

PHYSIOLOGY OF THE BONE

Wolff's Law: " Every change in the form and function of bone, or of their function alone, is followed by certain definite changes in their internal architecture and equally definite secondary alteration in their external conformation."

Bone is characterized by strength and rigidity, but the structures of which it is composed are also considerably elastic. The structural pattern is responsible for the great strength of bone.

Osteoblasts are bone producing cells.

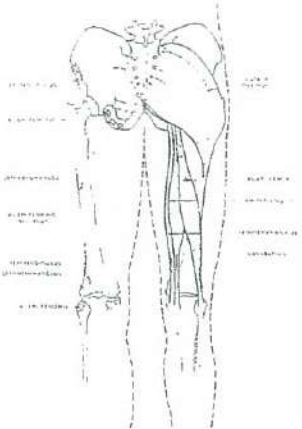
Osteoclasts are cells which remove bone tissue.

Bone is living tissue constantly being build up and sloughed off. Bone builds up on stress lines, an area which is subject to the force or stress of movement or gravity will build up, those which experience no such stress will slough off. Bone as living tissue can indeed be re-molded over time. The formation and breaking down of bone is continuous. The coordinated activity of osteoblasts and osteoclasts produce reorganization of bone structure in response to new physical forced or carry out the repair of fractures.

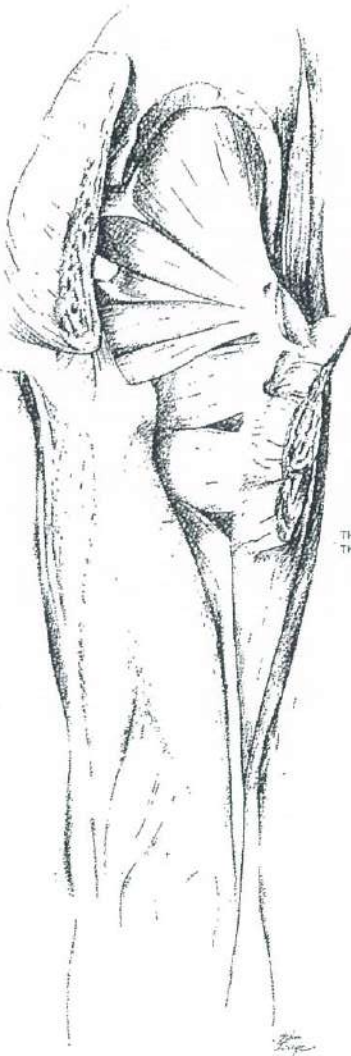
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USE OF THE FIGURE 8

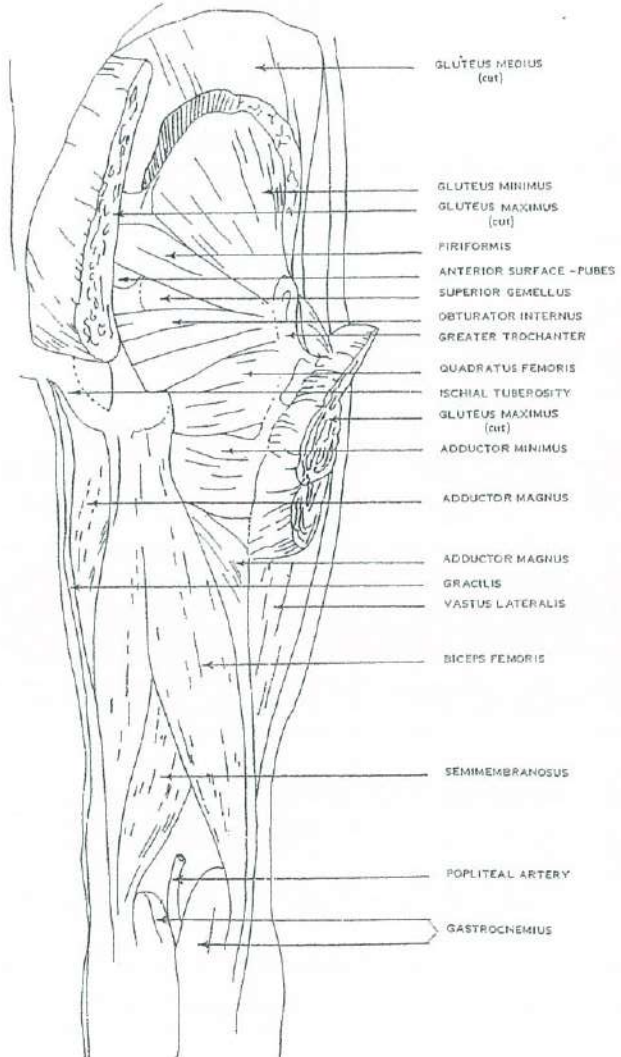
The figure 8 is used primarily in the ball and socket joints of the body, the shoulder joint and the hip joint. These joints are capable of movement in all three planes. The figure 8 is a three dimensional construct that spatially takes into account all the possible movement of these joints. All too often in dance training the 3 dimensionality of our bodies is trained out of us.



8-11

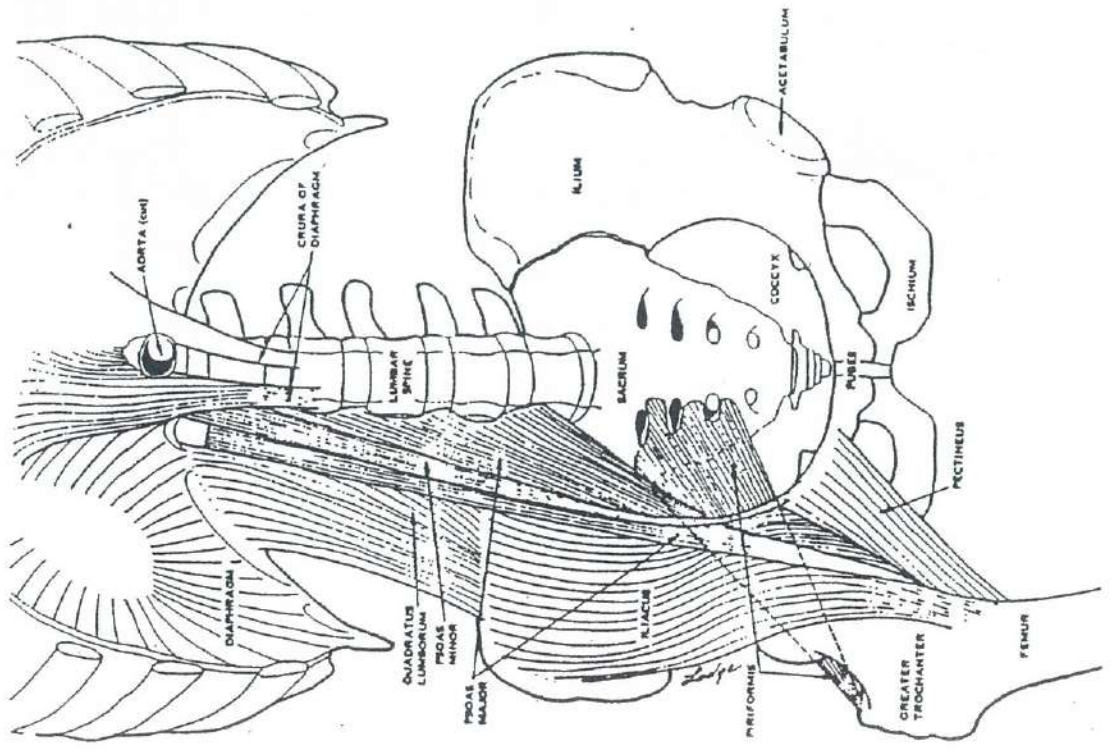
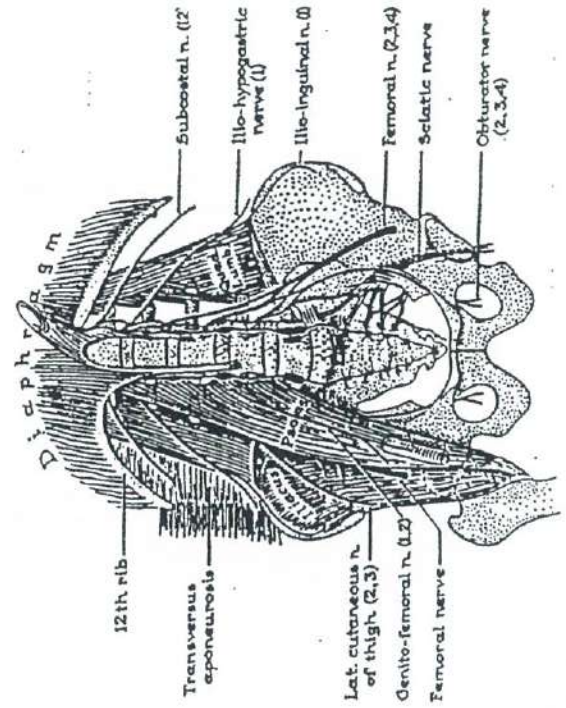
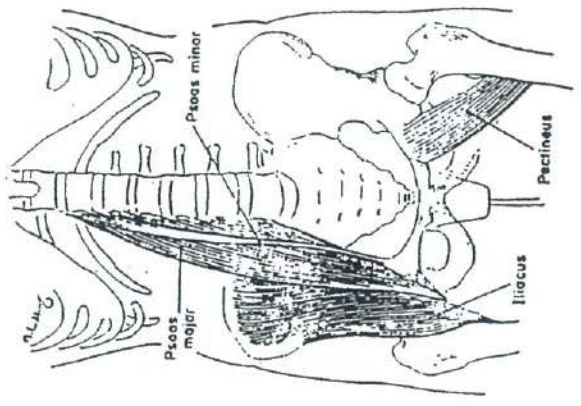


THE ROTATORS OF THE HIP AND THE HAMSTRINGS OF THE THIGH

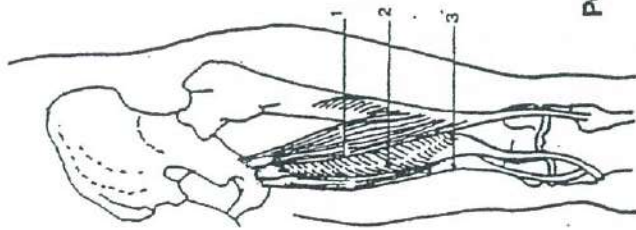


8-12 Posterior views: These schemata of the hamstrings and rotators emphasize the mechanism of "gluing." Individual muscles are encased in fascia, and groups of muscles are encased again in containing and restricting myofascial sheaths. Given the tendency of fascial sheaths to glue together when they are in trouble, the knots and thickenings that can be palpated below the skin become understandable.

ANTERIOR VIEW OF PELVIC REGION SHOWING THE PSOAS



Hamstrings



Posterior

1. Biceps Femoris

2. Semitendinosus

3. Semimembranosus

Biceps Femoris

O. Long head: ischial tuberosity
Short head: linea aspera

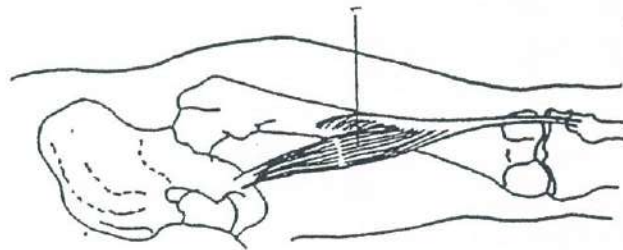
I. Head of fibula

A. Long head: extension of hip
Both heads: flexion of knee
lateral rotation of flexed knee

N. Long head: Sciatic nerve – tibial division (S1, 2, 3)
Short head: sciatic nerve – peroneal division (L5, S1, 2)

P. Lateral-posterior surface of thigh

Tendon palpated on lateral aspect of posterior knee



Semimembranosus

O. Ischial tuberosity

I. Semimembranosus: posterior medial tibial condyle
Semitendinosus: anterior proximal tibial shaft

A. Extension of hip
Flexion of knee
Medial rotation of flexed knee

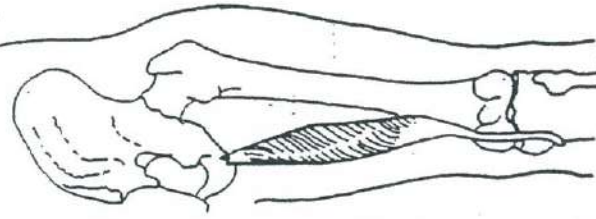
N. Sciatic nerve – tibial division (L5, S1, 2)

P. Semimembranosus: difficult to palpate because tendon is deep
Semitendinosus: tendon palpated on medial aspect of posterior knee (adjacent to gracilis tendon but lateral to it).

Semimembranosus and semitendinosus insert medially at the knee while the biceps femoris inserts laterally.

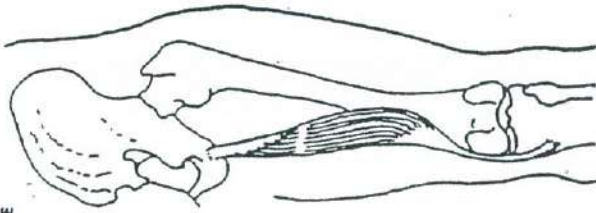
Hamstrings

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Posterior

Semitendinosus



Semimembranosus

O. Ischial tuberosity

I. Semimembranosus: posterior medial tibial condyle
Semitendinosus: anterior proximal tibial shaft

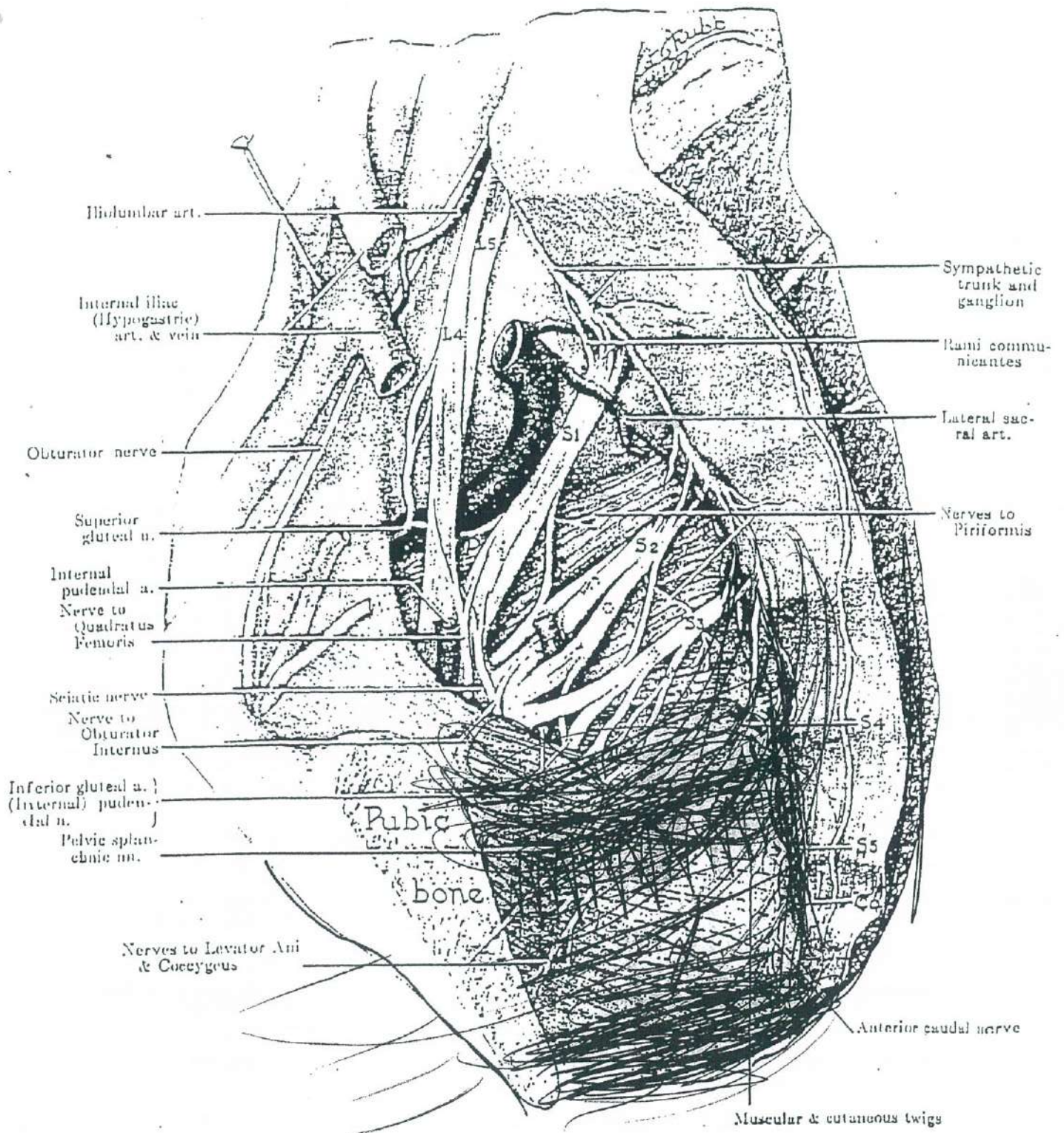
A. Extension of hip
Flexion of knee
Medial rotation of flexed knee

N. Sciatic nerve – tibial division (L5, S1, 2)

P. Semimembranosus: difficult to palpate because tendon is deep
Semitendinosus: tendon palpated on medial aspect of posterior knee (adjacent to gracilis tendon but lateral to it).

Semimembranosus and semitendinosus insert medially at the knee while the biceps femoris inserts laterally.

THE PELVIC FLOOR SHOWING THE LEVATOR ANI & COCCYGEUS



192. The Sacral & Coccygeal Nerve Plexuses, antero-median view.

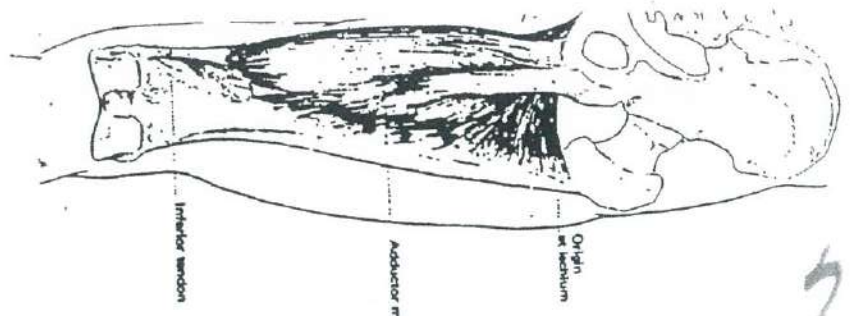


FIGURE 1: ADDUCTOR MAGNUS
POSTERIOR ASPECT

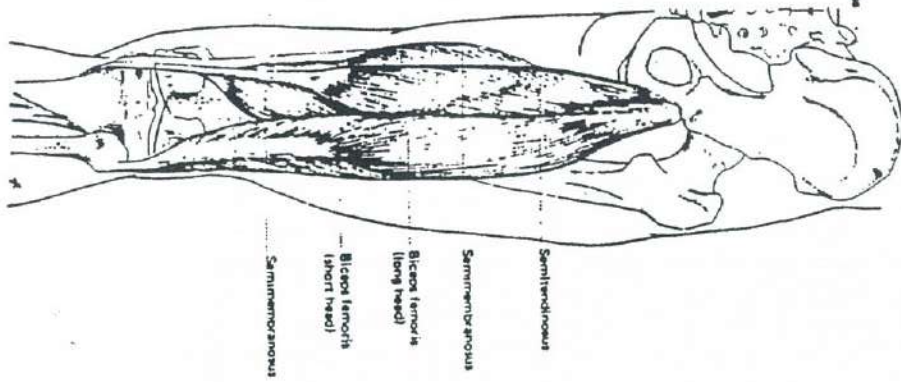


FIGURE 2: MUSCLES OF THE POSTERIOR GROUP
SUPERFICIAL LAYER

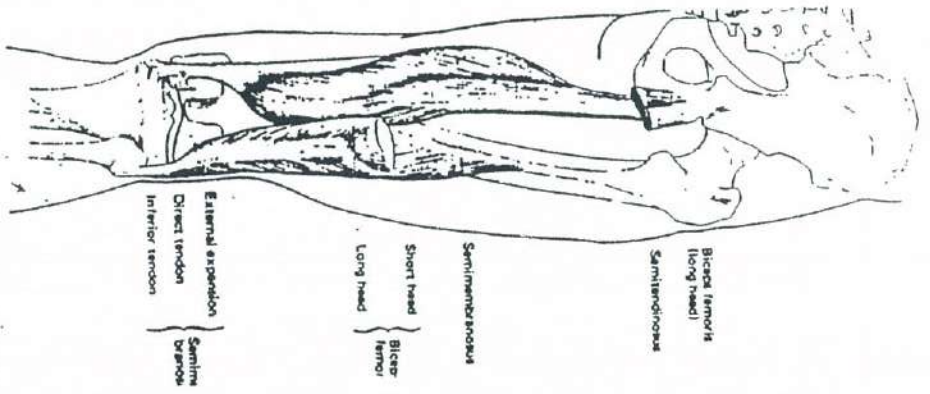
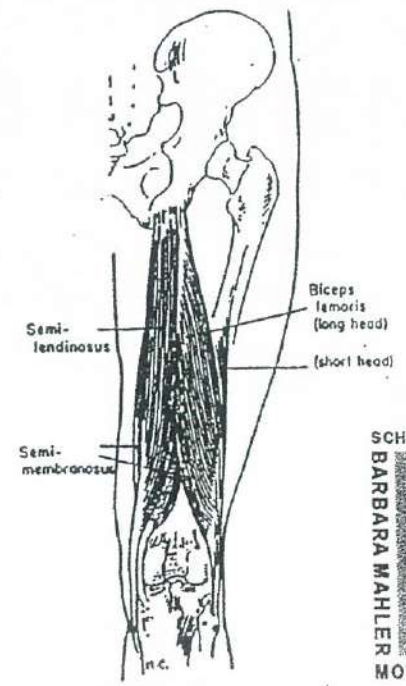
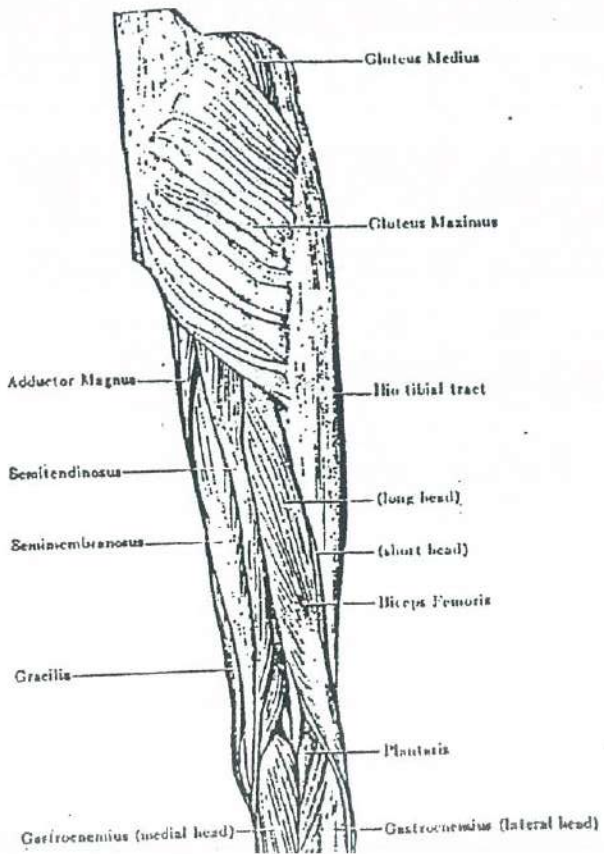
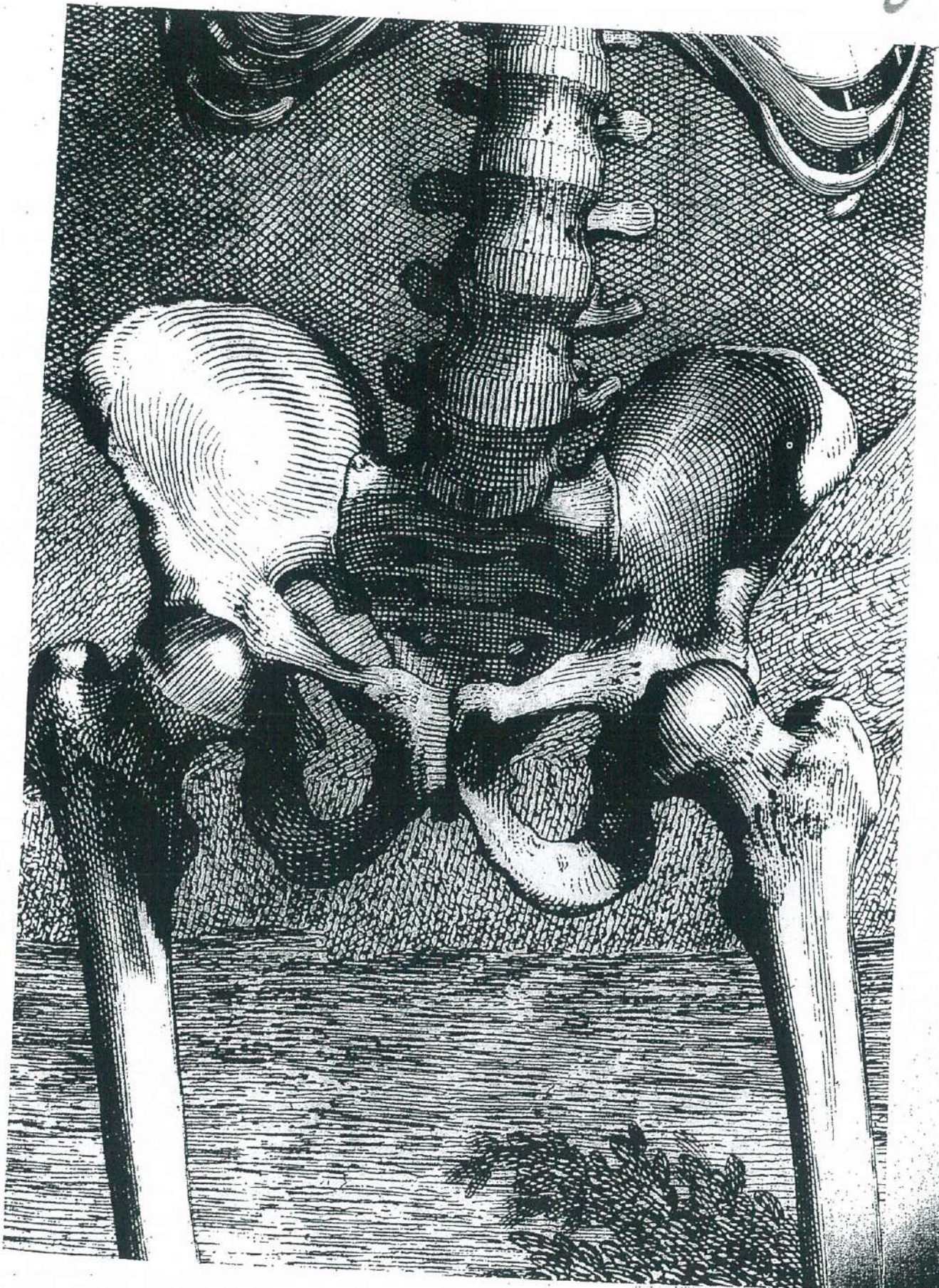


FIGURE 3: MUSCLES OF THE POSTERIOR GROUP
DEEP LAYER

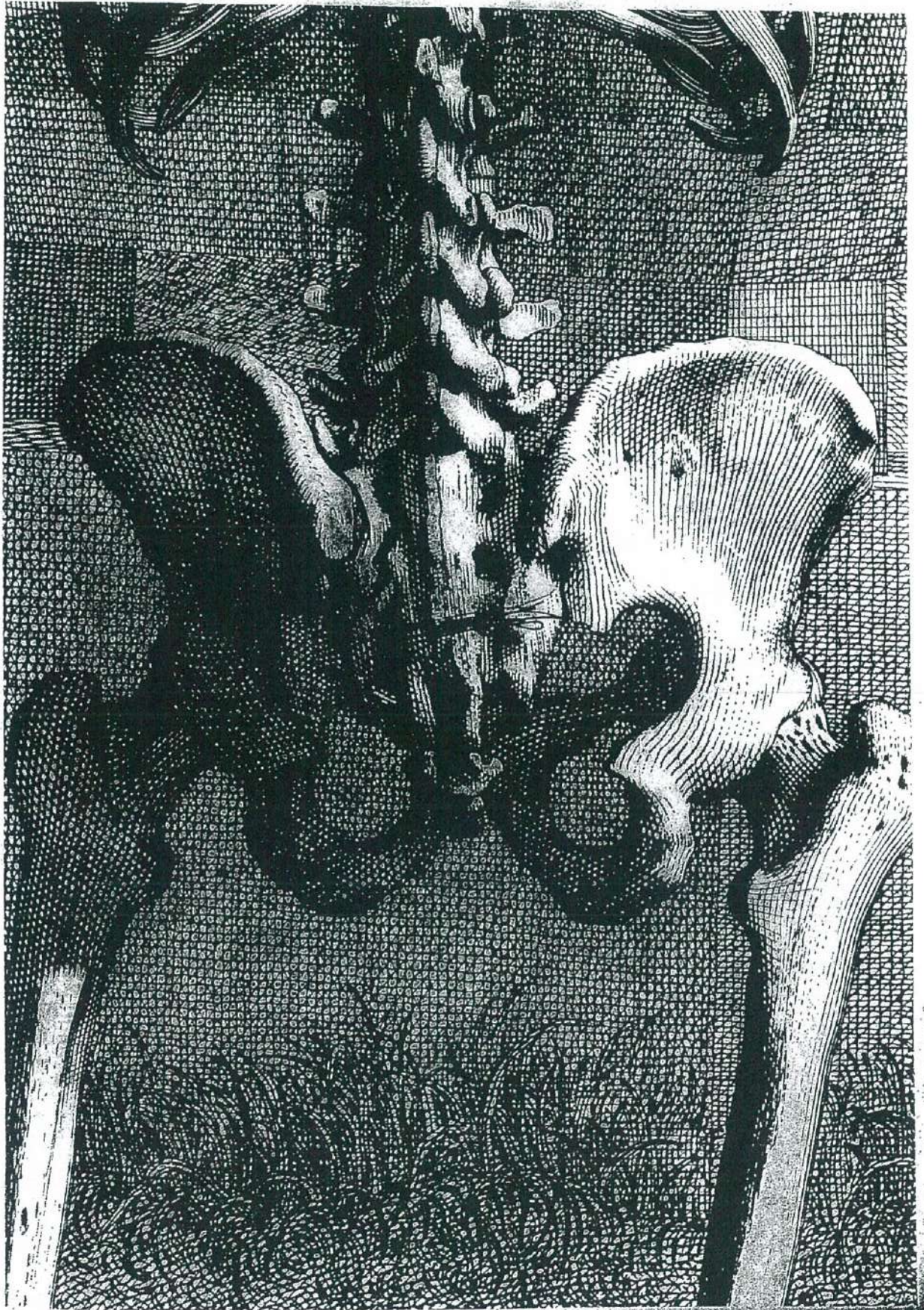
MUSCLES OF THE BACK OF THE THIGH, THE HAMSTRINGS



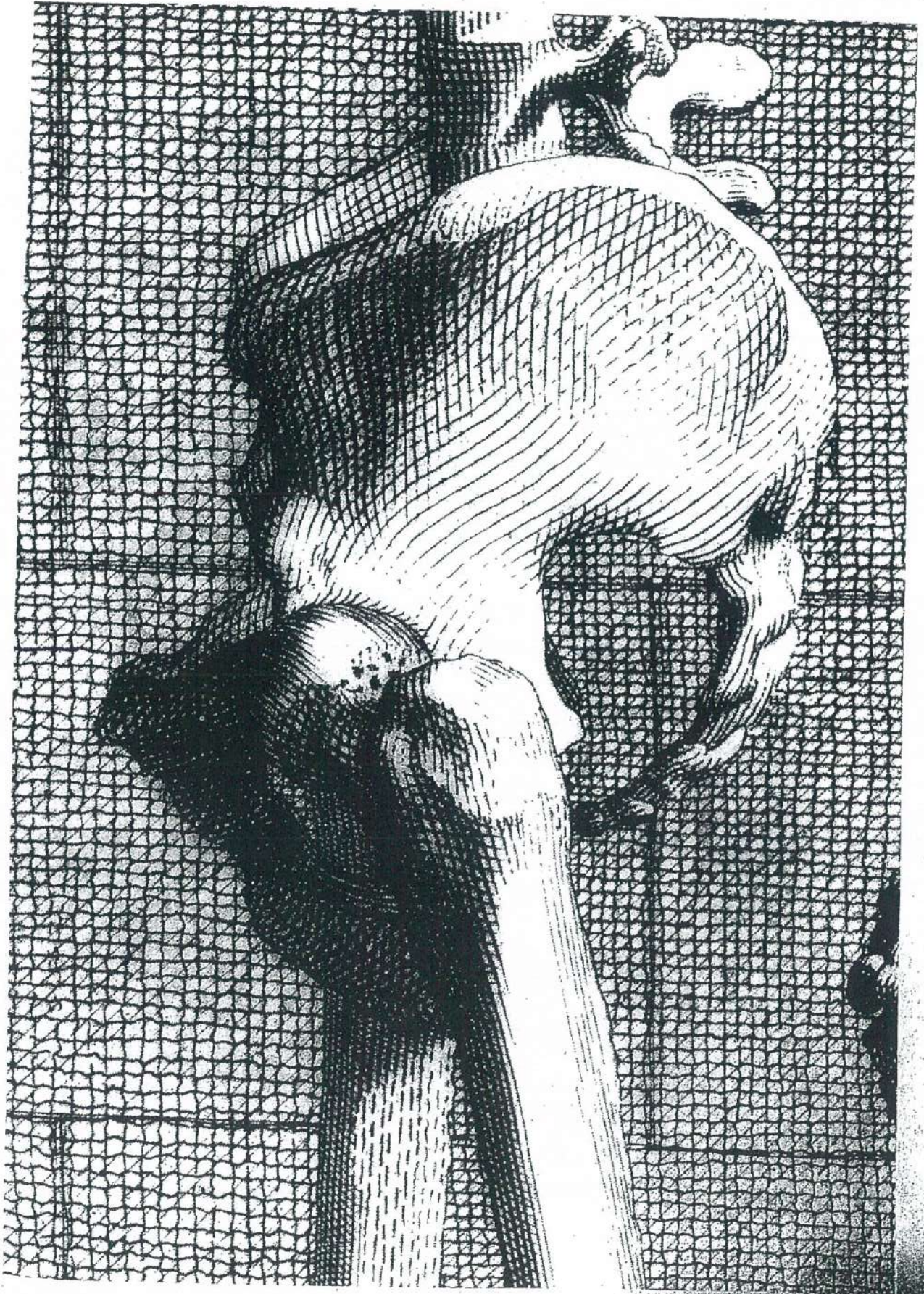
SCHOOL OF DANCE
BARBARA MAHLER
MOVEMENT STUDY

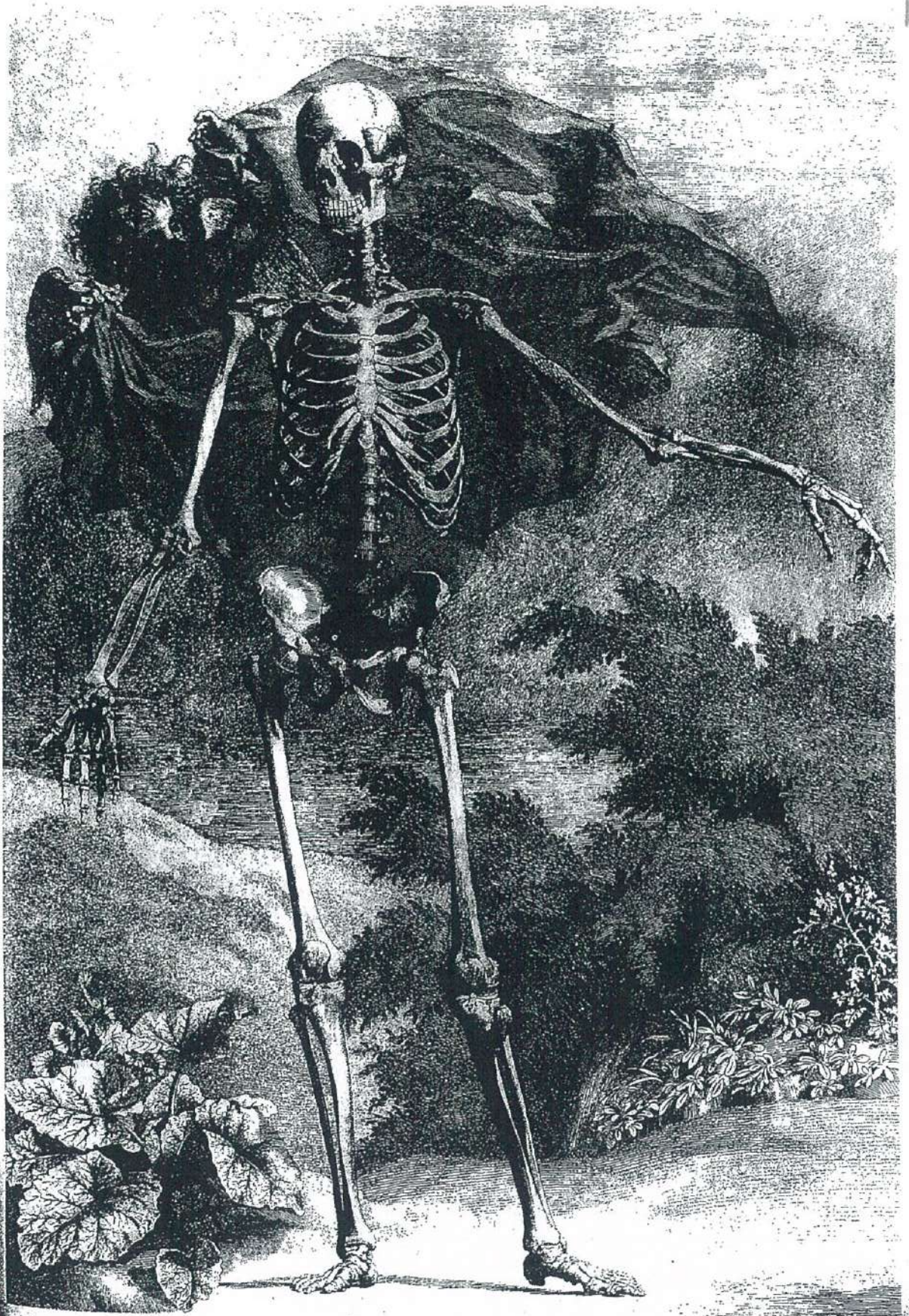


THE PELVIS AND ANTERIOR VIEW



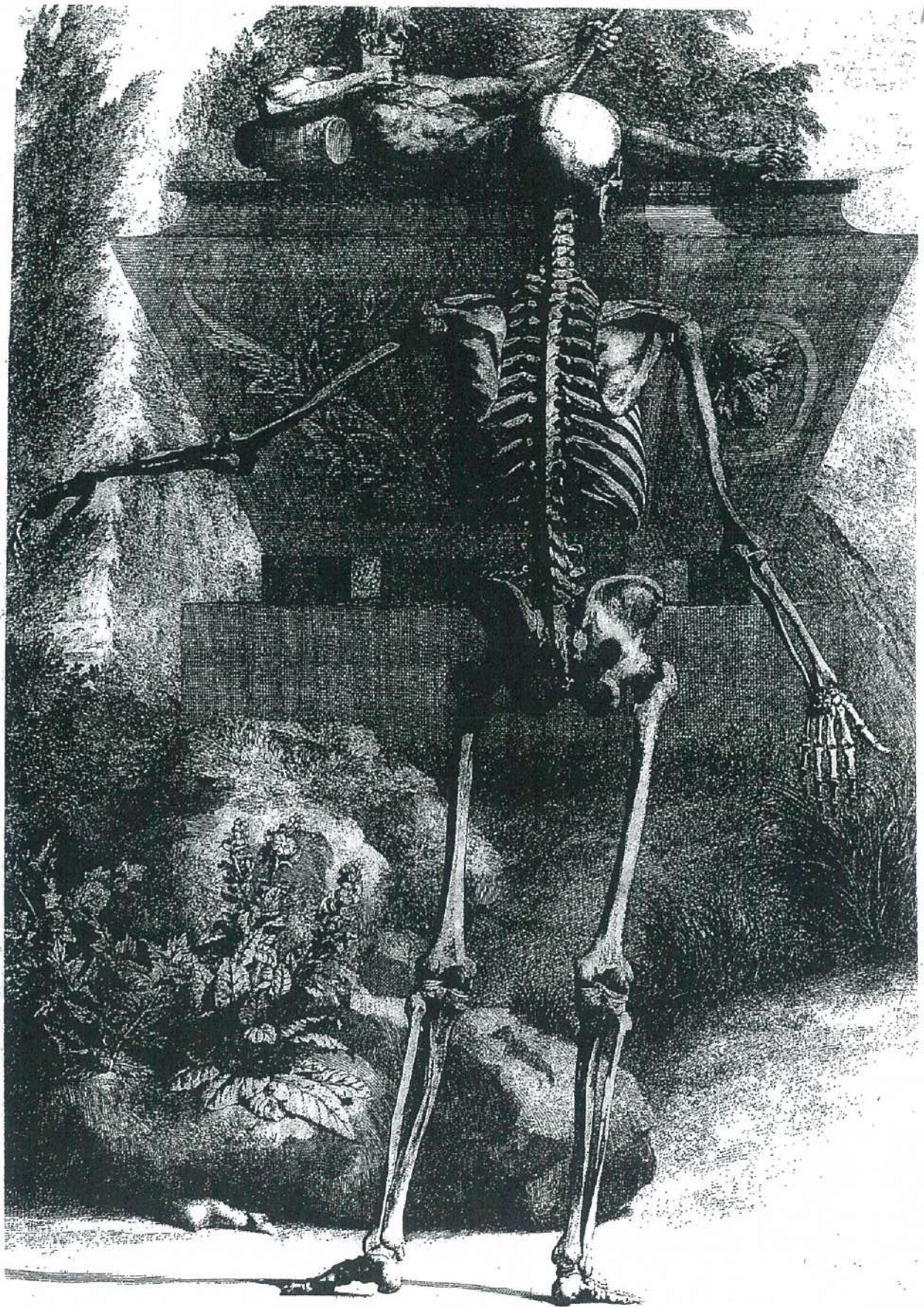
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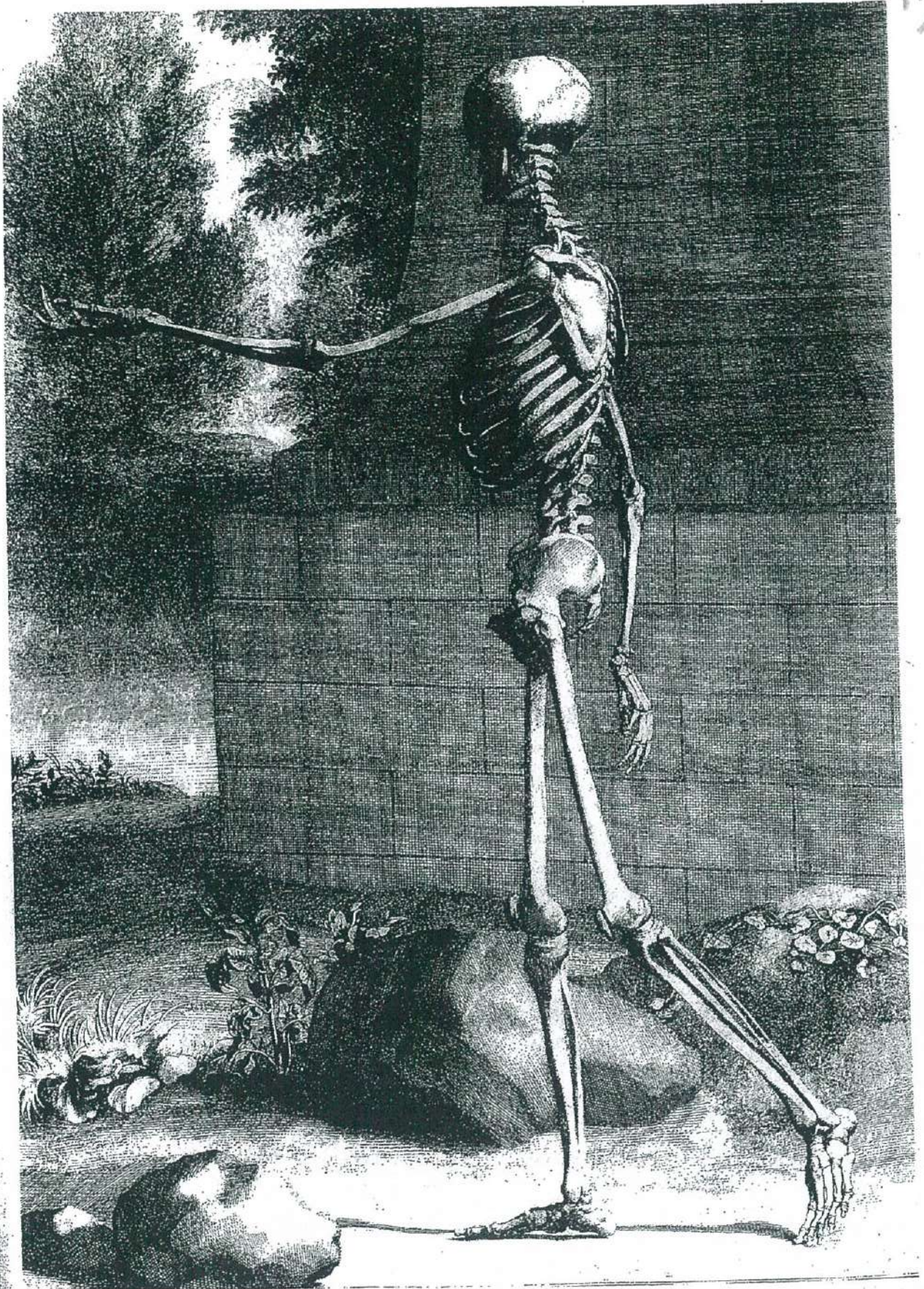


THE BONES AND MUSCLES OF THE BODY. 29

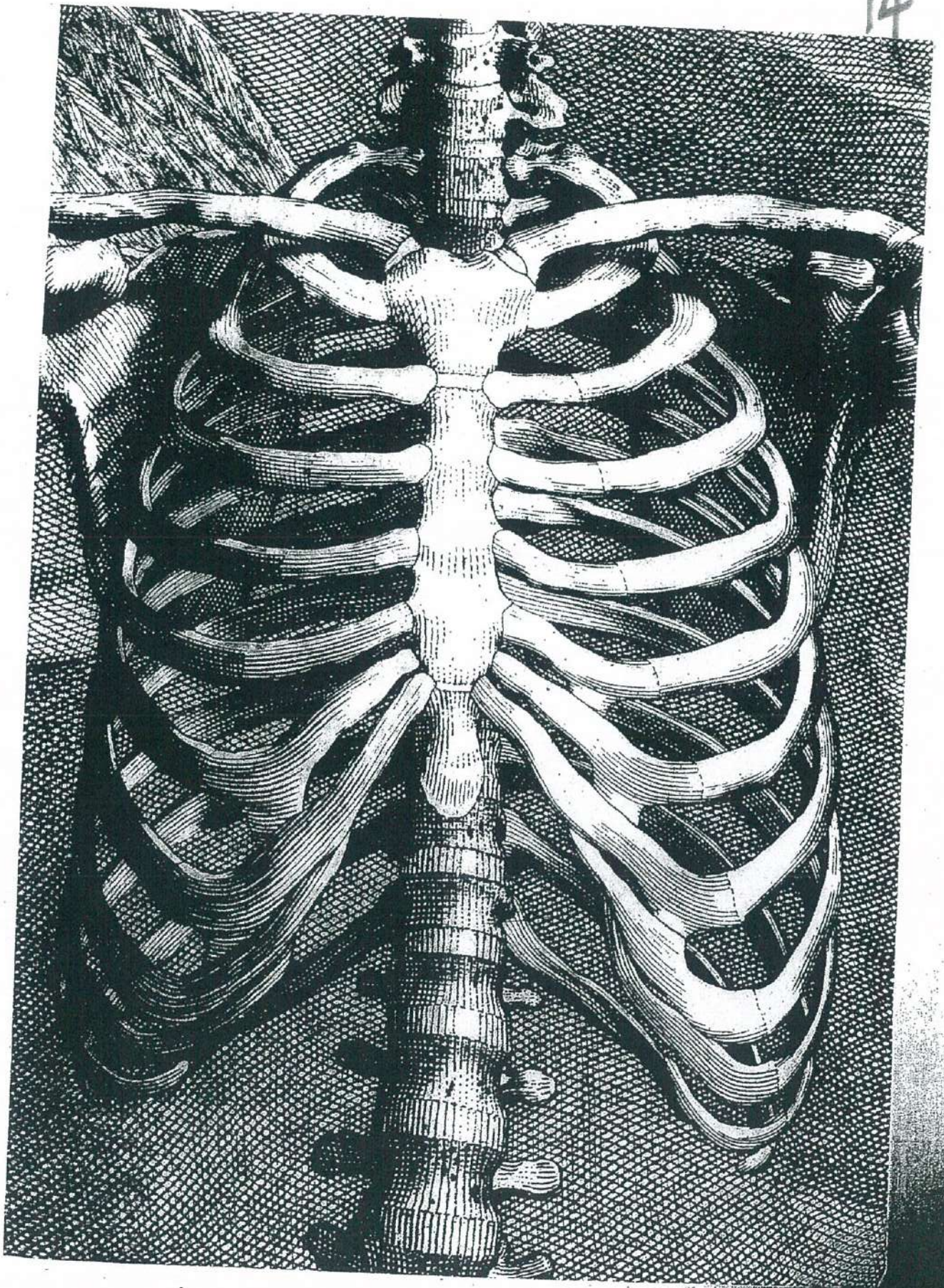
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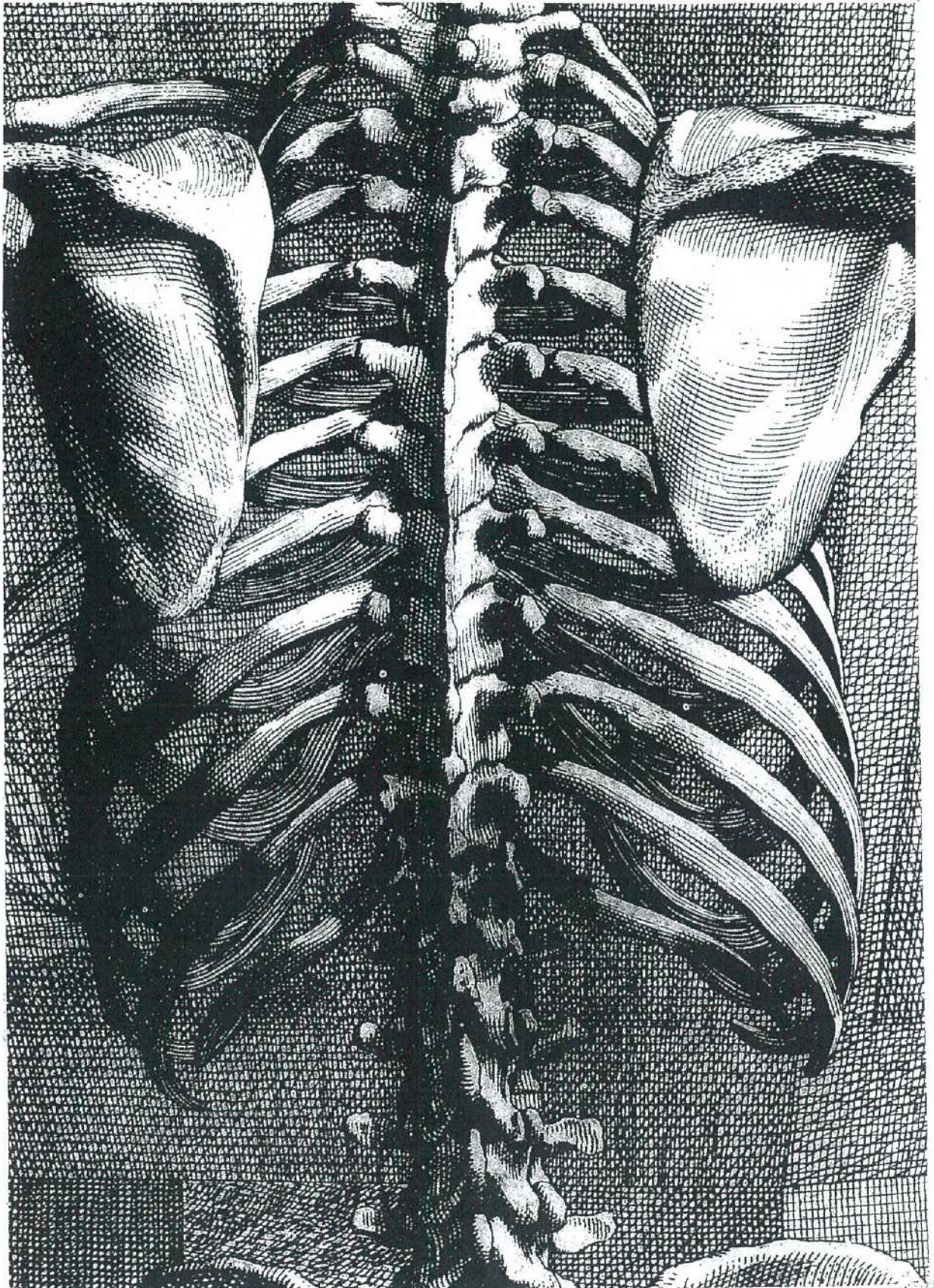
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THE VERTEBRAL COLUMN AND RIBS.

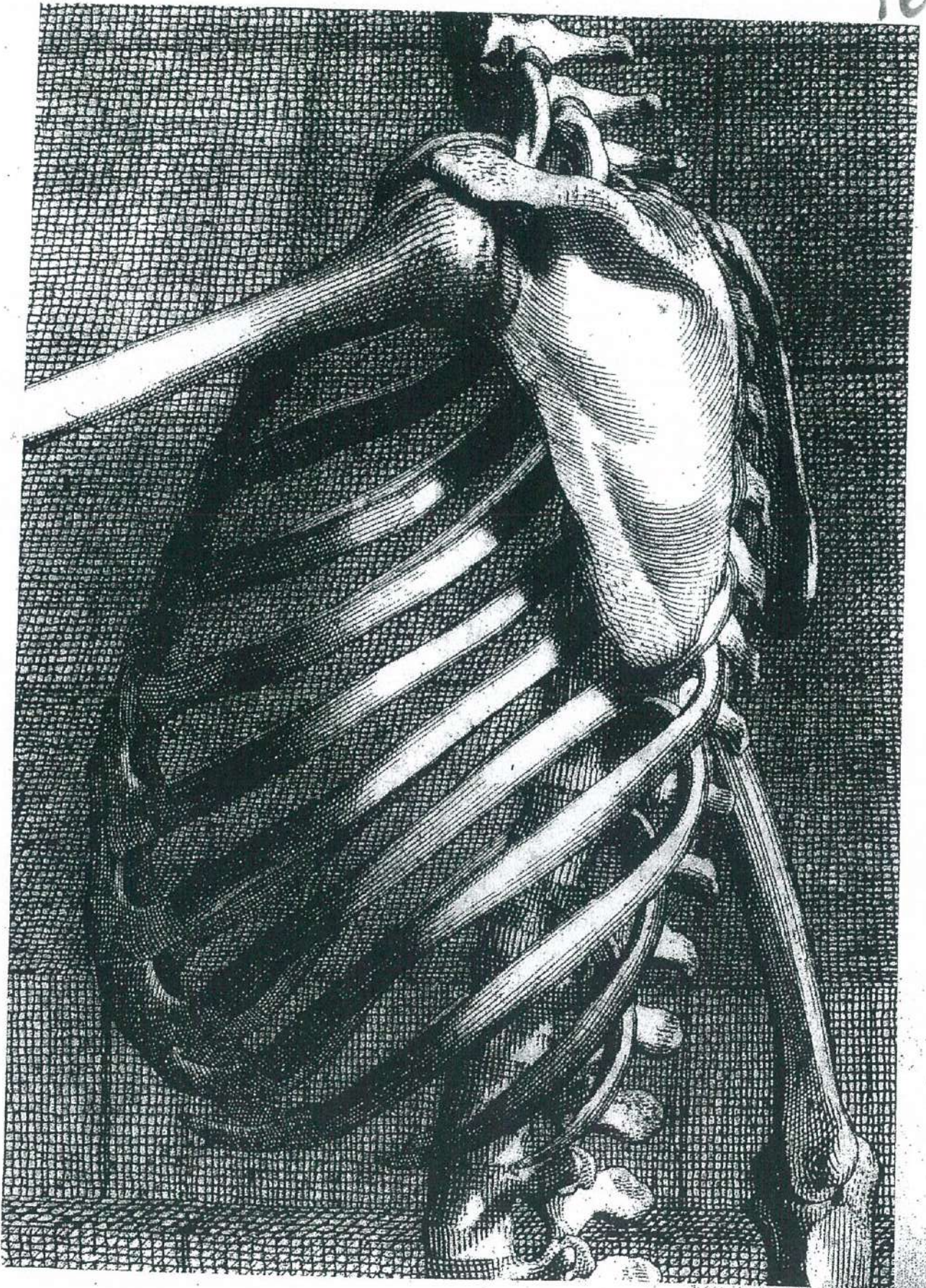
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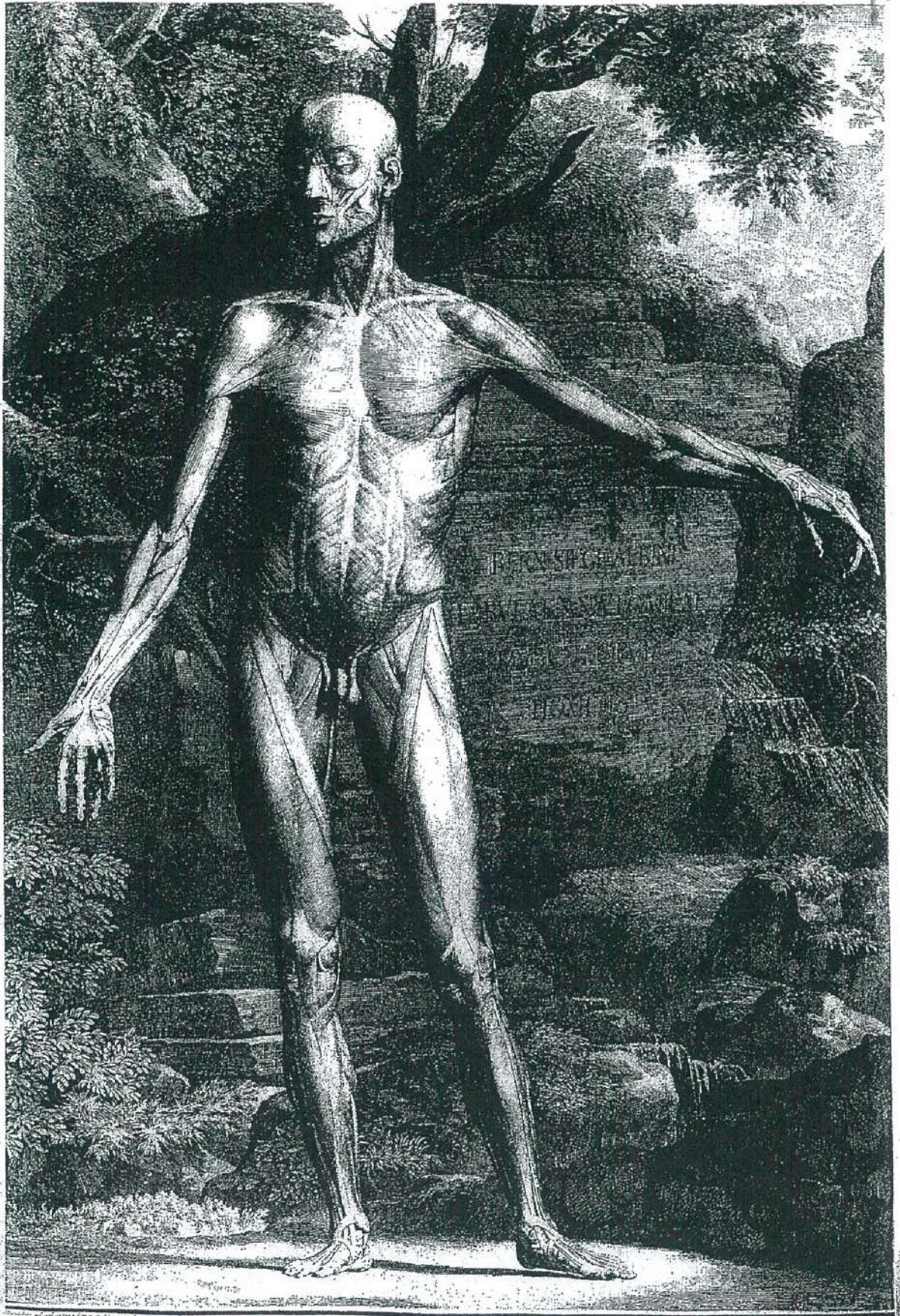


THE VERTEBRAL COLUMN AND RIB CAGE 87

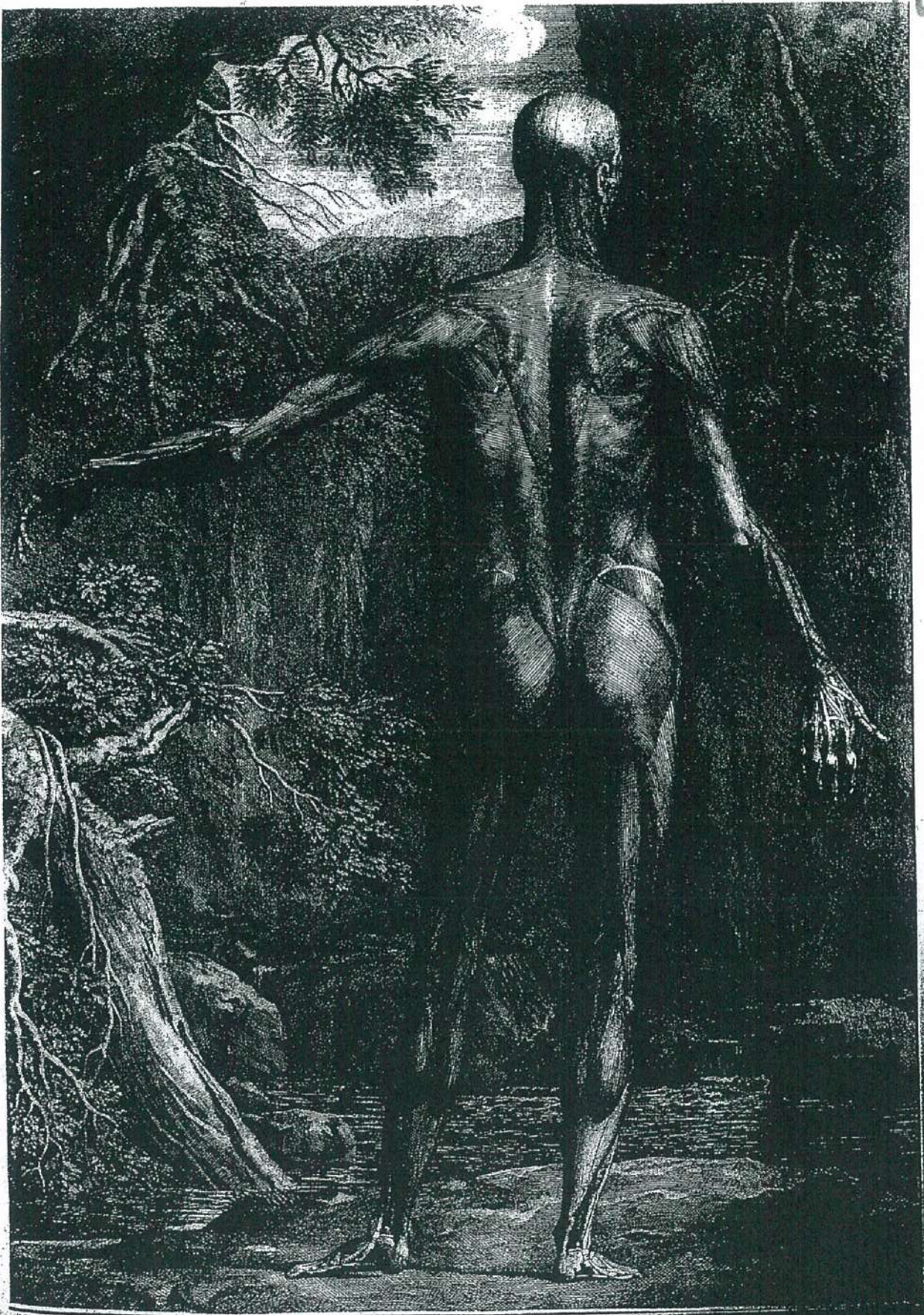
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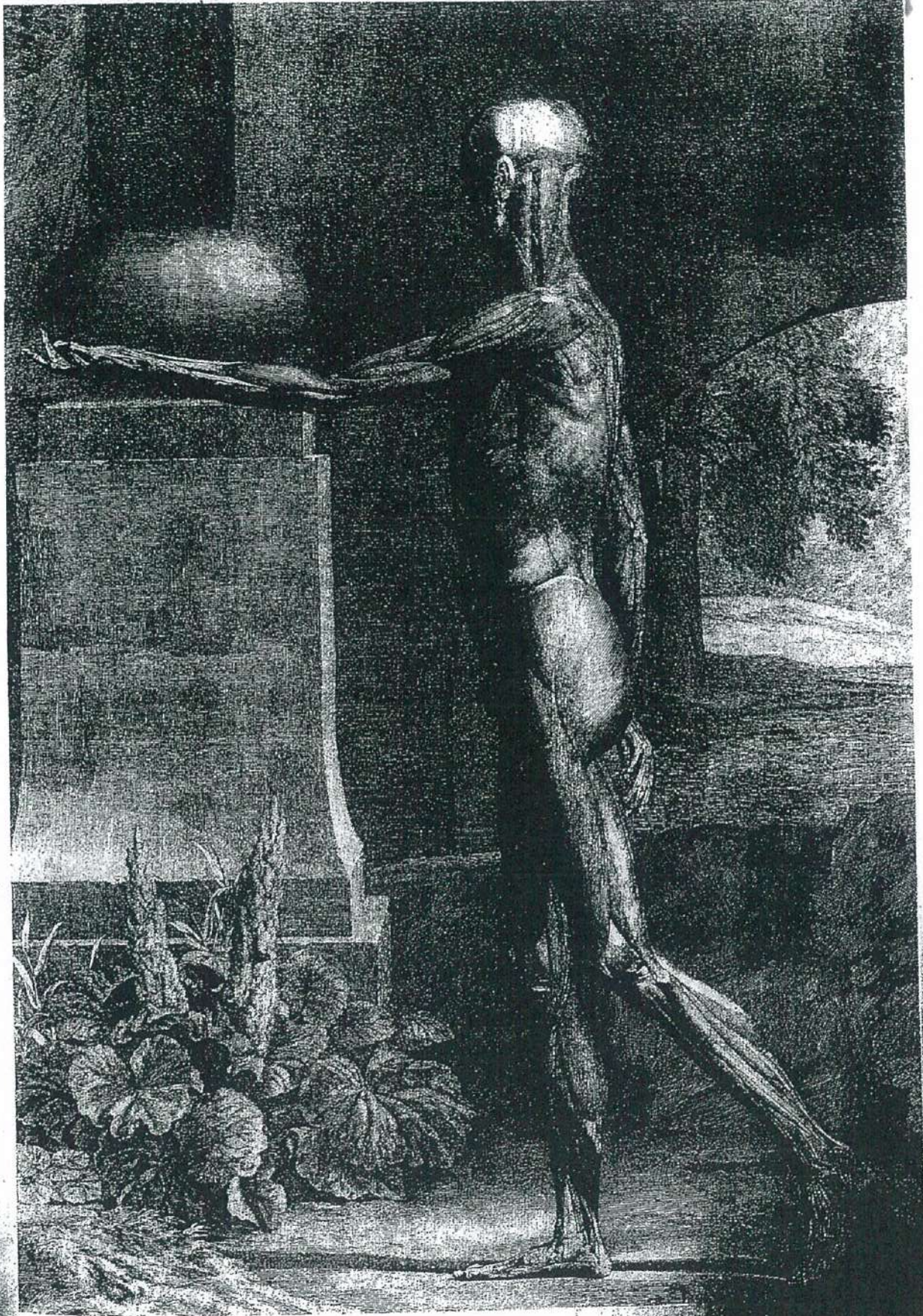
THE VERTEBRAL COLUMN AND RIB CAGE - 89



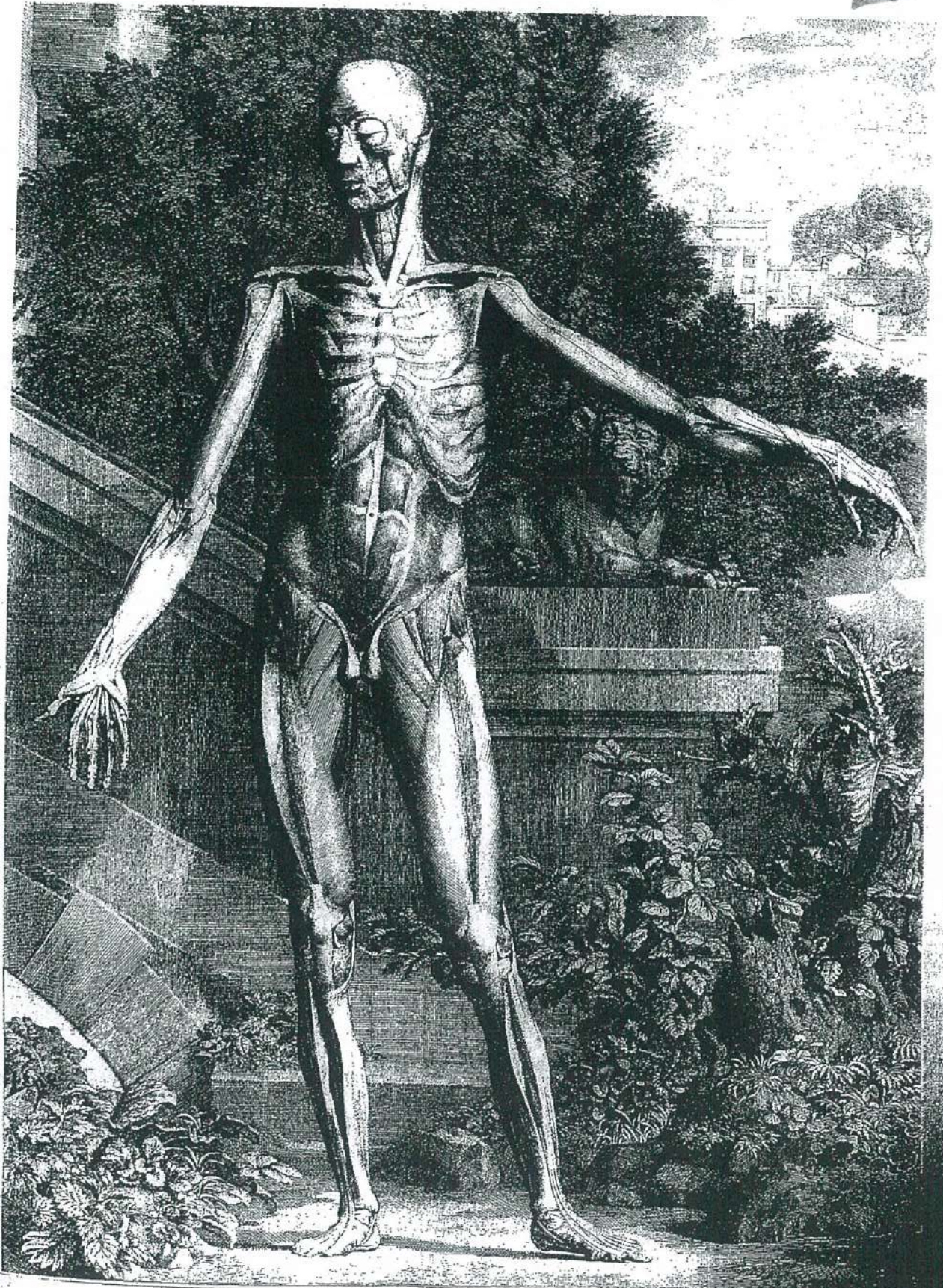
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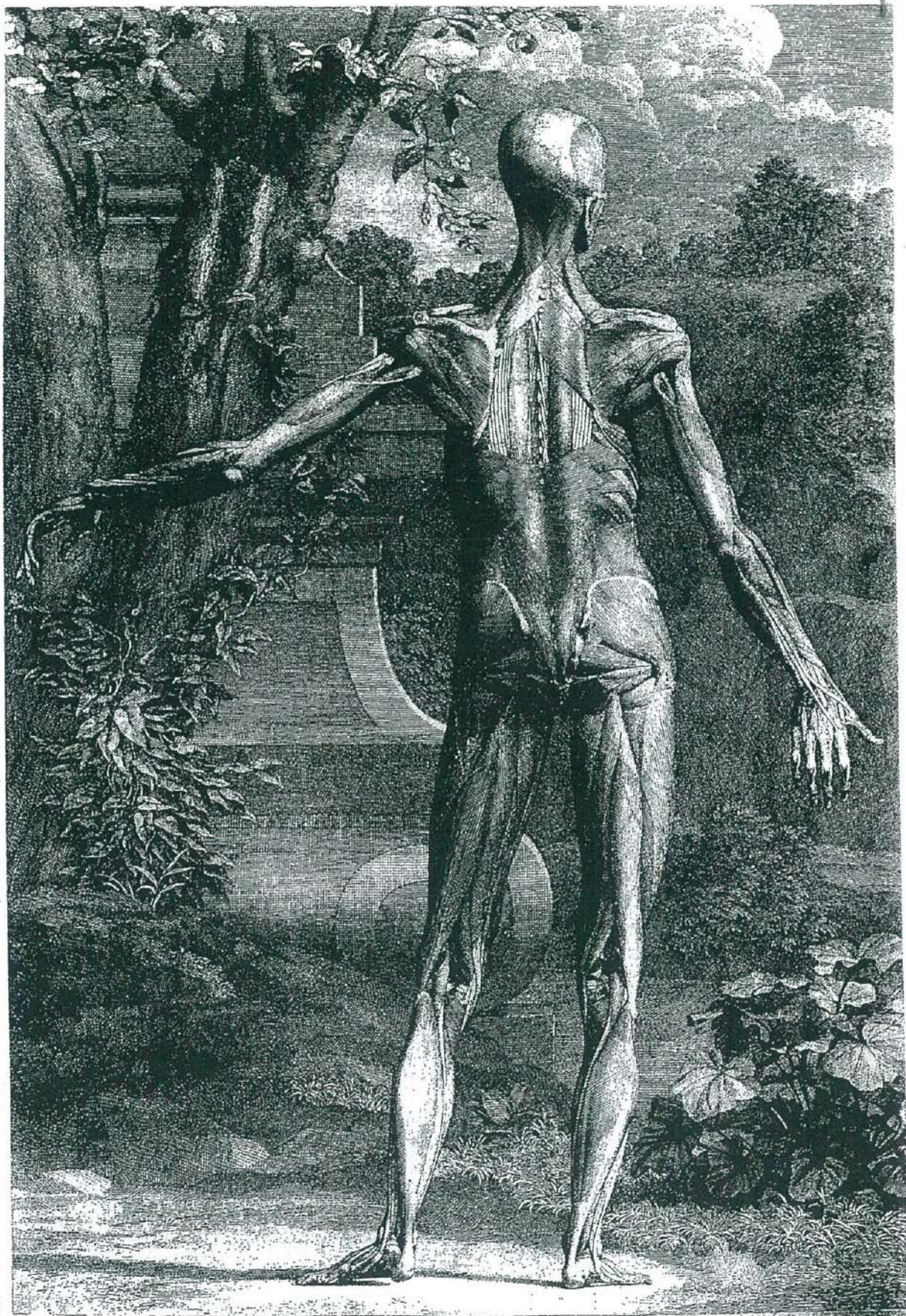
THE BONES AND MUSCLES OF THE



THE BONES AND MUSCLES OF THE BACK



THE BONES AND MUSCLES OF THE BODY

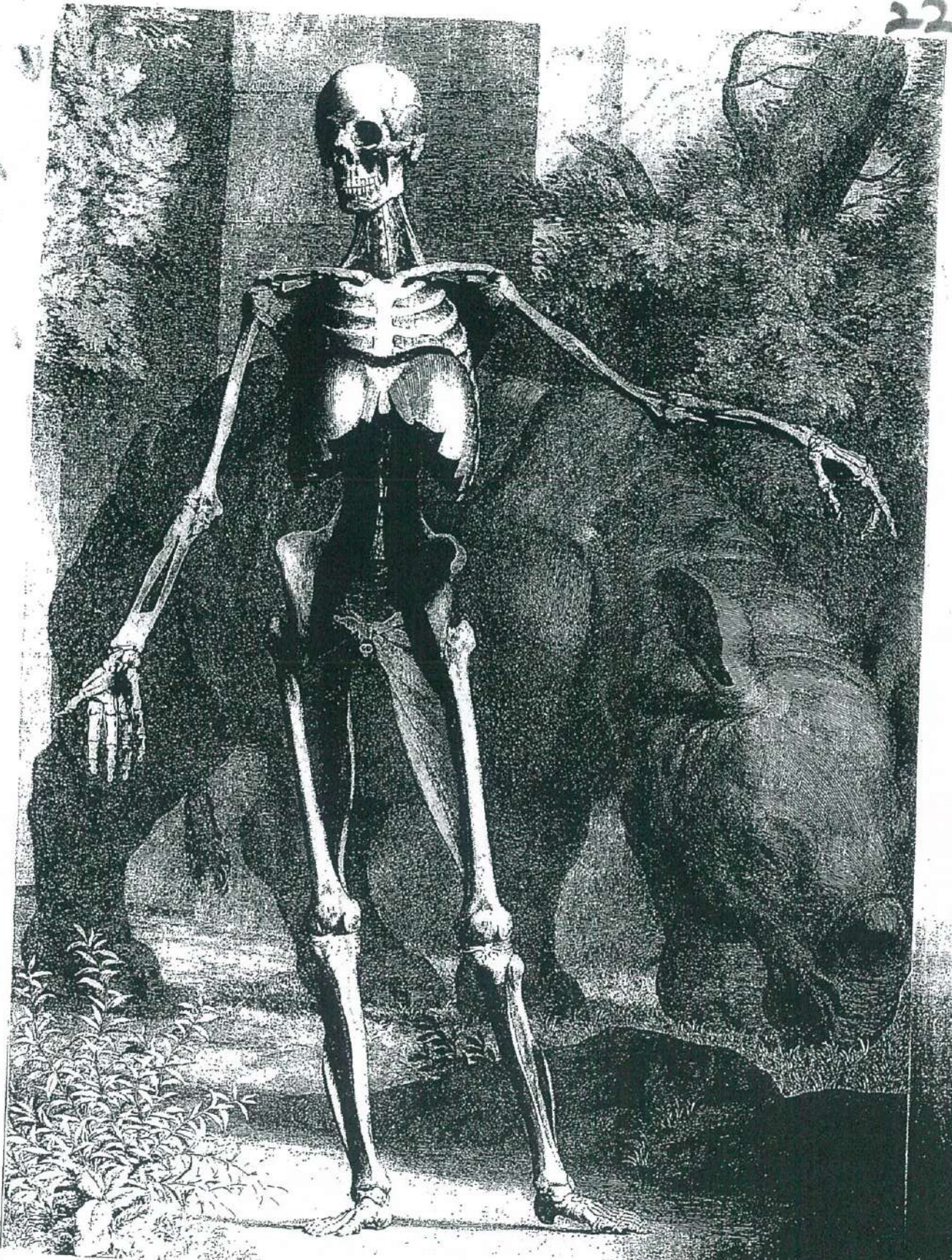


THE BONES AND MUSCLES OF THE BODY 43

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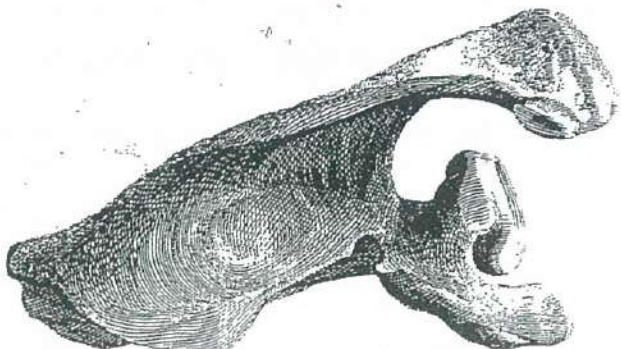
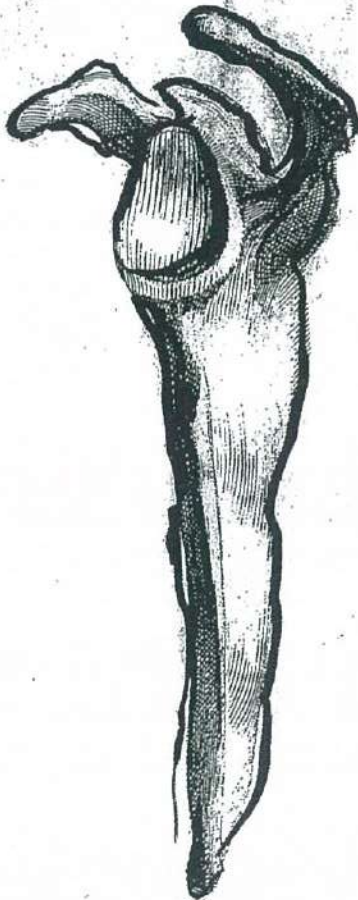
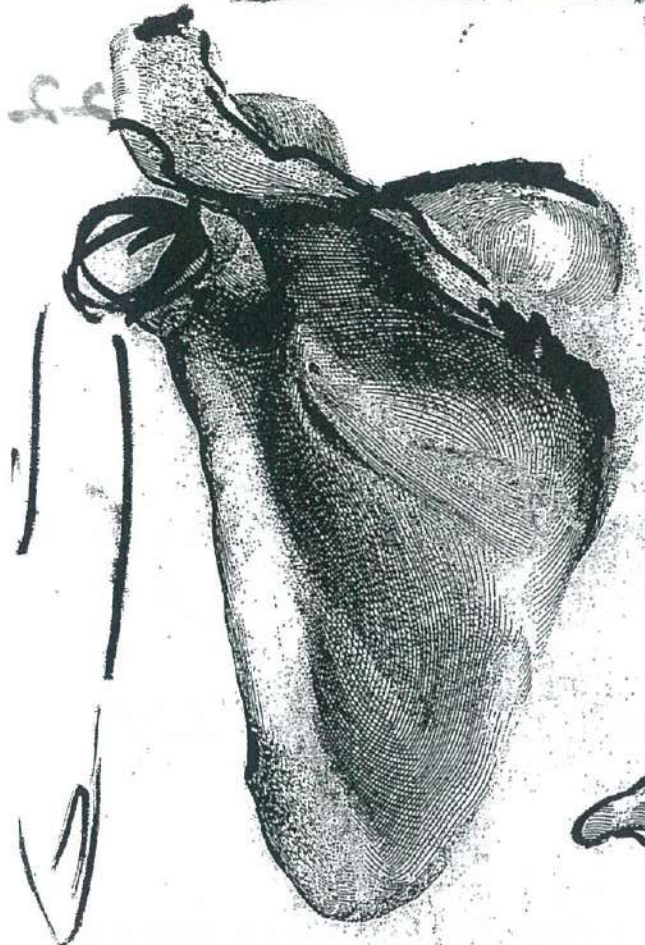
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THE BONES AND MUSCLES OF THE HUMAN BODY

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