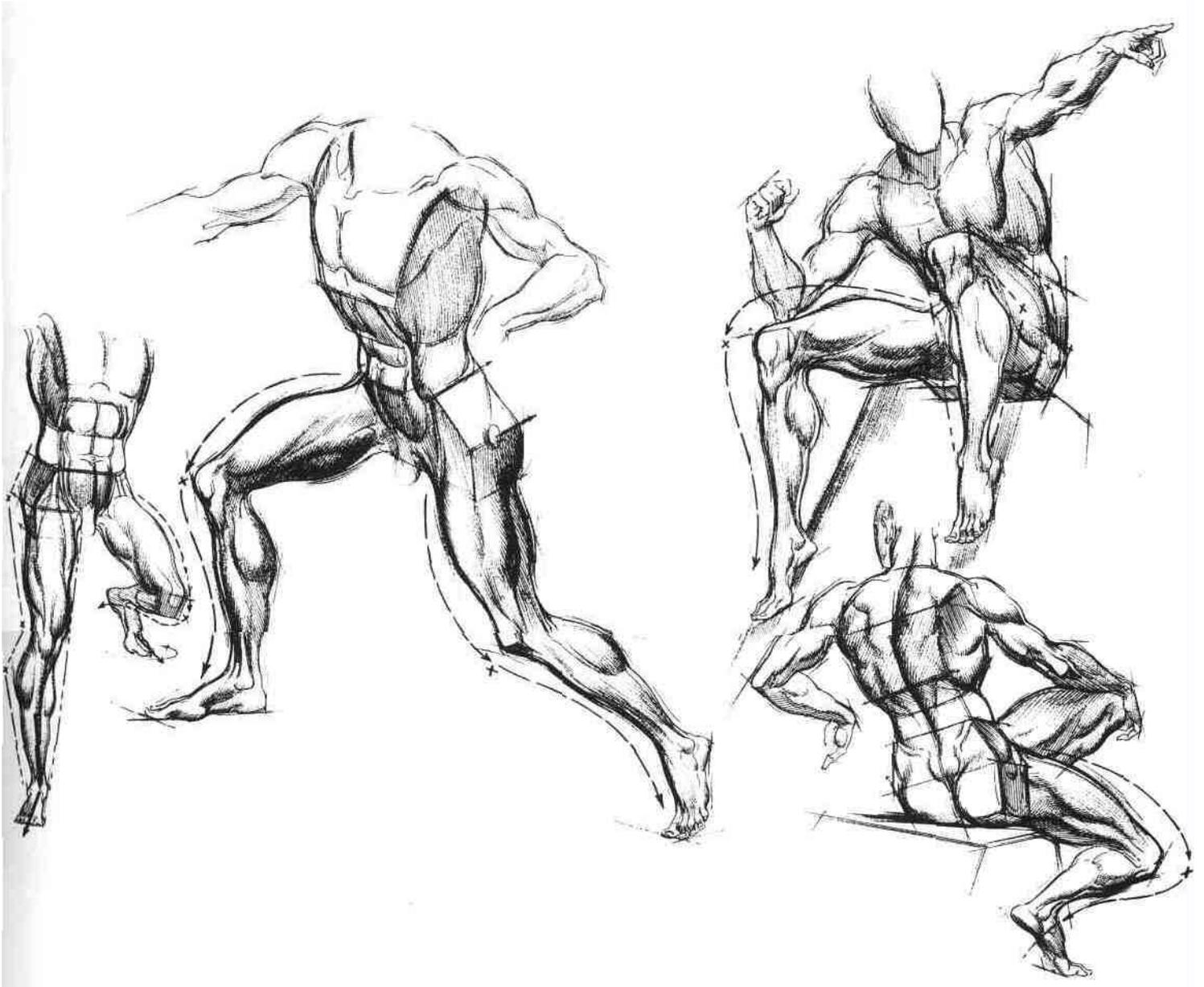


This series of figures shows the wedge block of the pelvis initiating the attachment of the legs. Notice how the cylindrical thigh form of the upper leg enters the pelvic mass well below its box-like front corner.



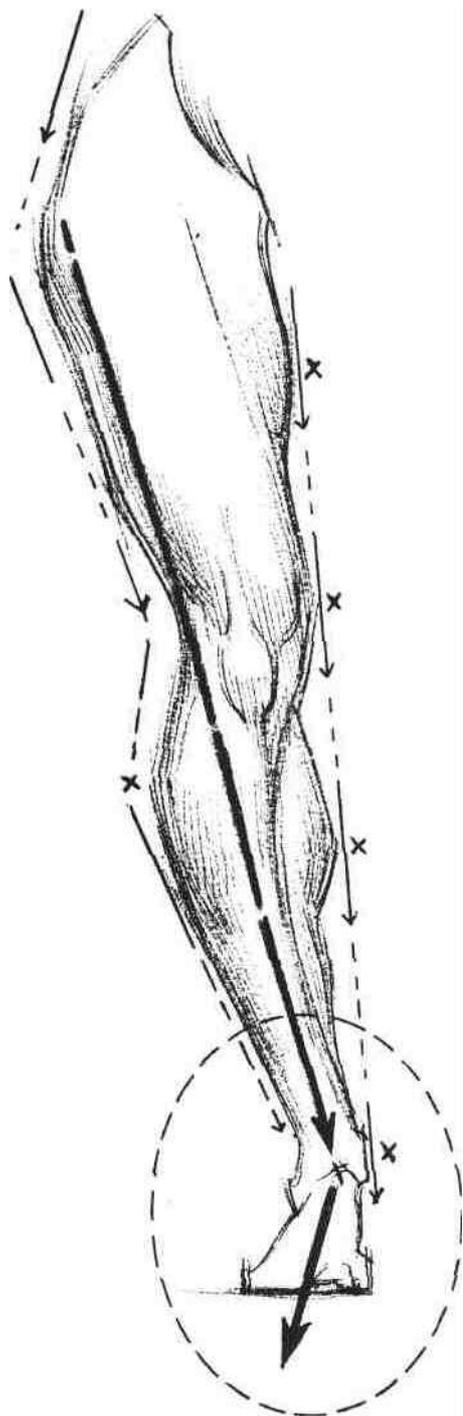
When we attach the legs to the sides of the pelvic wedge block, note the large, protruding secondary form, the centrally located lower belly (actually the mass of the small intestine), which is encased in the hollow of the pelvic basin. The figure to the left shows a schematized version of the bulging belly box mounted in the opening of the hip flanges. The center figure relates this belly bulge to the legs. Notice how the legs, entering the hips, tend to squeeze

the base of the belly. Because of the apparent pressure, the belly rises high in the basin. The figure to the right emphasizes the high belly insert in an action figure: when the legs move, the wedge may spread to accommodate the change of position. The round protrusion, high in the sides of the legs, is the great trochanter, the bony eminence which lets us see the origin of the leg as it swivels, bound yet free, in the socket of the hip.



Let us review the structure rhythms of the leg. In the small, erect figure to the left, the front leg is characterized by a B-shape. The side leg (in a raised bend position) has an S-curve line. (Both rhythms are shown in the dotted lines.) The large, center figure faces left with both legs in a side view position which are expressed with S-curve notation

lines. The two figures to the right show how the side view leg is easily interpreted in both front and back positions. The upper figure presents a front view leg in a deep bend, which is described with a B-shape curve. In this case, notice that the upper leg is shown with the *top* section of the B-shape *folded backward* as the knee bends back.



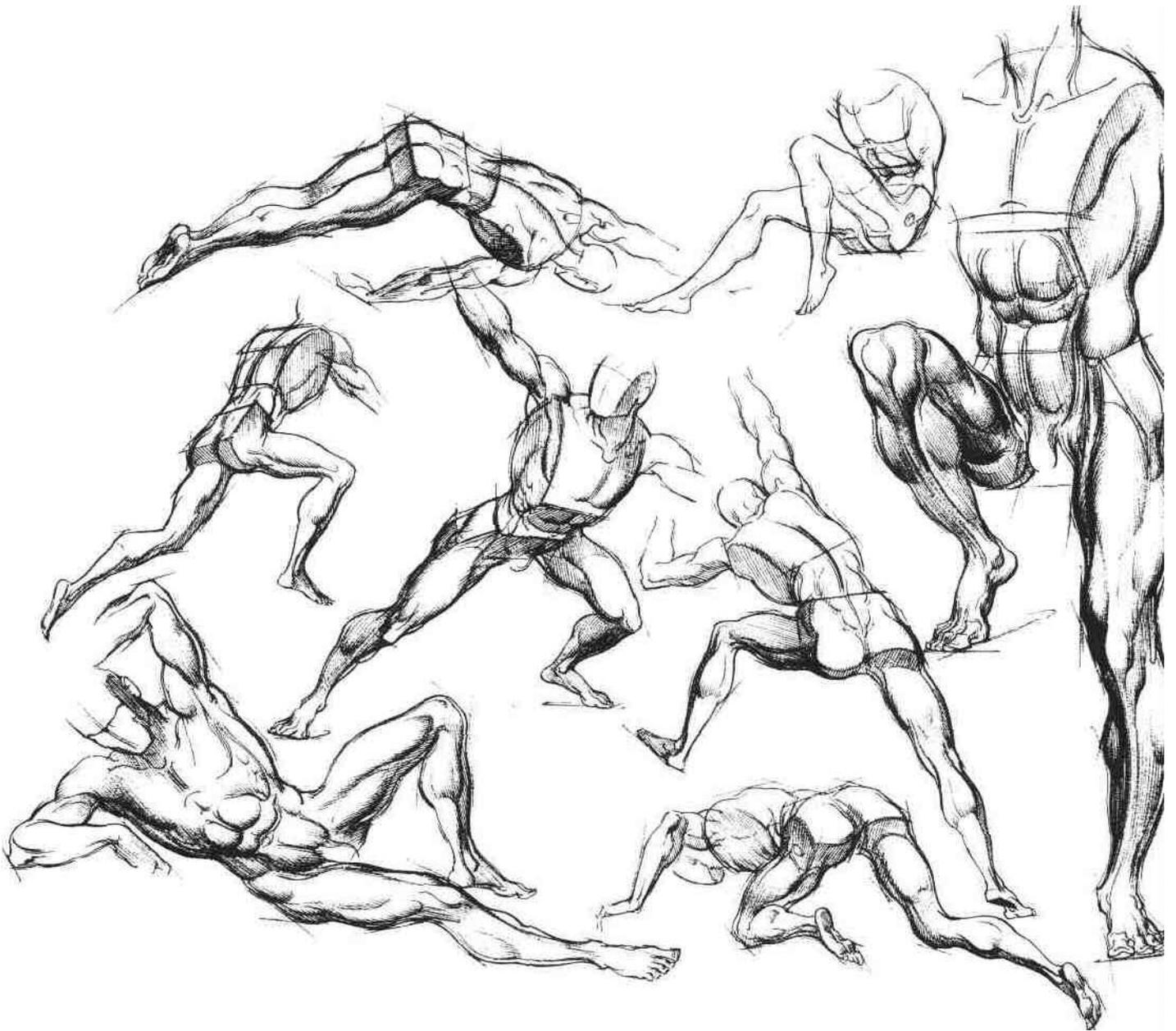
A
 No discussion of the leg would be complete without noting the stance of the feet and their relationship as support platforms to the pillars of the legs. In this front view leg, notice how the entire length of the leg thrusts *inward* from the high, outside hip projection to the low, inner ankle projection (see long leg arrow). The foot stance is shown in the dotted ellipse. Note the thrust of the foot as the ankle connection reverses the bearing of the leg and thrusts the support direction of the foot *outward* (see short foot arrow).

This series of action figures allows to see the stance of the foot from number of viewing angles. Observe how the foot arrow thrusts *outward* from the ankle to



We have mentioned the enormous flexibility of the two body masses the torso, which effect extreme movement in the mid-axial connection the waist. When the body weaves sways, or gyrates, it is important give the leg pillars an effective a convincing support. In the figure the right—a multiple action torso the front legs are underpinned with *outthrust* foot stance support. (Note how the long leg arrows reverse at the ankle, then bear the foot stance in outward direction from the leg.)





In this summary series of sketches, which show leg and torso positions and actions the reader is asked to let his eye range casually over each figure. Can you identify easily which of the legs is drawn from a side view (S-line) orientation and which from a front view (B-shape) orientation? In making your judgment, do you observe how the anklebone relates to each leg view —whether the bulge is inside or outside the outline of the leg? As you look at the lower legs, are you aware of the outward thrust of the feet?

The Arms are Third in Importance

In our proposed sequence of figure sketching, we have so far discussed two stages of the notational order: (1) the torso masses, and (2) the legs. Now we propose the third factor in this sequence: *the arms are third in importance in the sketching order*. While movements of the arms do not cause major shifts of the torso or displacement of the legs, the arms are capable of great versatility of movement which cannot be equaled by the other members. No matter how they move, whether singly or together, parallel or in opposition, it is important, in sketching them, to see them as a *unit*, a bracketed or yoked pair of correlated members. Earlier, we spoke of the structure rhythm of the double underarm curve. This, together with tapered cylinder forms, is a rudimentary description of the arm. To this description, we will add the *armature bracket*, the connecting yoke of the linked arms.

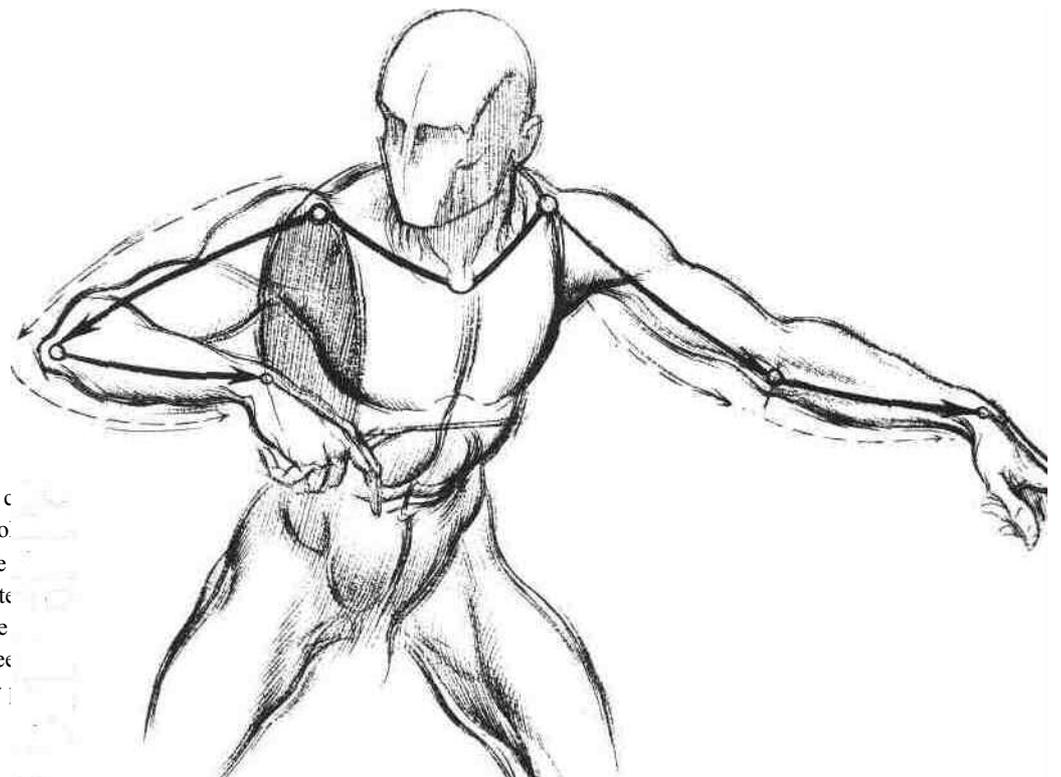
Linking the arms through the chest is no *arbitrary device*. *The arms have* no proper anchor to the skeletal frame. Free-swinging as they are, their position in the region of the shoulder is secured with fiber and tissue. The shoulderblade (scapula) to which the arm is attached is itself unanchored, and the lesser attachment of arm to collarbone is a variable connection. The arms at this juncture are independent of the frame, but the collarbone is anchored in the breastbone (sternum), and here, all the way down to mid-chest, the junction is firmly secured and cannot be displaced. The only real movement here is equal to that of a fixed hinge. For this reason, we conclude that *the collarbone is a true extension of the arm*, and we assert that the yoked arms are a proper use of this concept.



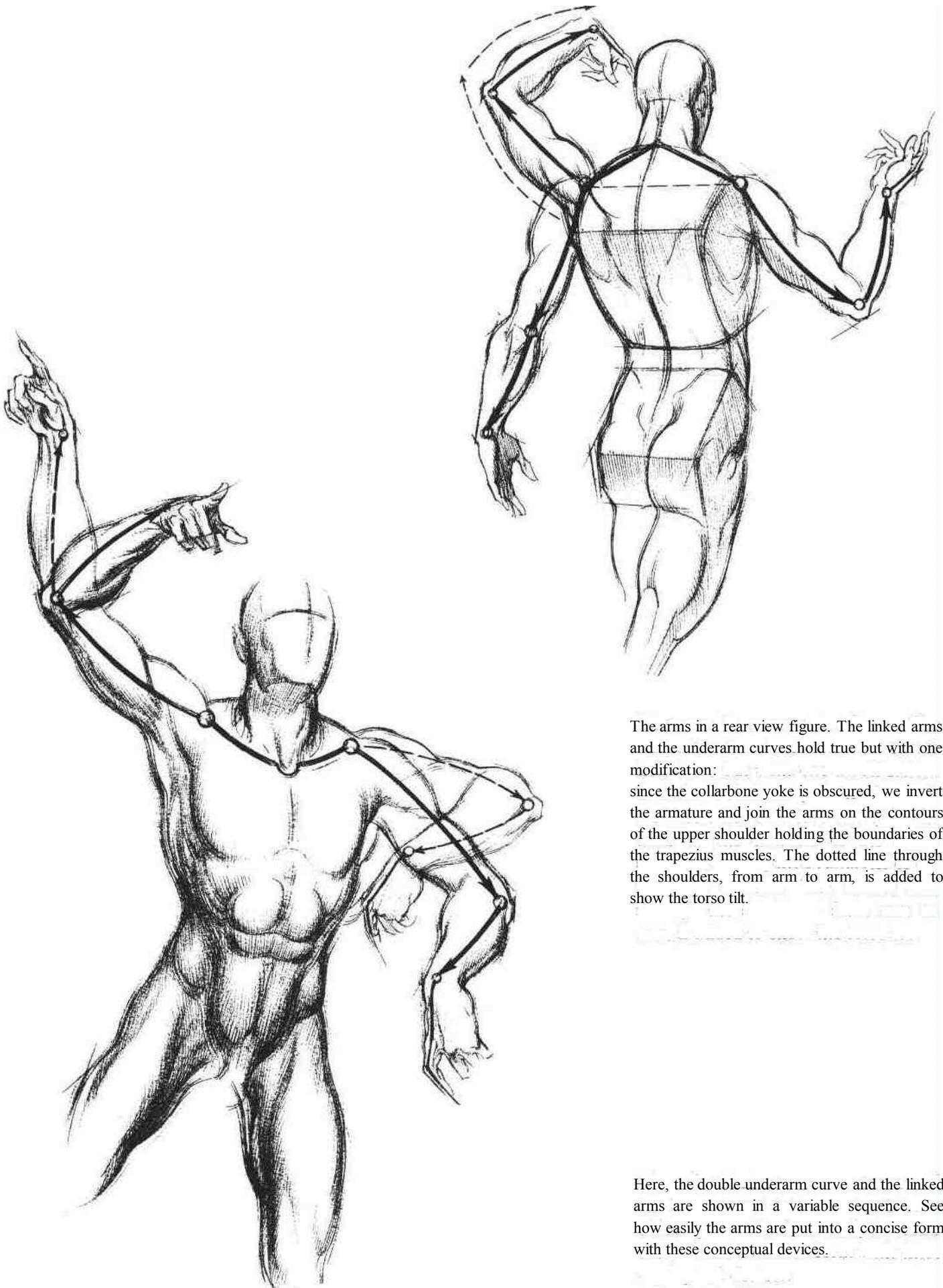
In the small figure (upper left), the arms are indicated in strong line with a light line cylindrical overlay. The arms are linked *through* the chest barrel, from shoulder to shoulder, on the yoke of the *collarbones*. The large figure carries the schematic drawing, begun in the small figure, a step further. Cylinders are replaced by arm forms (dotted lines). The armature yoke of the coupled arms is still emphasized. The total figure has been advanced and tightened up.



Here is another example of the linking of the arms. The smaller schematic drawing is taken to an advanced stage in the larger figure, reinforcing the interconnecting transit of the linked arms through the chest barrel.



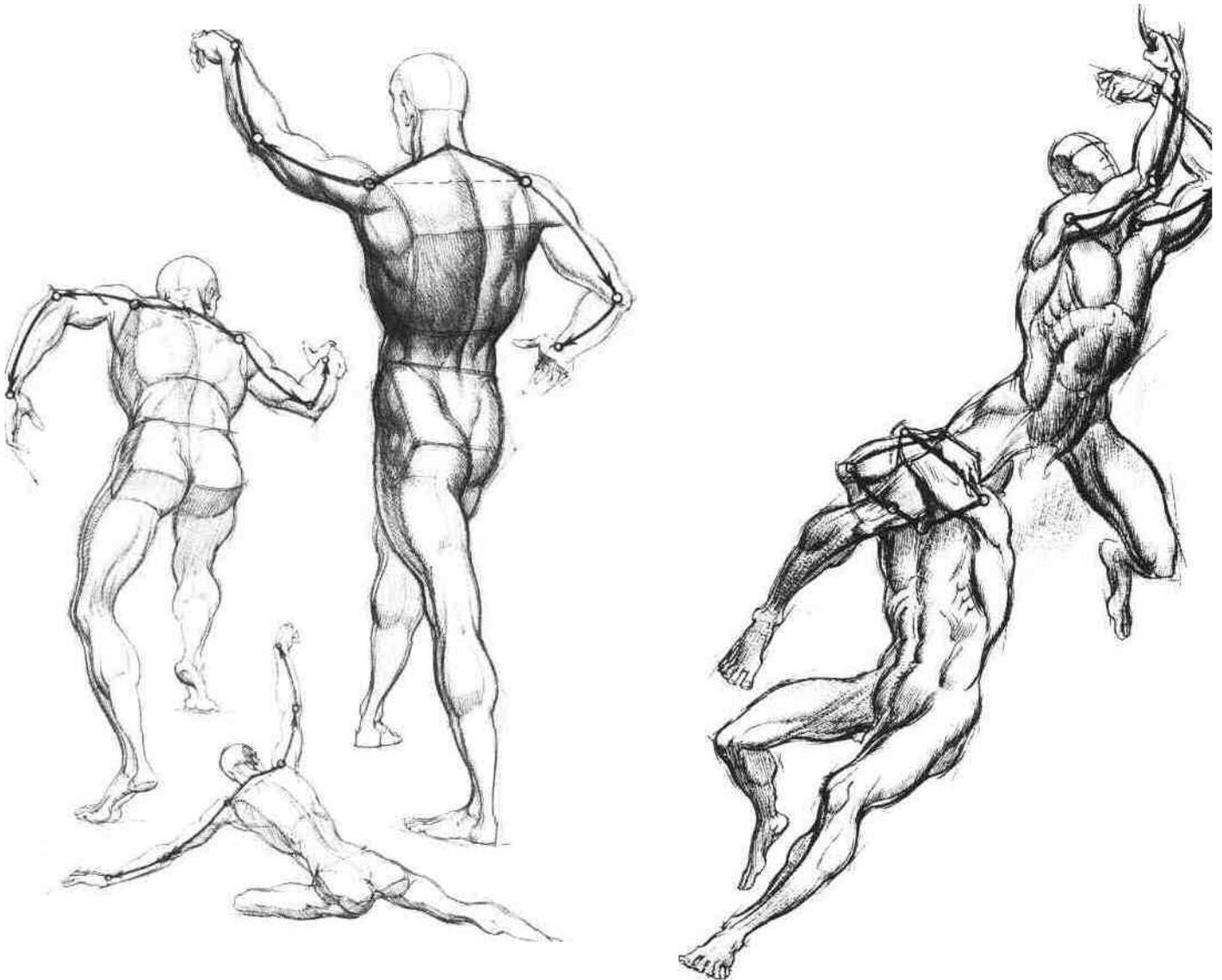
In drawing the arms, it is important to couple the arms in the collarbone to their structural rhythm. The structure of the arms, upper or lower, has a consistent similar curved rhythm, starting from the elbow. A double curve develops (see lines), holding to the underarm exterior of the member.



The arms in a rear view figure. The linked arms and the underarm curves hold true but with one modification:

since the collarbone yoke is obscured, we invert the armature and join the arms on the contours of the upper shoulder holding the boundaries of the trapezius muscles. The dotted line through the shoulders, from arm to arm, is added to show the torso tilt.

Here, the double underarm curve and the linked arms are shown in a variable sequence. See how easily the arms are put into a concise form with these conceptual devices.



Three rear view figures in completed form, drawn in notational sequence. The torso masses, supported by the legs, are followed by the armature yoke — inverted—on the shoulders. The student is urged to experiment with the linked arms (on this page, if necessary!) to test the facility of the approach.

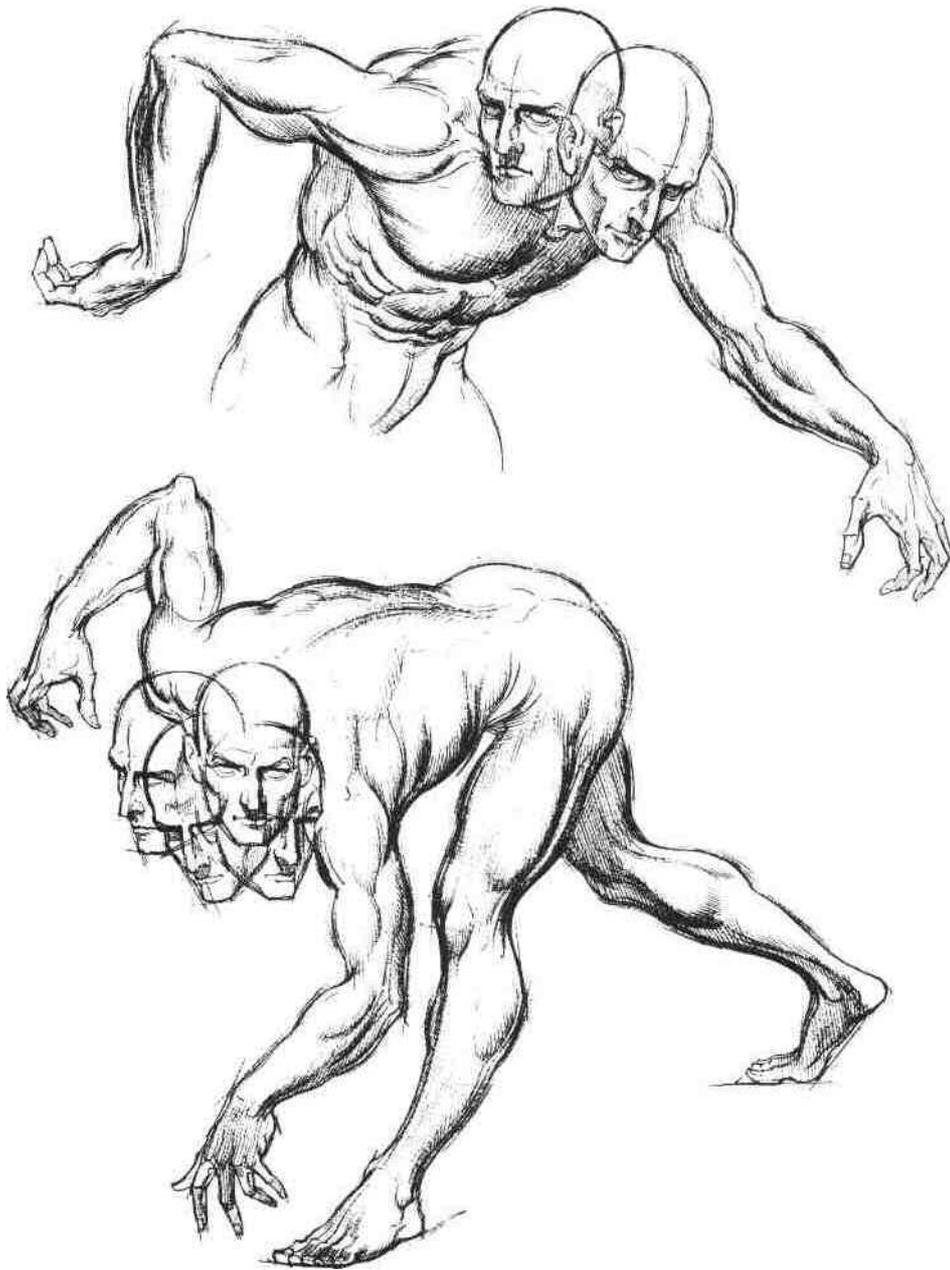
Here we see a notational sketch of *the overlapping* of arms, a problem not covered in the previous examples. The upper figure shows one arm over the other; the lower figure shows the arm paired, flexed, closed, and folded to gether. The important thing to remember in the treatment of overlapping forms is the value of being able to see, transparently, the origin of attached members and the construction of obscured parts.

The Head i

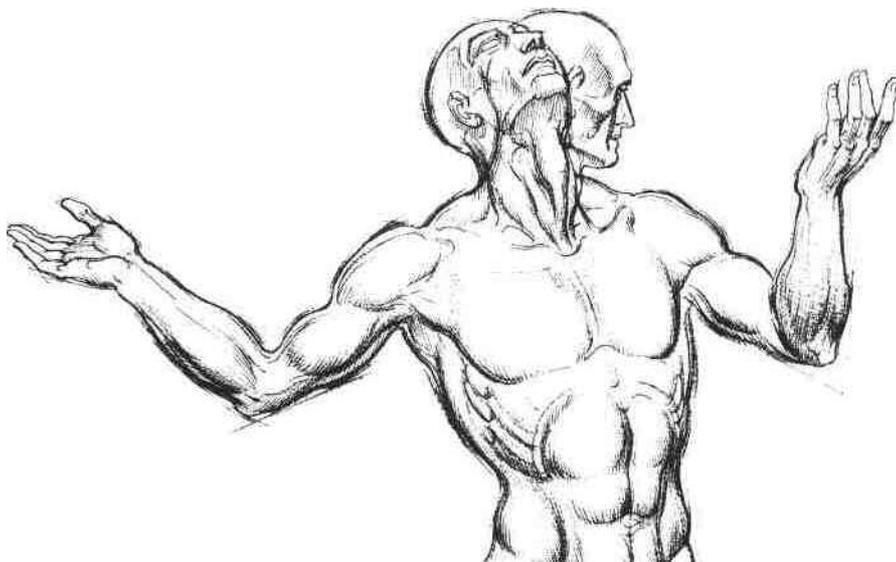
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Here, two figures with deep torso bends give overviews of the figure from the front and from the back. The superimposition of each of the heads, in a number of trials, can proceed with ease and directness when the figure is initially laid in. Indicating the head first would create a needless obstruction to the effective notation of the figure's form, which confirms the proposed rule to put the head in last.



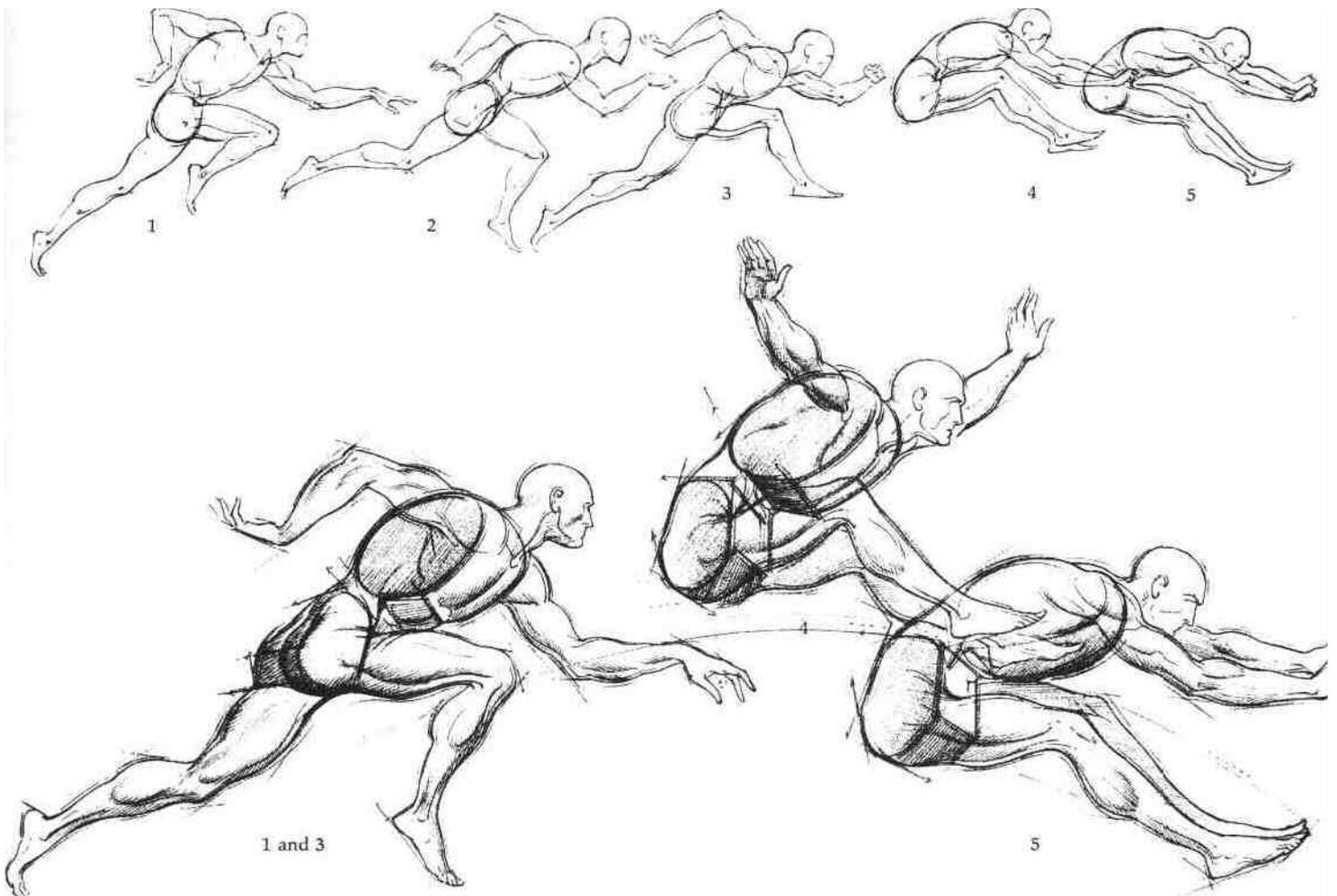
In this example of two head placement possibilities, the erect figure is conventional in treatment. The two heads, however, suggest the extreme use which may be advanced within the context of the figure. In this case, an averted profile head or a three-quarter underview position can both be tested against the stable support of the torso.

Exercises in Notation

The way is now open for a practice session using the proposed form order of figure notation. Without resorting to visual aids, illustrated references, photos, or models, start a series of action sketches, giving vitality and liveliness to the forms of the torso. When you add the legs and the arms, try to avoid passive, insipid attitudes. These tend to be unimaginative and

unstimulating, and what is worse, they usually project a pedestrian, art-schoolish look. *Challenge the eye!* Make your figures spirited, animated, provocative. The extremities should be free and open; forms should stretch, extend, thrust, exert. Your figures should convey energy and vigor. If figure ideas are hard to come by, perhaps the governing motif of a sports

action might encourage you to visualize the actions of, for example, a skater, a wrestler, or a runner in a phase-sequence or "filmic" series of changes. This approach—a figure going through a number of related, sequential acts, none alike in their mobile, momentary progression — is illustrated below.



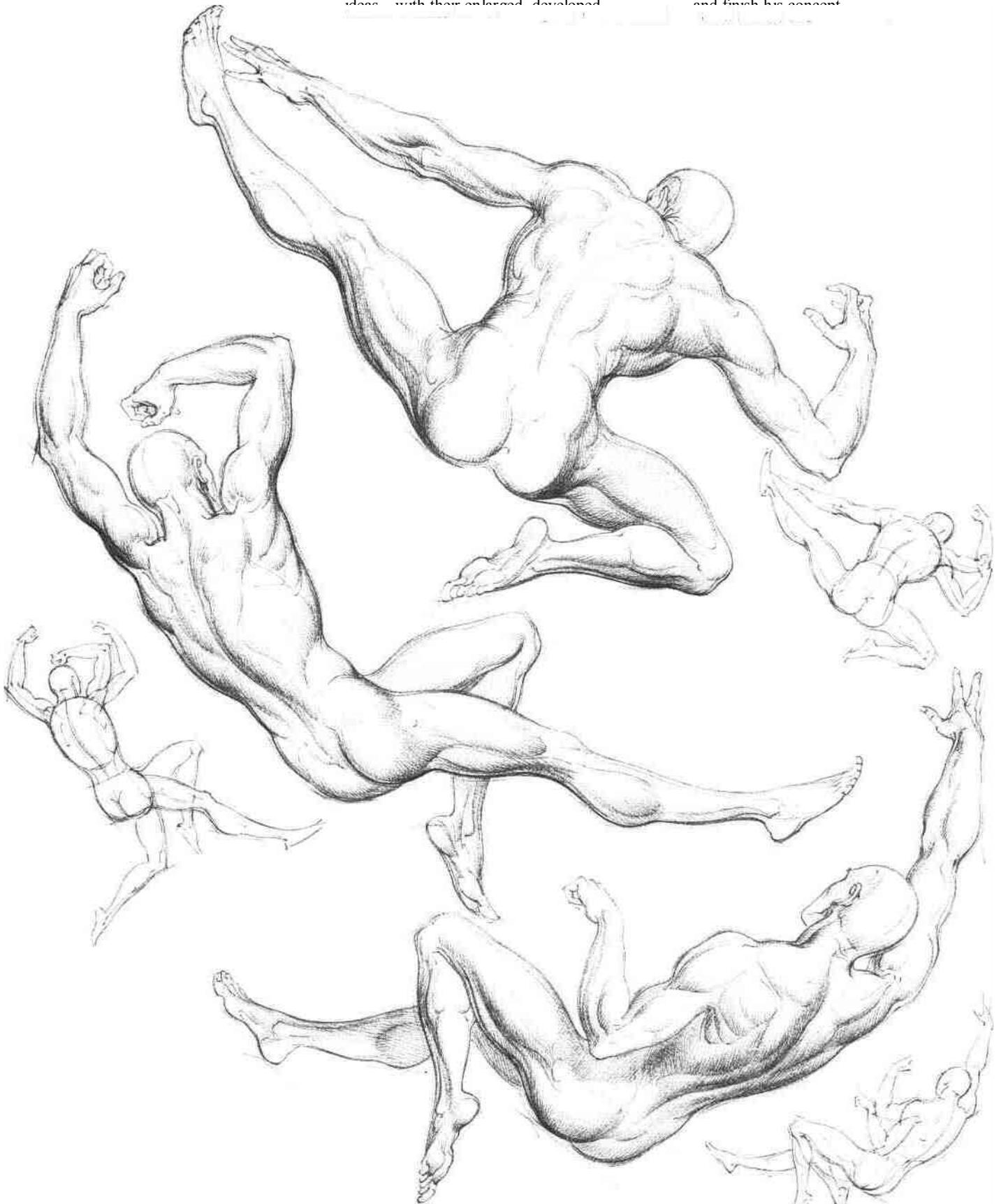
A series of side view figures might be a good way to begin in an opening exercise. *Above*, we see a running figure gathering impetus for a leap and jump. The drawing of this sequence is quite arbitrary, and does *not*, for the artist, have to respect the technique of the broad jumper. In this five-phase action statement, the figure (1) leans forward, (2) runs hard, (3) takes off, (4) leaps, and (5) projects forward to a mark. *Below*, we see the companion illustration to the above five-phase action

statement. These figures show a further developing, enlarging, tightening, and finishing. To compress the action of the athlete and achieve a heightened tension and excitement, parts of figures 1 and 3 have been combined; figure 2 has been dropped. Because of this condensation, the running action has a greater concentration of drive and thrust. The leap of the middle figure (4) has been raised. His arms are outstretched, and he appears to fly. This idea was developed in the final workup

and was inserted before the final stretch and landing figure (5). The important things in this three-part finish are (1) having a pool of original figure ideas to work from, and (2) making a critical assessment of form and function to meet a required goal. (It is at this second point that the art student becomes the artist—when he is able to assert a definite judgment of his needs and work out his own solutions

Here, the use of the notation sketch is shown as an initial stage in working a figure to a completed stage. Compare the sizes of each of the figures—the small, "thumbnail", primary figure ideas

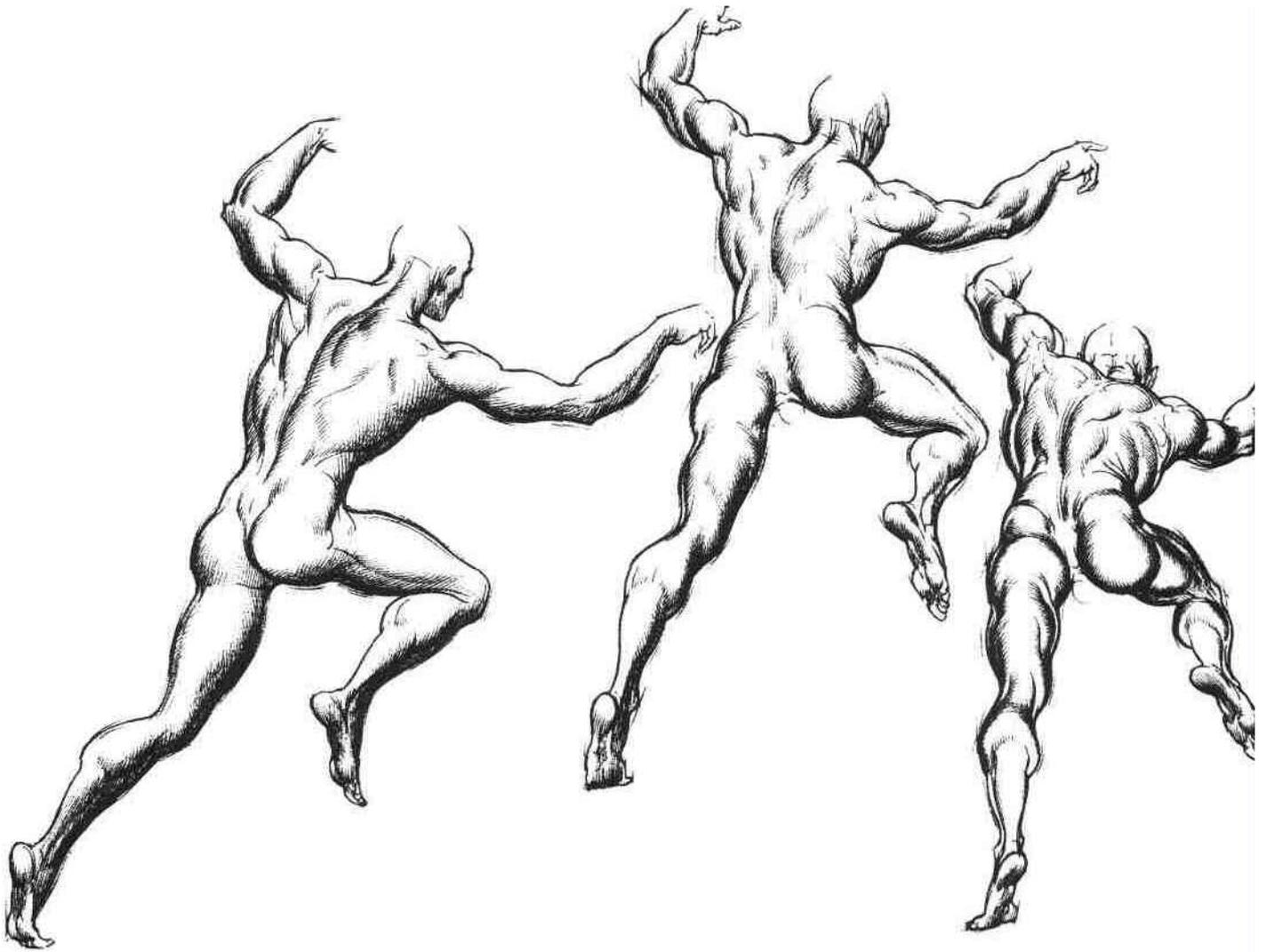
counterparts. This is a *method* of working, a two-stage procedure where the artist explores and probes in a tentative, searching series of rough sketches, then breaks off to resolve and finish his concept





There are times when a notation sketch is placed on the work surface in its final large size, rather than in a smaller size. In this case, the same sketch idea is carried through, without interruption, in a continuous sequence from probing to finish. The advantage of this second method is that the "sudden vision" or "inspiration" of the first

sketch has such a concentrated visual impact that the figure will go flat, or stale, if its development is inhibited. In this illustration, a group of figures, from small to increasingly larger sizes, have been sketched in a spiral pattern which evolves to a center workup. *Note:* size is no bar to carrying a spontaneous notation to its final stage.



This three-stage sketch shows how the forms of the figure change when they are foreshortened. These three figures are the same, but they are each seen from a slightly different view. The figure on the left gives a predominantly side view; the form effect shows an easy transition, especially in the extended members. The center figure shows a partial back view; now the forms begin to show more depth, and a tendency to bulging occurs (expansion and compression) as the forms close into one another in the process of foreshortening. The figure on the right, seen from a predominantly rear, low-angle view, produces a form-over-form, "lumpy"

effect; the expanding and compressing effect describes what happens in depth recession, but it inhibits the flow of forms—the result is segmented and discontinuous. In this last figure (right), the forms seen on end tend to divide and detach; the array of dissimilar elements becomes an aggregate of parts, rather than a coherent whole. If there is a seeming unity in the forms, it is in their positional sequence and direction, as well as in the viewer's familiarity with the contour of the figure. But if you look closely, you will see that the partitioning and the divisions that chop up the flow of body lines are, nevertheless, uncomfortably there.