



1937

The importance of the study of anatomy to the figure artist

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THE IMPORTANCE
" OF
OF THE STUDY OF ANATOMY
TO THE
FIGURE ARTIST

By
Dorothy Young
" "
1937

A Thesis
Submitted to the Department of Art
College of the Pacific

In partial fulfillment
of the
Requirements for the
Degree of Master of Arts

APPROVED: *E. Grace Ward.*

Chairman of the Thesis Committee

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INTRODUCTION

Artists have and do now occasionally ridicule Anatomy as a study of no utility to them; a feeling which seems due to an exaggerated independence of spirit. How could such minds stoop to learn Anatomy, who despise the instruction and influence of a Master, trusting wholly to their own imagination?

Anatomy is of little use to the student if he has not grasped how to draw form, but it helps him to invent form. Without an understanding of how to invent, we can only make flat plans of the anatomy inside the outline; but once the drawing of bones and structure has been understood, all the anatomy that the student knows may be to his advantage.

I do not pretend to say that the study of anatomy is sufficient to make an artist; many professors imagine themselves teaching Artistic Anatomy when in truth they have merely been describing the bones and muscles to their audience, without ever directing their attention to the results of their arrangements, and when at the end of the course the student has copied one or two *écorchées*, he fancies that he thoroughly understands the anatomy of forms, and that he has completed his anatomical studies! Fatal confidence, the sad results of which quickly show themselves in his works.

An artist must know as much science as he can use. If

he knows more, there is a chance that science will use him. It is the structure of the body he must grasp and the way anatomy works. Knowing the parts by name is merely a convenience.

The exterior forms of the human body are produced by prominences and depressions of the subcutaneous parts. These forms, distinctly enough marked in some persons, are scarcely visible in others; but it may be held as a rule by the artist that they are much less distinct than is generally believed, even when the muscular system is powerfully developed; that they may be modelled distinctly, it is necessary that the body enter into action, and that the different parts composing it move on each other. The ordinary movements scarcely affect or modify the exterior; appreciable changes, bold reliefs, profound depressions display themselves only during energetic efforts. Although, for example, all the muscular powers contribute in the support of the body when standing, and every individual movement, however gentle, requires the combined action of a great number of muscles, so perfect is the arrangement of the forces and the levers, the resistance yields so punctually to the slightest contractions of these muscular powers that their displacement is effected without exacting any great muscular efforts.

Thus, in moving the thigh, the arm, the foot, or hand in the ordinary actions of life, the contractions of the muscles by which all this is effected is seen with difficulty.

But in any strong physical action, the contractions become more energetic and their powerful action may easily be traced in the bold reliefs they form under the integuments.

If we can master Figure Drawing, even to a limited extent, we shall be well prepared to draw anything, and of all things in nature we are most critical of the human body round which there are gathered the deepest associations of idealism and instinct.

However, the ideal in Art and in Nature is best understood as a standard from which to deviate, rather than as a scheme to impose on form.

Rules are made to be broken, but they cannot be broken until they are understood.

The creative force is given to few, but each one of us, layman or artist, cherishes a spark that may - who knows - start in another artist a conflagration. Then whether the work produced be trivial or profound, the student of "Life" may give thanks that he pursues an ageless quest of unexhaustible allure.

CHAPTER I
THE HISTORY OF THE STUDY OF ANATOMY

According to Mathias Duval, the word Anatomy comes from the Greek ἀνά, meaning across, and τομή, meaning section, a study of the parts composing the body - muscles, bones, tendons, and ligaments.¹

This may be done by examining the nature and arrangement of the organs which determine the external forms of artistic anatomy.

Those who believe that the study of anatomy is necessary or at least of great importance to the artist, may find ample backing for such a belief in the record of the study of anatomy from the time of the Pharaohs to the present day.

As the painter penetrates deeper and deeper into the past beyond the origin of pottery, beyond the records of tools and weapons, the archaeologist discovers, buried in the silt where little else remains, wondrous evidence of prehistoric man's absorption with the human figure.

From Etruscan vaults and Indian graves, from catacombs and crypts, endlessly emerges a host of images and symbols disclosing in a thousand forms, this urge. But enough has been said to prove that from primeval times man's thought centered about his ego, and that in a myriad shapes he paid his tribute

¹ Mathias Duval, Artistic Anatomy, 14.

to the human vessel.

If we pause to review the past, a slight examination shows us that anatomy has always exercised a powerful fascination for the sculptor and painter. From the earliest times we see a preoccupation with its challenging problems. Assyrian reliefs show bold statements of the salient muscles of the legs and arms. The Archaic sculptor stressed the powerful swell of calf and thigh and mapped out the torso into effective planes, firmly based upon the muscular development of the body.

There is no certain evidence that the ancient Egyptians practiced dissection, but they obviously knew a good deal about anatomy, for in embalming the dead, they removed the whole of the viscera, the aorta, and most of the muscles of the body. The very fact, however, that they practiced embalming indicated their belief in the sanctity of the body, and under this belief dissection was an offense against the dead.

"Embalming used by the Egyptians varied with the wealth and importance of the deceased. The most expensive process of embalming, costing the equivalent of a thousand dollars, commenced with an incision in the wall of the abdomen. The man who made the incision ran away as soon as the act was completed to avoid being stoned - a ceremonial gesture to indicate his offense against the dead."¹

¹ Howard Haggard, Devils, Drugs, and Doctors, 128.

When we turn to Egyptian Art we find that while the Egyptians were very fine draftsmen when they wanted to be, especially in the earlier periods, they did not need to know anatomy to the extent that the Greeks, for example, needed to know it; Egyptian Art found its raison d'etre in the glorification of their kings and divinities, and the more unapproachable and dignified these kings might be made, the more successful were the statues and paintings which glorified them. This ideal of unapproachability was achieved by placing the figure in some fixed and more or less stately pose, so that all eyes might see that he was entirely unmoved by the passing emotions and gestures and attitudes of daily life, as on page 7; and as were even the common people, shown on pages 8 and 9. In such an art, a study of anatomy was absolutely unnecessary. One of the Pharaohs, according to the Anatomist George Cox, wrote a treatise on the subject of anatomy about 3000 B.C. Little is known of it.

Like the Egyptian, the Babylonians had little knowledge of anatomy. The ancient Jews likewise had little anatomical knowledge; but the later Jewish writings as embodied in the Talmud are improved in this respect and give a sketchy kind of anatomy. The bones of the body are variously numbered, as two hundred forty-eight and two hundred fifty-two, and include the bone of Luz. This bone is the supposedly indestructible nucleus, a sort of seed, from which the body is to be resurrected. The belief in the bone of Luz and the missing rib of Adam persisted until the Sixteenth Century, when Vesalius



Hatshopsitu.
(Davis, *The Tomb of Hatshopsitu*, p. 22).

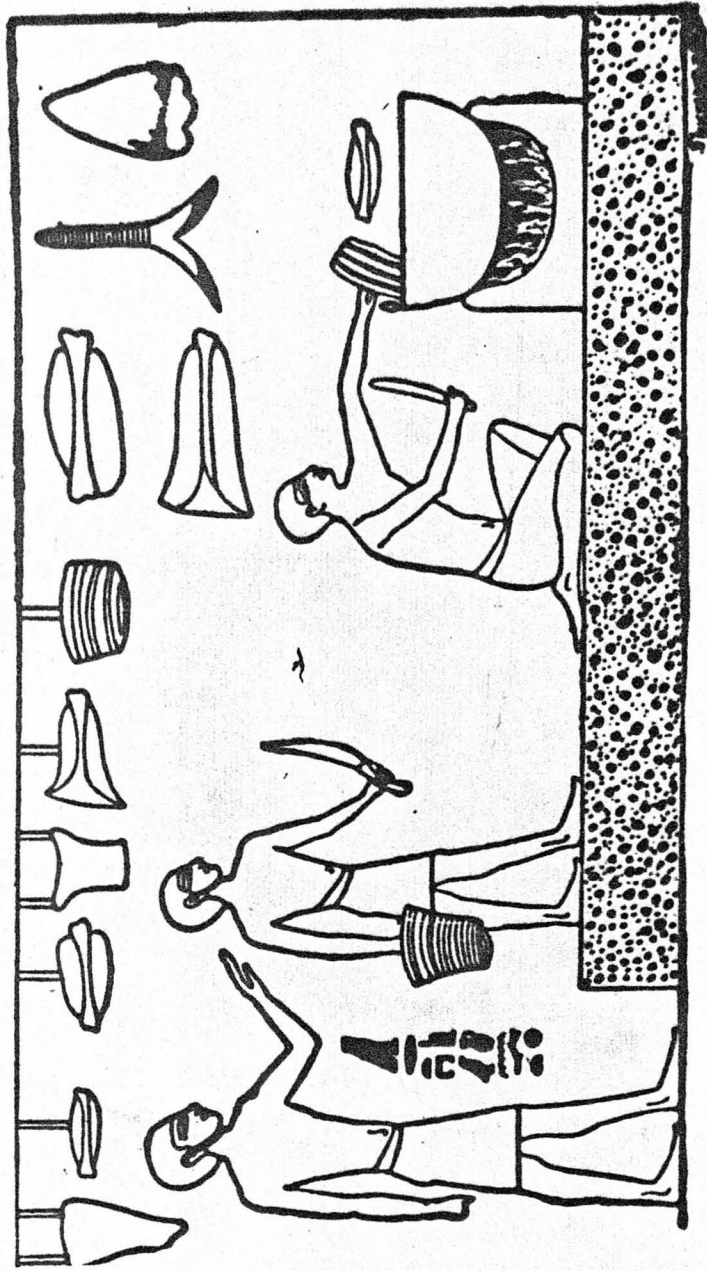


Fig. 16.—The Cookshop.

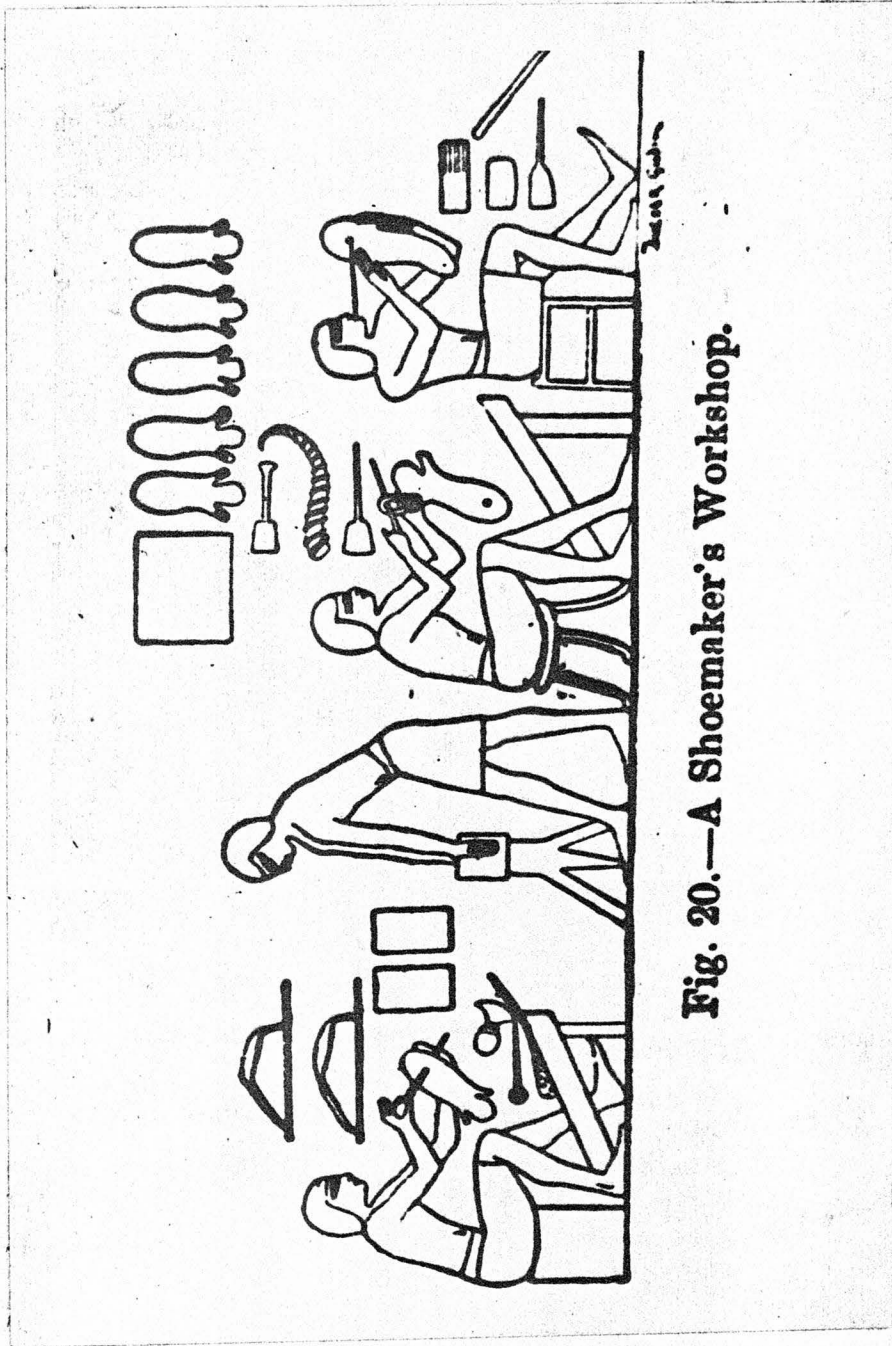


Fig. 20.—A Shoemaker's Workshop.



THE SKELETONS OF A MEDIEVAL DEATH DANCE

A woodcut made about 1495 and shown here in comparison with the previous illustration. The inaccurate anatomy, particularly striking in the bones of the pelvis and the joints of the legs, is an example of the lack of anatomical knowledge before the time of Vesalius.

showed that both are myths.

But with the Greeks the case was a different one; with them the athlete was as often glorified as was the stately ruler. "The Discus Thrower" - page 12, shows violent action and every muscle is in exactly the right place. By the Fifth Century B.C. the sculptor's rendering of the human form is so perfect that no flaws are to be discovered by even the most exacting anatomist. But with all this, it must be admitted that nothing is known certainly as to whether the Greeks practiced dissection; it is known that they desired to, but it is known also that such practice was contrary to the law and custom of the ancient Greeks. That the Greek artist would have liked to study anatomy is shown by the fact that Hippocrates dissected animals and Galen, the great Greek physician who lived in the second century after Christ, derived his knowledge of anatomy from the pig, the ape, the dog, and the ox. He assumed that the structures he found in these animals were identical with the structures in the human body. For thirteen centuries the human breastbone was supposed to be segmented like that of an ape, and the liver to be divided into many lobes like that of a hog. Such was the hold that Galen's work had upon the physicians of the middle ages that when Vesalius in the Sixteenth Century showed that Galen's description of the hip bone was wrong, the excuse that was offered for Galen's error was that man had changed his shape through wearing tight trousers! Galen did not even



The Discus Thrower



Marble Warrior

have a skeleton to study, for he speaks of his great pleasure at finding a few human bones and earnestly advised his students to go to Alexandria to study the skeletons there. It was not until the Second Century A.D. that actual dissection was undertaken in Alexandria.

In 1163 an edict of Tours officially cast surgery into disrepute. Two centuries later another papal Bull was misinterpreted to the detriment of anatomical study. Pope Boniface VIII in 1300 decreed that whoever dared to cut up a human body or boil it should fall under the ban of the church. This edict was intended to prohibit a practice of the crusaders, who, when one of their number died during the pilgrimage to the Holy Land, cut up the body and boiled it in order to obtain the bones, which could be conveniently transported back to relatives in Europe. The papal Bull against this practice was misinterpreted as applying to dissection for anatomical study.

There are two ways of accounting for the minuteness of observation and soundness of generalization which may be found in the best work of the Greeks; the first is by saying that the Greeks made the most of their opportunities for studying the nude figure in action at Olympic games -- opportunities which are denied the artist today. But even such opportunities, important as they doubtless were, do not seem quite enough. It seems just a shade more probable that the Greek sculptors, in spite of the veneration in which the dead

bodies were held, practiced dissection secretly; such an occurrence would not be without parallel in history.

During the Renaissance, when artists no longer had legal opportunities to study living models, they began to feel even more intensely the need for anatomical study to satisfy their urge to paint more realistically. It was during the Renaissance that the ecclesiastical authorities allowed an occasional dissection called, "making an anatomy." The subjects for dissection were executed criminals, but the actual dissection was a subordinate part of what was in reality an elaborate social function. The subject for the dissection was selected from among the prisoners, special rites were performed over him, and spiritual indulgences were allowed for the indignities which were to be done to his body. When thus prepared spiritually, the prisoner was strangled by the executioner and the body was turned over to the University. Invitations to the dissection were issued to the city officials and other prominent persons. In the presence of the assembled company the papal indulgence permitting the dissection was read and the corpse was then stamped with the seal of the University. Often as a preliminary to the dissection, the subject's head was removed in accord with the prejudice against exposing the brain, which according to the Christian conception was the seat of the soul. After these formalities an introductory oration was read and the physicians sang in chorus. Then came the

dissection, which was a perfunctory affair. The physician in charge did not touch the body. Instead, it was opened by a servant while the physician stood to one side and read aloud from Galen, pointing with a wand to the various structures as they were enumerated in the text. A celebration followed the dissection and there was a concert, banquet, or theatrical performance. The whole affair occupied the greater part of two days and was concluded by ceremoniously burying the slightly mangled corpse.

The first great contribution to anatomy was made by the Belgian, Andreas Vesalius, in 1543. Vesalius actually dissected the human body and made accurate observations unblinded by veneration of Galen. Vesalius had undertaken the study of medicine at the age of eighteen, first attending a school at Montpellier and afterward at Paris. The instruction in anatomy given in Paris consisted in reading Galen, dissecting a few animals and observing an occasional brief demonstration of the easily accessible parts of the human cadaver. In 1543 Vesalius, then twenty-nine years old, was ready to publish his great work on anatomy. The illustrations were drawn, it is generally believed, by Stephan von Salcar, one of Titian's pupils.

During the life of Leonardo da Vinci (1452-1519) of the Florentine school, dissection was still looked upon with horror; even murder was not much more objectionable. Leonardo, with his mental viewpoint a thousand years ahead of his time,



ANDREAS VESALIUS

From a woodcut appearing in the *Fabrica*, his book of anatomy, published in 1543.



Royal Library, Turin

LEONARDO DA VINCI
(DRAWN BY HIMSELF)

wrote beside one of his anatomical drawings: "And thou, oh man, who through this work of mine learnest to understand the marvelous works of nature, if thou believest it to be a crime to dissect the human body, consider how infinitely more wicked it is to take human life."¹

The student of Life should by all means examine Quaderni d'Anatomia and see with what ardour Leonardo da Vinci delved into the uncharted recesses of man's anatomy. His pencil, ignoring superstition, searched everywhere, illustrating the skeleton, the muscles, the brain, the way the heart beat. To everything he found, his pencil gave style and beauty; thus "science was married to art."²

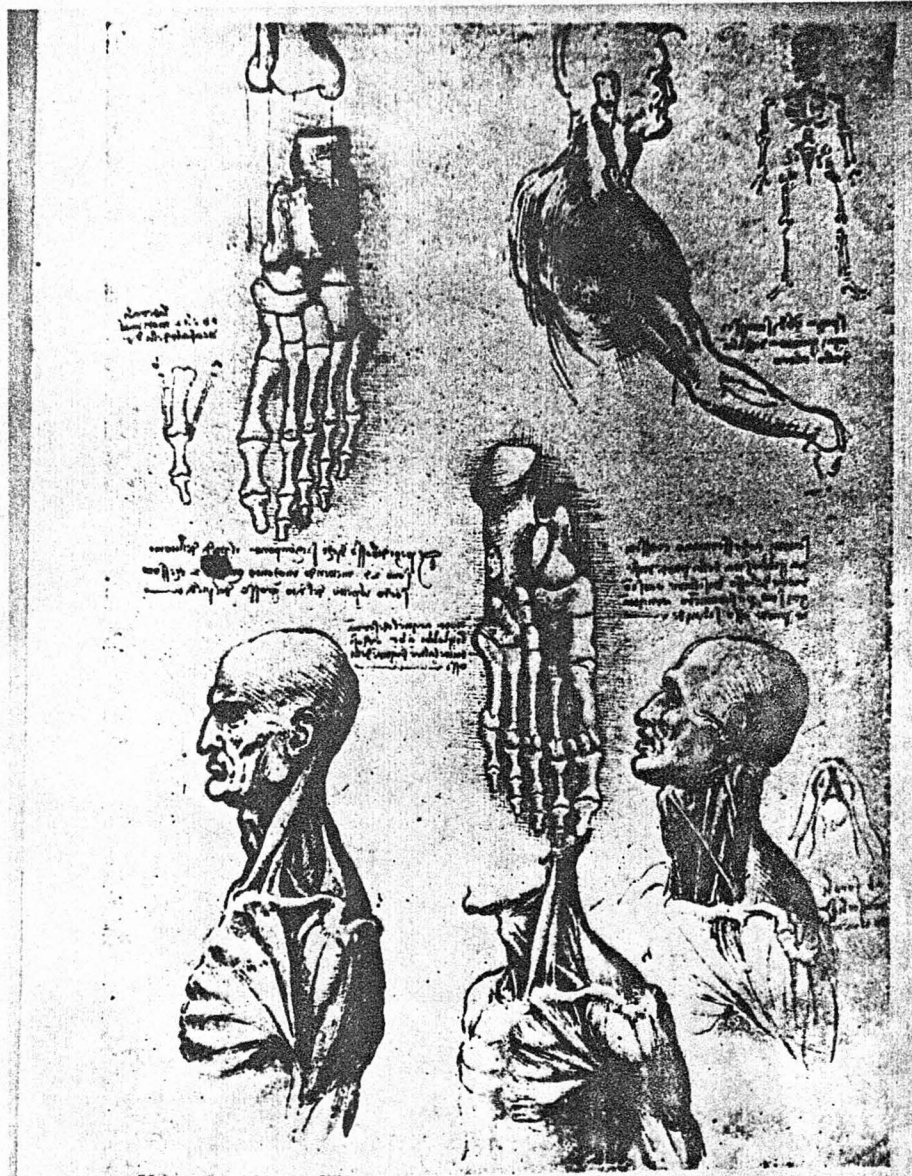
After remarking that he had already most carefully dissected more than ten cadavers, he continues: "If you love such matters you will perhaps be impeded by the stomach, and if that does not impede you, you will perhaps be impeded by the fear of living in the night hours in the company of such quartered and flayed corpses, fearful to look at, and if this does not impede you, you will perhaps lack good draftsmanship which belongs to such demonstrations."³

He states other impediments, from which it is very evident that he did not suffer himself, for his many fine and accurate drawings might be used today in a lecture on anatomy

¹ Leonardo da Vinci, Notebooks, 50.

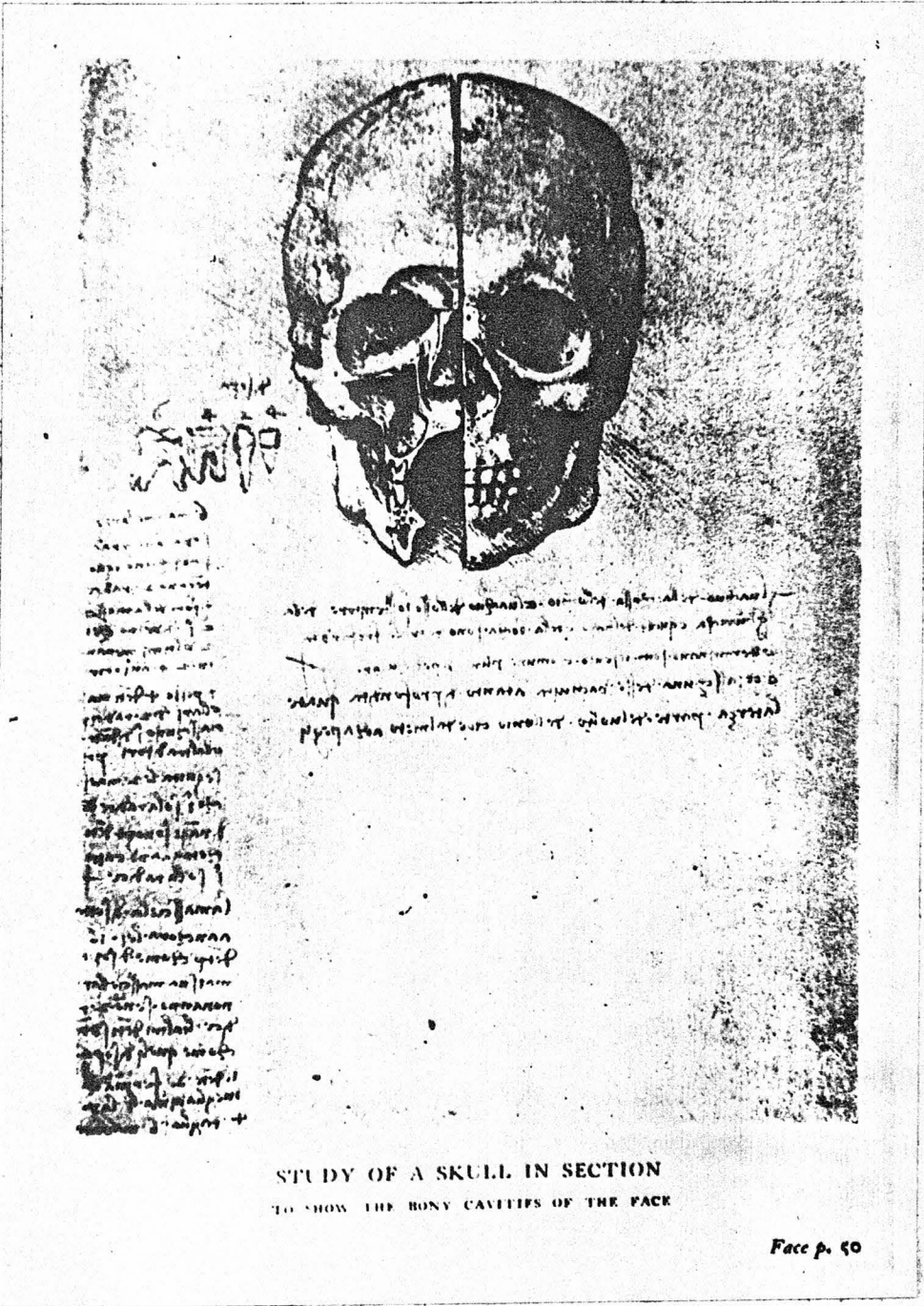
² Ibid., 25.

³ Ibid., 39.



STUDIES IN THE ANATOMY OF THE NECK AND OF THE BONES OF THE FOOT

Face p. 78



STUDY OF A SKULL IN SECTION
TO SHOW THE BONY CAVITIES OF THE FACE

Face p. 50

for medical students. Yet his scientific precision did not exclude the larger vision.

It is instructive to compare his attitude with that of Michaelangelo who also studied anatomy with uncommon thoroughness. Michaelangelo (1475-1564) of the Florentine school made laborious studies of dissections and has left many beautiful illustrations of anatomy. In contrast to the scientific and biological approach of Leonardo, Michaelangelo's researches are always directed toward a fuller understanding of the beauty of form.

We have numerous drawings by Raphael in proof of his anatomical research, as for example, the remarkable study of a skeleton to show the direction of the limbs and the position of the joints for the figure of the swooning virgin in the painting of the entombment. He constructed the figure in the manner of a carpenter. Using his knowledge of anatomy, he made every joint articulate, explaining the machinery of the body while he described it; and yet the figure comes together as a whole and as a mass isolated from surrounding space or landscape.

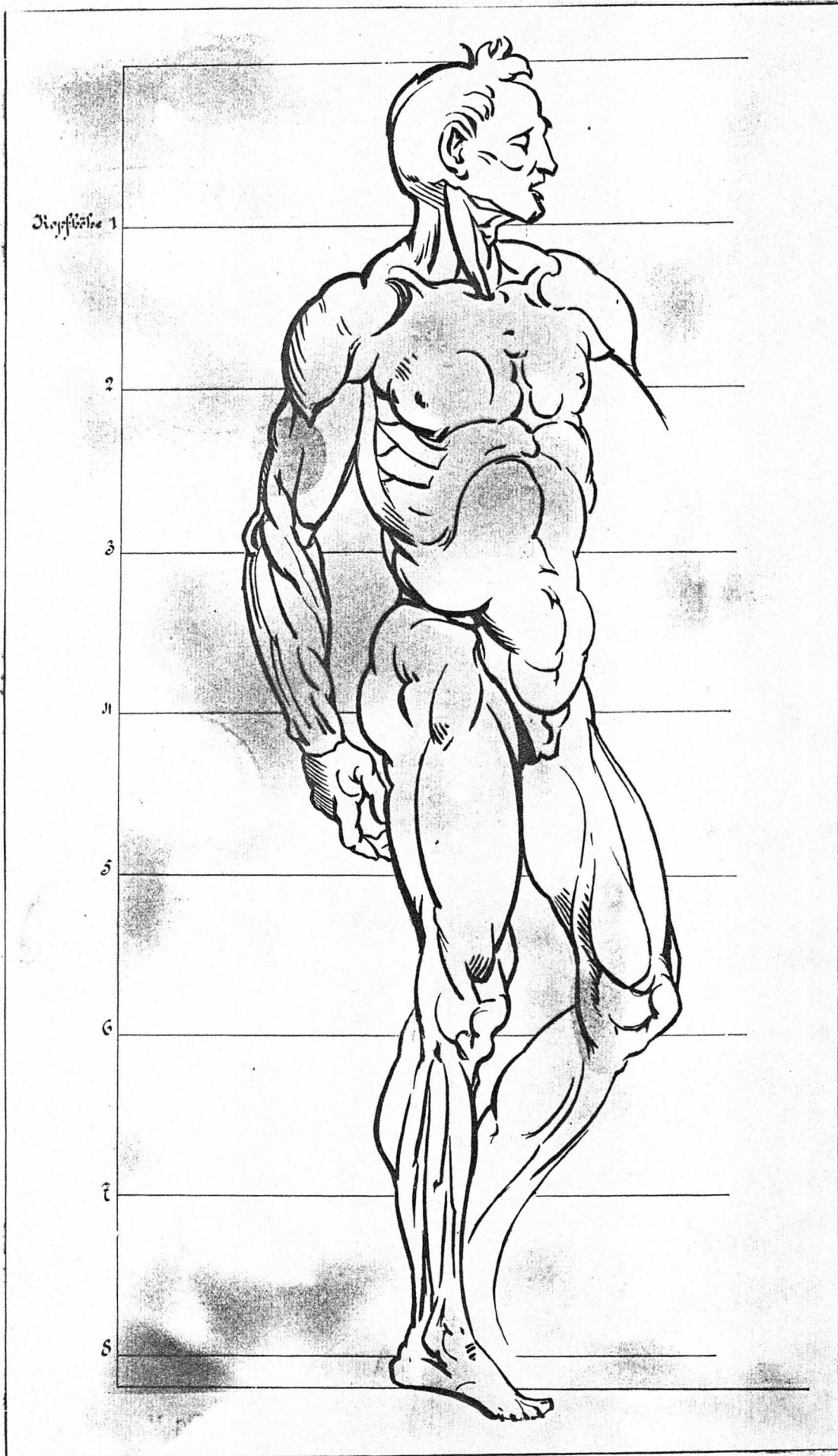
There is a sketch which shows two students in a crypt, engaged upon a dissection. The corpse lies on a rough table and their only source of light seems to be a guttering candle stuck casually between the ribs. Thus in dark, dank crypts worked the two masters, and so assiduously did Michaelangelo pursue his investigations that he ruined his health. When

we consider the contemporary lack of asepsis, not to mention his aversion to soap and water, the wonder is that he escaped so lightly.

Very few of his anatomical drawings survive, but one or two of his wonderful little figures in wax are still in existence, and should prove a spur to the slothful student.

How much Michaelangelo knew may be sensed by a study of the engraving of his famous cartoon of the Pisan soldiers surprised bathing in the Arno. Throughout his work in the Sistine chapel he used his knowledge in a faultless manner. Without such a profound understanding of anatomy it is impossible to imagine anyone accomplishing such a stupendous task. Lying uncomfortably upon his back, high up on the scaffolding, with no other aid than memory to serve him as he worked impetuously upon the three hundred and fifty odd figures, how often must he have relied upon the wealth of information he had gained from his anatomical research. With all his skill he never lost sight of essentials. His knowledge was power indeed; with him anatomy was only a means toward a fuller comprehension of the plastic beauty of the human figure.

In the "Academie de Peinture et de Sculpture" which was founded by Cardinal Mazarin under Louis XIV in 1648, and which later became the "École des Beaux Arts" in Paris, two studies were instituted side by side as fundamental and indispensable to the practice of art. They were Perspective



Proportions of male figure by Michaelangelo

and Anatomy.

The scarcity of anatomical material in the Seventeenth Century may be judged from the fact that Rondelet, a professor of the medical school of Montpellier, for want of other subjects, dissected the body of his own dead child before his classes.

The development of anatomical teaching in the United States was burdened by opposition to dissection. The most violent outburst against dissection occurred in New York City in the so-called Doctor's Mob of April 1788, in which the people arose against the so-called inhuman treatment of deceased bodies. In 1831, a little more than a century ago, Massachusetts passed a law making bodies belonging to the State available for dissection.

Howard Haggard says: "As late as 1901, Dowie, a fanatical leader of a religious sect, wrote against dissecting."¹

¹ Howard Haggard, Devils, Drugs and Doctors, 158.

CHAPTER II
ELEMENTARY LIFE DRAWING

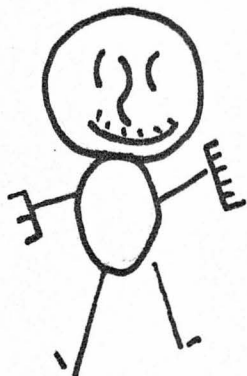
The interest of man in his own ego and especially in pictorial representations of himself is very evidently not confined to the field of adults. The children of the present day also are interested in drawing pictures - not so much of themselves at first, but of the much adored and much copied adult. Their drawing and painting is, of course, very naïve and has fascinated adult artists for a good many years. Contemporary artists who teach and write tell us that we adults could profit by it if we could erase the knowledge that has stylized our work and make our minds open to perceive in a child-like manner.

There is very little material to be found on the subject of Life Drawing for the child, but the later periodicals show a newly awakened interest in this subject. It will be the purpose of this chapter to determine the interests, abilities, and difficulties of children of different school ages in drawing the human figure.

Mrs. Kathryn D. Lee, head of the Art department at the University High at Chicago, said: "The study of the figure should come in the Spring when we feel like running, jumping, and enjoying the freedom of motion out-of-doors after a long

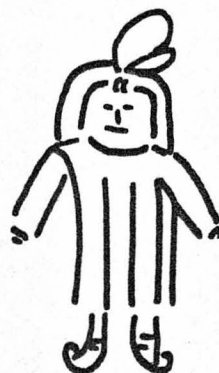
winter."¹

One of the first drawings which a child wants to make is that of his father or mother and he does it usually like this:



This is a statement of fact and is not the result of observation alone. The head is important because it talks, so it is drawn large. The body is solid and the limbs are lengthy. All this is true although it is not what the child sees. It is what his state of mind tells him.

The teacher, however small her talent for drawing, can also manage a figure at least as good as this on the black-board, which she can call "Mary." She should then call Mary before the class, and teacher and children can proceed to observe further details about her. They will find that she probably has bobbed hair and a white apron and these can be added to the figure. Then Jane, who has a different colored apron, can be observed, and the children can draw her from memory.



Next the teacher can draw a child side view, the

¹ Katherine D. Lee, School Arts, January 1930, 284.

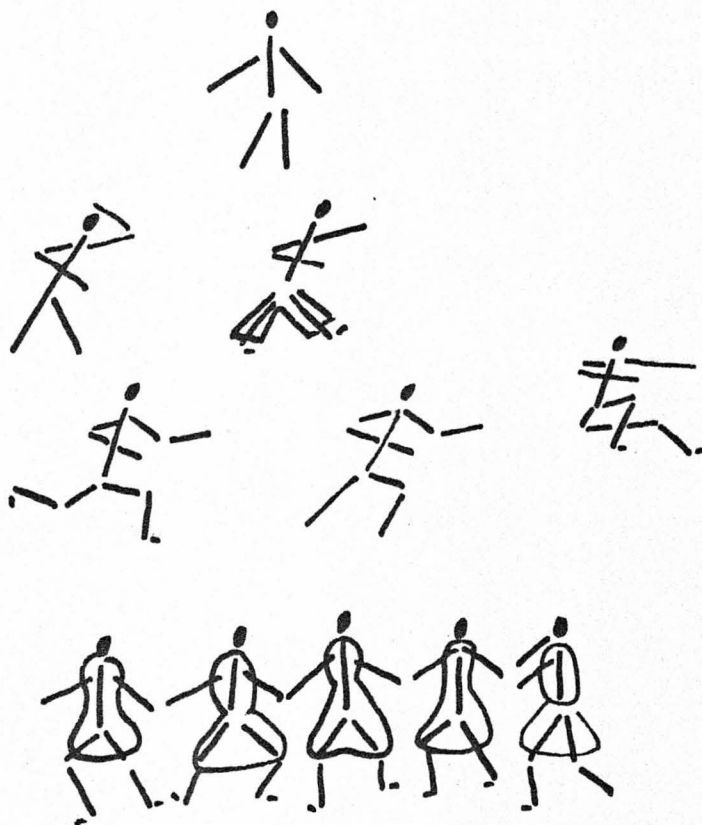
children following, and after that they can draw several figures by themselves. In this way the children come to observe and express, the teacher drawing on the blackboard in a manner only just above their own standard.



Children should not stand as models for more than three minutes at a time, and then only in an easy and

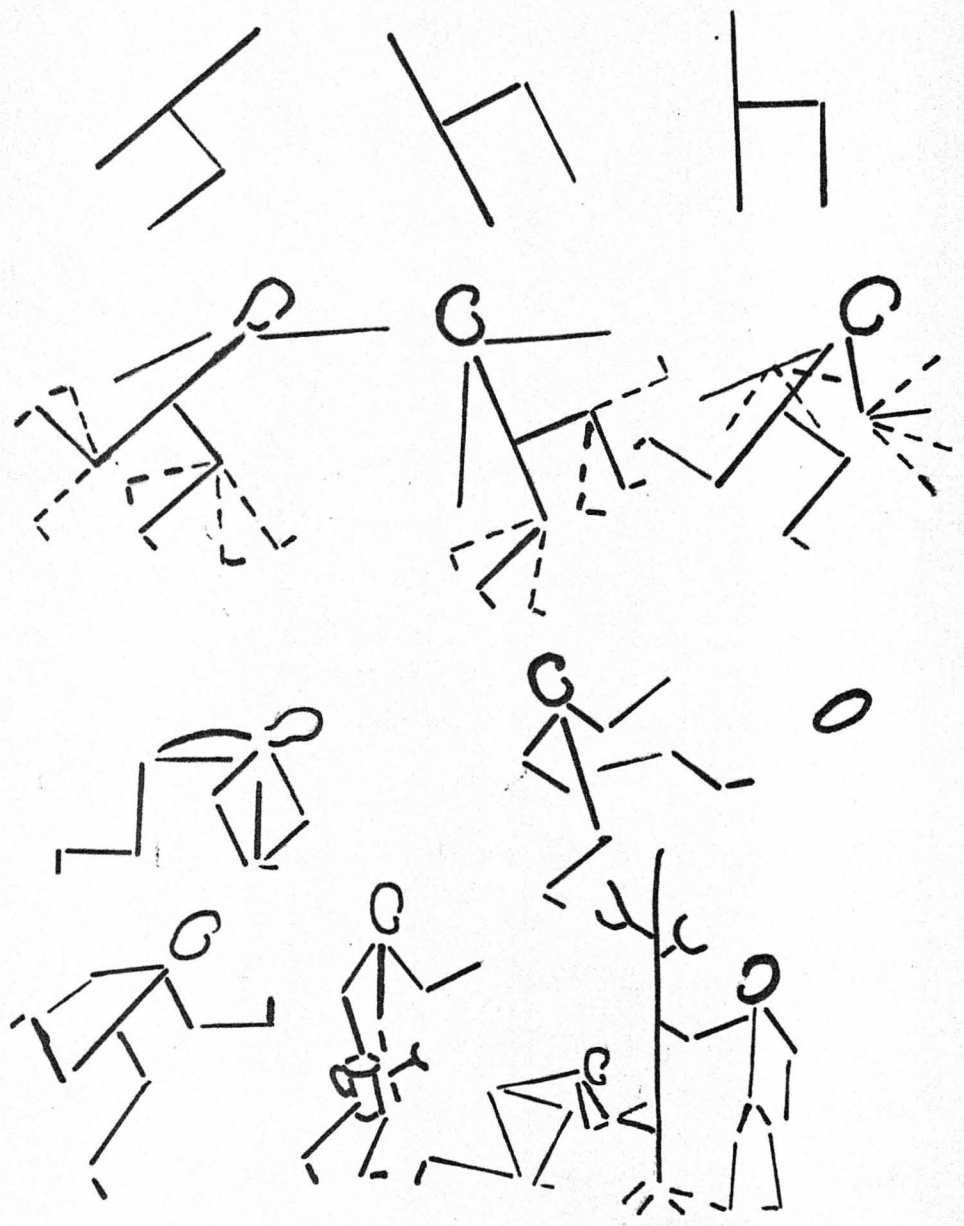
safe position, and never with the arm raised.

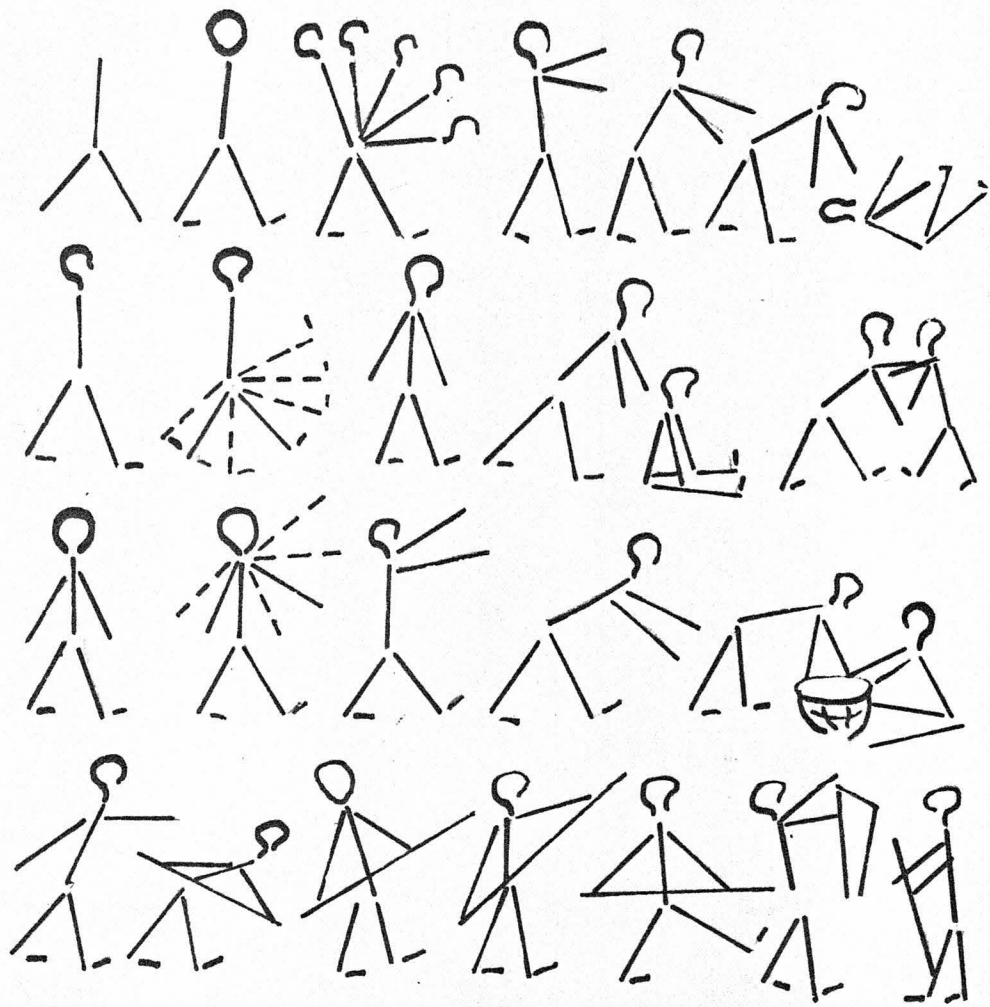
To make a new interest for the children, a background can be put in behind the figure; then subjects or stories can be illustrated. In this way, when free expression lessons



are given, the children will know better how to make their own meaning clear. With very young children, match stick figures can be used. These can be commenced as pattern work, and to develop some sense of proportion, the matches used for legs may be cut off slightly. Later, simple subjects

used for legs may be cut off slightly. Later, simple subjects





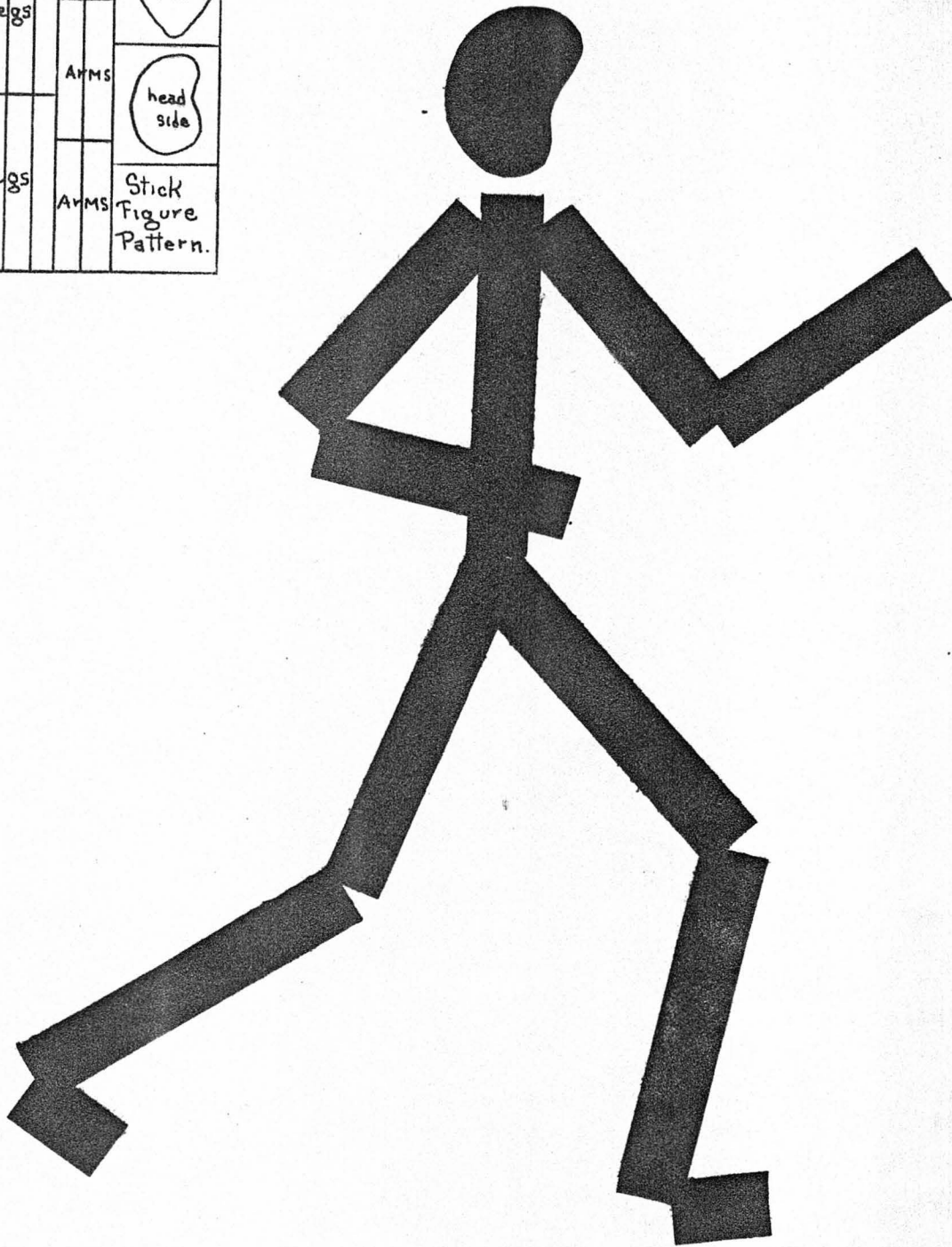
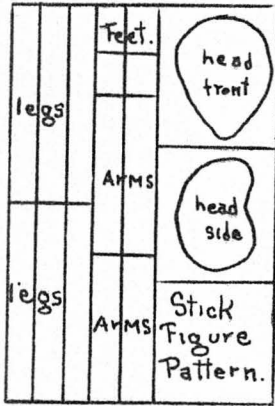
for illustration by this method can be given, e.g. The Race, Football, Going to Work, etc. The figures should always be clothed to give width. These are attractive exercises for very small children, but they cannot be carried far on account of the problems connected with the introduction of more than one dimension,

All kinds of action and attitudes may be shown with stick figures. Children all over the world use stick figures to show what they mean when drawing. Such figures tell the story so easily that advertising used for the products of large firms in Europe and America often use stick figures for their illustrations. Whole stories are often illustrated with a group of stick figure drawings.

Simple ways for stick figure drawings to be used are shown on page 29. First a chair shape is drawn with three lines. Figures A, B, and C show three positions of the chair form. When arms and legs are added as shown in the next three figures the different actions of running are shown, showing also the proportion of the torso to the arms and legs.

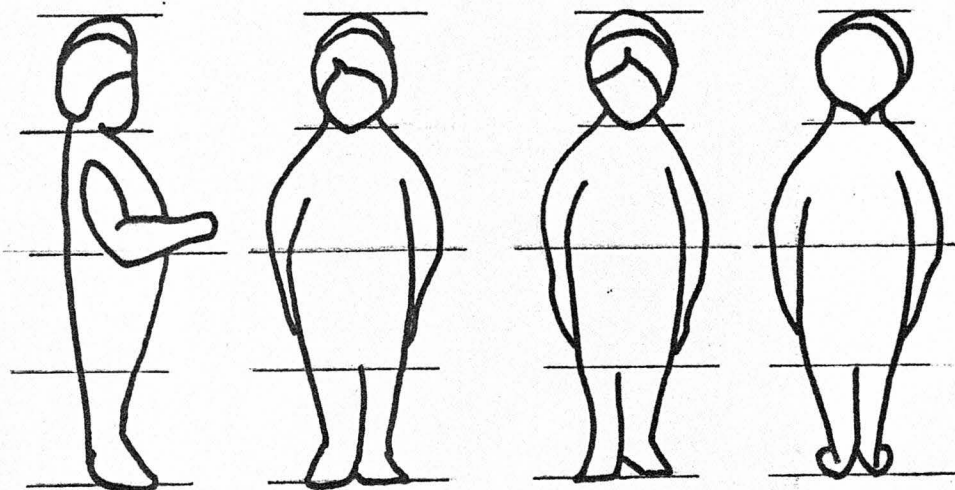
Another stick figure plan is to start in by drawing a tent with a tent pole. To this tent pole a head is added, as shown on page 30, and the arms and feet complete a figure that can be drawn easily and one which we can use for illustrating our stories.

Stick figures which can be made from black paper, as shown on page 32, will permit us to move the parts around



and find certain actions that we need. These parts may be pasted down on white paper or be used as a suggestion of action to use in pencil or crayon drawings. In making this pattern, the length of the torso can easily be compared with the arms and legs.

Elise Reid Boylston, assistant supervisor of Art in Atlanta, Georgia, suggests dividing the paper in parts to get correct proportions, and that "by parting the hair on one side and adding features accordingly, the head is slightly turned....."¹ as in figure N below.

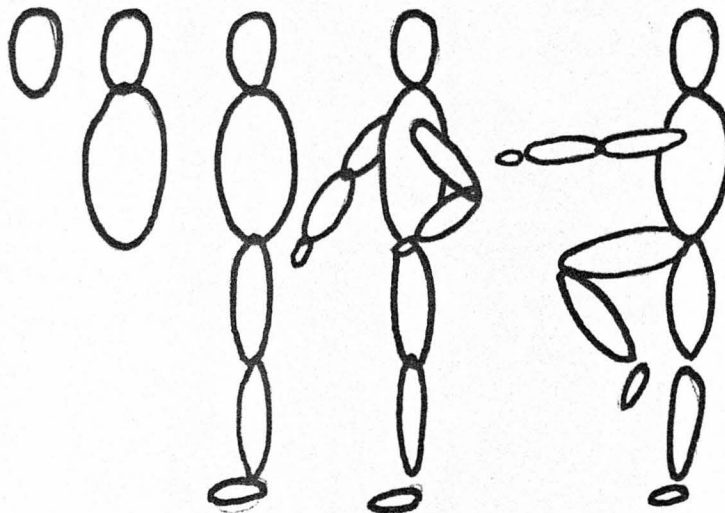


This seems a bit complicated and not the true state. Surely the proportions which change with the turning of the head would later have to be unlearned.

Marie Lewis of Casper, Wyoming, makes a plea for the use of ovals instead of stick figures. She says: "Children

¹ Elise Reid Boylston, School Arts, June 1929, 618.

sense the solidarity if figures of ovals are used rather than



stick figures in outline."¹

Her idea, which I consider highly commendable, is that they should draw as large as possible at first using black crayola, using the head as a unit of measure for other members of the body. She suggests that no neck should be drawn, as this would be too much detail for small finger muscles.

The symbol for the body is two heads high and slightly thinner for the side than the front position. The legs are divided into three parts - upper and lower legs, and the foot. The upper and lower legs are each one and one-half heads high. The children can measure with their fingers the size of the head they have drawn and thus calculate the other proportions

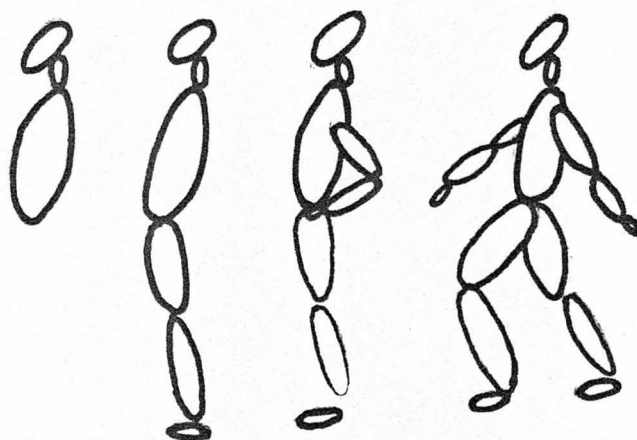
¹ Marie Lewis, School Arts, Sept. 1931 and June 1932, 49.

of the body.

The foot is made with a small oval about as long as the head is high, though much thinner.

The arms are divided into three divisions - upper and lower arms the same length (leave space for shoulder). The tips of the fingers should come half way down on the upper leg.

In the third grade the side view should be the same as



for the first, but the neck should be drawn in a half head high and the axis for the head tipped so that the chin protrudes.

From the fifth to the eighth grades, first an oval is made for the head and tipped so that the chin protrudes. Next a vertical line is drawn from the head to the bottom of the paper and a measure of seven heads down this line taken, where the feet are placed.

The hips are drawn next with a tilt half way between the

head and feet. Then the neck is sketched a half head high.

The torso oval joins the neck and hips so that the upper part of the body is complete except for the arms which are made the same as in the lower grades.

In high school Miss Lewis suggests that the placing of the head, feet, hips, and neck should be the same as in grades five to eight excepting that two ovals are used for the torso - one for the chest and one for the abdomen.

This method, according to Miss Lewis, is successful in the Casper public schools.

Miss Janet Smith who is an Art instructor in Kansas City, uses the same method with a few slight variations.¹ She

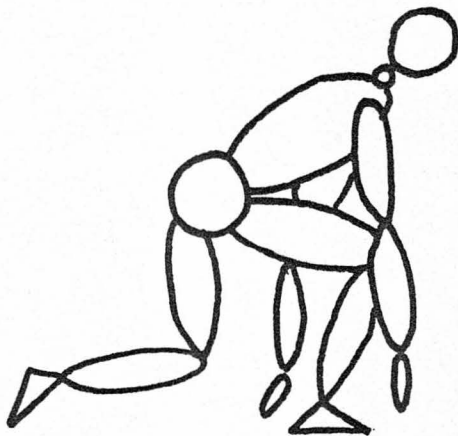


Fig. Y

uses a ball for the head and a triangle for the foot. After the third or fourth lessons the pupils made up their own poses, as in figure Y.

Another more advanced way of teaching figure drawing is shown in figure X, in which the head is a round or oval form. A line dropping

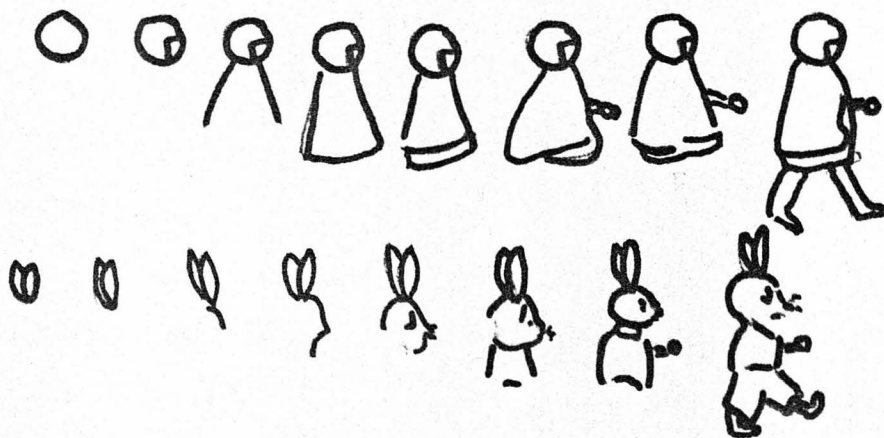
dropping from this guides the body parts and arms, legs, and feet are added.

¹ Janet Smith, School Arts, October 1928, 79.



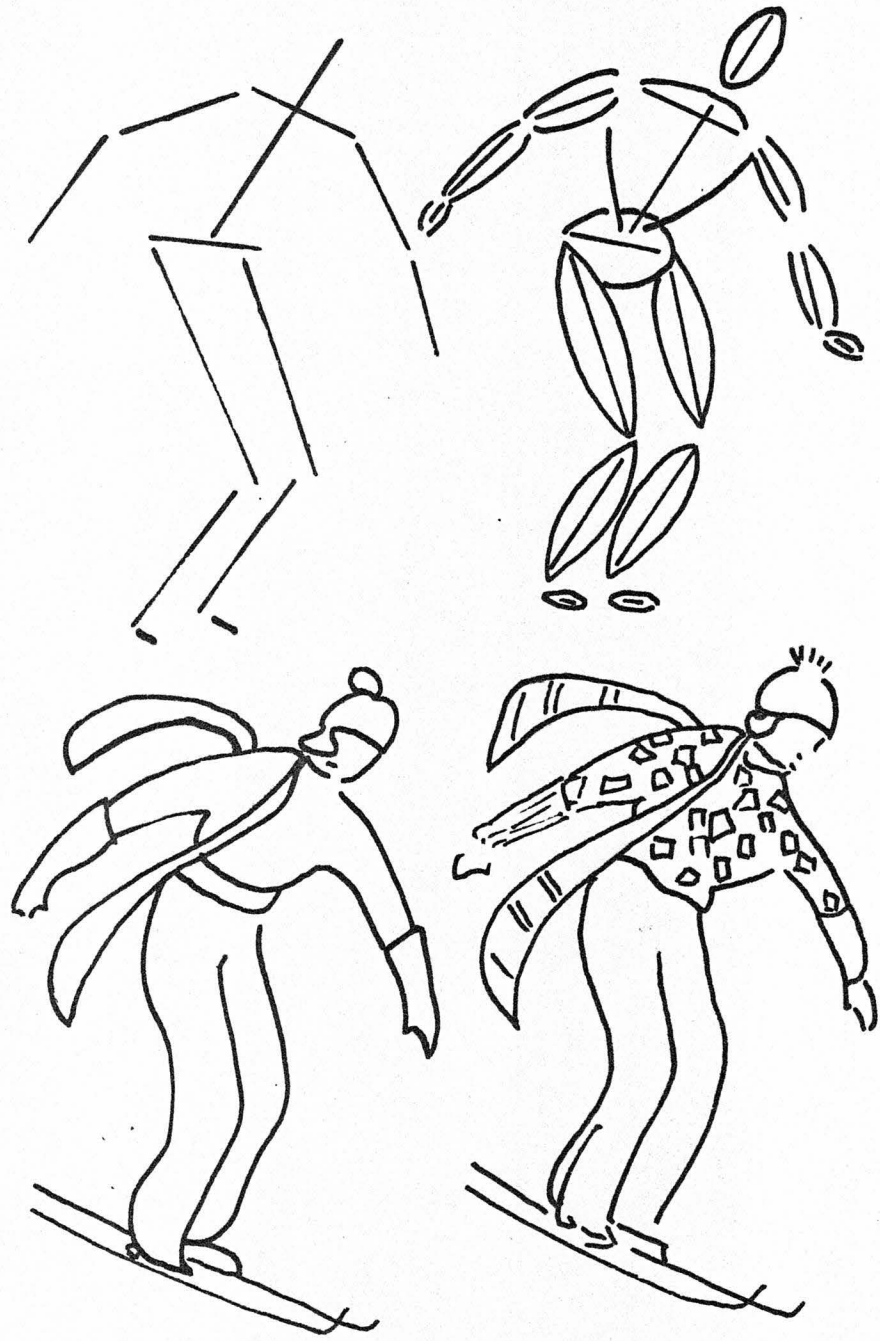
Fig. X

Little Red Riding Hood and Peter Rabbit show simple drawing steps.



Other subjects may be as easily drawn if planned in this orderly way. Orderly plans make difficult things throughout art work much easier.

Jointed dolls may be used to draw from also. Sketches

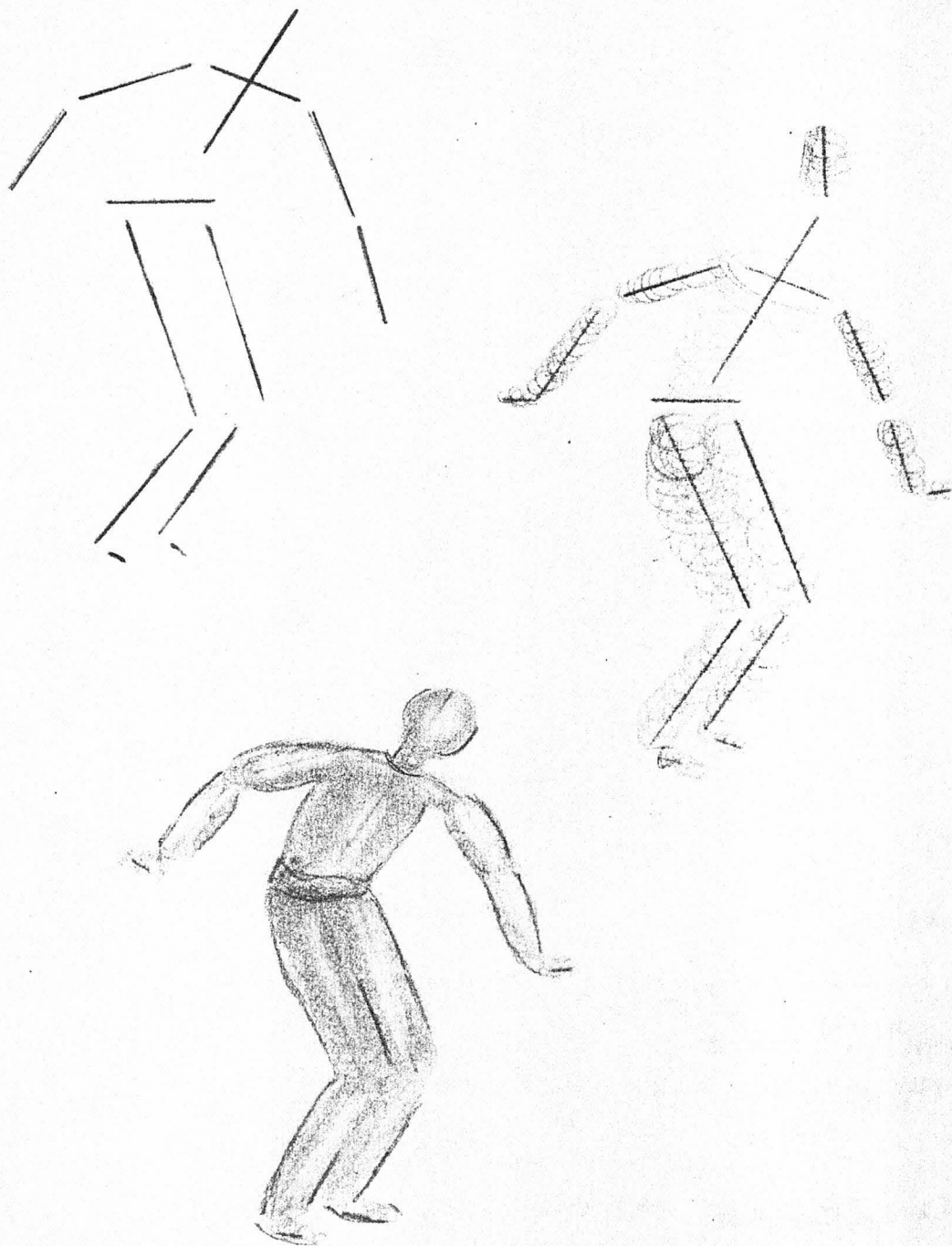


made from jointed dolls which have been posed in action show that these dolls may be used to help the beginning artist. Prominent contemporary artists use jointed figures to help them in painting figure pictures.

Edna C. H. Madsen, Art instructor at Harper High School, suggests that the pupils should clip photographs of action figures from magazines and newspapers and from them draw stick figures emphasizing both the action and the proportion instead of the detail - remembering that diagonal lines show action.¹ The straight lines of these stick figures may then be used for axes of ovals for making the "oval figure" over which rhythmical lines may be drawn to suggest clothing, as on page 38.

Frances O'Brien Garfield in her recently published book, You Can Draw, suggests a simple method for Life Drawing which consists in starting with a simple action line, as on page 40, and then clothing it in interlocking circles or scribbles. The scribble is then smudged and finally refined. The average beginner finds working with clay easier than drawing or painting because clay does not present the problem of third dimension in form, whereas drawing does. By giving the beginner the equivalent of a solid body at once in his drawing, this problem is solved, and the student is trained from the start to do that most difficult of things -- see his drawings as a whole.

¹ Edna C. H. Madsen, School Arts, May 1936, 24.



Adolfo Best Manguard suggests another method for securing an equivalent for a solid body in elementary drawing.¹ His plan is to start with a vase form for the torso. I would suggest that the use of the urn might be even better, using the handles as arms; however, the main point would be in obtaining the solid torso suggested by the shape of the base. His formation of animal figures by the use of two circles for the main bulks of the animal torso corresponds with the bulks of the human torso.

As far as live models are concerned it would be best, in order that all may have a good view, to seat the model on a table or the teacher's desk if it is flat. While this places the figure considerably above the eye, the perspective will not be sufficiently affected in most cases to be important.

The studies should be held down to simple action studies most of the time as the object is not merely to produce pictures but also to develop power.

Since the face usually presents much difficulty, it will be better if at first the head is merely blocked in with just the general contour. Artists often do this when making studies for pictures, although I might insert here a fine method for drawing faces, which Elsie D. Charles, Supervisor of Art in the Clinton, Iowa public schools, suggests.²

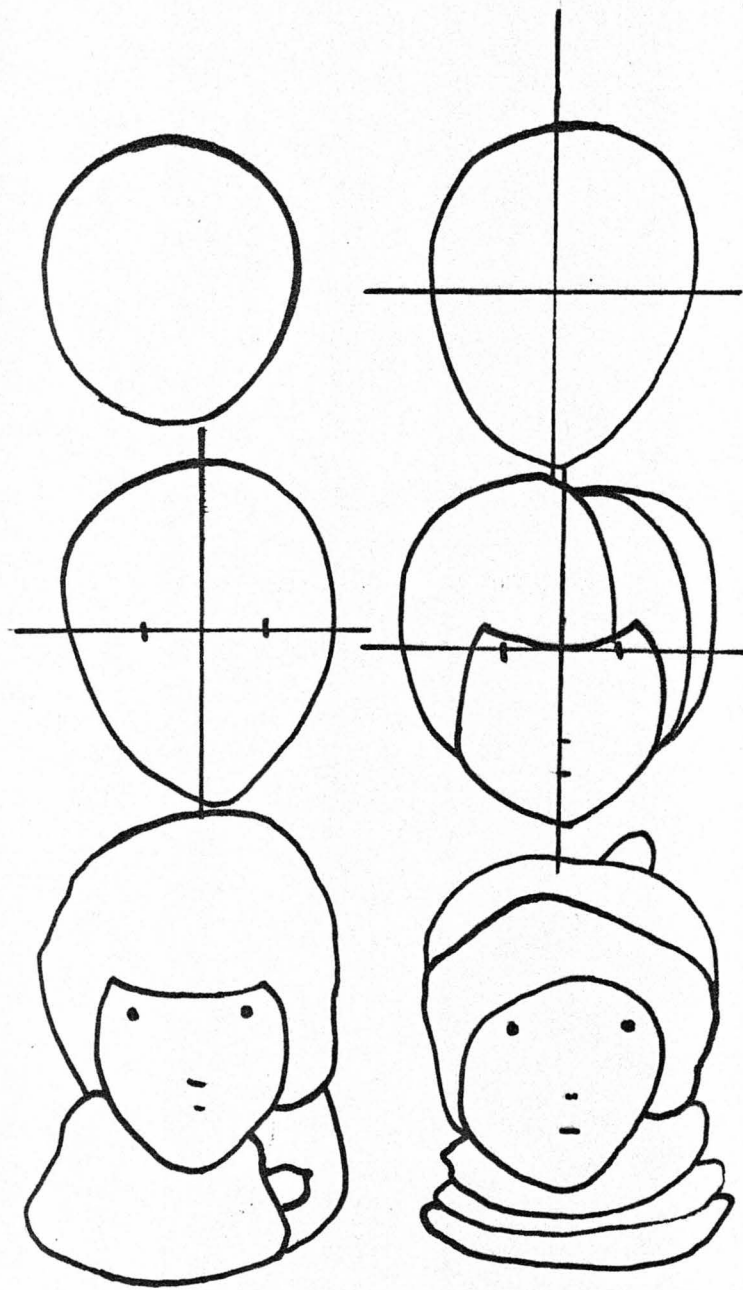
¹ Adolfo Best Manguard, Method for Creative Design, 68-72.

² Elsie D. Charles, School Arts, June 1929, 625.

"First, draw lightly a circle. Second, change the circle to an egg shape, small end down. Third, draw a line across half way down for the eyes. Fourth, notice the space of the width of an eye between the eyes. Fifth, put in up and down spots for the color of the eyes. Sixth, put in nose and mouth marks. Seventh, put in the line for the hair - commencing below the left ear upward to the line of the bangs, down in a nice curve for the bangs and down the other side." (See page 43 for illustration)

An incident of local history might be chosen for illustration and the chief figure concerned drawn in the costume of the period with the scenery of the neighborhood for a background.

The best way to go about this is to mark off the height of the figure and arrange that it fairly fills the paper. It should be pointed out that it will not be suitable to draw any of the boys or girls of the class, because the figure required is an adult one, and the proportions will differ - the legs longer and the head smaller in comparison with the total height. Divide the line representing the height of the figure into halves and take a fourth of the upper half for the head. Allow the whole of the lower half for the legs, leaving the remainder for the body. Once the proportions have been obtained the teacher can sketch in the costume on the blackboard, the children copying her and finishing the picture with their own ideas of a background.



With children of ten or twelve years, longer poses may be allowed for models in order to obtain more accurate drawing. From twelve to fourteen years, portraits may be attempted, if models can be found, but children of this age should not sit as models for more than half an hour at a time.



During these years picture making and illustration will work in with music and literature. Children of this age will probably find such work as this a welcome outlet for their day dreams and one which affords relief from the matter of fact subjects which they are usually commencing at this age. Drawing of this description involves a maximum of output and individual expression, with a minimum of fact and attention to detail. Once the need for truth and knowledge is realized, however, the children will begin investigations on their own account -- not primarily for the sake of the lesson but because they are conscious of a personal need.

This type of work may be introduced in all standards, from free expression drawing in infant work to finished picture compositions.

At the age of ten years and onwards, more ambitious work

may be attempted in drawing from a model. The children's attention should be drawn to the lines of action found in



moving figures, and they should be encouraged to think of the figure as a whole - not as something to be drawn in little bits.

At their age also, more thought should be given to space filling.

When selecting a subject for illustration, all the children should be asked to give suggestions and the one obtaining the most votes chosen. Different children may then come out and stand before the class, taking a pose to illustrate the subject in hand.

When several have been tried, a selection should be made, the model chosen retaining his pose for a few minutes while the class makes quick sketches. Possibly several sketches of this kind may be made while the model is posing, and, if practicable, music which suggests or illustrates the subject may be played or sung.

This communal form of figure drawing is good, as it gets the work going on broad lines with the stimulus of competition, and each child benefits by seeing the work of others. To afford variety, however, the children should sometimes choose their own subjects and work them out alone, perhaps getting

each other to pose for a few minutes in order to obtain the leading lines. These action poses are excellent practice, giving self-reliance, power of selection, and speed. A child can skip, play ball, or write on the board, and the class can watch the action and record their impressions in several rapid sketches. These may be used either to form the foundations of the finished pictures or merely as practice efforts.

In all of these exercises the medium of expression can be varied; soft pencil may be used, or direct brush painting which obliterates detail, or charcoal which encourages broad sweeping lines.

Stanley G. Brendeiser, head of the Art Department at Santa Maria High School and Junior College, suggests allowing students with no fundamental training to draw figures. His experience shows that many students have drawn a figure for the first time in almost perfect proportion, good in action and original in rendering.

¹ Stanley G. Brendeiser, School Arts, June 1929, 587.

CHAPTER III
ADULT LIFE DRAWING

About five hundred B.C. the sculptor, Polyclitus, produced a statue called Doryphorus, Lance Carrier, which was so excellent in proportion that the Greeks called it Canon, or rule. The measurements which Polyclitus applied in the Doryphorus he also set forth in a treatise and thus established a standard of proportion which was followed by sculptors for a hundred years and is still an ideal standard. It has stood the test of beauty and reason. It estimated the whole figure to be the length of seven heads.

Lysippus (323 B.C.) gave his figures a slender grace at the expense of natural truth. He made them eight heads high.

Through the ages, the human form has developed many modifications, but we are always ready to defer to classic standards when it is a question of ideal beauty.

The effect produced upon the human mind and character by that higher kind of beauty which embraces harmony and proportion is one of those secret moral influences to which we have long closed our eyes, but which at this late stage of civilization the world appears to again be beginning to recognize and enjoy.

It is necessary that we know the alphabet and other

elements of a language before we can use the alphabet to any degree of success; before we can make our meaning clear and transmit to others our feelings and emotions. The same thing remains true in the creation of a work of Art.

We find that almost all charm, certainly the chief charm, must be reinforced by a thorough study of bony structure. Rhythmic proportion remains the final test. Modelling is captivating, of course, but is a secondary factor.

The prime necessity is a fine proportion of parts, for that is a thing more obvious to the ordinary gaze than subtlety of modelling. In judging models, one frequently finds the aesthetic anomalies of arms delightfully modelled, but too long for their girth; or well shaped legs that nevertheless appear thin in comparison with a full and heavy torso, although there are permissible so-called "distortions" which are made in order to emphasize certain rhythms. One will find, however, that the successful ones are made by artists who have a fundamental knowledge of anatomy from which to deviate. There can be no culmination of beauty where a want of harmony exists, and that is why we may call a girl with a turned-up nose "pretty," but hesitate to call her beautiful or even handsome.

Beauty of the figure is not only skin deep; it depends on the structure underneath and so, of course, the more knowledge of anatomy the better, so long as it is not misapplied or paraded.

Borough Johnson says: "However brilliant the handling of a life drawing may be, without a sound foundation of anatomical construction, the result must be fundamentally superficial and valueless."¹

As we know more about human beings and take a greater interest in them than in anything else, we are rather particular about their representation.

When, to fundamental notions is added the knowledge of the muscular masses which move these bones, the artist will at once be enabled to analyze through the skin as through a transparent veil, the action of the parts which produce the forms with their infinite variety of character and movement.

The artist has to be a geometrician in his measurements, an architect in building his picture, a psychologist, a realist, an idealist, an analyst, an engineer, and a faultless recorder.

The oriental artist reaches great heights in artistry by studying his object in a most minute fashion, and when he feels he has everything in mind thoroughly, he dashes off his drawing at top speed.

In a quick pose study many times half the facts will be left out and the student may show greater talent in such scribbles over which he may expend little time than in the finished studies when he is earnestly concentrating on the

¹ Borough Johnson, The Technique of Pencil Drawing, 10.

wrong thing. This is because most of us are capable of intense concentration for a short time; hand and brain work together and the time limit forces the student to seize on the essential rhythms.

Armand Braun says: "By the precious gift of imagination the artist lifts apparently insignificant things into the fairy realm of beauty and purpose. It will certainly attain this purpose if, in spite of his idealistic tendencies, our artist is yet in the main a realist. He cannot be content with the full understanding of the outward appearance of things; he must actually know a good deal about them, understand their cause, their construction, their substance.

When drawing a building the artist should in some way give the impression that he knows the plan and almost the contents of the house; he should know the material of the whole and of every part of it, and by a mere indication, and by some indefinable means, express softness and hardness and degrees of these extreme qualities."¹

The ideas for which the artist should seek in his study of Life Drawing are ideas of proportion, form, attitudes, and movements, and, as the expression of the passions either in painting or in sculpture cannot be reproduced except by various changes in the general attitude of the body and in the special mechanism of the physiognomy moved by the muscles, our study should deal not only with proportions, form

¹ Armand Braun, The Human Form in Art, 3.

attitudes, and movements, but also with the expression of the emotions and passions.

Attitudes are determined by the muscles, but these are subject to laws which result from the position and action of the joints, as well as the direction of the muscles and the differences of shape produced by their swelling and tension in action, and their contraction when relaxed.

Proportions themselves cannot be defined without an exact knowledge of the skeleton, for it is the bones alone which should furnish us with the marks from which to take measurements.

A knowledge of the bones and their articular mechanism is indispensable so that we may guard against being deceived in certain apparent changes of length in the limbs when certain movements take place.

The most efficient study should start with the skeleton which will teach us the direction of the axis of each part of the limbs and the relative lengths and proportions of these parts.

The bones composing the skeleton play an important part in the production of forms over nearly all the regions of the body. They are constant or at least undergo but slight modifications during the motion, and they moreover serve as landmarks to the student.

The configuration of the bones cannot be altered like that of the soft parts continually modified by contraction

and expansion. The movements of bones in no way change their forms, and when we see a bony projection become changed into a depression, and vice-versa, we look for the cause not in the bone itself, but in the surrounding parts. It is also to be observed that the extremity of a bone will always occupy the same position relative to the bone of which it forms a part; only it will produce sometimes a projection and sometimes a depression according to the position or movement of the member. Take, for example, the form caused by the elbow. When the forearm, consisting of radius and ulna, is stretched, the situation of this process is marked by a depression, but bend the arm, and the cavity is transformed into a marked projection. Nevertheless, the projection and the depression will under all circumstances be situated at the same distance from the lower end of the ulna.

This unvarying relation of the different parts of the bones to each other offers us the means of determining the length of the upper and lower limbs.

All lines of contour depend upon muscular development of bone prominences. The attitude of mind and concentration of energy make up the degree of action as far as relations of muscular structures, one upon another, are concerned. Generally, one or two sets of muscles form the contour that gives the story of the subject. Take, for example, a figure pointing at an object, the neck twisted so that the head is pointed over the right shoulder, as on page 54. We find that the

extensor muscles of the arm holding the arm out from the body and the neck muscles that control the head movements, the trapezius at the base of the skull and the sterno-mastoid in front and to the side, are the major controlling muscles.

To test the limitations caused by muscular structure, in this case we find the trapezius is actually stretched on one side and so compressed on the other that further action is difficult. We must not think that any particular muscles do anything unsupported as they are very dependent upon one another.

There are a number of very evident anatomical limitations that are generally covered in the anatomy of the figure. The following, I think, should be mentioned:

The ankle-joint allows a bend of about 45° in flexion and extension. The knee-joint allows a bend of less than 180° in flexion and extension. The hip-joint with the back bone and the opposite hip-joint has a wide range of movement, not only backward and forward, but also from side to side. The shoulder-joint is remarkable for its wide range of movements which may take place in every direction. The movements of which the elbow-joint is capable are those of flexion and extension, somewhat similar to those of the knee-joint. The waist is capable of movements from side to side and backward and forward, or a combination of these, as in a rotary motion. The movement of the head is very similar to that of the wrist.



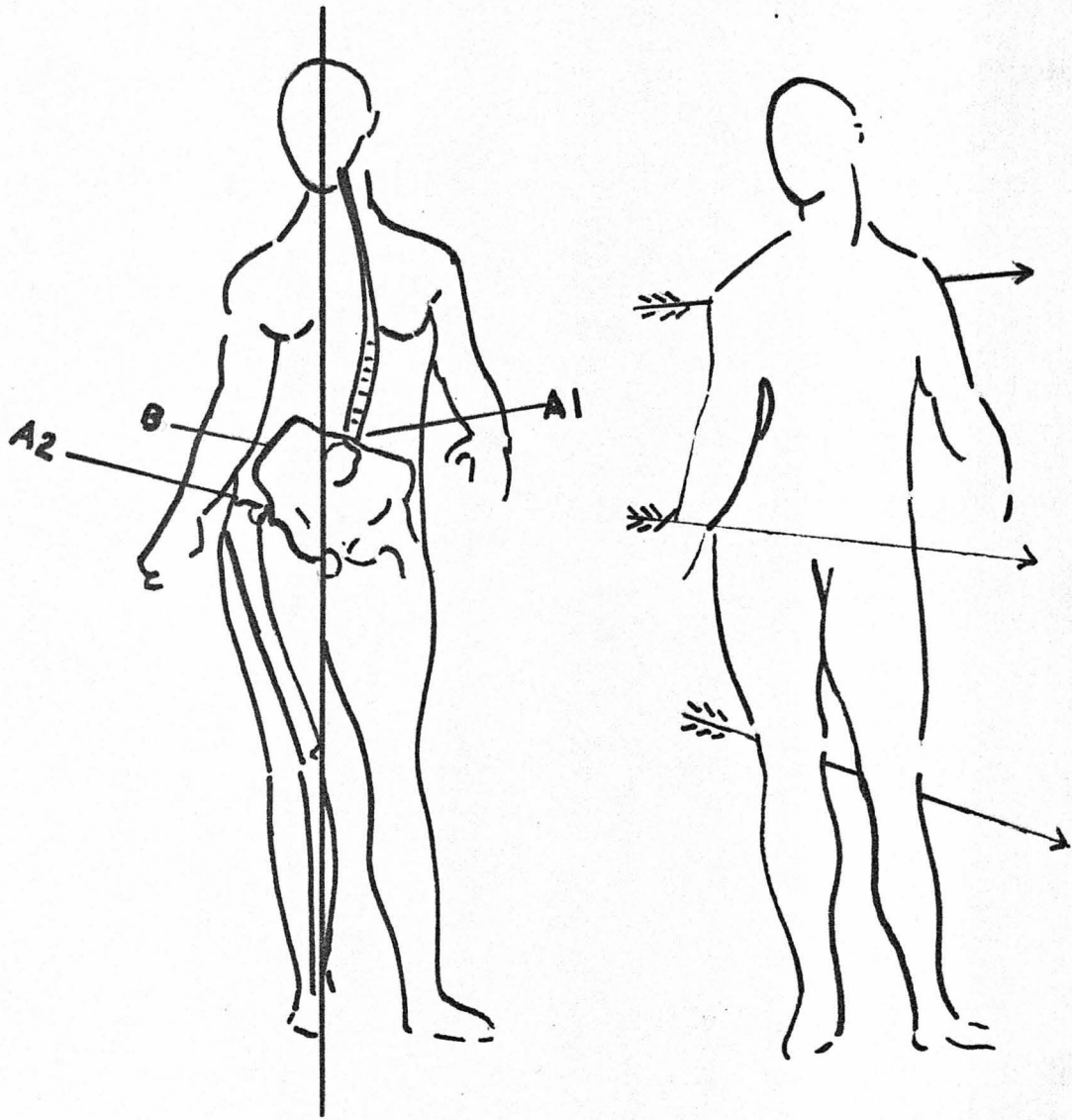
On page 56, point A2 indicates the "ball-bearing" of the joint at the head of the femur. The visible point of this joint is the great trochanter.

These parts are obviously of great importance in movement and in rest. The whole weight of the head and chest is taken by the pelvis at point A1, and then carried across to the joint at A2. Thus tilts the whole basin of the pelvis. In order to correct this tilt and at the same time keep the body upright, the shoulders tilt in the opposite direction with the head which has its axis on the neck directly over the right foot. This balancing stretches the left side of the figure and contracts the right, and the left knee hangs lower than the right, which carries most of the weight. If the arms are hanging down the sides, the right hand and elbow would also be lower than the left because of the tilt of the shoulder.

However, if we illustrate the anatomy more or less correctly and fail to emphasize rhythm, our drawing will have that distressing appearance of illustrating a half animated corpse. "The total life line - that animating oneness of movement permeating and unifying every part - is the ultimate end desired."¹

From the following examples on page 57, I shall hope to make the principle of contour effects evident. This is not only in reference to lines caused by the contrast of the figure and the background, but to all surface modulations.

¹ Quotation by Miss E. Grace Ward - Life Class, College of Pacific.



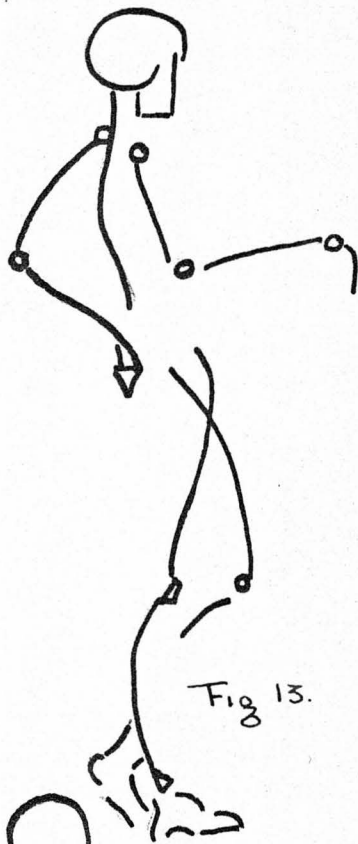


Fig 13.

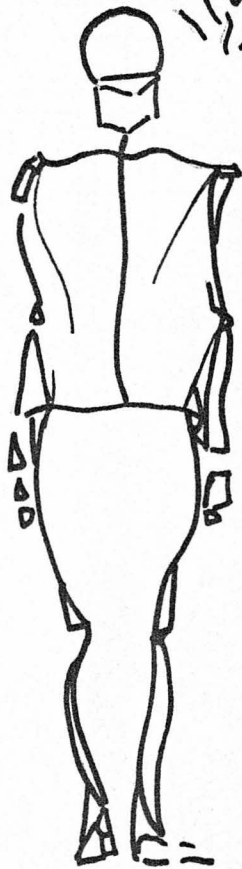


Fig 11

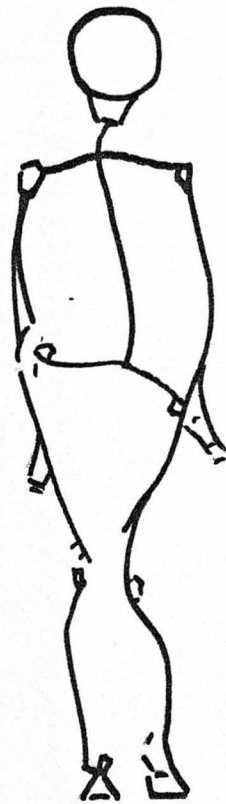


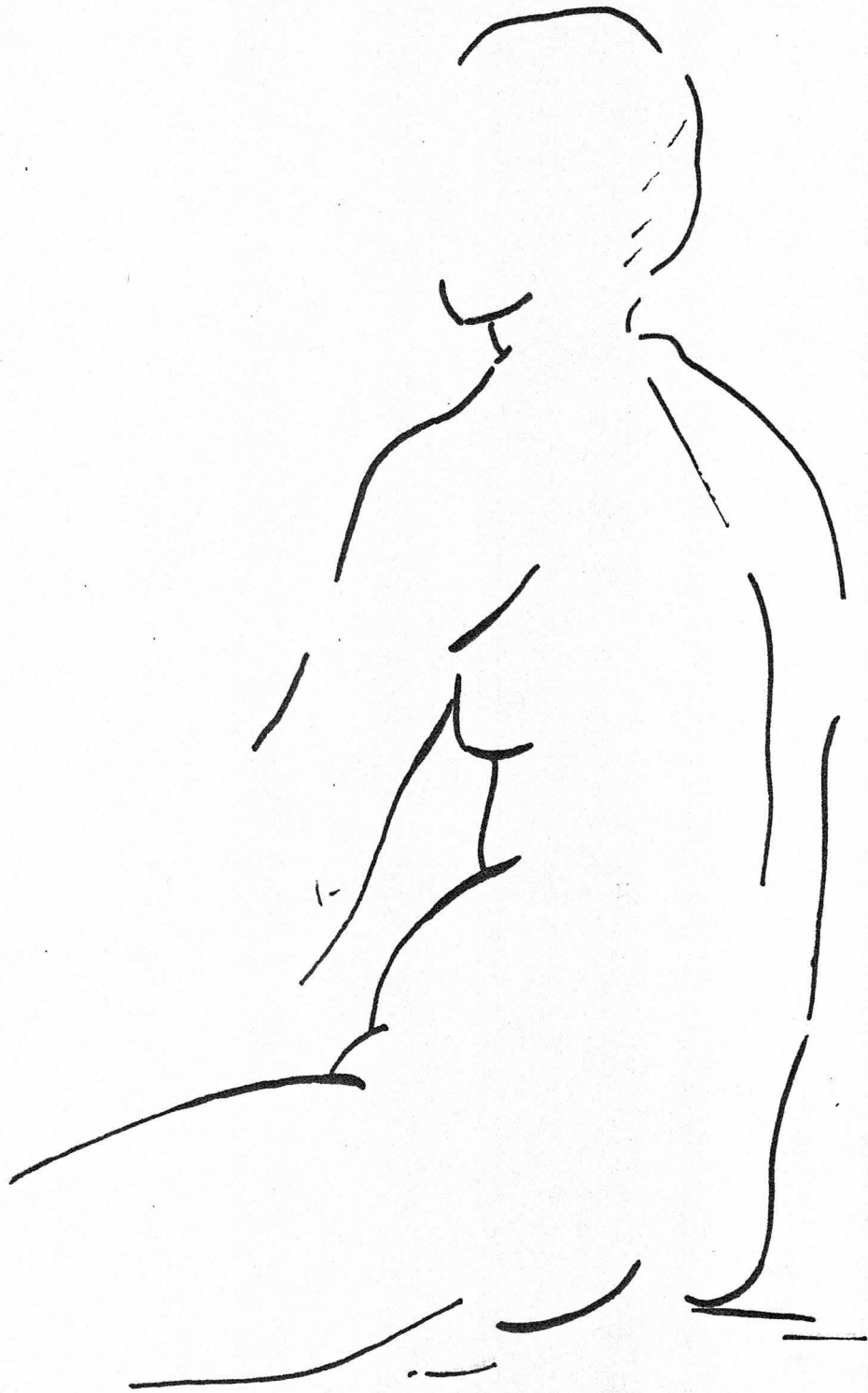
Fig 12

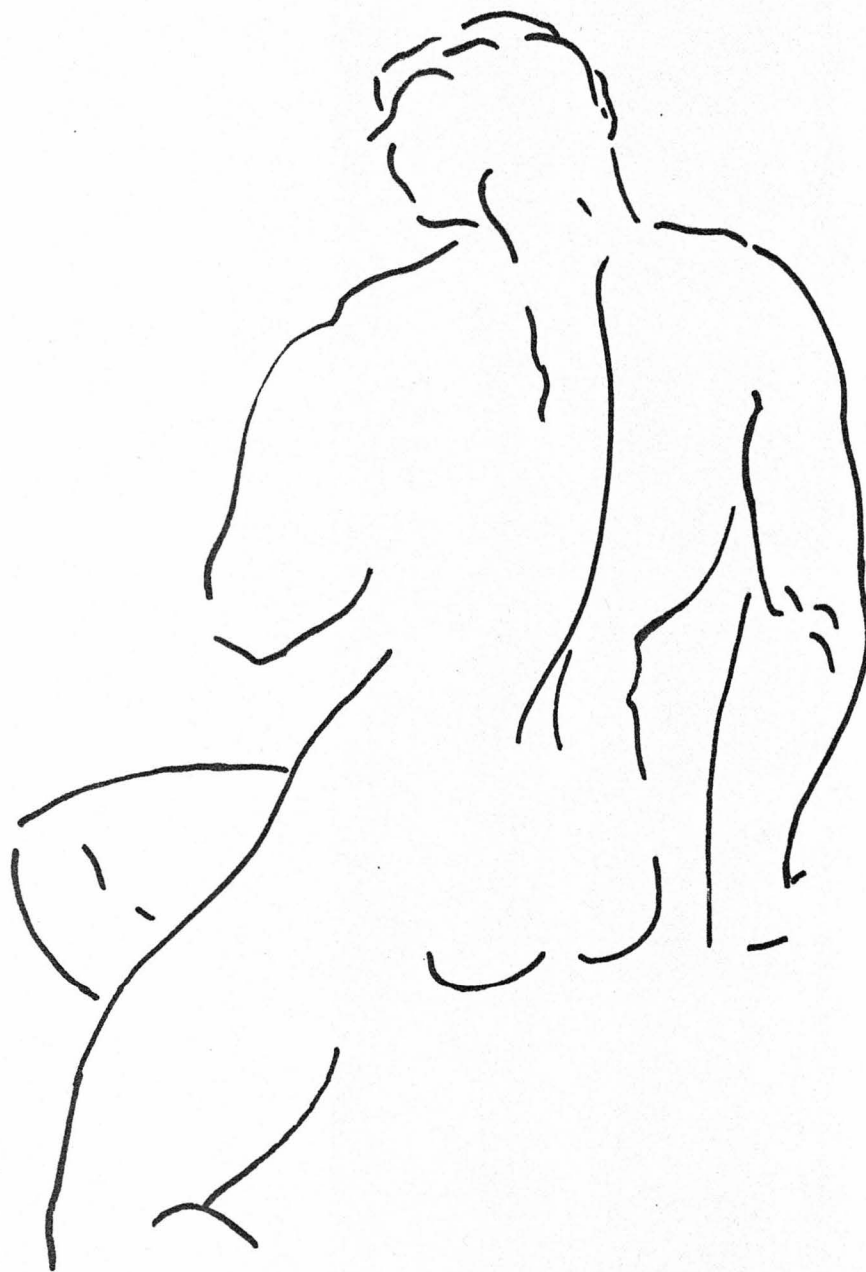
The figure is taken up in three positions - side, front, and back view.

For quick studies to be made in spare moments, single line sketches are advantageous to study action and rhythm principally. There is a certain life giving quality about them and it is not necessary that the figures be unsexed. The male figure has a broader line for the shoulders than the hips. The female figure has wider and higher hips and narrower shoulders.

The motion of the figure can be made much more effective through the use of curved lines rather than straight lines because of the swing which is added. These curved lines are based largely upon internal structures; for example, the side view of the back is based almost entirely upon the vertebral structure. In figure 11 we have an example of the whole figure front view. In figure 12 we have an example of the female figure back view. In figure 13 we have an example of a figure seen from the side view.

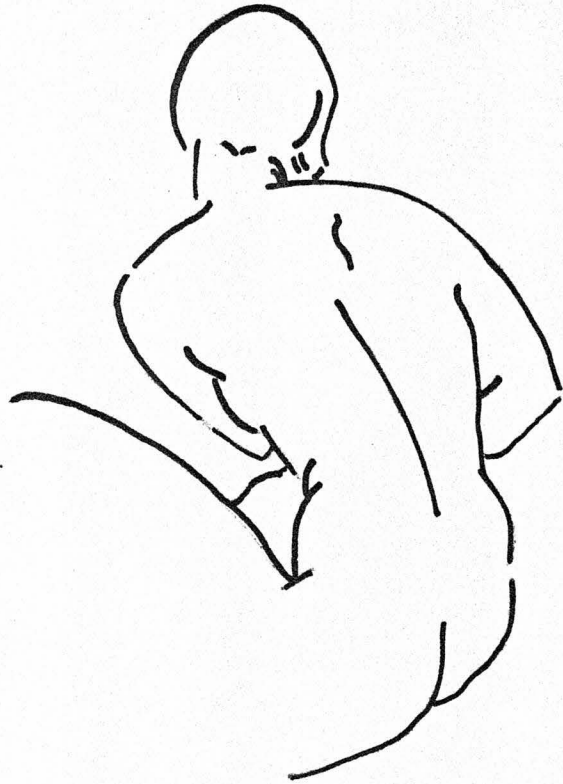
On page 59 we have a female figure above eye level. All weight is supported and balanced in the pelvis except that of the legs, one of which hangs from the seat. The model balances herself by leaning back, hanging her shoulders forward, hunching her back and holding up her head. The stress of balance between the torso and the pelvis and head had to be kept in mind throughout the drawing, as was also the case of the drawing of the male, page 60.

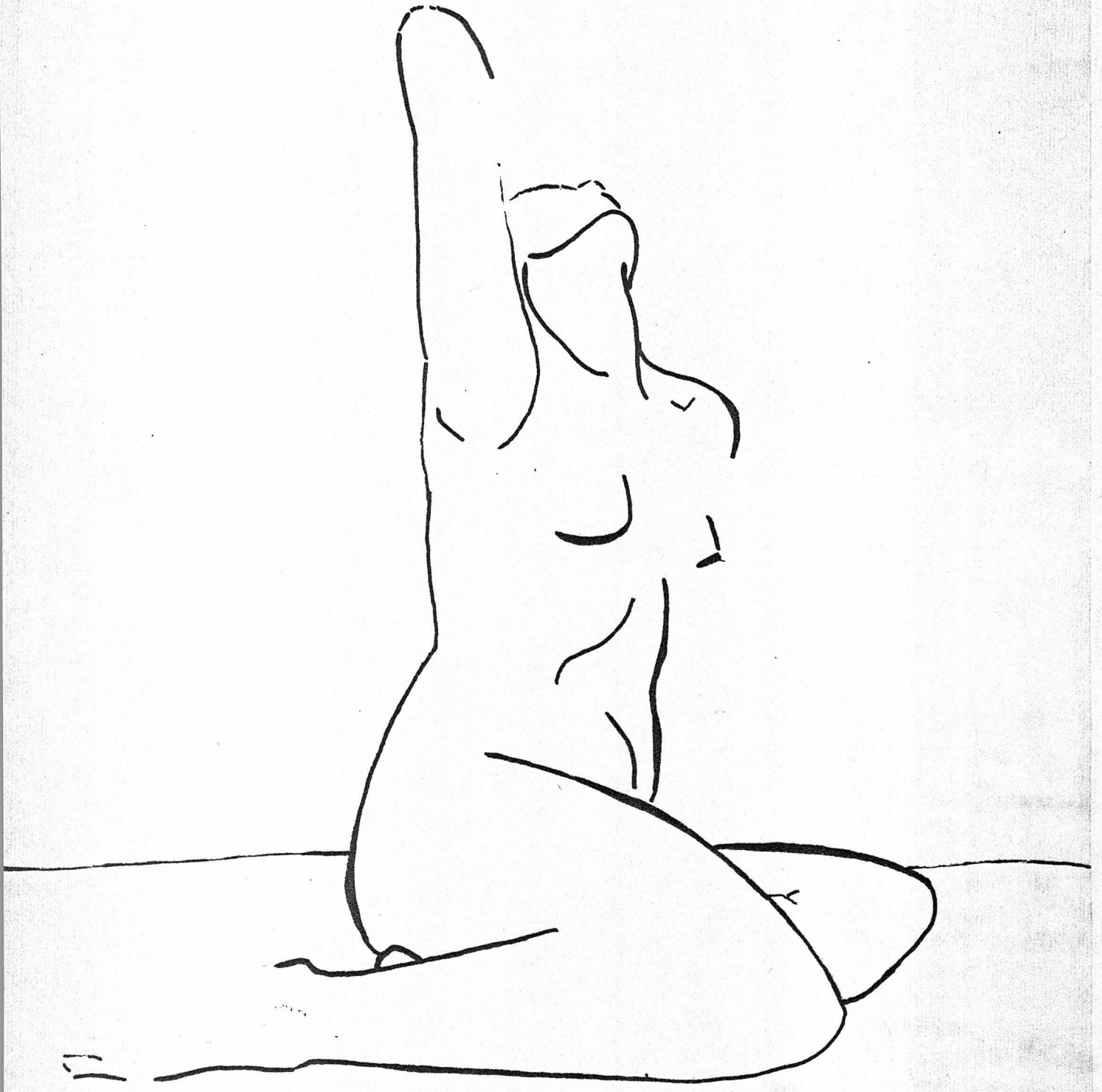


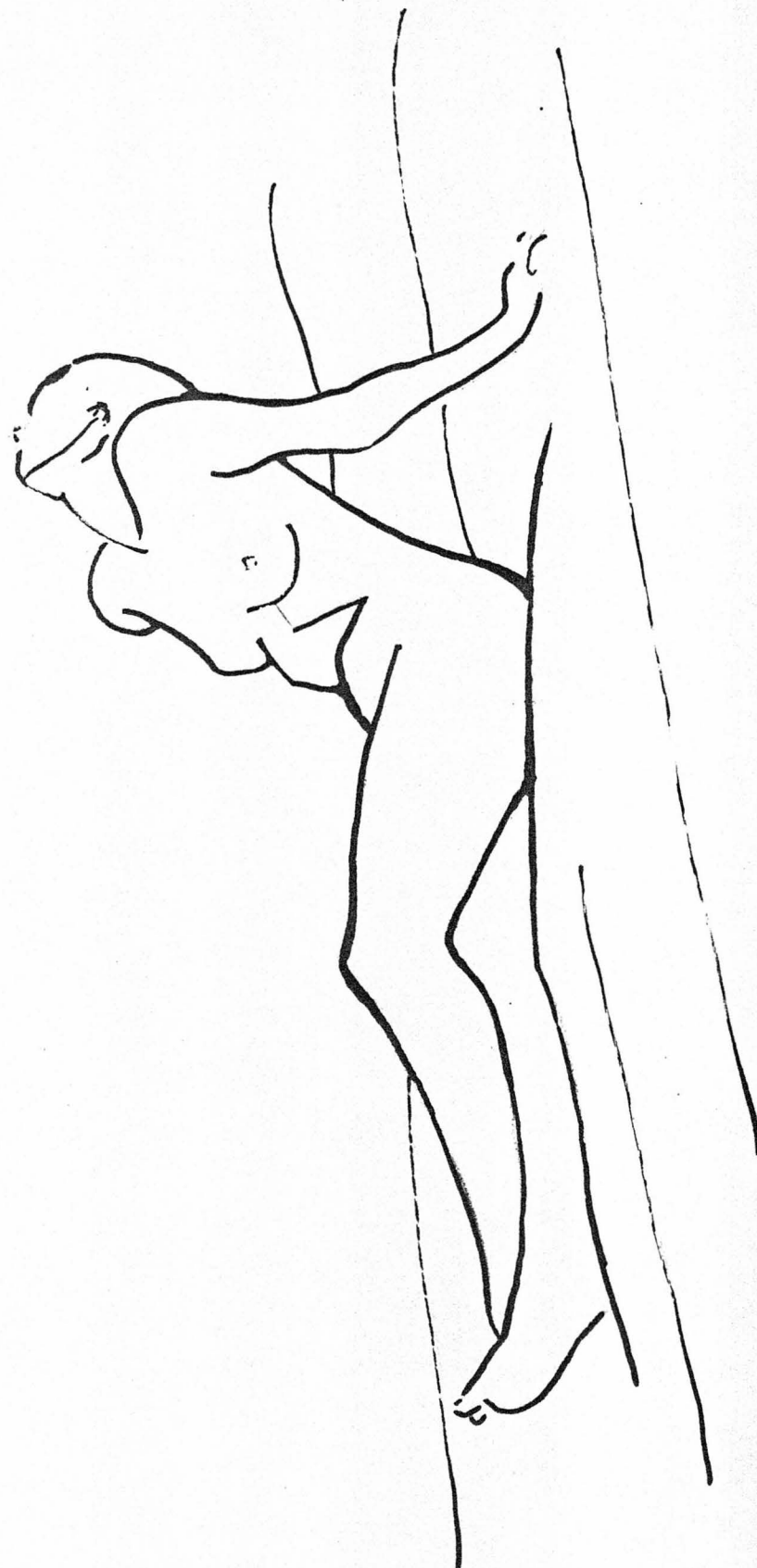


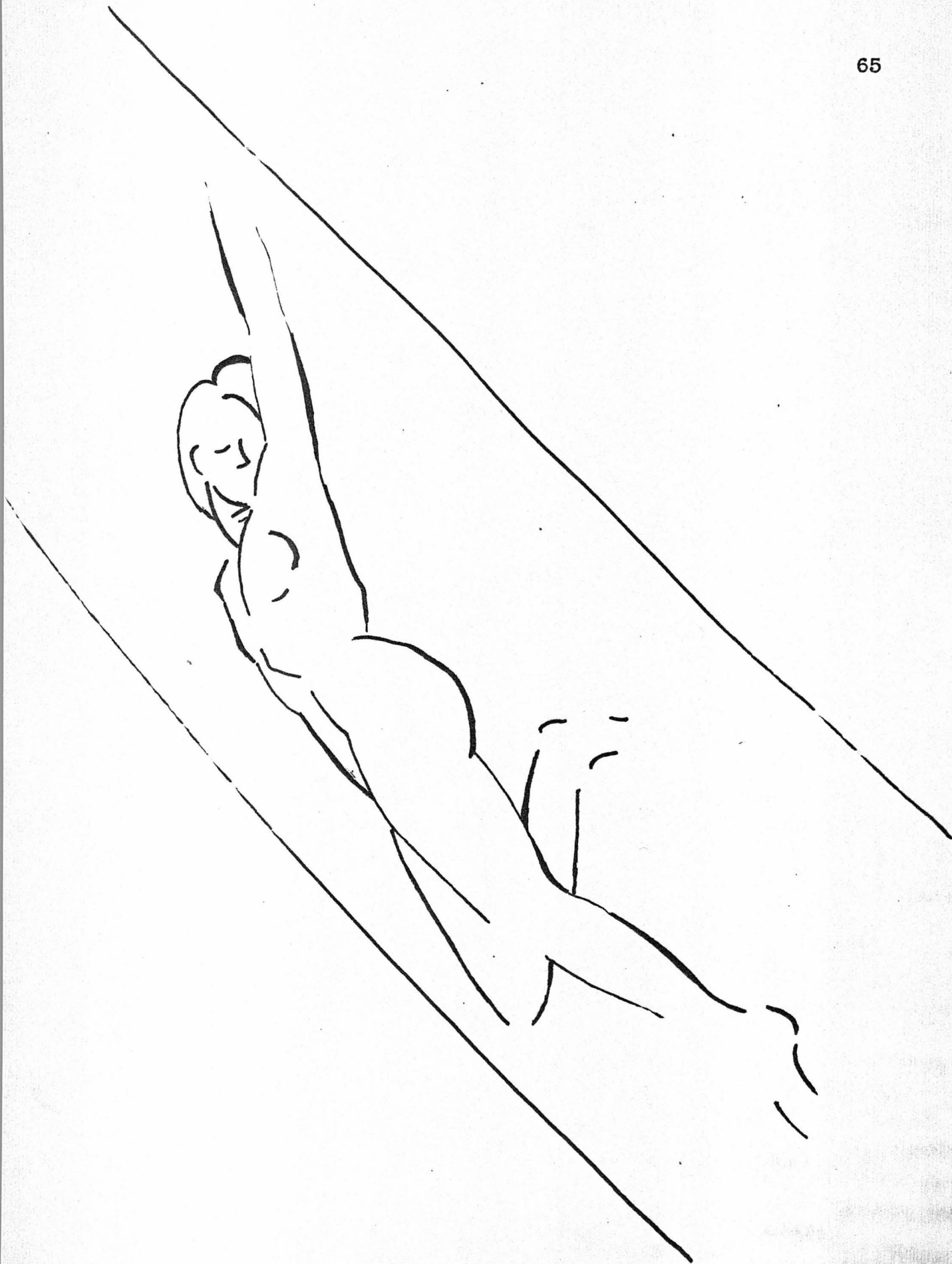
The drawings on the following pages further exemplify rhythm attained in line drawings.

These drawings have been rather difficult for an amateur to do since the study of anatomy has been so far uppermost in my mind that in many cases details which were unnecessary have been added, and other faults for which I must apologize. This is a good example of the fact that it is what has been learned and pushed to the back of the mind that helps an artist most; otherwise, freedom of execution is hampered.









As for extant proportions of the figure from the artist's viewpoint, Victor Perard has made a composite which is easy to follow.¹ His illustrations are based on seven and one-half heads to the height of an erect figure.

His proportions follow:

For the Male Figure --

Width at deltoids	----	two heads
Width between hips	----	one and one-half heads.
Width between nipples	----	one head
Height of neck plus trunk	--	two and three-quarter heads
Height of lower extremities	--	three and three-quarter heads
Finger tips to elbow	----	two heads

For the female figure the bones are shorter, the pelvis broader, the sacrum wider, the shoulders narrower, the humerus shorter, the length of the torso proportionately longer, the legs shorter, skull smaller, the female abdomen more rounded, and the thighs thicker.

Special attention should be accorded the head, since portraiture is so important in much present day Life Drawing.

According to Bridgman, the head of an adult should be divided into two parts by a line passing through the lower eyelid, the lower half again divided equally, marking the

¹ Victor Perard, Anatomy and Drawing, p.viii.

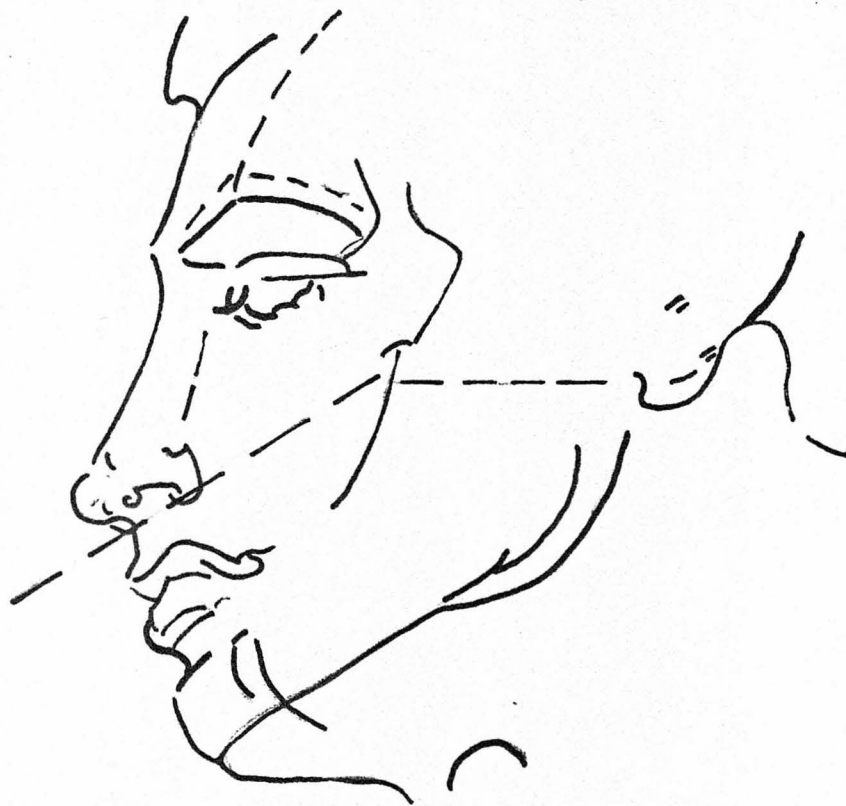
base of the nose, the mouth two-thirds up from the chin.¹

Yet it is the breaking or the variation of these rules that give character and personality to a head.

There are four distinct forms to the head. First, the forehead, square and passing into the cranium at the top; second, the cheekbone region which is flat; third, an erect cylindrical form on which are placed the base of the nose and the mouth; and fourth, the triangular form of the lower jaw.

It is the placing and lacking of these forms that give solidity and structural symmetry to the face, and it is their relative proportion as well as the degree to which each tilts forward or backward, protrudes or recedes, that makes the obvious differences in faces.

¹ George B. Bridgman, Features and Faces, 49.



CHAPTER IV

SYMMETRY

Symmetry is the due proportion of several parts of the body to each other - the harmony or adaptation of several parts of a thing to each other - according to Webster.

In symmetry or formal balance we find a preference for a balanced figure. The two sides of a symmetrical pair of lines or masses are called question and answer - or mass analogy between antecedent and consequent. In representative painting and drawing geometrical symmetry is rigid and monotonous.

The twin or opposite muscles in the body are analogous. They are linked by resemblance, but one is not a counterpart of the other. If we draw an axial line through the body so that there is a bilateral symmetrical division, we find we have twin structures on either side of the line - or the sense that they closely resemble one another in construction. The growth of one, however, is from the center to the right and the growth of the other is from the left. It is impossible to transfer one side to the other and have a successful result. The two sides of the body are not the same, but similar. The construction of twin muscles varies greatly at times, because of increased functions on one side as we would find in the case of a blacksmith.

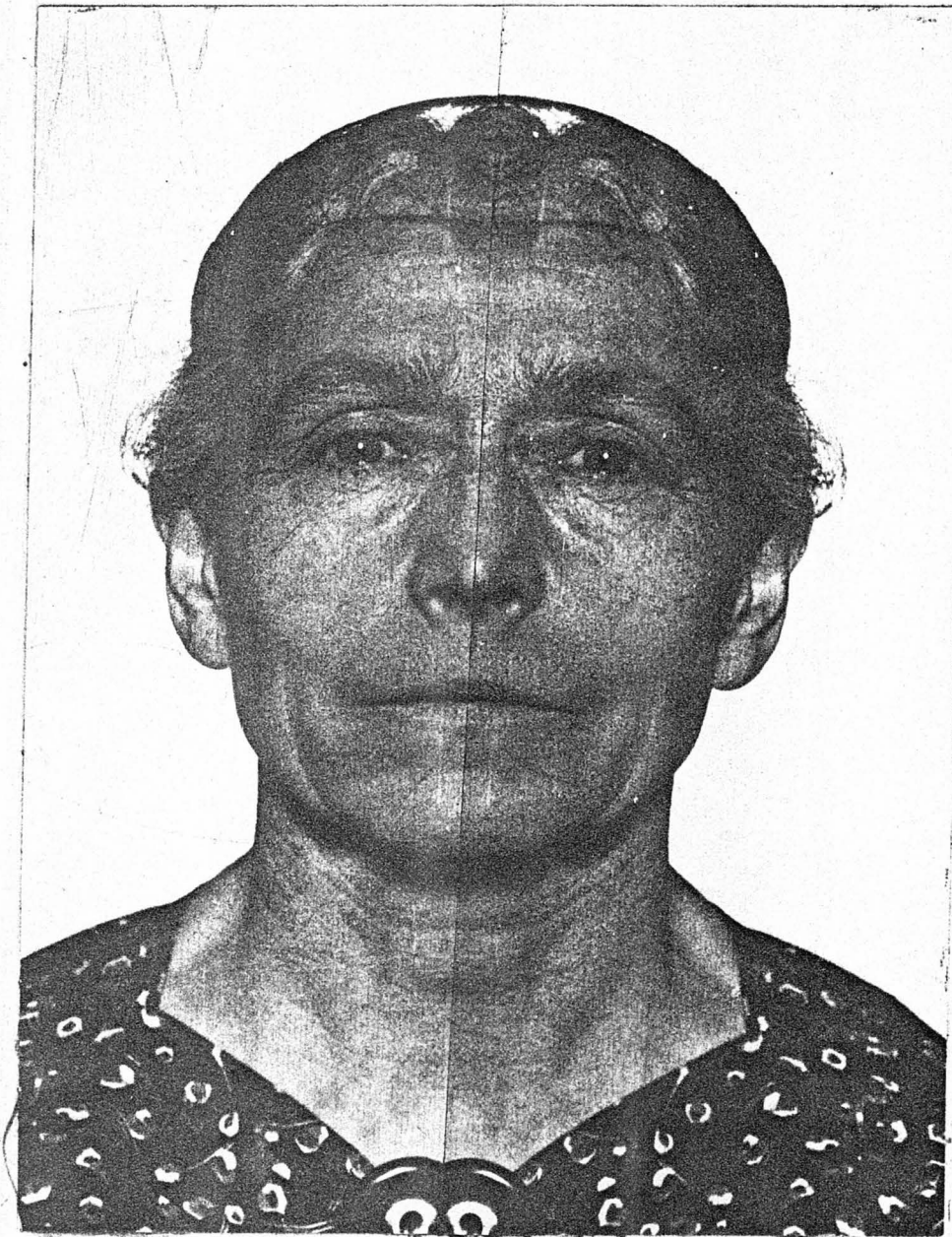
The reaction of the facial muscles caused by thought is very evident. Various emotions are often expressed by one side of the face, the opposite side being composed. These things lead to the development of every muscle separately. We must take this into consideration when we are drawing a human figure.

An interesting article was published by the newspaper feature service in 1925 dealing with an experiment with the opposite twin muscles. A celebrated London photographer, Geoffrey Randers, hit upon the plan of creating "twin faces" in photographs. His method consisted of nothing more intricate than this: first he chose a full face photo of a subject; next he had it copied in reverse; then he took the two photos, sliced them down the middle and pasted together the two left and the two right sides. Sometimes the two joined together left sides of the face suggested a sensitive spiritual personality, while the right sides revealed a cruel nature.

The portraits on the accompanying pages are examples of the differences found in twin muscles of the face. This is a very interesting sidelight in view of the fact that people go so far as to think that one side of the body is the same as the other. This, I believe, is not only a confusion of terms, but of concept. Even though we should keep in mind and study these differences, it is the unified whole which we wish to express.



Portrait of Miss E. Grace Ward
my esteemed teacher of Art



Miss Ward's Two Left Sides



Miss Ward's Two Right Sides



Portrait of Miss Doris Jean
Miss Ward's Assistant



Miss Jean's Two Left Sides



Miss Jean's Two Right Sides

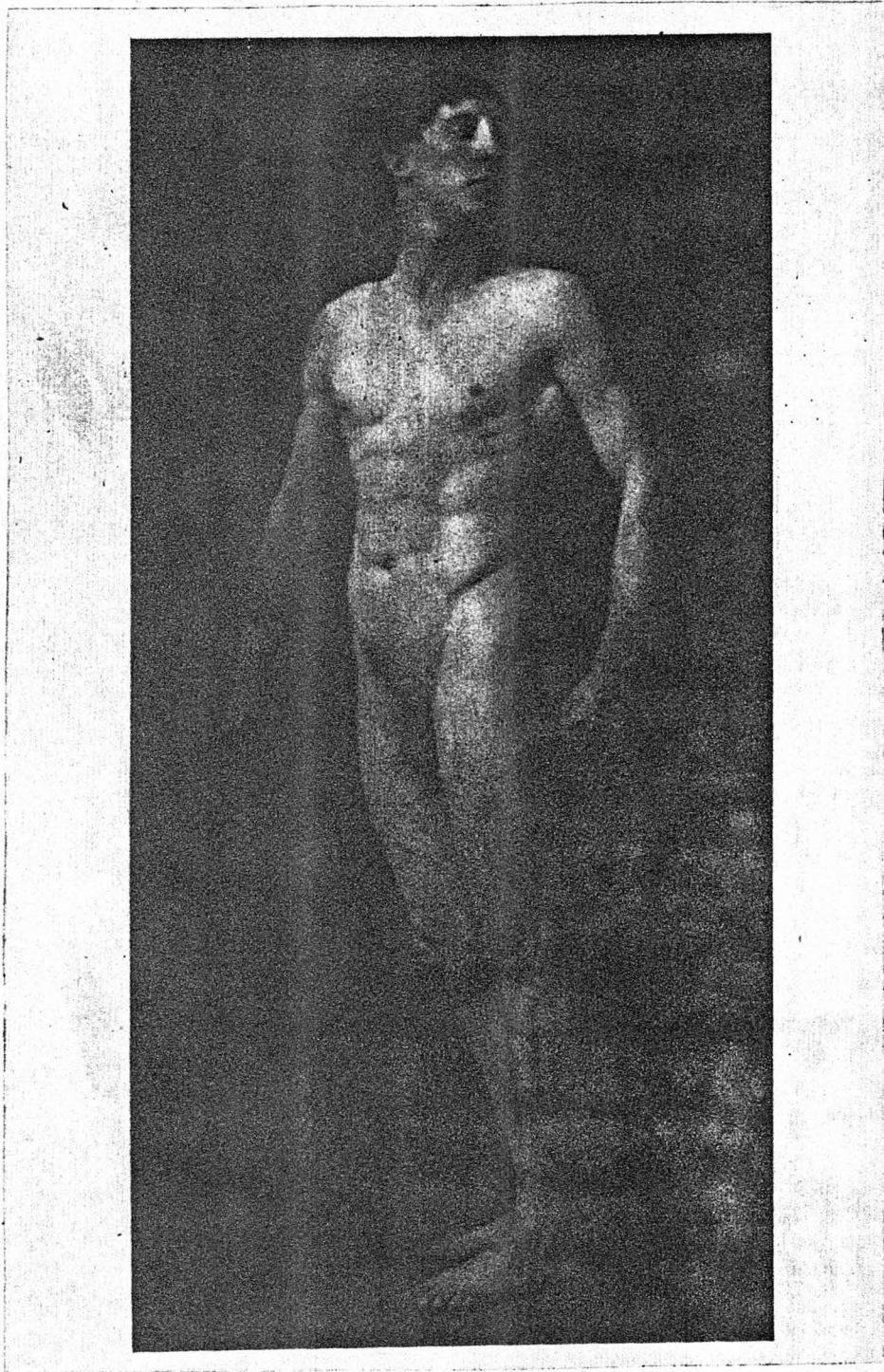
The best way to make a complete study of this unified whole and its component parts is to first carefully read over books on Artistic Anatomy by accepted authors, and pick out their salient points. These books are listed in the bibliography at the end of this thesis. I shall now present a brief review of them.

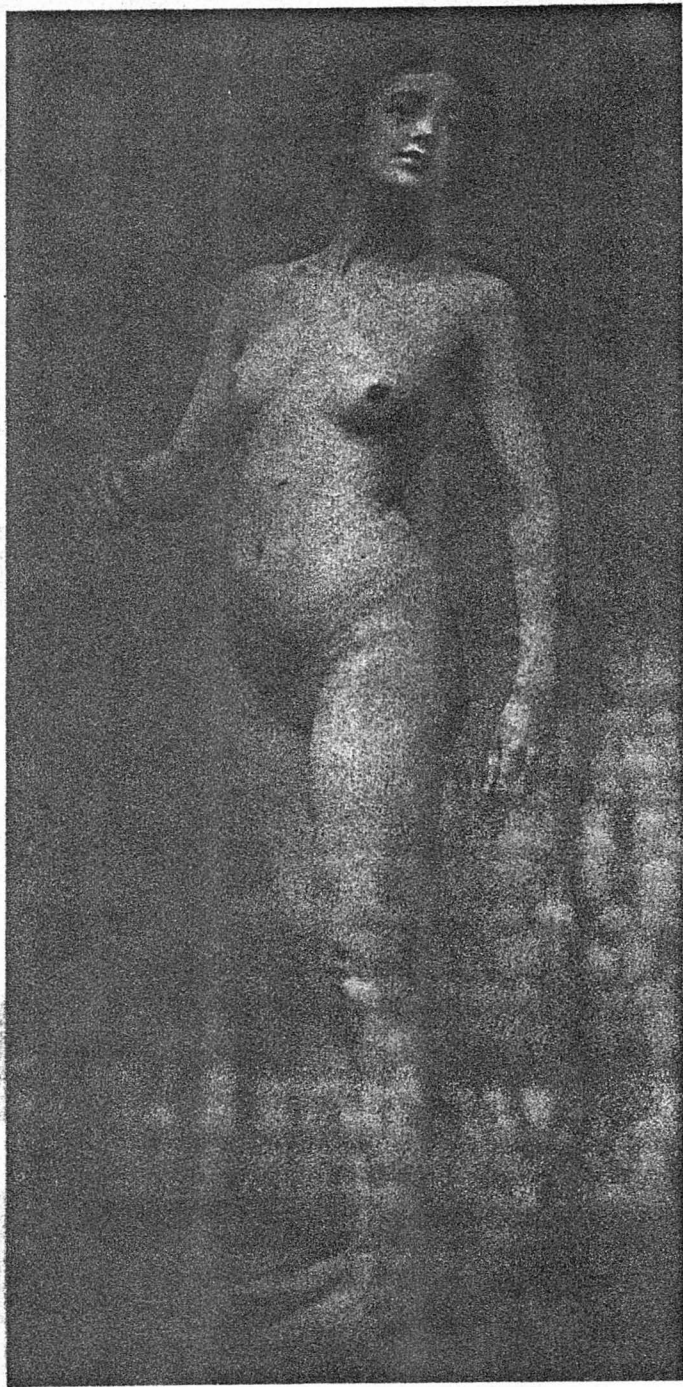
A. Thompson's Anatomy for Art Students is probably the most serviceable all-round book on the subject obtainable at the price. It shows both the male and female figure in a variety of poses - as on pages 78, 79, 80, 81, 82, and 83 - the latter deplorably stocky, judged by present-day standards.

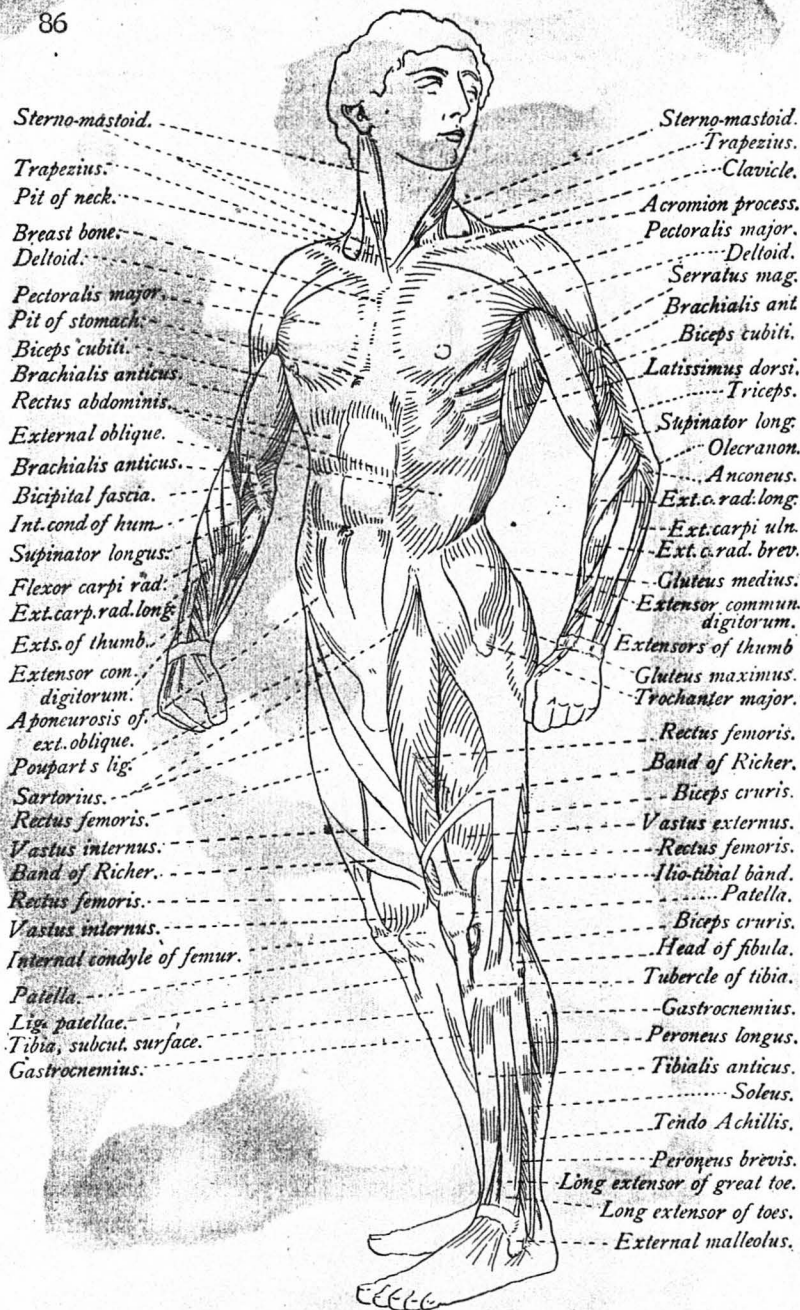
This book is scholarly and reliable rather than artistic in the modern sense. This is, however, not altogether a disadvantage when dealing with anatomical facts. Such a book is at any rate to be preferred to a version in which the personality of the author obtrudes too powerfully. This may at first seem to belie the desire for a more imaginary treatment, but is the imposition of a theatrical style, or exaggeration of emphasis, which is objectionable.

In Vanderpoel we find an often sensitive impressionism entirely excusable in an artist's personal style, but dangerously vague in a teacher of Life, whose every diagram should concentrate upon the search for plastic form - or so it seems to me.¹

¹ John H. Vanderpoel, The Human Figure.







Sterno-mastoid.

Trapezius.

Pit of neck.

Breast bone.

Deltoid.

Pectoralis major.

Pit of stomach.

Biceps cubiti.

Brachialis anticus.

Rectus abdominis.

External oblique.

Brachialis anticus.

Bicipital fascia.

Int. cond. of hum.

Supinator longus.

Flexor carpi rad.

Ext. carp. rad. long.

Exts. of thumb.

Extensor com.

digitorum.

Aponurosis of

ext. oblique.

Poupart's lig.

Sartorius.

Rectus femoris.

Vastus internus.

Band of Richer.

Rectus femoris.

Vastus internus.

Internal condyle of femur.

Patella.

Lig. patellae.

Tibia, subcut. surface.

Gastrocnemius.

Sterno-mastoid.

Trapezius.

Clavicle.

Acromion process.

Pectoralis major.

Deltoid.

Serratus mag.

Brachialis ant.

Biceps cubiti.

Latissimus dorsi.

Triceps.

Supinator long.

Olecranon.

Anconeus.

Ext. c. rad. long.

Ext. carpi uln.

Ext. c. rad. brev.

Gluteus medius.

Extensor commun.

digitorum.

Extensors of thumb

Gluteus maximus.

Trochanter major.

Rectus femoris.

Band of Richer.

Biceps cruris.

Vastus externus.

Rectus femoris.

Ilio-tibial band.

Patella.

Biceps cruris.

Head of fibula.

Tubercle of tibia.

Gastrocnemius.

Peroneus longus.

Tibialis anticus.

Soleus.

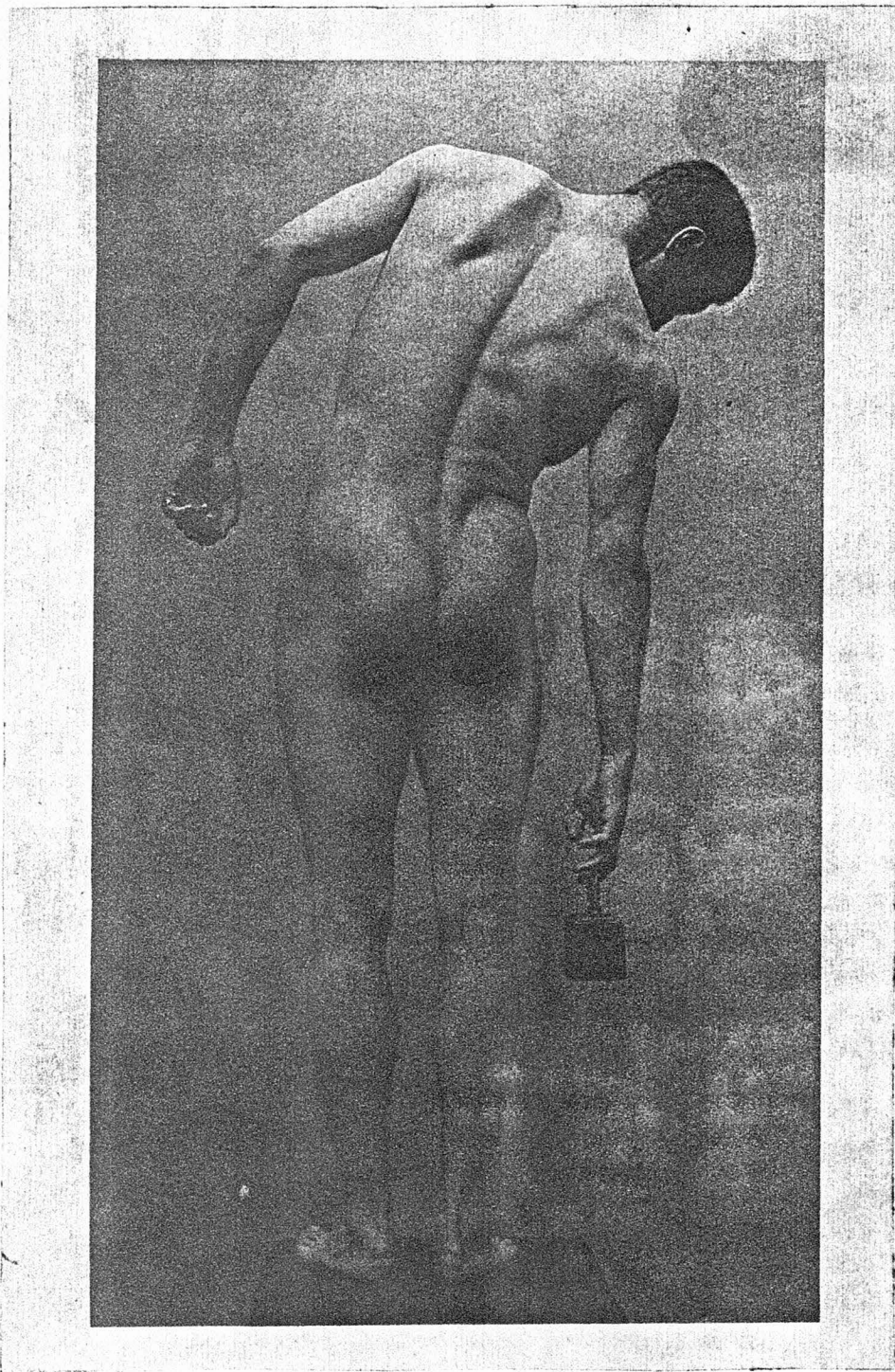
Tendo Achillis.

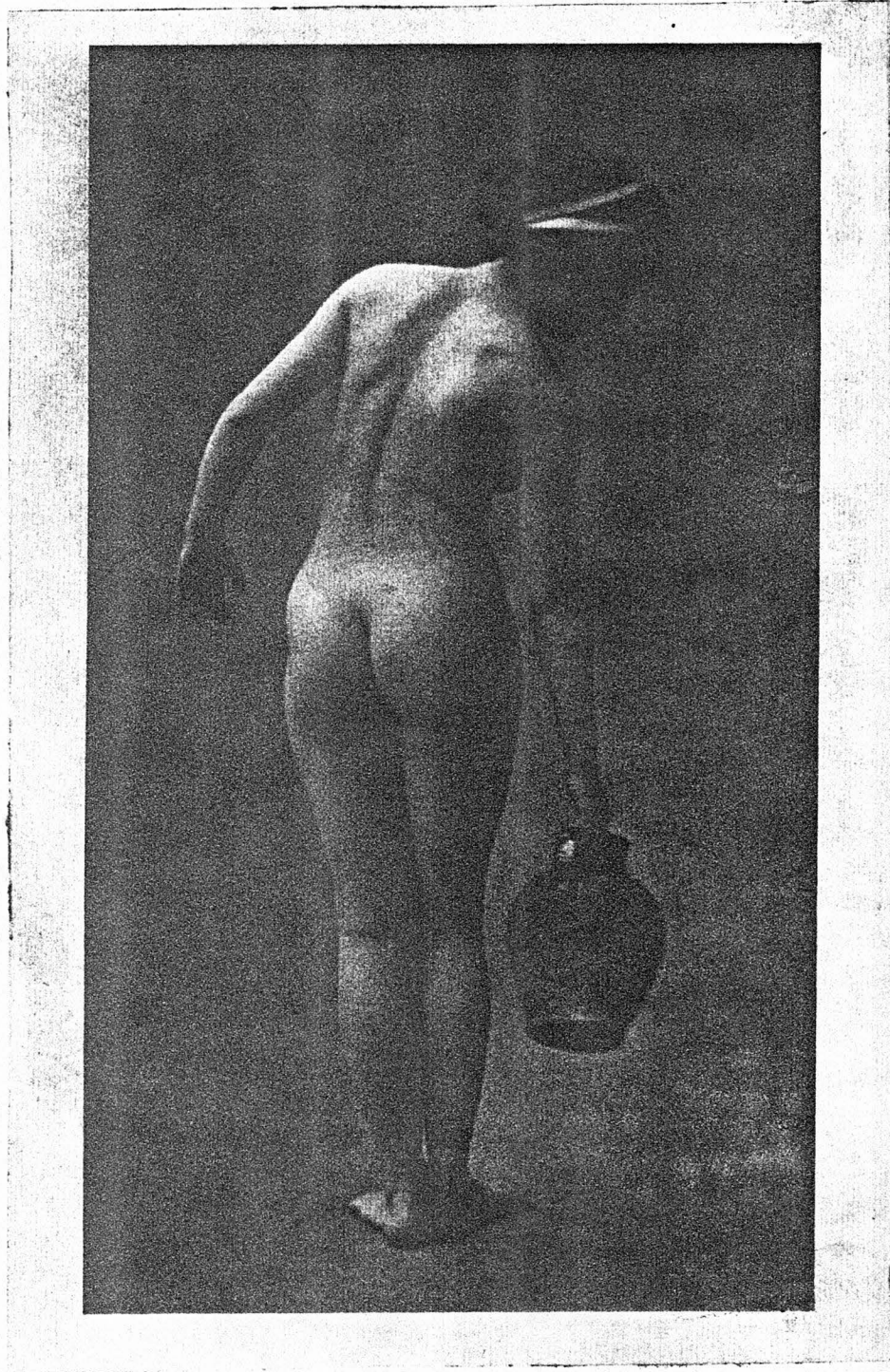
Peroneus brevis.

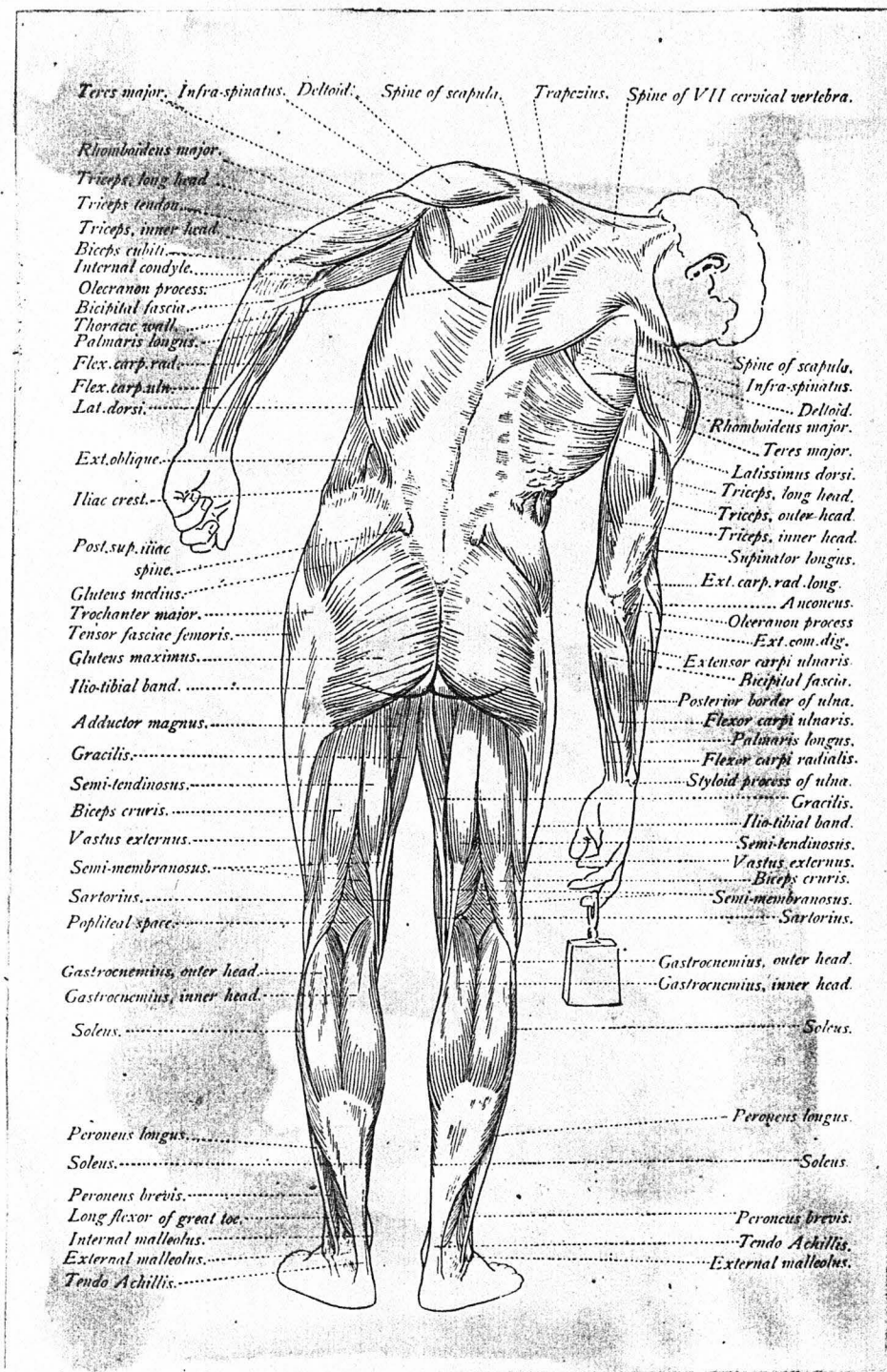
Long extensor of great toe.

Long extensor of toes.

External malleolus.







George B. Bridgman's Constructive Anatomy is full of vigorous and clever drawings of all parts of the figure. The harshly chiselled and blocked-in forms show great knowledge and skill, and may be of value to the sculptor who knows when to stop. Its stylistic detail is likely, however, to confuse the beginner who has no grasp of the underlying truths of the figure's structure, and who is more than likely to fall into its mannerisms.

As a contrast to Bridgman's approach, Alan Bement's book on Figure Construction might be reviewed next. For those who are beginning the study of the figure, it proves an easy introduction.

Richard G. Hatton's Figure Drawing and Figure Composition are both useful contributions on the subject. His first published edition is to be preferred for its conciseness and its simpler illustrations. It gives all the pertinent facts about the figure, and is particularly serviceable in showing those details, contours, and sections of the various members of the body which every good draftsman must know, and which the majority of us first have to be shown before we can see them. Such information as he gives should be at the finger tips of every student who intends to use the figure.

The ideal book has yet to be written. Fortunately, a good book on artistic anatomy is a good book for all time. The discovery of the thyroid glands did not mean a revision of all handbooks previously issued. The art student in his

studies is concerned with structural and surface forms that have changed but little since the days of Menes. Lack of National Olympiads and the all-round cultivation of the body common to the ancient Greeks has suppressed or obliterated certain minor features of the torso that they emphasized, and the specialization of the modern athlete tends too often to produce a lean and rangy type, or unsymmetrically developed physiques, only too liable to deflect the eye from the larger forms and beautiful interrelationships of plane and mass that should be our primary objectives.

With such insignificant changes in mind we may safely assert that the human figure has undergone no perceptible modification in the last two or three thousand years. Perhaps we should qualify our statement by calling attention to the modifications recently wrought upon the female figure.

Under the influence of a past ideal, the early Victorian of the gentler sex assumed delicate and very ladylike proportions suitable to the clinging vine type, then in vogue. Later in the Nineteenth Century under the compulsion of an almost incredible fashion, and with the aid of steel corsets, she put on steatopygous hips, wasp waist, and formidable one-piece bust. The absurd way in which, subsequently, the figure was swaddled and denied is truthfully depicted in the Gay Nineties drawings. But it remained for the bicycle craze to develop the most amazingly grotesque outfits ever recorded in the history of costume.

Happily, in this age such perversions are either extinct or metamorphosed into something nearer the creator's original design. We approach more closely to the Greek ideal, in which male and female blended certain becoming attributes.

Today, many an Amazon might pose with a man for a modern version of Orestes and Electra.

CHAPTER V

THE IMPORTANCE OF THE STUDY OF ANATOMY

Is it better to paint external forms just as they appear and without understanding them, or is it better to learn the underlying cause of those elevations and depressions which make up the human figure? Common sense would incline one to the latter view, but one need not depend on common sense alone; men of high standing, both as artists and scientists, have studied the question and are generally agreed that the more one can learn about one's subject, the better, for one sees - or rather perceives - only what one knows and very naturally one does not draw that which is unnoticed.

Many artists use the following quotation from Plesse as sort of a motto - "The eye sees in things only what it looks at in them and it looks only at that of which the idea is already present in the mind."

Sir Joshua Reynolds expressed the same idea when he said: "The eye sees no more than it knows."

Bertillon, the famous expert on criminal identification says: "It is necessary in order to see well, or know beforehand what are the points to be looked at."

The beauty of the human form depends essentially on the forms beneath the outer covering; it is therefore the inner form, expressed through the outer that comprises the problem

of art.

The shortest and surest road to successful representation is through the study of anatomy. We cannot depend upon inspiration alone to express our ideas; there should be an underlying consciousness of all the elements involved in a world of art.

Where anatomy helps is in making it easier for the artist to visualize the figure vividly in any pose of movement, and to recall the essentials of its bony and muscular structure with an uncommon degree of accuracy - confidently, without amateurish fumbling. It familiarizes the student with the manifold shapes and contours, the planes and particularly the sections of the human form. By its aid he is enabled more readily to understand many important points that might otherwise remain obscure. For example: the flexibility of the spinal column and its range of action; the mobility of the bony girdle of the shoulders; the possible movements of the head, arms, and legs, and their strong, effective "growth" from the trunk. He may observe the powerful influence the framework of the thorax and the pelvis exert upon the torso, and with the assistance of a few good diagrams he is sooner able to grasp the fine design and symmetry of that baffling but noble structure.

To have noted the strong curve of the femur is to realize more vividly the powerful sweep of the thigh. To have examined the fixed course of the ulna and the pivotal

action of the radius is to obtain an accurate conviction about all forearms.

If an admiration for "joints of cunning workmanship" weaken one's conception of form, it is unfortunate. But for the ambitious student, there are no dry bones. "Every face, however full, padded round with flesh and fat is but modelled on a skull."

The only students who benefit by anatomical study are those who investigate with intelligent persistence, and are willing in their creative work to efface their anatomical knowledge in the interests of fine design and emotional expression.

Anatomy, if properly understood, will be of immense help in enabling the draftsman to fit his figures easily and powerfully into his composition; by its aid he is better able to make it fit any shape or form without unpleasant distortion or feeble exaggeration.

If the study of anatomy leads to map making and pettifogging, that is the student's affair, for anatomy should ultimately be the means by which he apprehends the dynamic forces inherent in every healthy human form. It is a magnificent tool; but only the spirit can breathe life into the most cunning artifice of flesh and bone.

In da Vinci's Notebooks he says: "It is a necessary thing for the painter in order to be able to fashion the limbs correctly in the positions and actions which they can represent in the nude, to know the anatomy of the sinews,

bones, muscles and tendons in order to know in the various different movements and impulses which sinew or muscle is the cause of each movement, and to make only these prominent and thickened, and not the others all over the body, as do many who in order to appear great draftsmen make their nudes wooden and without grace, so that it seems rather as if you were looking at a sack of nuts than a human form or at a bundle of radishes rather than the muscles of nudes. The painter who has acquired a knowledge of the nature of the sinews, muscles, and tendons will know exactly in the movement of any limb how many, and which of the sinews are the cause of it, and which muscle by its swelling is the cause of this sinew contracting, and which sinews having been changed into most delicate cartilage surround and contain the said muscle - he will not do like many who in different actions always make the same things appear in the arm, the back, the breast, and the legs; for such things as these ought not to rank in the category of minor faults."¹

A finished drawing by a master contains subtleties that elude the beginner and may remain mysteries even to the accomplished draftsman. With apparently no effort he indicates a wealth of form which all the careful detail of the conscientious student fails to suggest. Often this clarity is attained through arduous practice in leaving out. Simplicity, the work of all great Art, is the work of genius or the result

¹ Leonardo da Vinci, Notebooks, 184-185.

of a fine understanding attained through knowledge; the simplicity of the unskilled sophisticate being merely vacancy. But though it is reasonable to assume that we cannot leave things out before we know how to put them in, there is no necessity for the slavish copying of irrelevant detail that is so common in the ordinary Life class. It is only by an intelligent summarization of the main structures common to all that we shall obtain a firm foundation upon which may be grafted the various modifications, dictated by personal taste and idiosyncrasy, that give character and attractiveness to each artist's style.

The figure seems to be the most important single element in all drawing and painting. For this reason we give it all the time we can afford. It seems also that it is related organically to all of nature's productions. We find trees of very distinctive rhythms such as the Monterey Cypress which is almost uncannily human largely because of the action and rhythm of its lines, which makes it appear to be on the point of moving or coming to life. We find symmetry to be an outstanding element of similarity. We also judge and describe trees by comparing qualities similar to those in man. We think of the Aspen tree as a rather poetic, trembling, weak thing; we think of the strength and stockiness of the Juniper tree; the determination and sturdiness of the wind-blown Spruce, and so on. These are all human characteristics. We go so far as to give trees souls, because of the effect of

life which they seem to suggest. We have proven our likeness to all animal forms. This comparison and the ease of transition from animal to human drawing is based on the love of animals which every normal being has.

The drawings on pages 94 and 95 have placed the human in a horizontal position to facilitate this comparison. The bones of the arms and hands in comparison with the bones of the fore legs and the bones of the scapulae differ slightly on account of the natural position of the whole body. The rib enclosure is in the same position and has the same use as in the human body and the bony structure of the hips very evidently approximates that of the animal.

In simplified drawing, such as we find in Best-Manguard, the comparison is still further carried out.¹ The child's innate love of animals leads him to a desire to draw animals first. Best-Manguard represents the animal body by two large volumes - one for the shoulders and one for the hips, with intervening lines to represent the rest of the form. From this the child can easily be lead to draw the human body in the same way, using simple large bulks for shoulders and hips with the simple rhythmic curves which represent the other parts of the body.

¹ Adolfo Best-Manguard, Methods for Creative Design, 68.

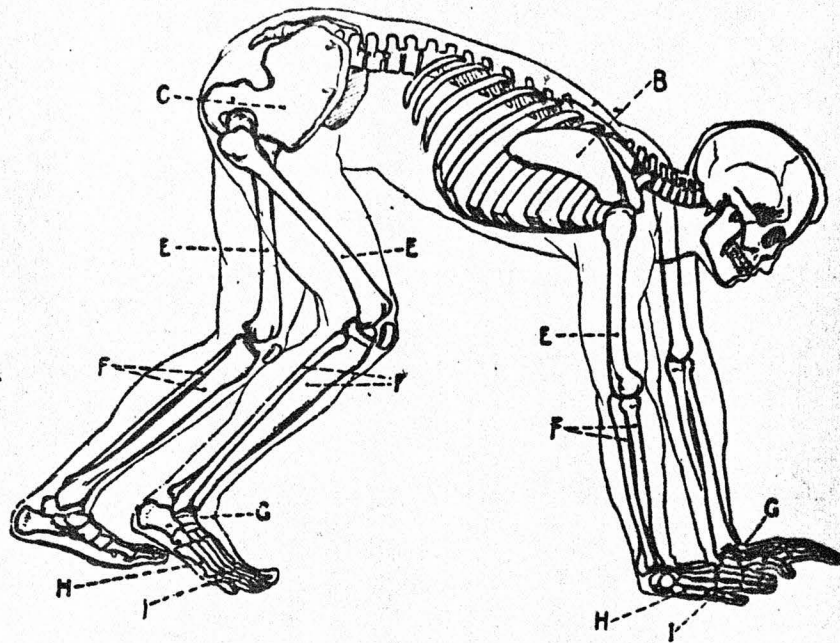


FIG. 32

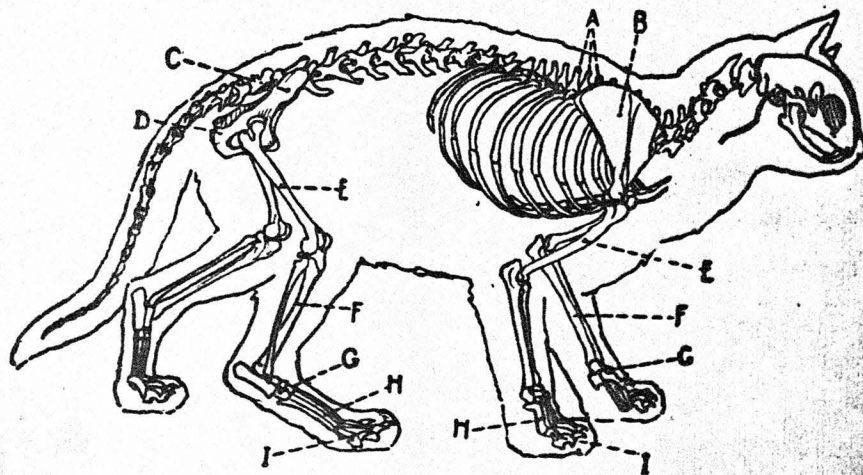


FIG. 33

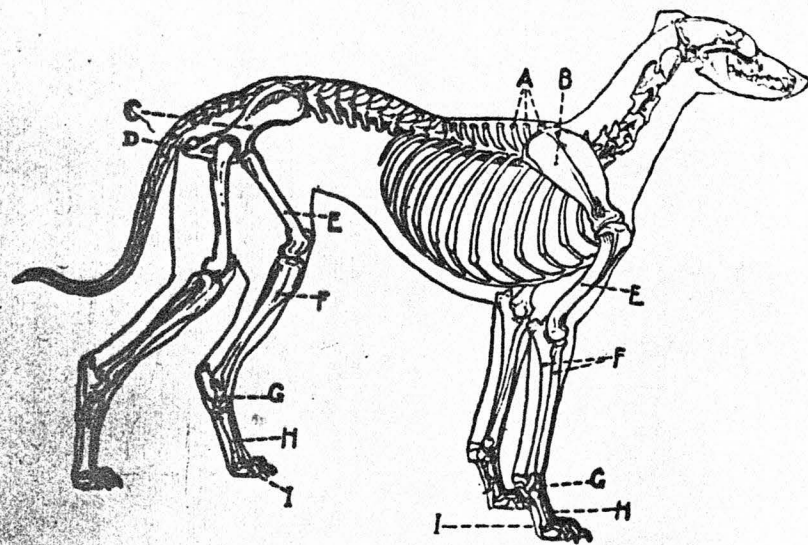


FIG. 34

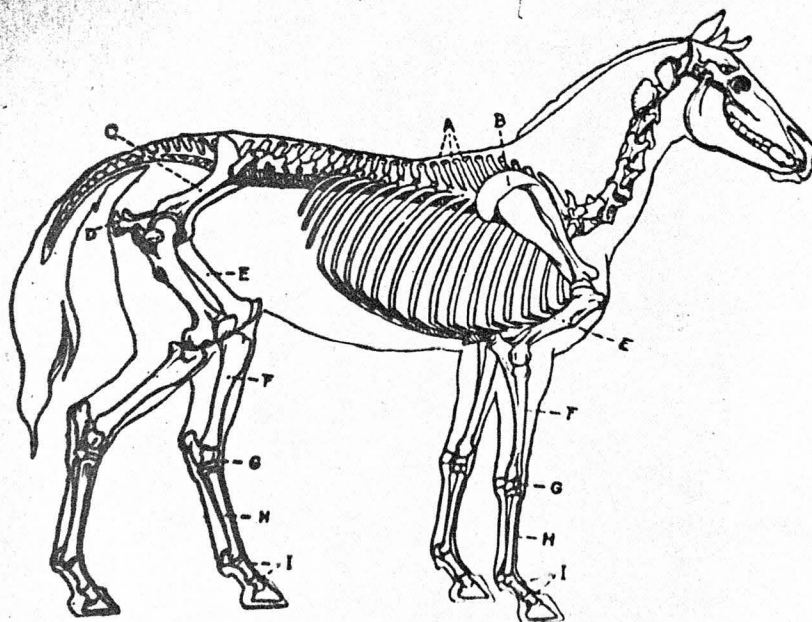


FIG. 35

CHAPTER VI

CONCLUSION

In conclusion: if the student has been systematic and reasonable in the elementary stages of his artistic education; if he has taken the trouble to study Anatomy and to locate bones and muscles, and the lighting of his plaster casts; if he has always measured every part of his drawing and checked it carefully with the original; if he has been successful in animating his drawings with life and been able to repeat his drawings from memory, and if he is still enthusiastic, then Life work will come to him as a welcome relief, a recreation and a revelation.

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