

MUSCLES OF THE APPENDICULAR SKELETON

MUSCLES OF THE FRONT LIMB

- A. MUSCLES OF THE SHOULDER**
- B. MUSCLES OF THE ARM**
- C. MUSCLES OF THE FORE ARM AND DIGITS**

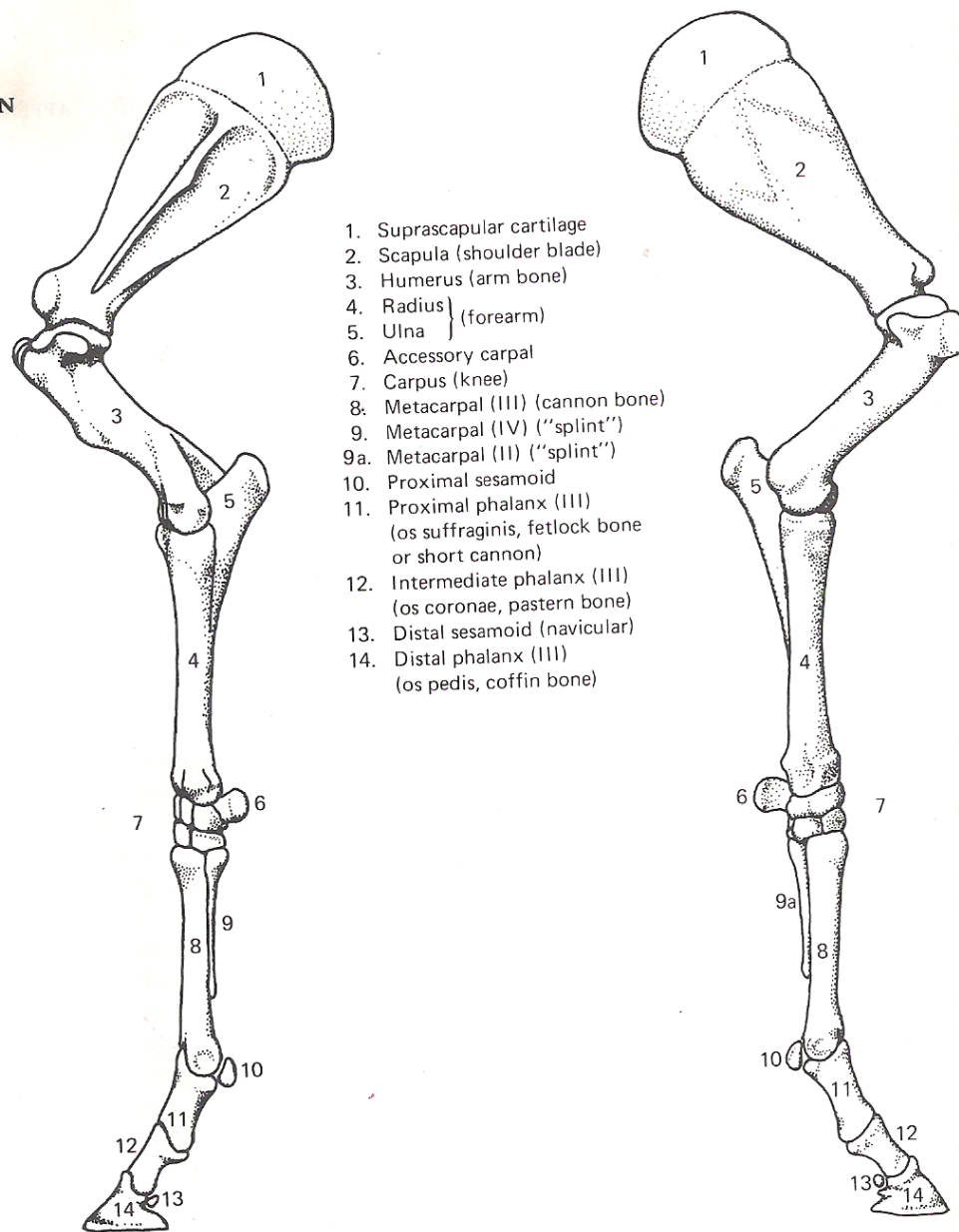
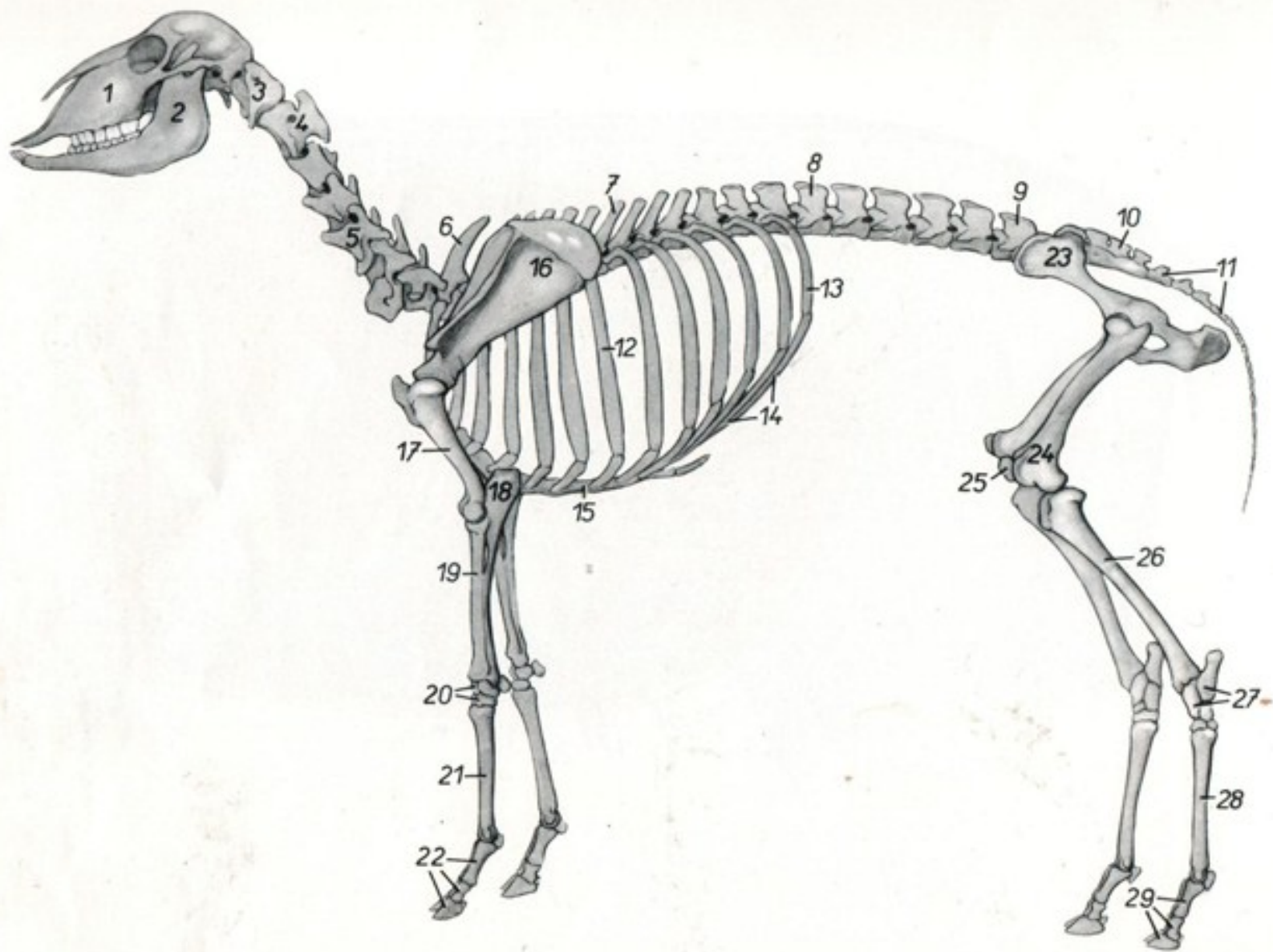


FIGURE 3-2 Bones of the pectoral limb—horse.

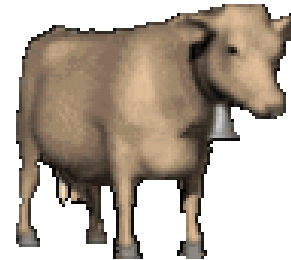
... of bone located on the distal



MUSCLES OF THE SHOULDER

LATERAL GROUP

- DELTOIDEUS
- SUPRASPINATUS
- INFRASPINATUS
- TERES MINOR



- **MEDIAL GROUP**

- SUBSCAPULARIS
- TERES MAJOR
- CORACOBRACHIALIS
- CAPSULARIS (Articularis humeri)

MUSCLES OF THE SHOULDER - LATERAL GROUP

Origin: Scapula; Insertion humerus

Muscle	Origin	Insertion	Innervation	Action
1. Deltoideus m.	Scapula spine Caudal Border of Scapula	Deltoid Tuberosity	Axillary n.	Flexes shoulder
2. Supraspinatus m.	Supraspinous Fossa Scapular Cartilage and Spine	Greater and Lesser Tubercles of Humerus	Suprascapular n.	Extends shoulder Stabilizes shoulder
3. Infraspinatus m.	Infraspinous Fossa Scapular Cartilage and Spine	Greater Tubercle of Humerus	Suprascapular n.	Extends <i>and</i> flexes shoulder
4. Teres minor m.	Distal Half of Caudal Border of Scapula	Deltoid Tuberosity of Humerus	Axillary n.	Flexes shoulder

FRONT LEG - HORSE

1. Scapular cartilage
2. Scapular spine

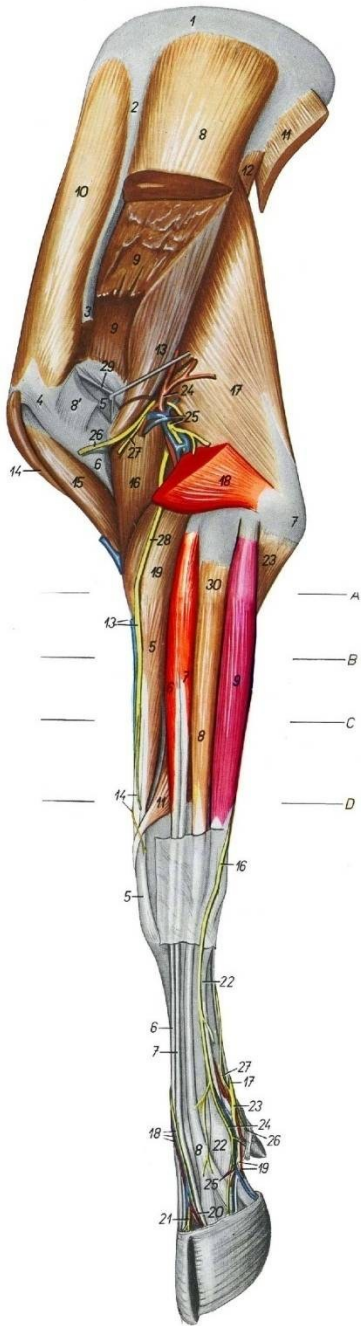
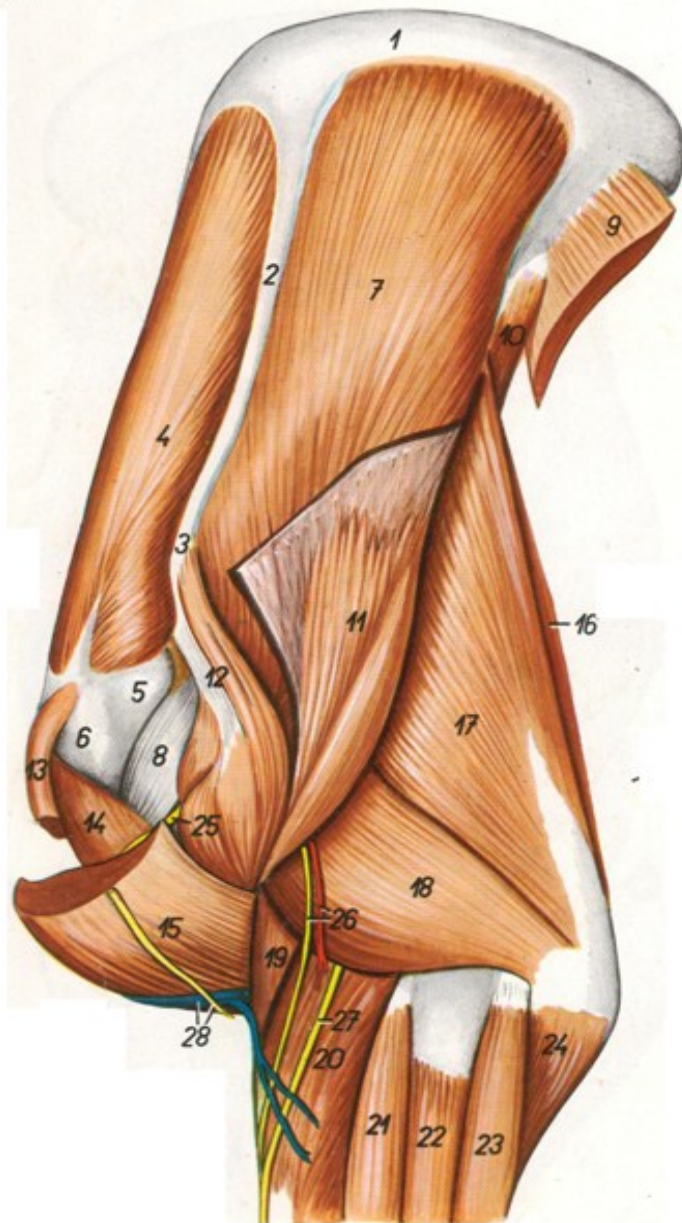
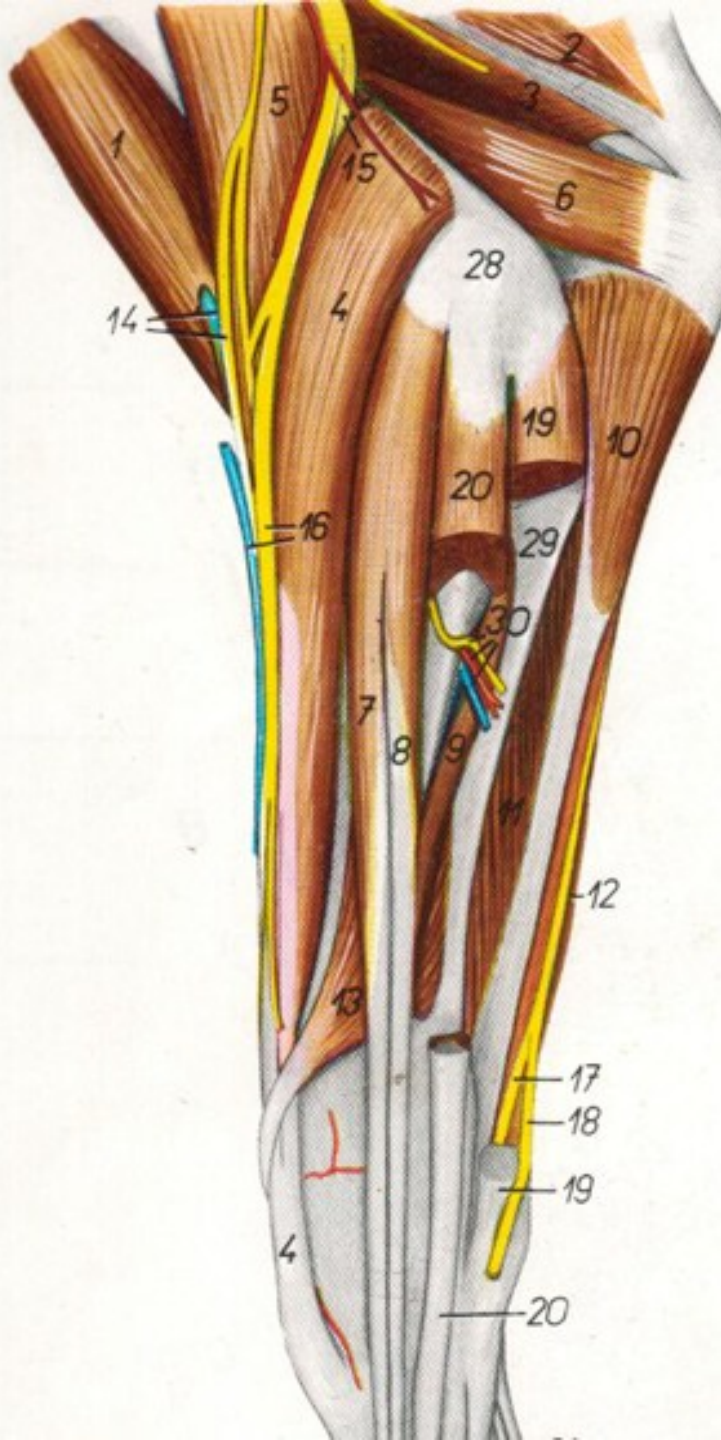
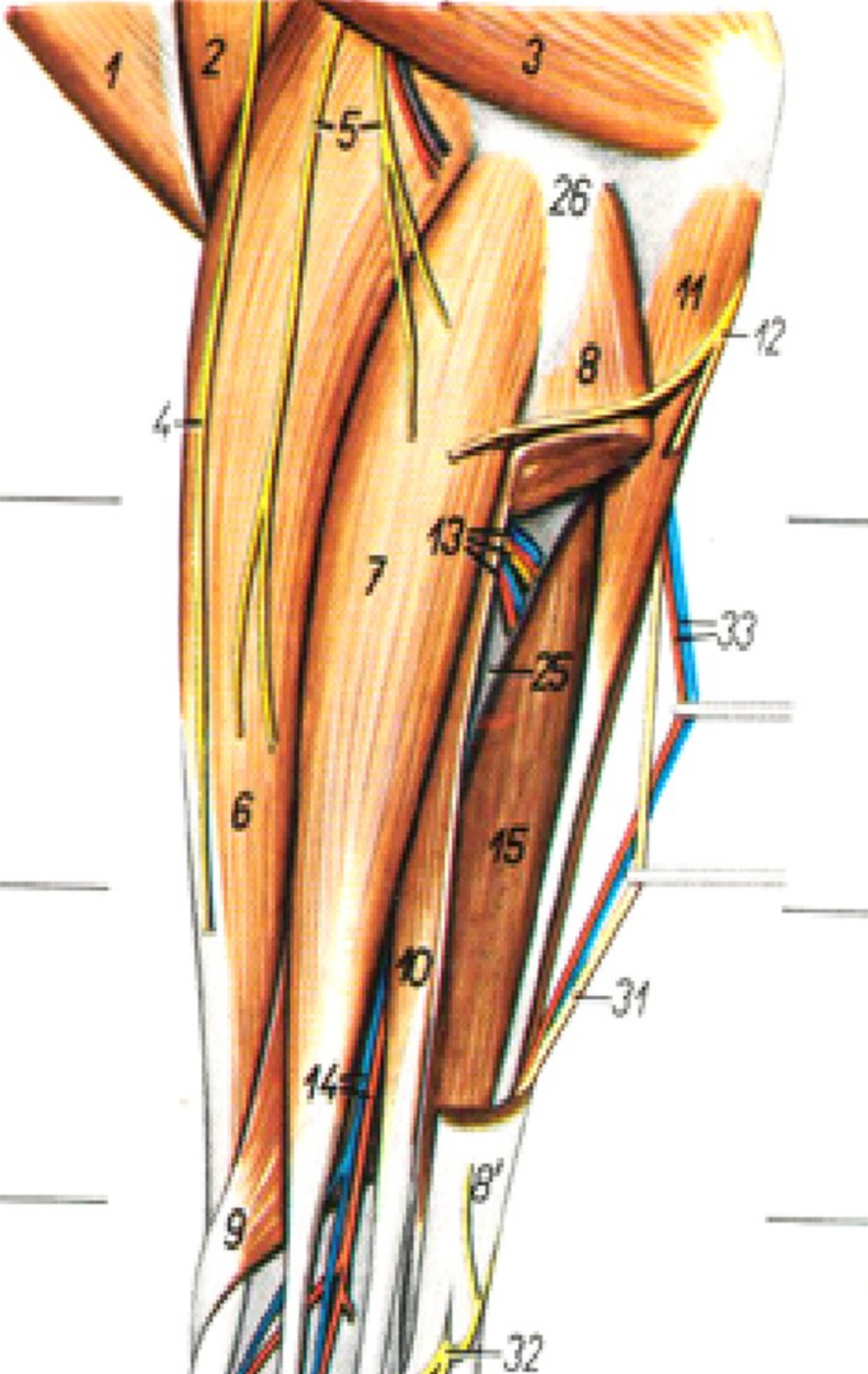


Figure 7





NERVES



1. Sternomastoideus
2. Brachiocephalicus
3. Triceps brachii
6. Extensor carpi radialis
7. Common digital extensor
8. Extensor carpi ulnaris
9. Extensor carpi obliquus
10. Lateral digital extensor
11. Flexor carpi ulnaris

MUSCLES OF THE SHOULDER - MEDIAL GROUP

Origin: Scapula; Insertion: humerus

Muscle	Origin	Insertion		Action
1. Subscapularis m.	Subscapular Fossa; Scapular cartilage	medial Tuberosity of Humerus	Subscapular	Extends shoulder
2. Teres major m.	Caudal Border of Scapula; Subscapularis	Teres Tuberosity of Humerus	Axillary n.	Flexes shoulder
3. Coracobrachialis	Coracoid Process of Scapula	Proximomedial Surface of Humerus	Musculocutaneous n.	Extends shoulder Adducts limb
4. Capsularis	Scapula- Posterior part of glenoid cavity	Posterior surface of shaft of humerus	Axillary nerve	tensing joint capsule

MUSCLES OF THE FOREARM AND DIGITS

I. EXTENSORS -Radial nerve

Muscle

Origin

Insertion

Action

1. Brachioradialis m. 2. (carnivores only)	Lateral condyloid crest (LCC) of humerus	Radius (distal ¼)	Rotate radius dorsolaterally
2. Extensor Carpi Radialis	-Lateral condyloid crest (LCC) of humerus -Coronoid fossa	Metacarpal II & III	Extend and fix carpus -Flex elbow
3. Common Digital Extensor m.	-Humerus, distal extremity -Radius (proximal extremity) -ulna, lateral surface	Swine-PIII of D2-D5 Ruminants-PIII of D3-D4 Carnivores-PIII of D3-D5 Equidae-PIII of D3	Flexes elbow Extends digit Extend carpus
4. Lateral digital extensor	-Radius, lateral tuberosity -LCL of elbow joint	Cat PIII of D2-D5 Dog: PIII of D3-D5 Ruminants: PIII of D4 Equidae PI of D3	Extend carpus -extend digits
5. Extensor Carpi Obliquus	Radius (lateral dorsal surface)	Swine/equidae-MCII Ruminants-MCIII Carnivores-MCI	-Extends carpus
6. Extensor Carpi Ulnaris (Ulnaris lateralis)	Humerus (lateral epicondyle)	Carnivores-MC5 Swine – MC5 & Ca Ruminants & Equidae _ Ca	Extend carpus Flex carpus

MUSCLES OF THE FORE ARM AND DIGITS

I. FLEXORS –Ulnar nerve /Median nerve

Muscle

Origin

Insertion/NS

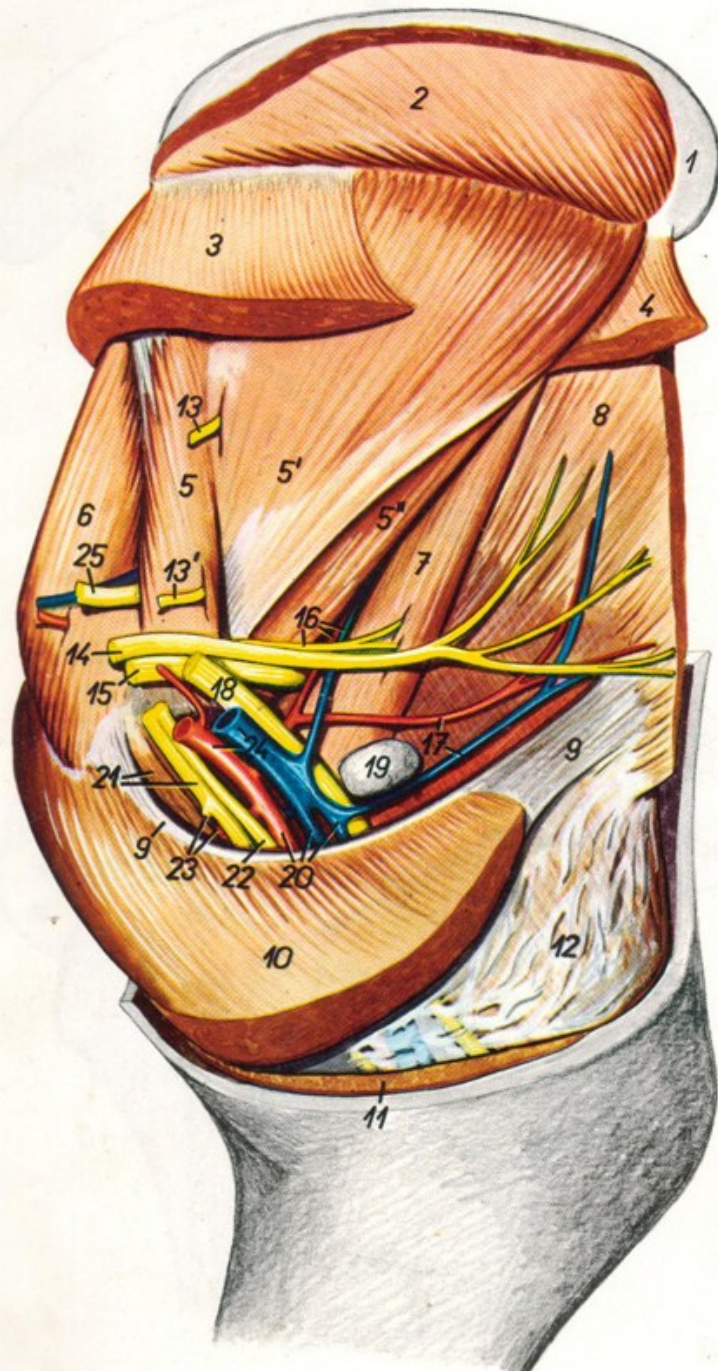
Action

1. Flexor carpi ulnaris m. -Humeral head -Ulnar head	Humerus (medial epicondyle) -Olecranon (posteromedial surface)	Ca/ ulnar	Flex carpal joint -extend elbow -supination (carnivores)
2. Flexor Carpi Radialis	-Humerus (medial epicondyle)	Median Horse-MC2 Carnivores-MC2 & MC3 Ruminants & pig MC3	Extend elbow -Flex carpal joint
3. Superficial Digital Flexor m.	-Humerus (medial epicondyle)	Median/ulnar Swine & Ruminants-P II D3 & 4 Dog-P II of D2-D5 Cat –P II D1-5 Equidae-P II of D3	Flexes digits Extends elbow Flex carpus
4. Deep digital Flexor -Humeral head -Radial head -Ulnar head	-Humerus (medial epicondyle) Radius (middle part) Olecranon	Median/ulnar Swine –P III D2-5 Ruminants-P III D3 & 4 Dog-P III of D1-D5 Cat –P III D1-5 Equidae-P II of D3	Flexes digits Extends elbow Flex carpus
5. Interosseous muscles	MC (proximal ends)	Median/ulnar Sessamoid bones (D1)	-flex D1
6. Short digital flexors)			

THE BRACHIAL PLEXUS

Formed by anastomoses established between the rami of spinal nerves
C5, C6, C7, C8 & T1, T2

1. Suprascapular
2. Subscapular
3. Pectoral (Anterior thoracic)
4. Musculocutaneous
5. Median
6. Ulnar
7. Radial
8. Axillary
9. Long thoracic
10. Thoracodorsal
11. External thoracic

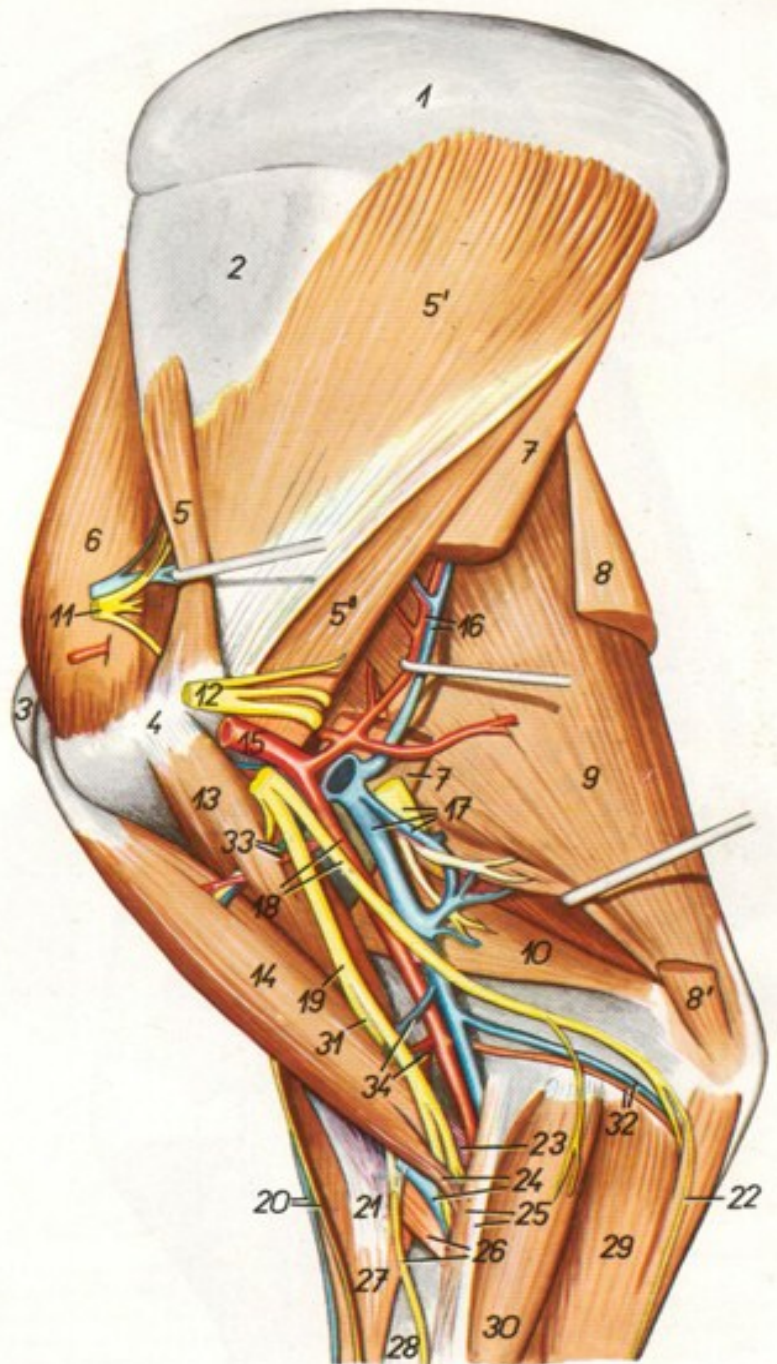


Muscles

1. Scapular cartilage
2. Rhomboideus
3. Serratus ventralis
4. Triceps brachii (long head)
5. Subscapularis
6. Supraspinatus
7. Teres major
8. Tensor fasciae antebrachii
10. Pectoralis

NERVES

13. Subscapular n
14. Thoracodorsal n.
- 15, 16. Axillary n.
18. Radial n.
21. Median n n.
22. Ulnar n.
23. Musculocutaneous n.

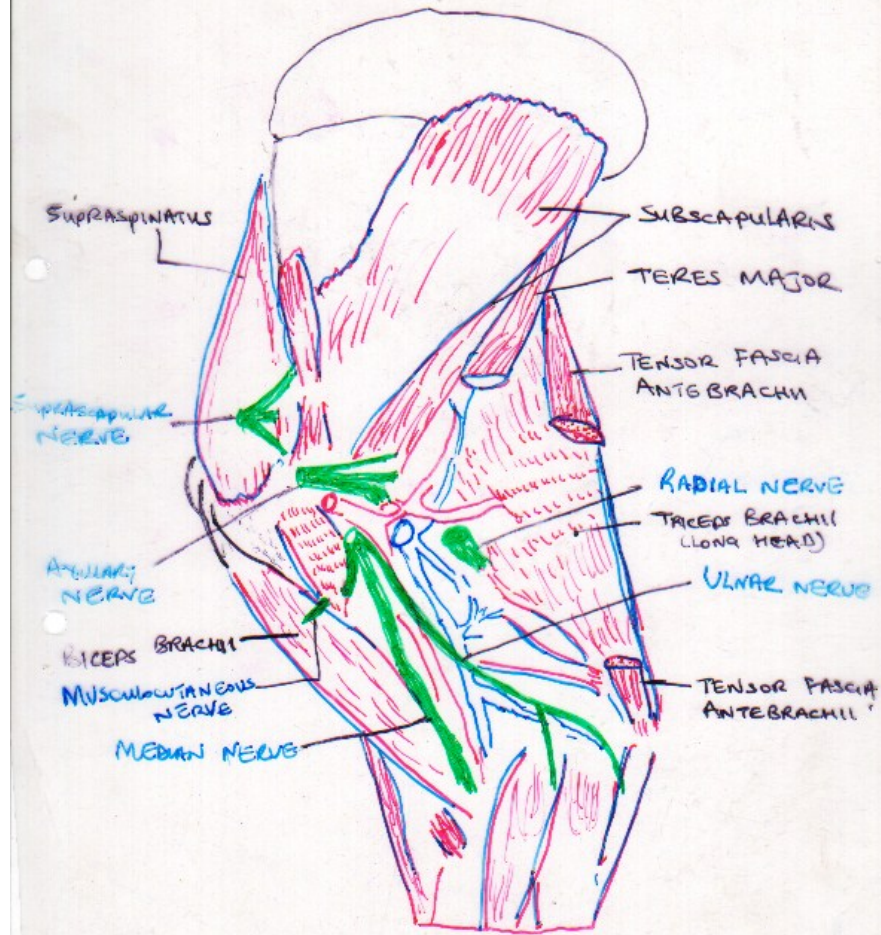


MUSCLES

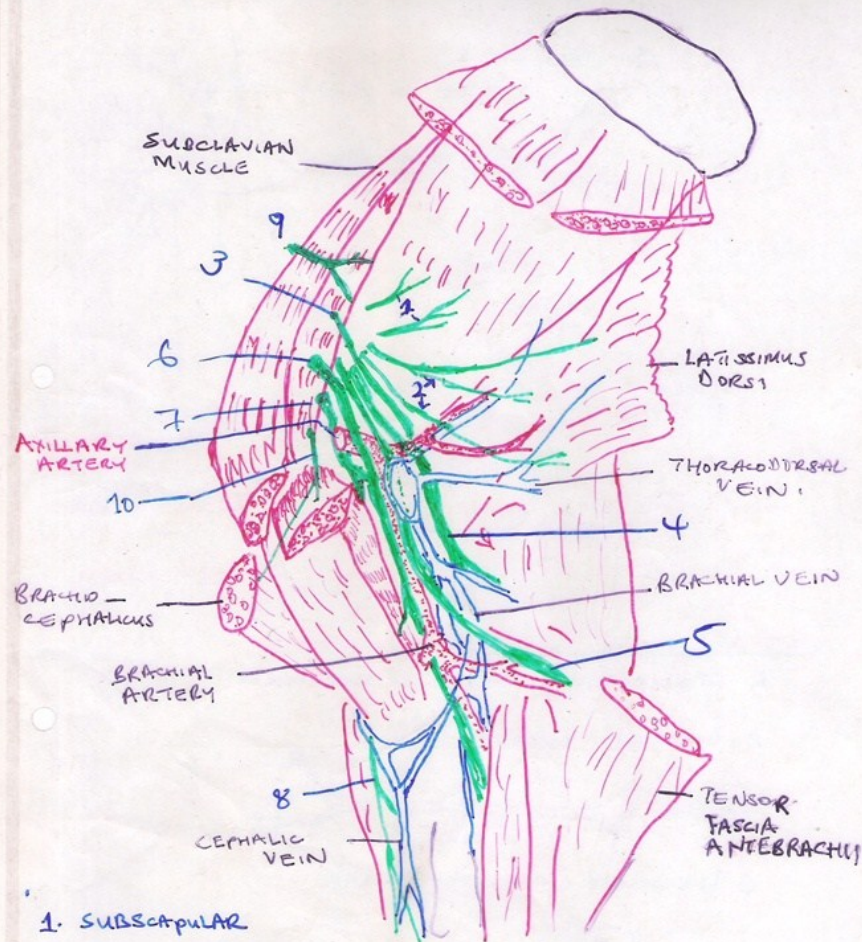
- 5. Subscapularis
- 6. Supraspinatus
- 7. Teres major
- 8. Tensor fasciae antebrachii
- 9. Triceps brachii (long head)
- 10. Triceps brachii (caput medialis)
- 13. Coracobrachialis
- 14. Biceps brachii
- 26. Brachialis
- 27. Extensor carpi radialis
- 29. Flexor carpi ulnaris
- 30. Flexor carpi radialis

NERVES

- 11. Suprascapular n.
- 12. Axillary n.
- 17. Radial n.
- 18. Ulnar n.
- 19. Median n.
- 31. Musculocutaneous n.



NERVES OF THE BRACHIAL PLEXUS



1. SUBSCAPULAR
2. THORACODORSAL
3. AXILLARY
4. RADIAL
5. ULNAR
6. MEDIAN
7. MUSCULO CUTANEOUS

8. MEDIAL CUTANEOUS NERVE OF THE FOREARM
9. SUPRASCAPULAR
10. PECTORAL NERVE

BRACHIAL PLEXUS

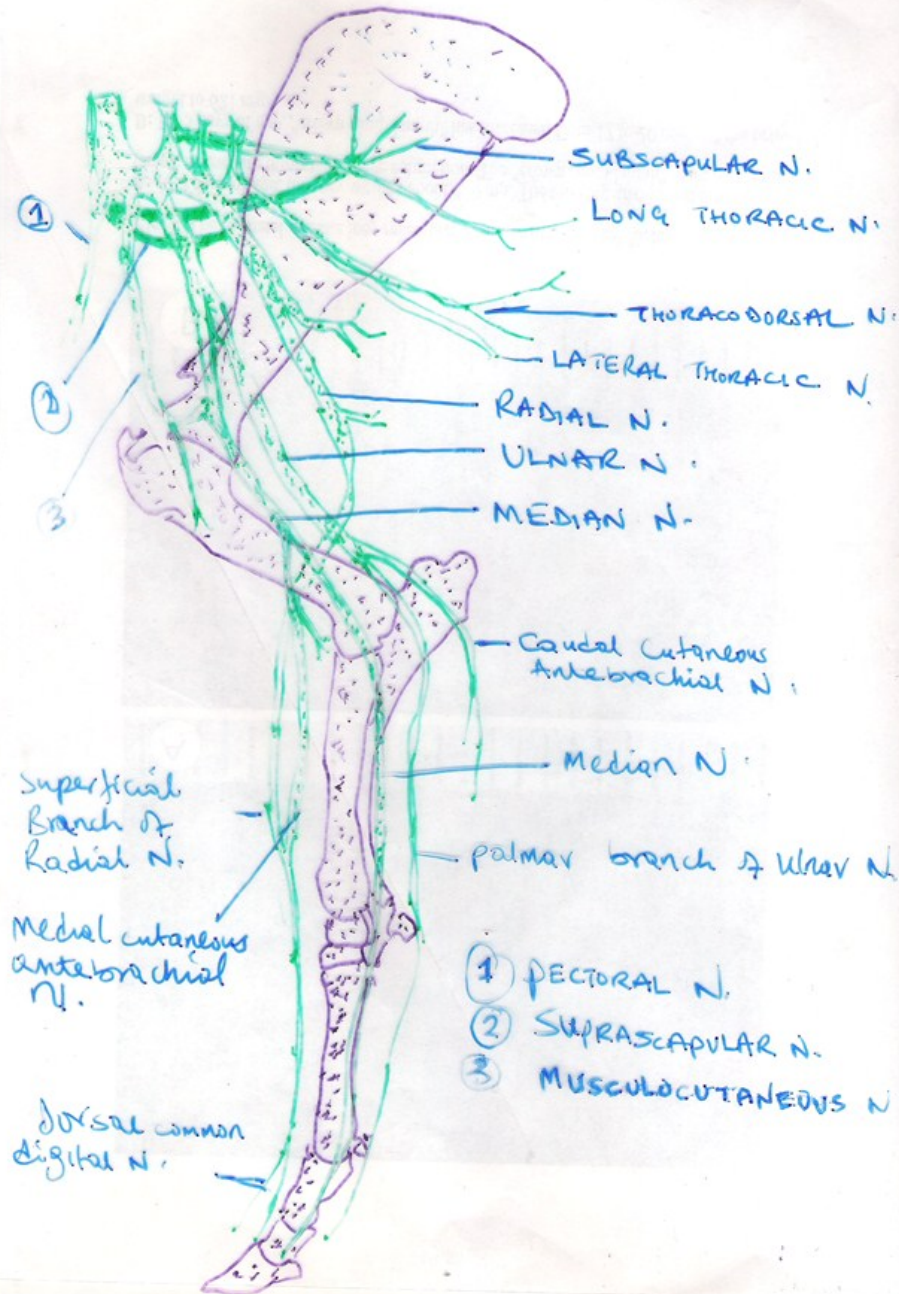
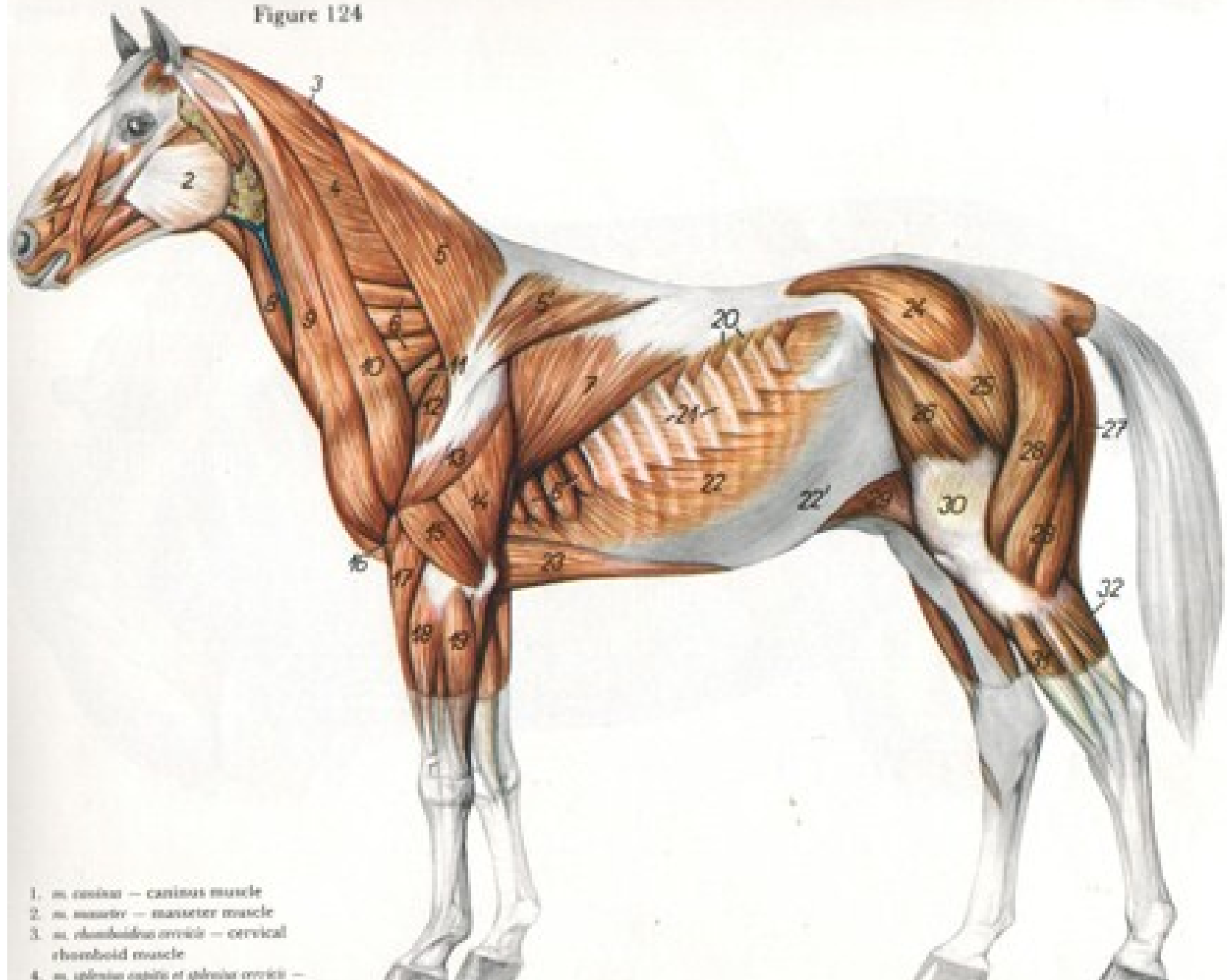
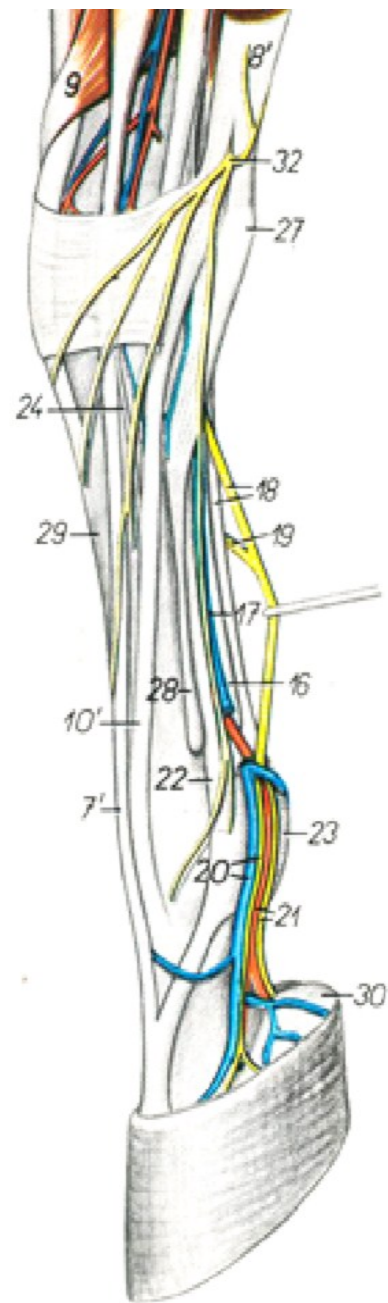


Figure 124

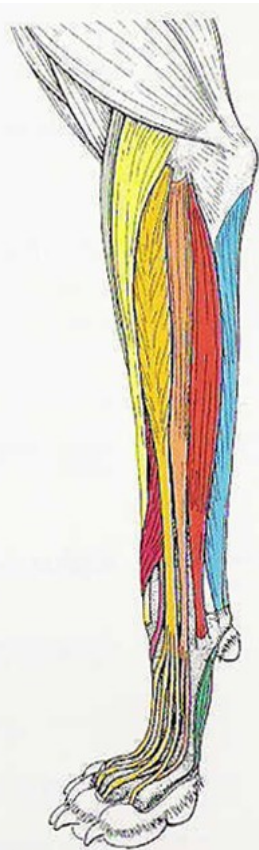




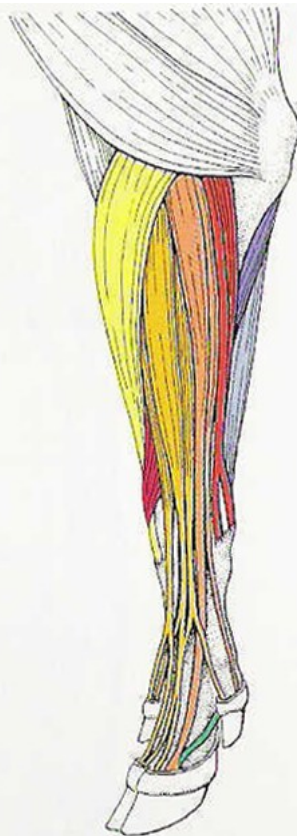
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MUSCLES OF THE ARM

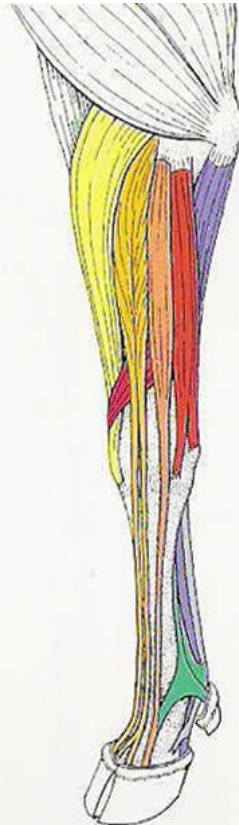
Muscle	Origin	Insertion	Innervation	Action
1. Biceps brachii m.	Supraglenoid Tubercle	Radial Tuberosity; ecr m	Musculocutaneous n.	Extends shoulder Flexes elbow Stabilizes carpus
2. Brachialis m.	Proximocaudal Surface of Humerus	Proximomedial Surface of Radius	Musculocutaneous n.	Flexes elbow
3. Tensor fascia antebrachii	Caudal Border of Scapula	Deep Fascia of Forearm; Olecranon	Radial n.	Extends elbow Tenses forearm fascia
3. Triceps brachii m. long head	Caudal Border of Scapula	Olecranon process	Radial n.	Extends elbow Flexes shoulder
lateral head	Deltoid Tuberosity	Olecranon process	Radial n.	Extends elbow
medial head	Medial Surface of Middle 1/3 of Humerus	Olecranon process	Radial n.	Extends elbow
4. Anconeus m.	Border of Olecranon Fossa	Olecranon process	Radial n.	Extends elbow Raises joint capsule



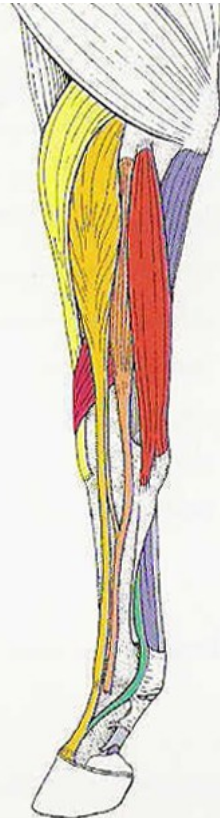
Hund



Schwein



Rind



Pferd

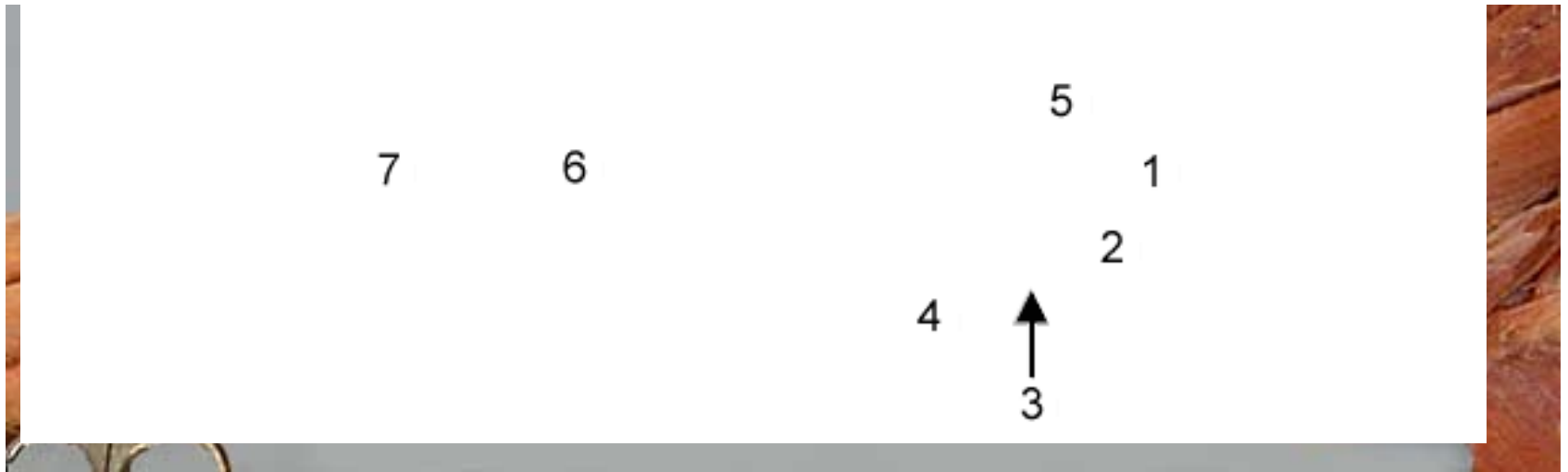
- M. extensor carpi radialis
- M. extensor digitorum communis
- M. extensor digitorum lat.
- M. extensor carpi ulnaris

- M. abductor pollicis longus
- M. extensor pollicis longus et indicis (Hd.)
- M. flexor carpi ulnaris
- M. flexor digitorum supf.

- M. flexor digitorum prof.
- M. interosseus medius
- M. brachioradialis

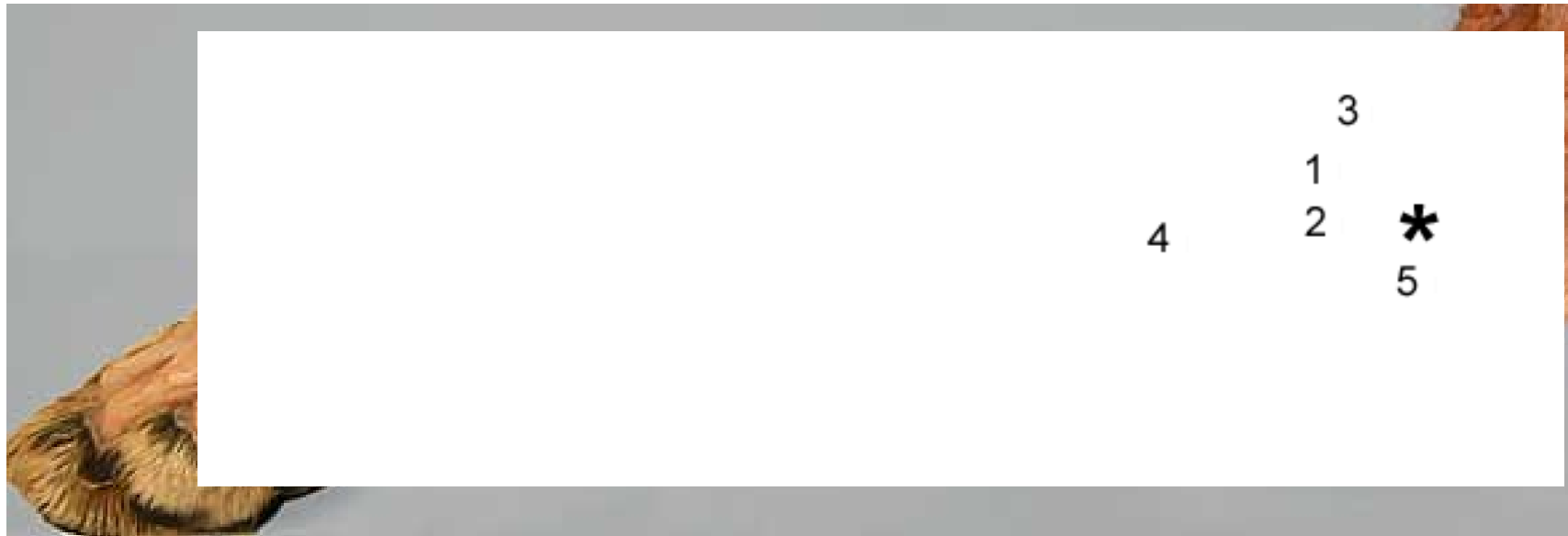


As you reflect skin from the antebrachium, identify carpal (**1**), metacarpal (**2**), and digital (not shown) pads. Reflect skin from at least one digit (all four digits are anatomically the same). Notice that **antebrachial deep fascia** (**3**) encloses and compartmentalizes antebrachial muscles. You will have to incise the fascia (arrow) to see the muscles (asterisk). A dew claw (pollex) (**4**) is present in this specimen.

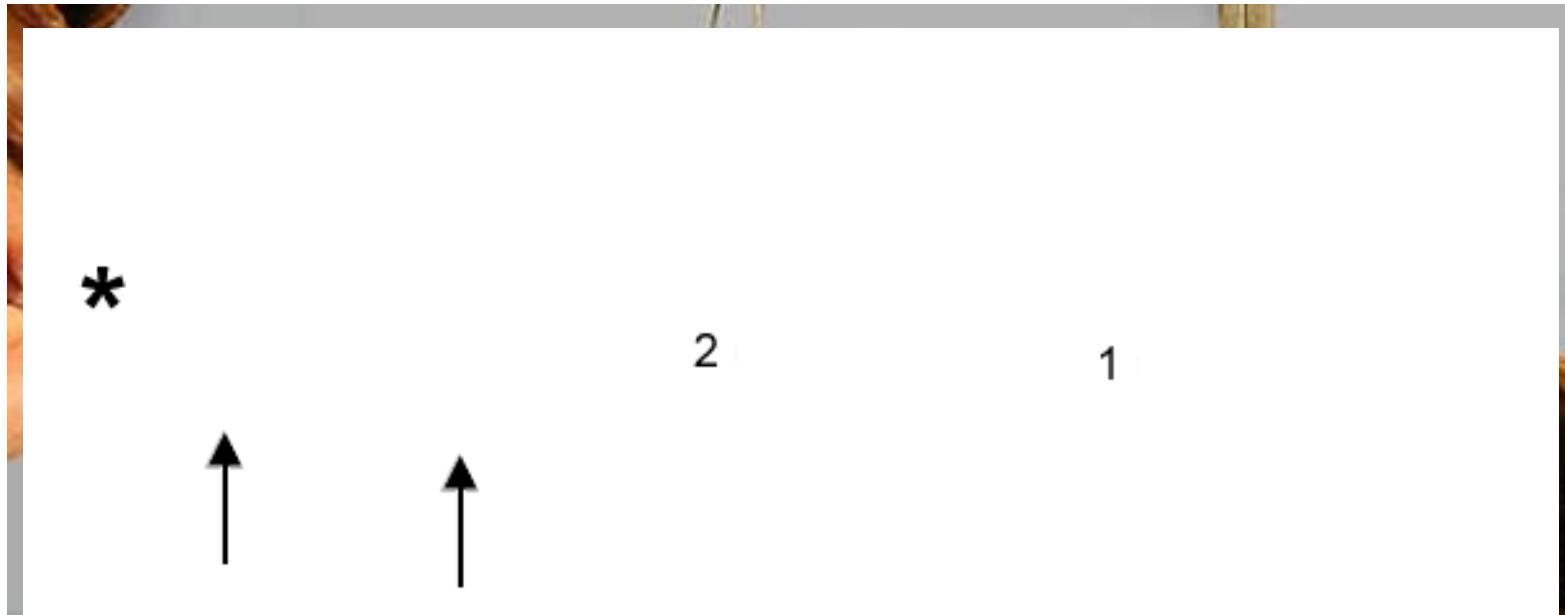


In general, the craniolateral group of antebrachial muscles acts to extend the carpus and extend the digits. Major muscles responsible for these actions are: **extensor carpi radialis m. (1)**, **common digital extensor m. (2)**, and **lateral digital extensor m. (3)**. The **ulnaris lateralis m. (4)** functions to support (flex) the carpus. Two minor muscles are the brachioradialis m. (5) and the abductor pollicis longus m. (6).

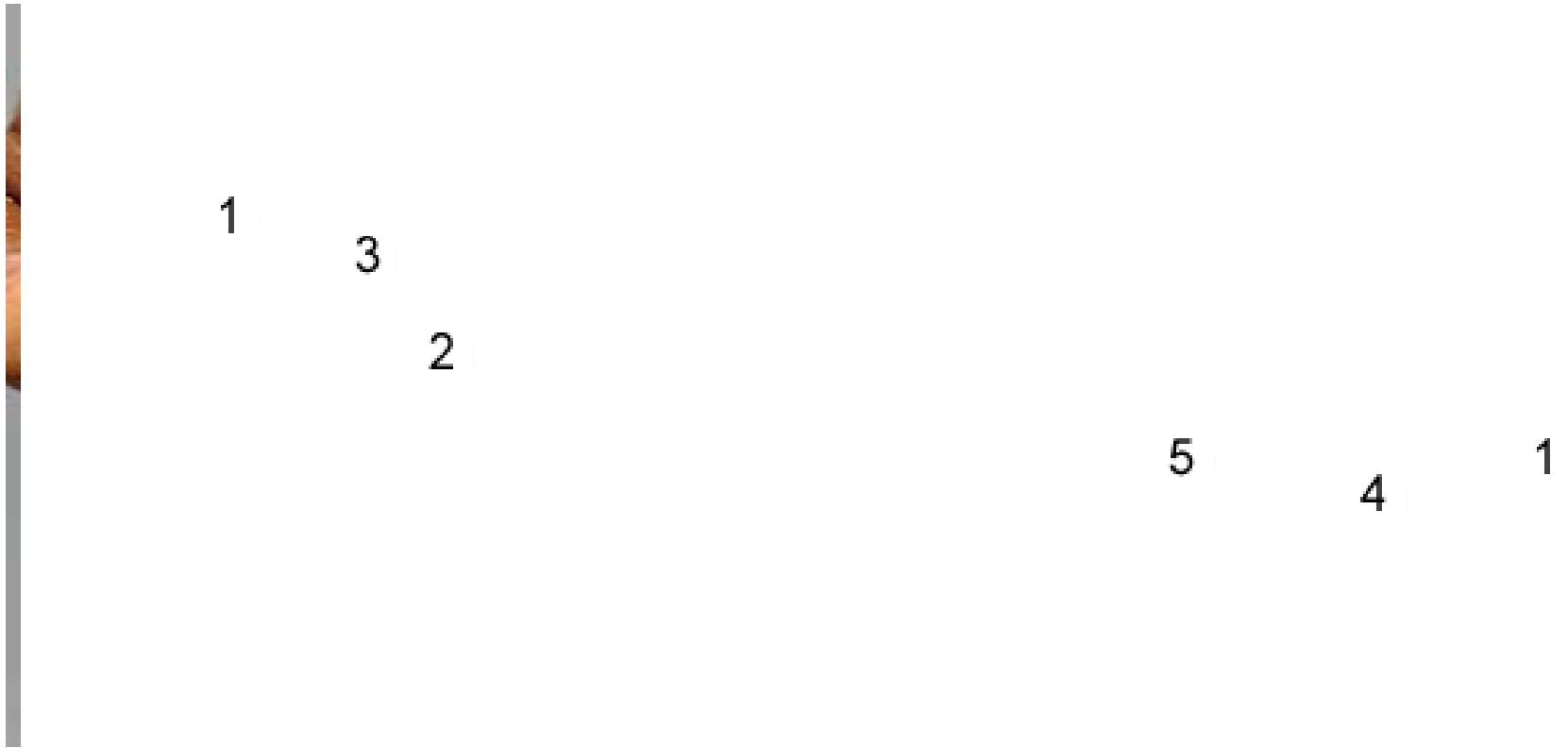
Fascia has been removed except for the **extensor retinaculum (7)** that binds digital extensor tendons at the carpus. (Scissors elevate branches of the common digital extensor tendon.)



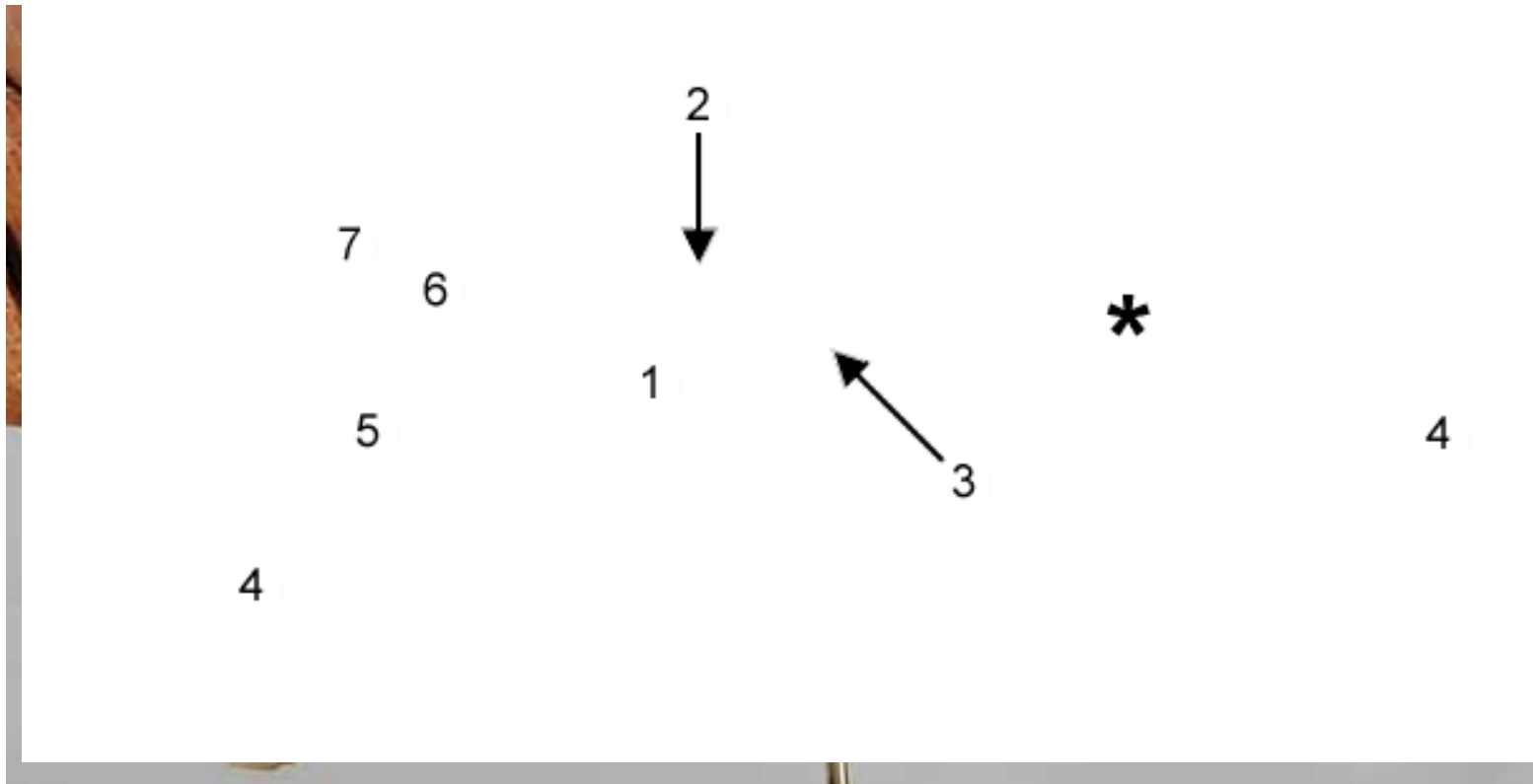
Tendons of the **common digital extensor m.** (1) and the **lateral digital extensor m.** (2) are elevated by forceps. Identify the **extensor carpi radialis m.** (3) and the **ulnaris lateralis m.** (4). The latter inserts on the accessory carpal bone. Craniolateral antebrachial muscles originate from the vicinity of the **lateral epicondyle of the humerus** (asterisk). Find the **anconeus m.** (5), caudal to the epicondyle.



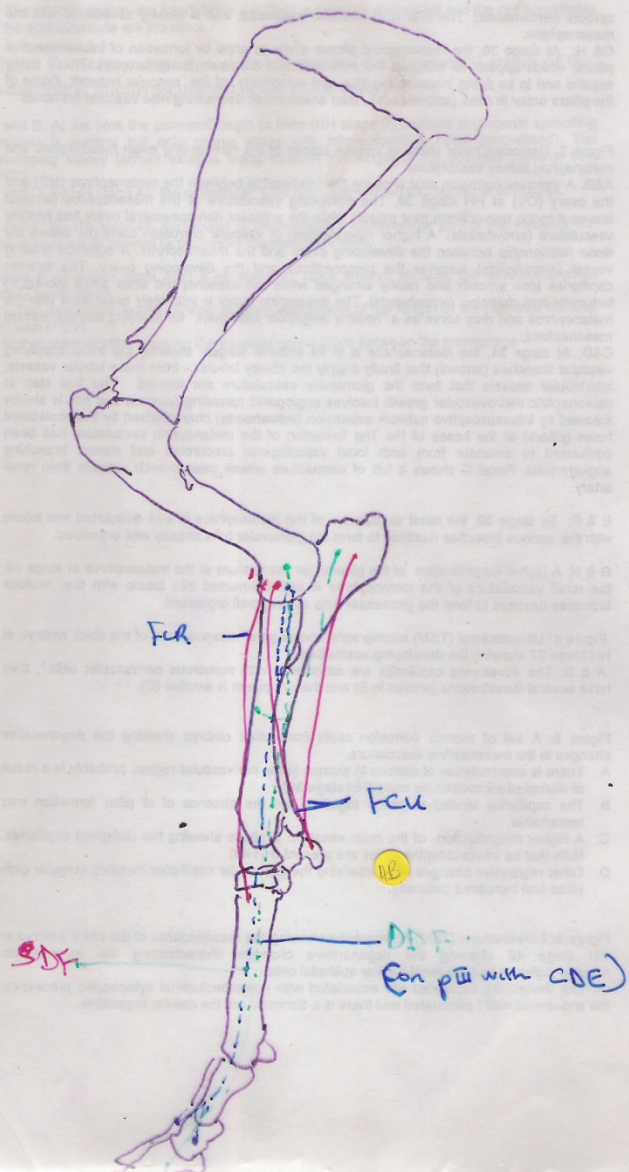
The caudal group of antebrachial muscles acts to flex (support) the carpus and digits. The muscles originate from the vicinity of the **medial epicondyle of the humerus** (asterisk). In this specimen, deep fascia has been removed from the antebrachium except for **flexor retinaculum** (1), which binds digital flexor tendons in the carpus. The **superficial digital flexor m.** (2) and its tendon branches are elevated by instruments. The flexor carpi ulnaris m. is indicated by arrows.



In this specimen, transected parts of the superficial digital flexor m. (1) have been reflected. The **flexor carpi ulnaris m.** (2) has humeral and ulnar heads. The latter is elevated by the forceps. The **flexor carpi radialis m.** (3) is positioned medially on the limb. The tendons of the deep digital flexor m. (4) are visible distal to the **flexor retinaculum** (5).



The humeral head (1) of the **deep digital flexor m.** is being pulled by forceps. The small radial head (2) attaches to the radius. The ulnar head (3) originates from the ulna. The deep layer of **flexor retinaculum** (asterisk) has been cut to release the tendon (arrow) of the deep digital flexor m. Other caudal-group muscles are: **superficial digital flexor m.** (4); **flexor carpi ulnaris m.** (5); **flexor carpi radialis m.** (6); and pronator teres m. (7).



Bovine. Superficial muscles after removal of the cutaneous muscles.

Figure 3

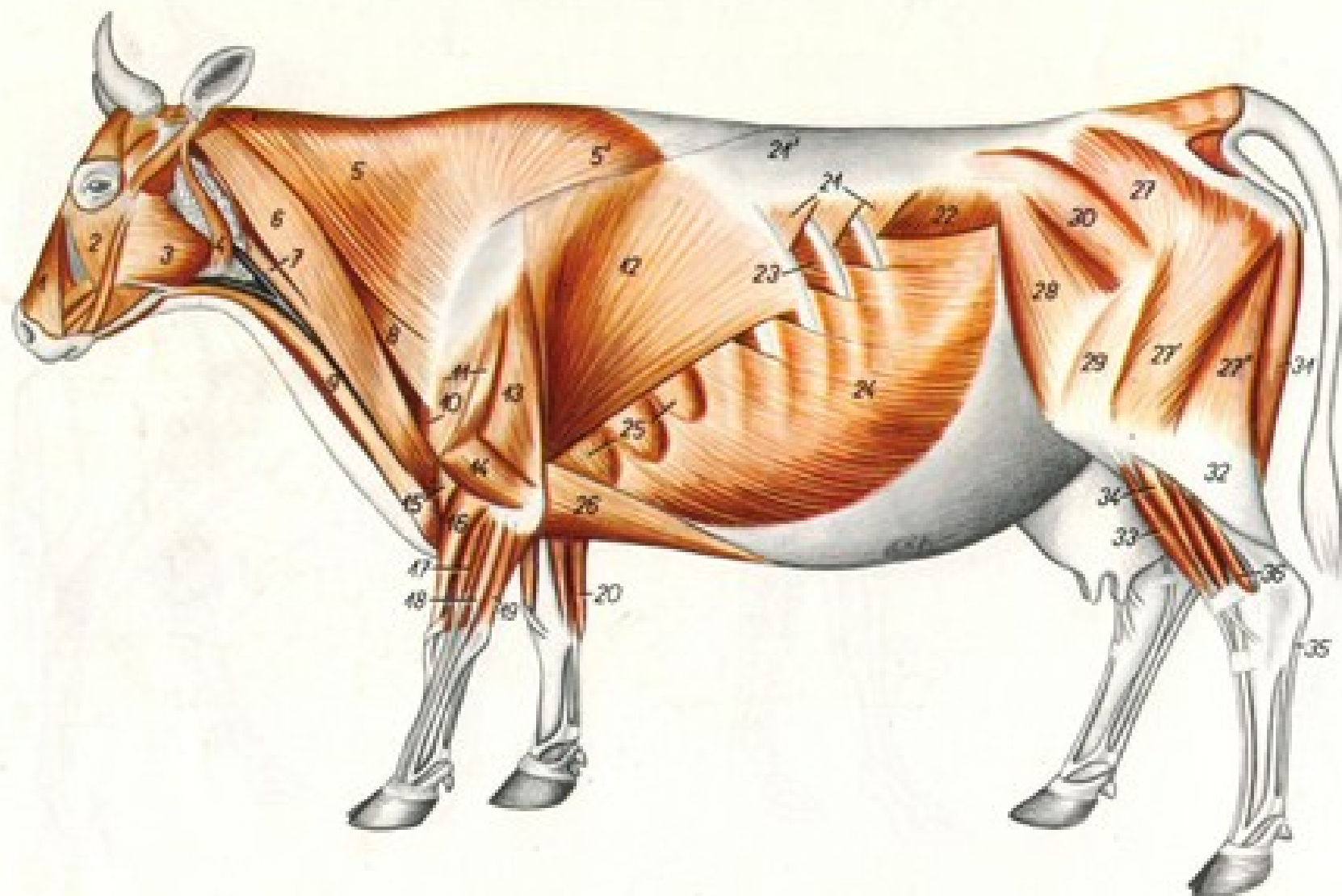


Figure 95

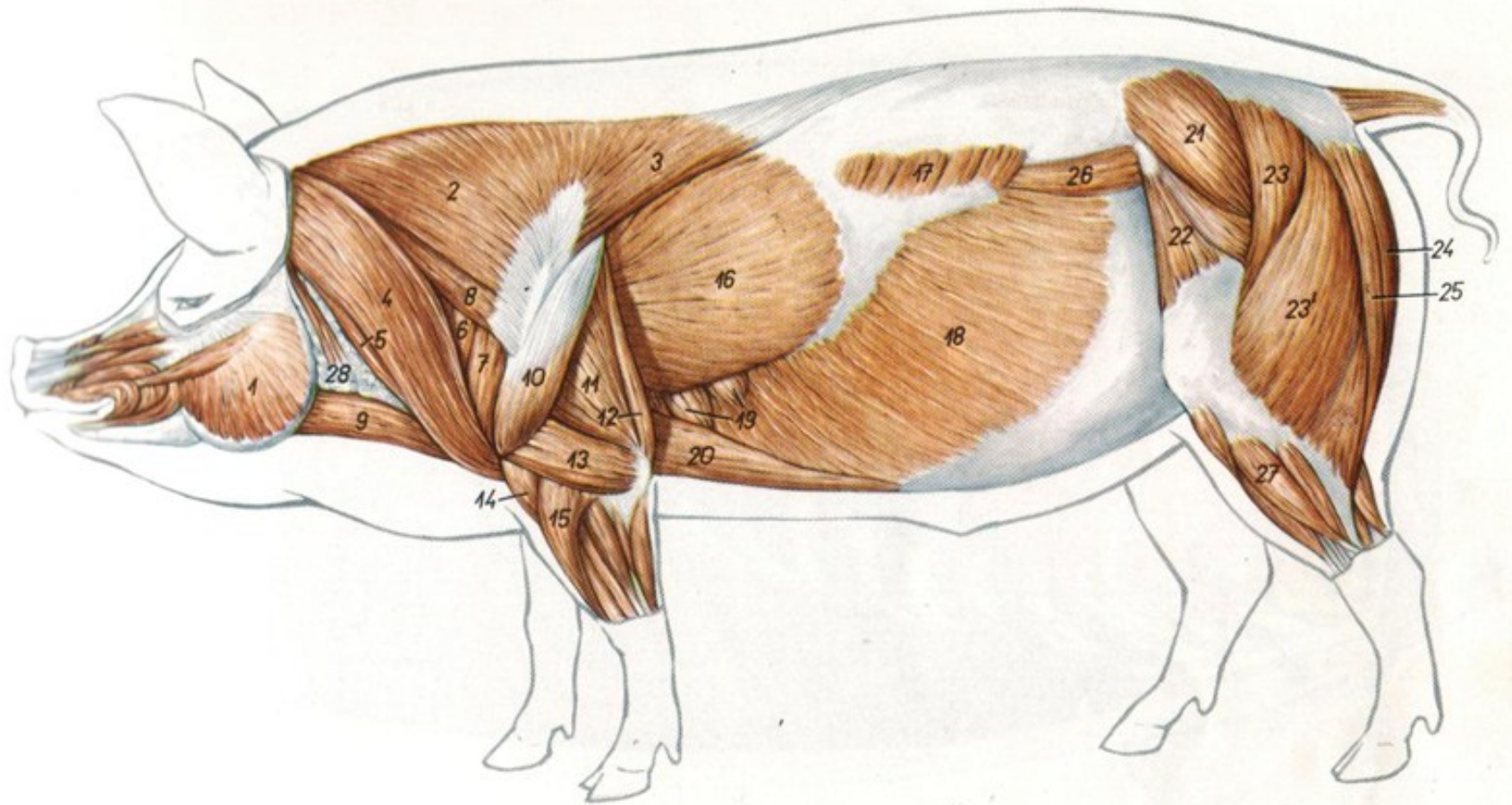
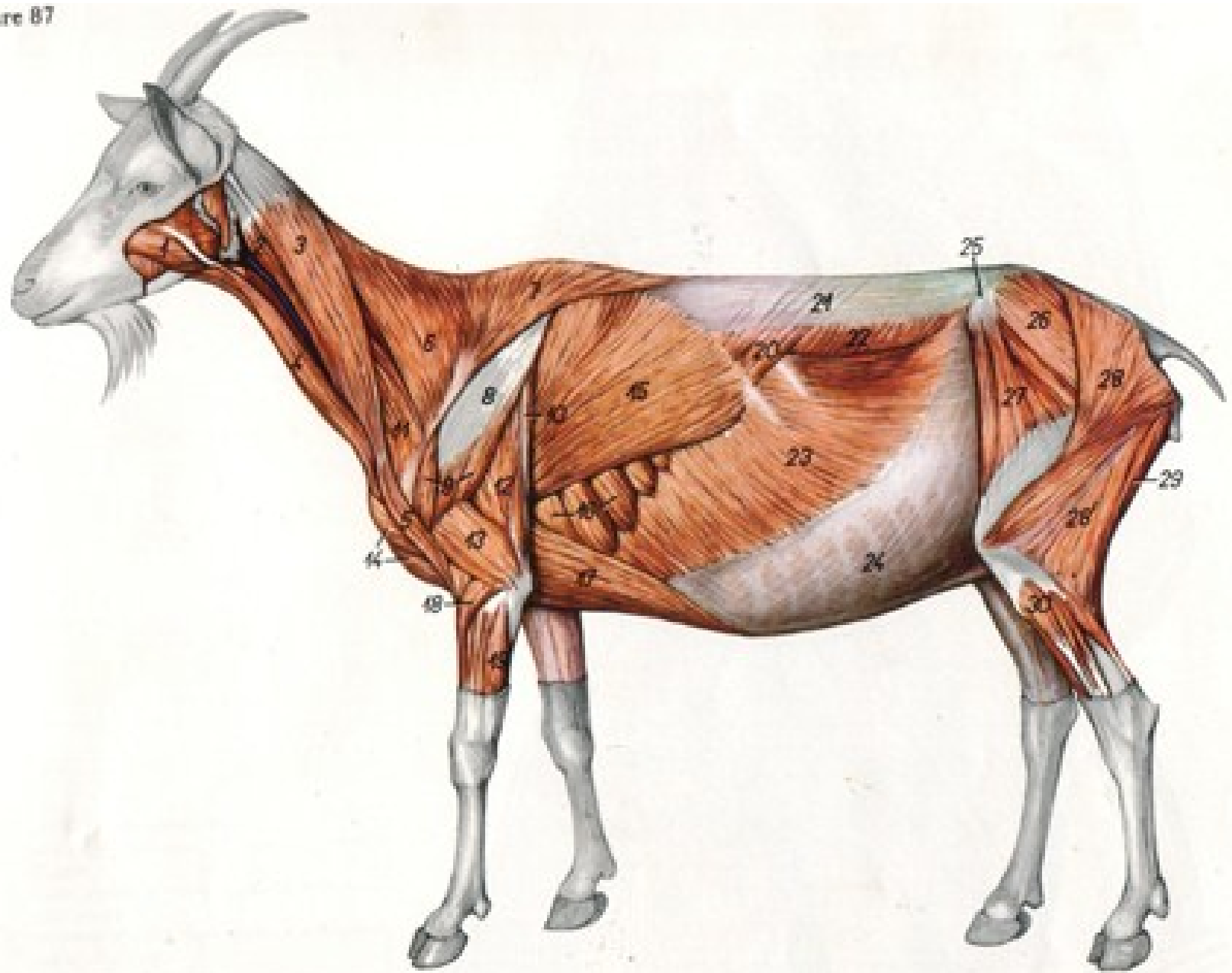
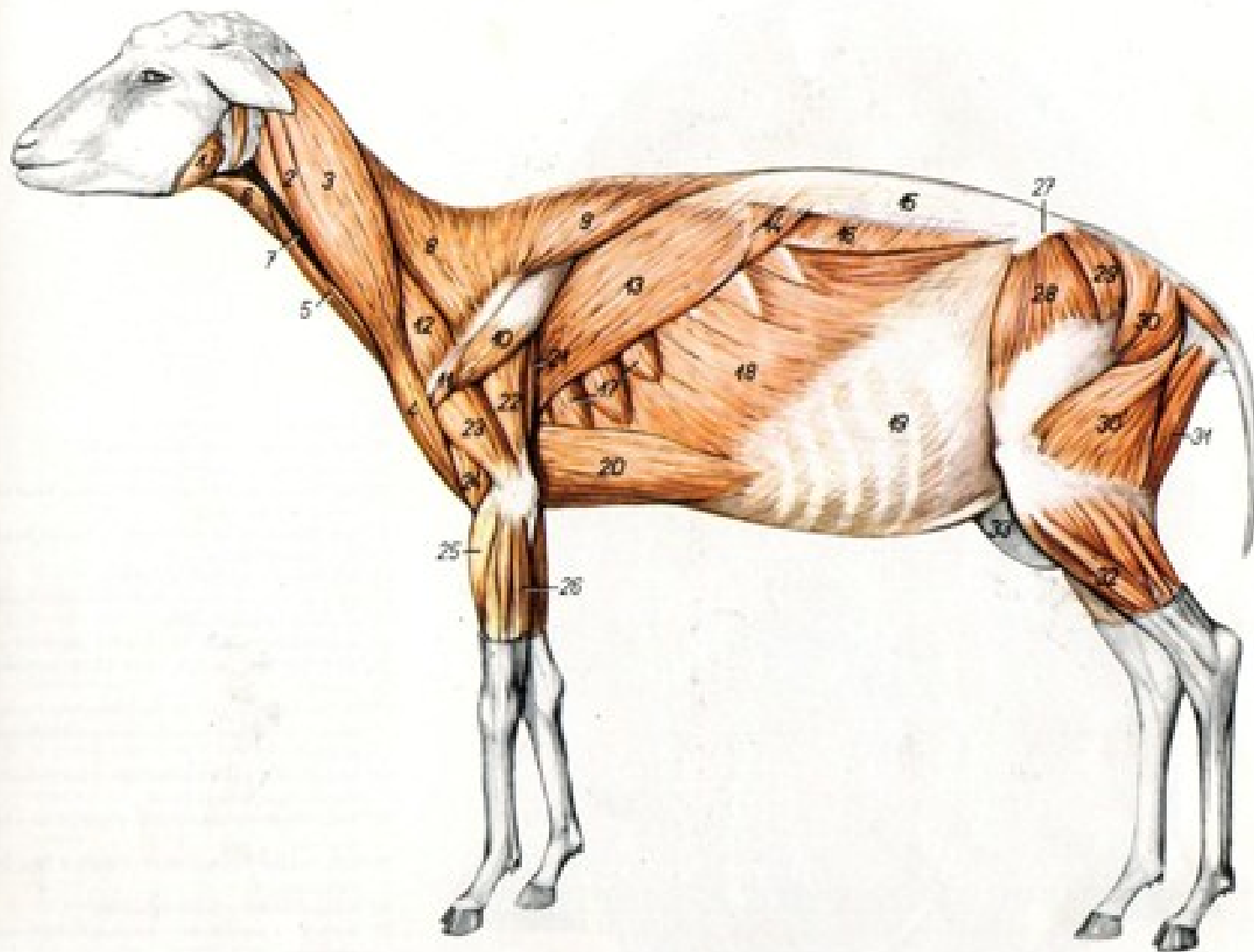


Figure 87

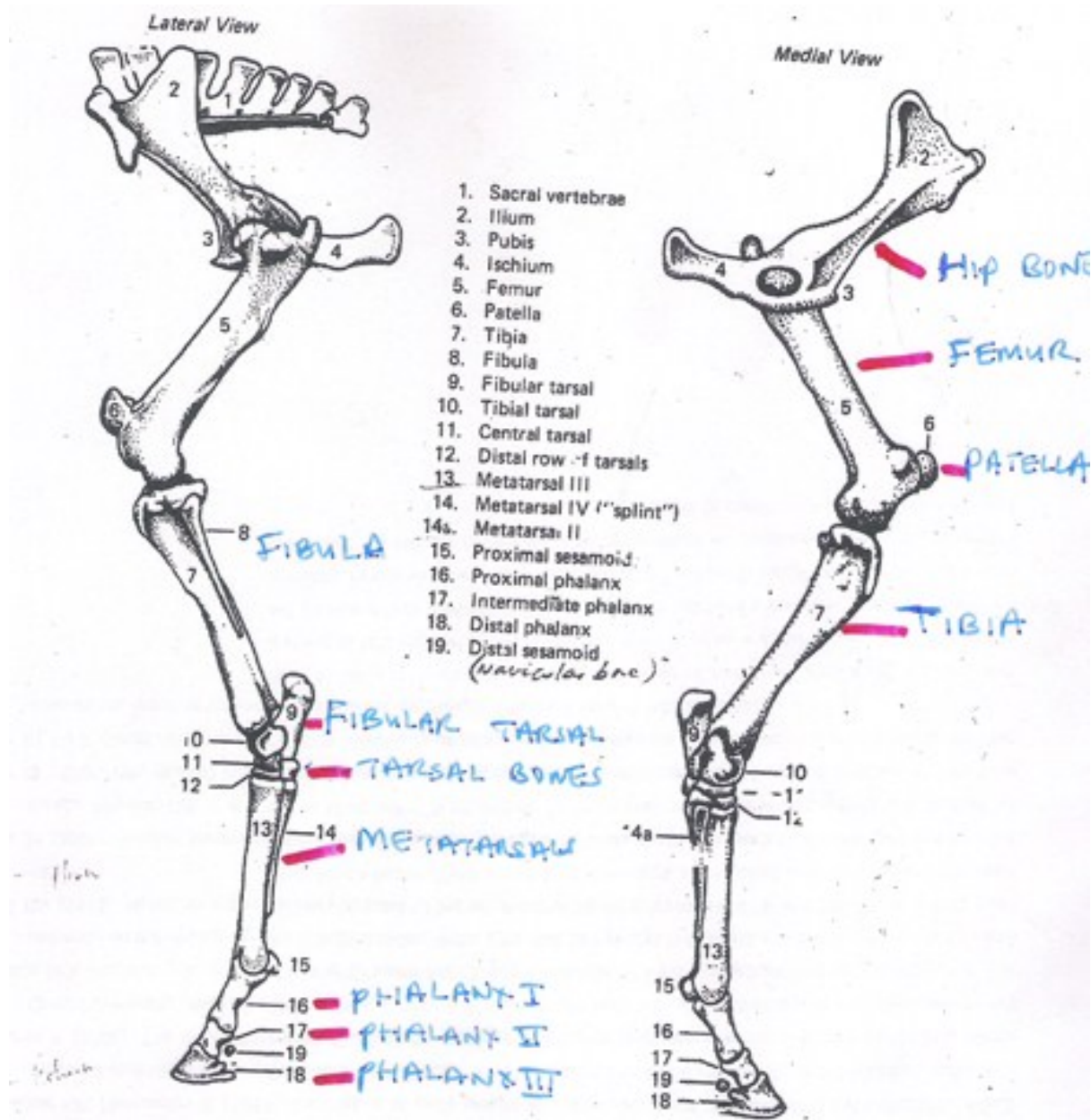


Sheep. Superficial muscles after removal of the cutaneous muscles.

Figure 64



MUSCLES OF THE PELVIC LIMB



MUSCLES OF THE PELVIC LIMB

A. Muscles of the hip joint

a. Superficial group

1. Tensor fascia lata
2. Gluteus medius
3. Gluteus superficialis
4. Gluteus profundus
5. Biceps femoris
6. Semitendinosus
7. Semimembranosus
8. Gracilis
9. Adductor
10. Pectineus
11. Sartorius (Tailor's)

b. Deep muscles of the hip joint

1. Obturator internus
2. Obturator externus
3. Gemellus
4. Quadratus femoris

B. Special muscles of the stifle

1. Quadriceps femoris
2. Popliteus
3. Caudal crural abductor

C. Muscles of the hock and digits.

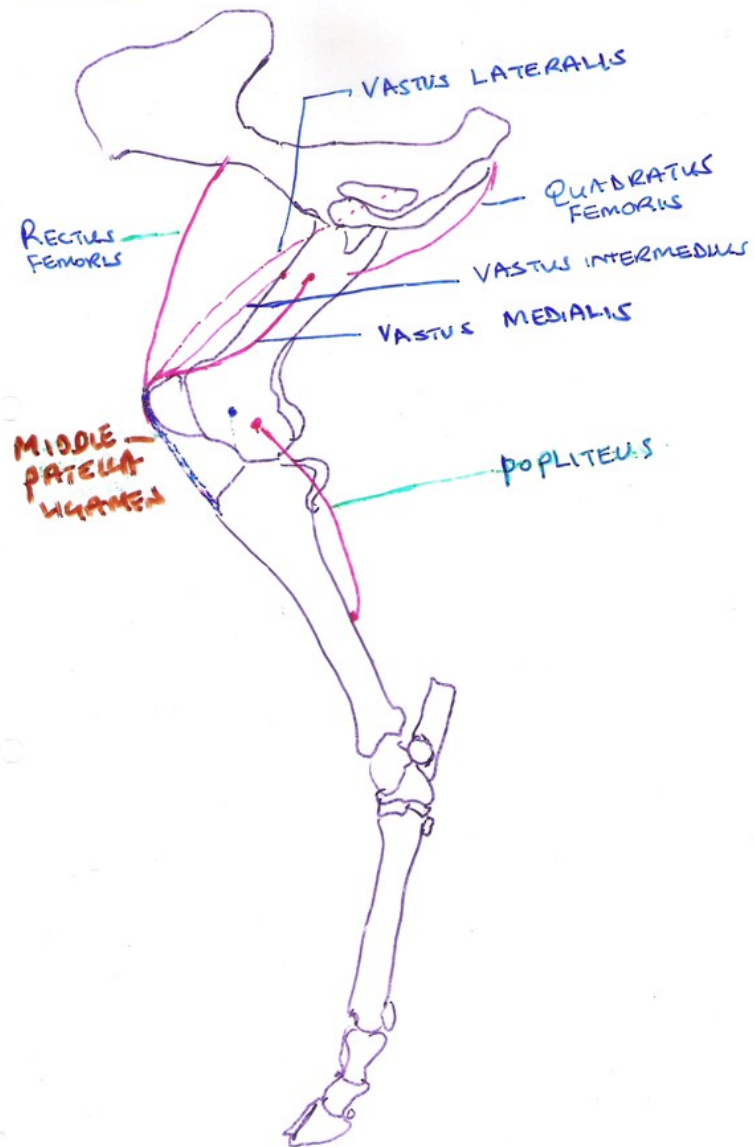
a. Hock flexors (extend digits)

1. Tibialis anterior
2. Peroneus tertius
3. Long digital flexor
4. Peroneus longus
5. Lateral digital extensor
6. Peroneus brevis
7. Extensor hallucis longus

b. Hock extensors (flex digits)

1. Gastrocnemius
2. Sartorius
3. Superficial digital flexor
4. Deep digital flexor
5. Short digital muscles

DEEP MUSCLES OF THE HIP & STILE



MUSCLES OF THE HIP JOINT

A: SUPERFICIAL GROUP

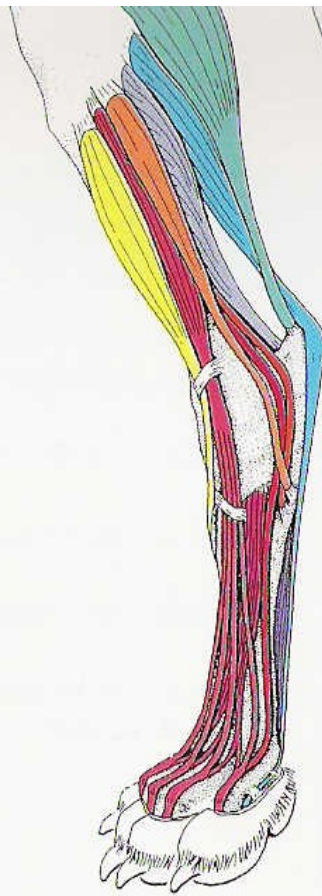
Muscle	Origin	Insertion	Innervation	Action
1. Tensor fasciae latae m.	Tuber Coxa	Patella (blends, with fascia lata)	Anterior gluteal n.	Flexes hip Extends stifle Tenses fascia lata
2. Superficial Gluteal m.	Tuber Coxa, sacrum, sacrotuberal ligament	Equidae-Trochanter tertius Carnivores-trochanter major Inserts as gluteobiceps in others	Anterior gluteal n Posterior gluteal n.	Flexes hip Advances and abducts limb
3. Middle Gluteal m.	Gluteal Surface of Ilium Sacroiliac and Sacrosciatic Ligaments	Trochanter major Trochanteric ridge	Anterior gluteal n Posterior gluteal n	Extends hip Abducts limb
4. Deep Gluteal m.	Ischiatic spine, Body of ilium	Trochanter major	Anterior gluteal n n.	Abducts limb

SUPERFICIAL GROUP (CTD)-HAMSTRING MUSCLES

Muscle	Origin	Insertion	Action	
5. Biceps femoris m.	sacrum and sacrotuberal ligament (<i>vertebral head</i>) Tuber ischii (pelvicoischadic head)	Patella and Lateral patellar ligament Tibial crest, Tuber calcis	Great sciatic n, Posterior gluteal n	Extend s hip, stifle, hock
6. Semitendinosus m.	Tuber ischii (Carnivores & ruminants) Tuber ischii & 1 st Cy (Swine & Equidae)	Tibial crest, Tuber calcis	Great sciatic n, Posterior gluteal n	Extend s hip, stifle, hock
7. Semimembranosus m.	Tuber ischii	Medial Condyles of Femur and Tibia	Great sciatic n.	Extend s hip, adduct limb stifle

SUPERFICIAL GROUP (CTD)

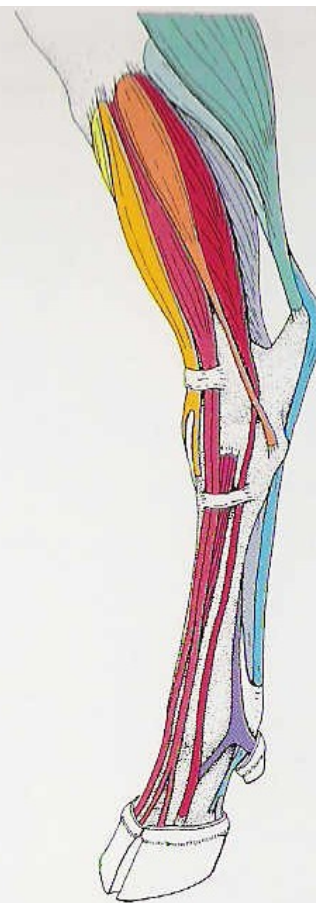
Muscle	Origin	Insertion		Action
8. Gracilis m.	Pelvic crest, prepubic tendon, ventral surface of pubis	Cranial border of tibia, Medial patellar Ligament, Crural fascia	Obturator n.	Adducts limb Extends Stifle
9. Adductor m.	Pubis and ischium (Ventral Surface)	Medial Epicondyle and Caudal Surface of Femur, MCL of stifle	Obturator n.	Adducts limb Draws limb back
10. Pectineus m.	Prepubic tendon, Anterior border of pubis	Medially on Femur	Obturator n.	Flexes hip Adducts limb
11. Sartorius m. (Tailor's m)	Internal Iliac Fascia, Insertion Tendon of Psoas Minor	Medial patellar ligament, Tibial tuberosity	Femoral n.	Flexes hip Adducts limb Draws limb back
12. Piriformis m	Sacrum (man, carnivores only)	trochanter major	Anterior gluteal	Extend hip, abduct limb



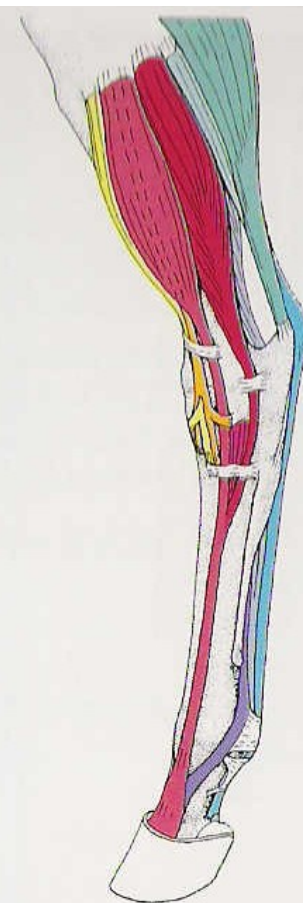
Hund



Schwein



Rind



Pferd

- M. tibialis cranialis
- M. fibularis tertius
- M. fibularis longus
- M. fibularis brevis
- M. extensor digitorum longus

- M. extensor digitorum lat.
- M. extensor digitorum brevis
- M. extensor hallucis longus
- M. gastrocnemius

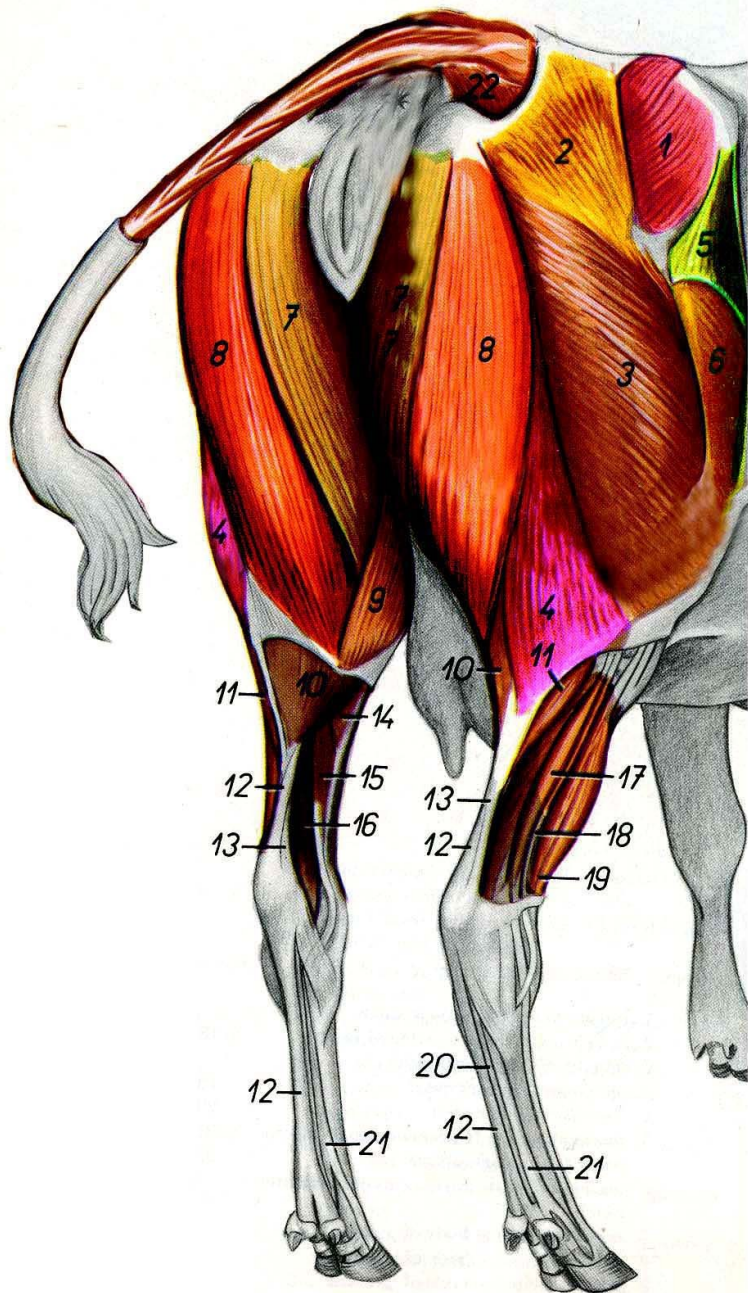
- M. soleus
- M. flexor digitorum supf.
- M. flexor digitorum prof.
- M. interosseus medius

DEEP MUSCLES OF THE HIP JOINT

Muscle	Origin	Insertion		Action
1. Internal obturator m.	Pelvis-Internal Surface around Obturator foramen, Body of ilium- (swine, equidae)	Trochanteric Fossa, Greater trochanter	Sciatic n.(carnivores, equidae) Obturator n (swine, bovidae)	Rotates thigh outward
2. External obturator m.	-Ventral surface of pelvis -Margin of obturator foramen	Trochanteric Fossa; crest	Obturator n.	Rotates thigh outward Adducts limb
3. Gemellus m.	Ischium - lateral border	Trochanteric Fossa of Femur	Sciatic n.	Rotates thigh outward
4. Quadratus femoris:	Ventral Surface of Ischium	Posterior surface of Femur near Trochanter minor	Sciatic n.	Helps extend hip joint

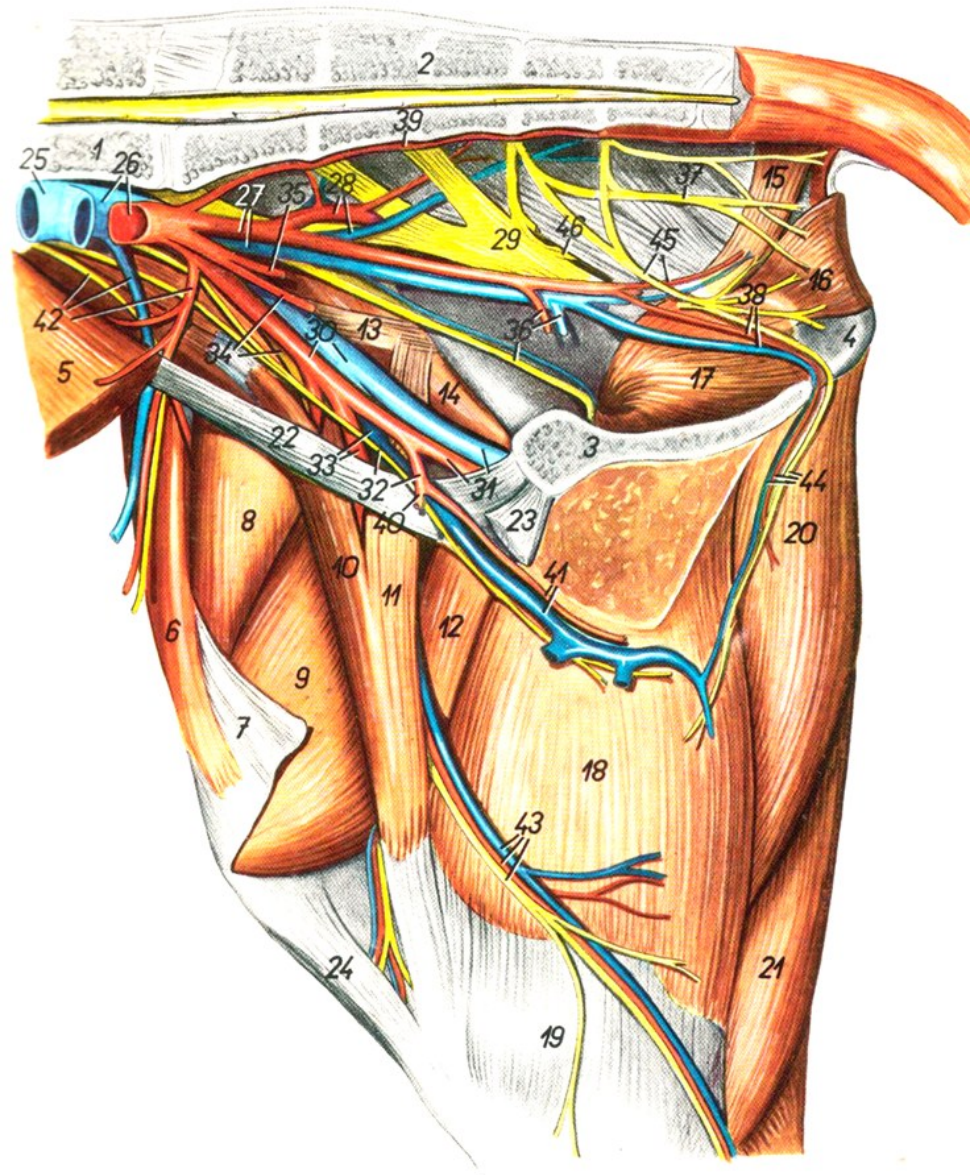
SPECIAL MUSCLES OF THE STIFLE

1. Quadriceps femoris m	-Rectus femoris -body of Ilium -Vastus lateralis-Femur, lateral surface -Vastus medialis –Femur, medial surface -Vastus intermedius – Femur, anterior surface	Tibial crest (via middle patellar ligament)	Femoral n.	-Flexes hip -Extends and stabilizes stifle
2. Popliteus m.	Lateral Condyle of Femur	Posterior surface of femur	Tibial n.	Flexes stifle
3. Caudal crural abductor m.	Sacro tuberal ligament (carnivores only)	Tibial crest	Sciatic n.	Abduct limb



- 1.
- 2.
- 3.
- 4.
7. Semimembranosus
8. Semitendinosus

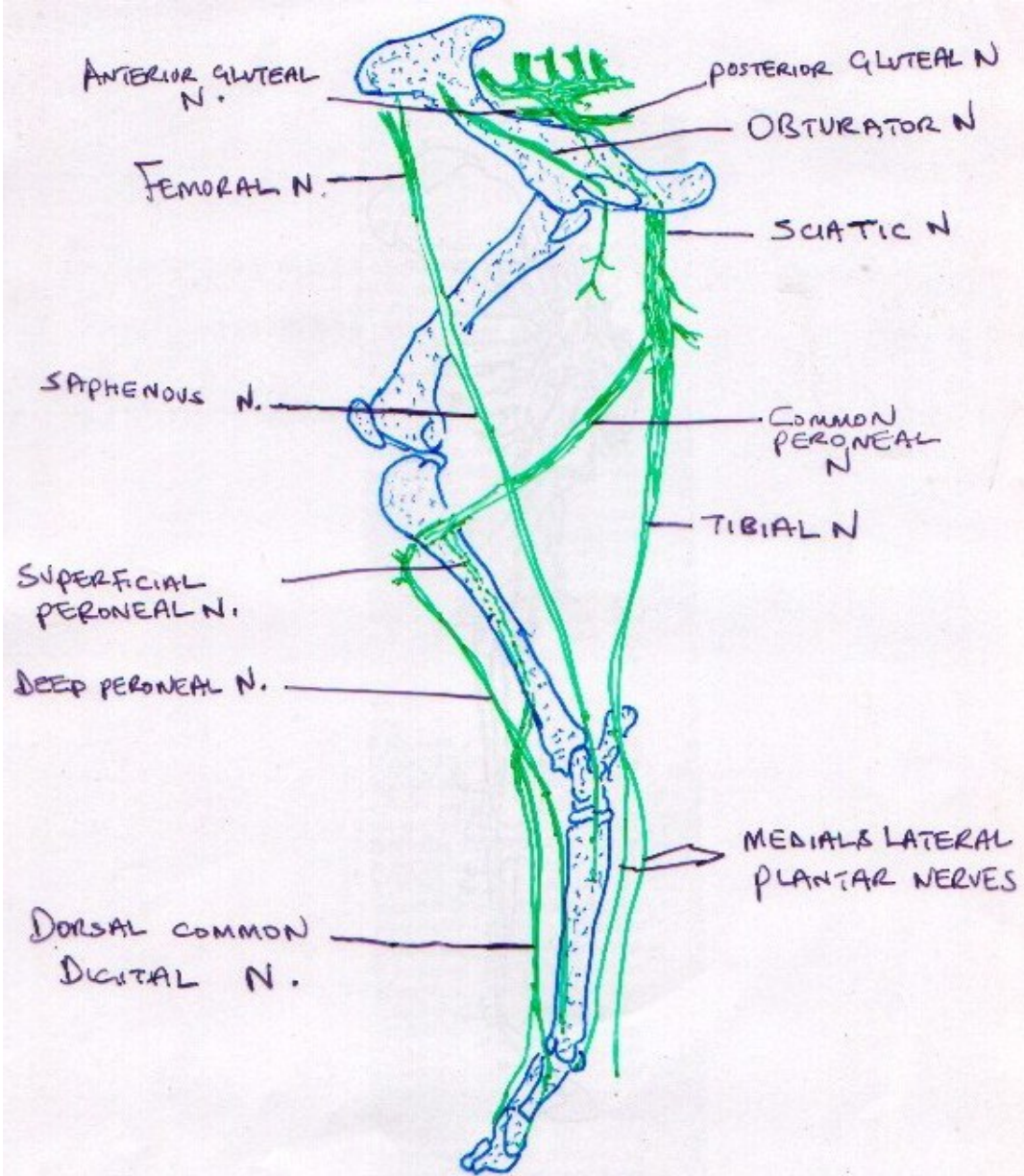
5. Obliquus internus abdominis
6. Tensor fascia lata
7. Fascia lata femoris
8. Rectus femoris
9. Vastus medialis
- 10, 11. Sartorius
12. Pectineus
13. Psoas minor
14. Iliacus
15. Coccygeus
16. Levator ani
17. Obturator internus
18. Gracilis
19. Fascia cruris.
20. Semimembranosus
21. Semitendinosus



THE LUMBOSACRAL PLEXUS

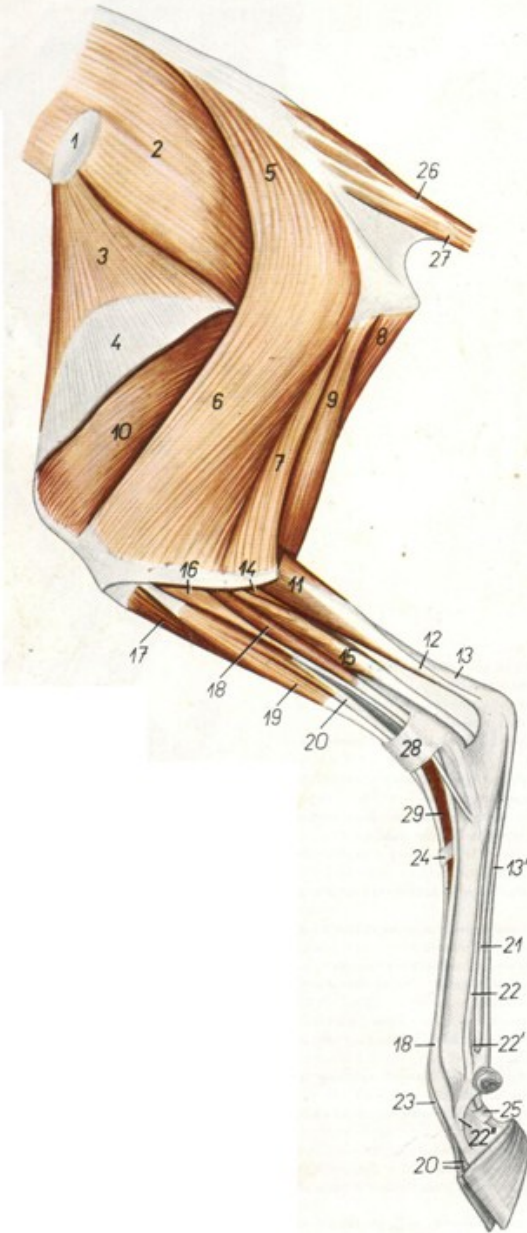
Formed by anastomoses established between the rami of spinal nerves
L5, L6, L7, C8 & S1, S2

1. Femoral
2. Obturator
3. Anterior gluteal
4. Posterior gluteal
5. Sciatic
6. Pudic
7. Posterior
8. Peroneal
9. Tibial

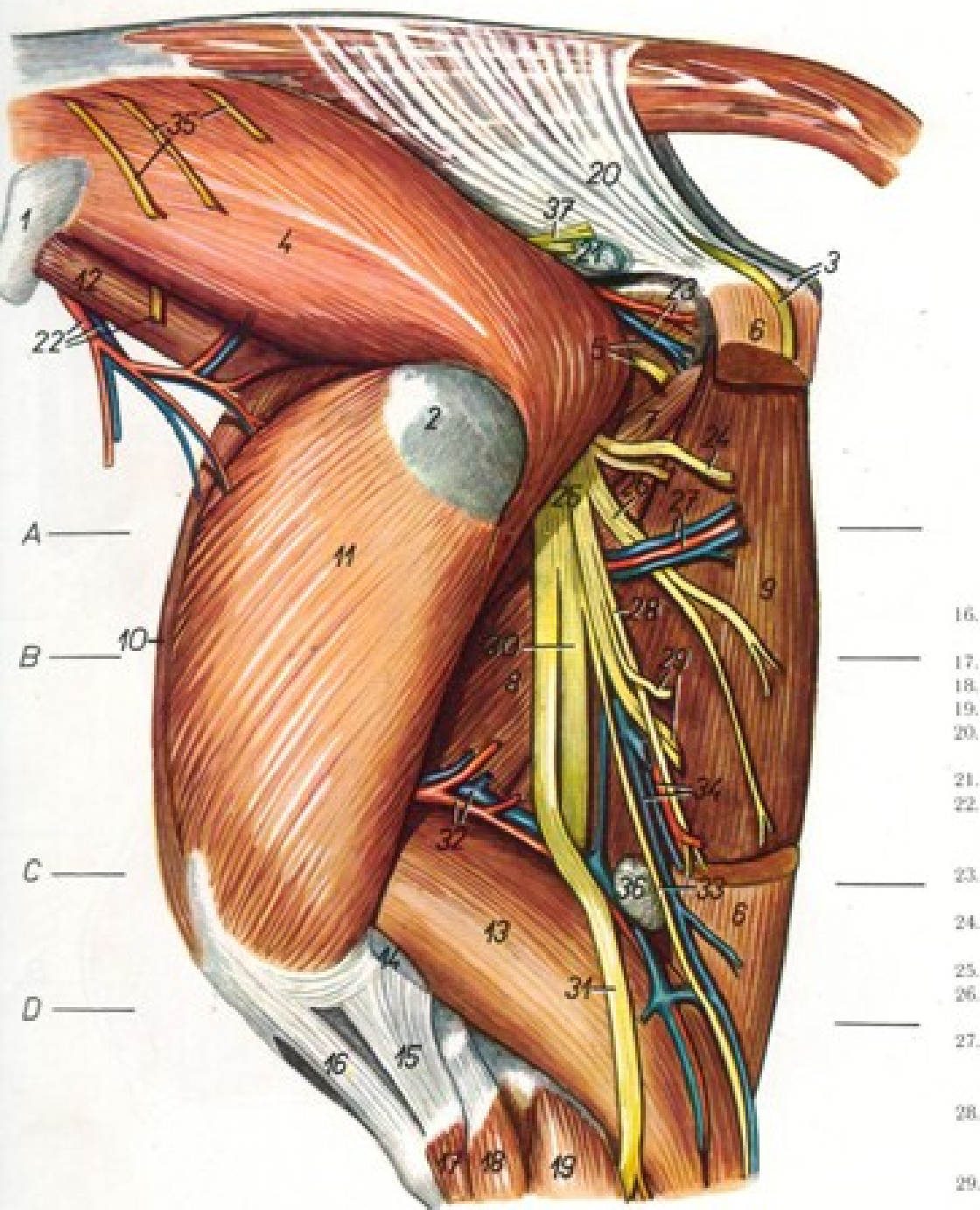


LUMBOSACRAL PLEXUS

Figure 77



1. Gluteus medius
2. Gluteus profundus
4. Fascia lata
- 5,6,7. Gluteobiceps
8. Semimembranosus
9. Semitendinosus
10. Vastus lateralis
11. Gastrocnemius



MUSCLES.

- 3.
4. Gluteus medius
- 5.
6. Semitendinosus
- 7.
- 8.
9. Semimembranosus
10. Tensor fascia lata
11. Vastus lateralis

NERVES

25. Sciatic
30. Tibial
31. Common peroneal



MUSCLES OF THE HIND LEG

1. Psoas minor
2. Iliacus medialis
3. Psoas major
7. Gluteus medius
8. Gluteobiceps
10. Coccygeus
11. Levator ani
12. Obturator internus
13. Tensor fascia lata
14. Rectus femoris
15. Vastus medialis
- 16,17. Sartorius
18. Pectineus
19. Semimembranosus
20. Gracilis
21. Semitendinosus
22. Gastrocnemius

MUSCLES OF THE HOCK AND DIGITS

I . MUSCLES THAT FLEX HOCK, EXTEND DIGITS- **peroneal nerve**

Muscle	Origin	Insertion	Action
1. Tibialis anterior m.	Lateral condyle of femur Tibial crest	Medially on tarsals metatarsus.	Flexes hock
2. Peroneus tertius (Fibularis tertius) (absent in carnivores)	Cranial muscular fossa of Femur	Distal tarsal bones, <i>proximal end of Metatarsus</i>	Flex hock
3. Long Digital Extensor m.	Cranial muscular fossa of femur	Dorsal surfaces of Phalanges (PI, PII, PII)	Flexes hock Extends digit
4. Peroneus longus	Proximally on fibula	Distal tarsal bones	Flex hock?
5. Lateral digital extensor	LCL of stifle, Tibia, , fibula	Swine-PIII of D4 & D5 Ruminants-PII of D4 Carnivores-PI of D5 Equidae-PII of D3	-Flexes hock -Extends digit
6. Peroneus brevis (Occurs in carnivores only)	Fibula & tibia (laterally)	Proximal end of MT5	Flexes hock
7. Extensor hallucis longus	Fibula	Swine-PI of D2; occasionally on D1 or MT2	Extends digit

II. MUSCLES THAT EXTEND HOCK, FLEX DIGITS- **Tibial nerve**

1. Gastrocnemius m.	Medial and Lateral Supracondyloid crest	Calcanean Tuber <i>(Common Calcanean Tendon, Achilles tendon)</i>	Flexes stifle Extends hock
2. Soleus m. (Prominent in swine)	Proximal Fibula	Joins Common Calcanean Tendon Of gastrocnemius	Could extend hock
3. Superficial digital flexor m.	Supracondylar fossa of Femur	Tuber calcis Swine + Ruminants-PI & PII of D3 & D4 Carnivores-PI & PII of D2-D5 Equidae-PI & PII of D3	Extend hock, flex digits
4. Deep digital flexor	a) Long digital flexor- lateral condyle of tibia b) Flexor hallucis longus m - lateral condyle of tibia c) Tibialis caudalis- posterior surface of Tibia	PIII on the palmer surface. Swine + Ruminants- D3 & D4 Carnivores- D2-D5 Equidae- D3	<i>Extend hock, flex digits</i>
5. Short muscles of the digits	Interosseous, flexors, extensors, abductors		

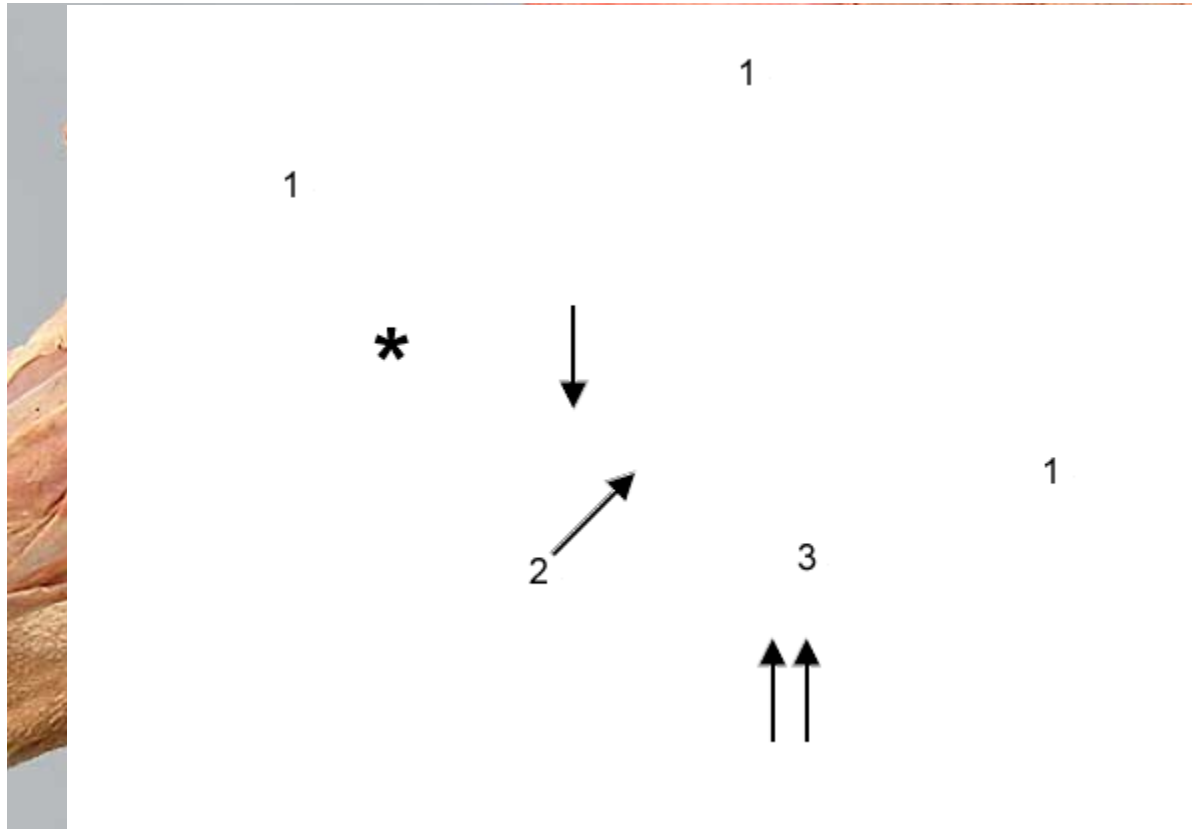
DISSECTED LEFT HIND LEG - DOG



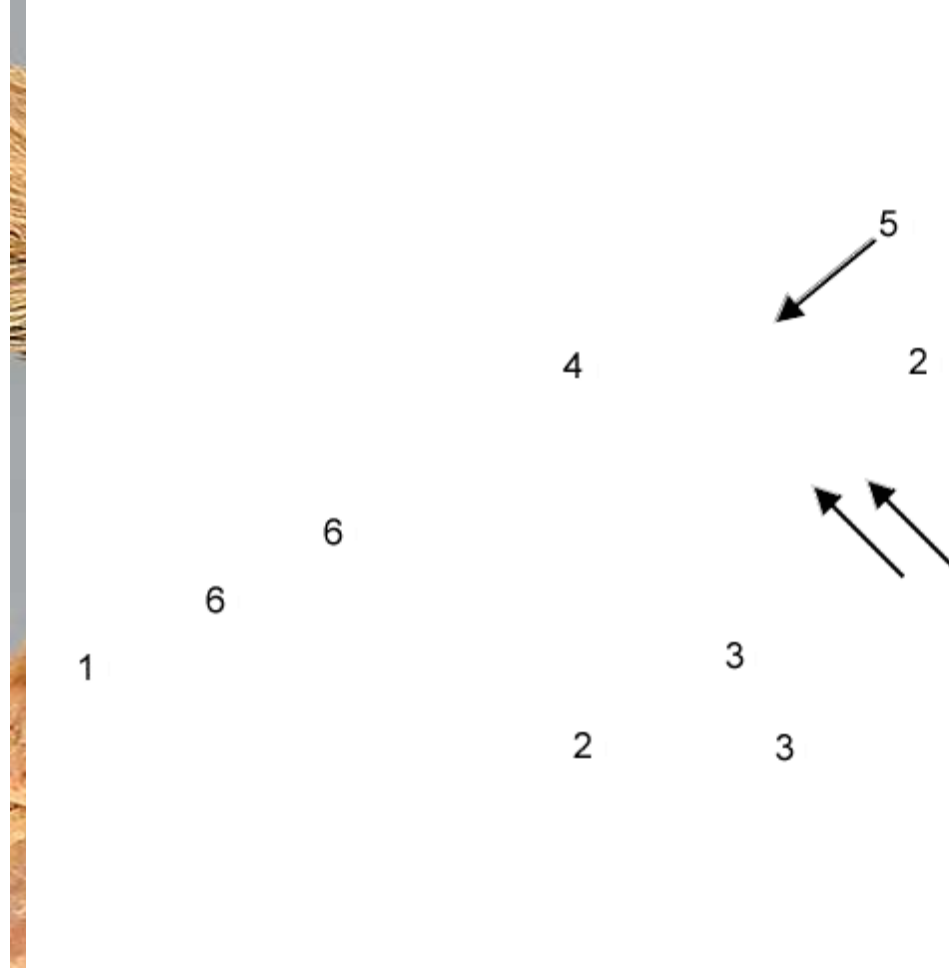
The largest of the hamstring (caudal thigh) muscles is the **biceps femoris m.** (1) which originates from the ischium and inserts broadly on **fascia lata** (2) and **crural fascia** (3). The muscle has been transected in two locations to facilitate reflecting it. The **semitendinosus m.** (4) is partially exposed.

Other visible (non-hamstring) muscles include: **sartorius m.** (5), **tensor fasciae latae m.** (6), **middle gluteal m.** (7), **superficial gluteal m.** (8), **levator ani m.** (9), and **external anal sphincter m.** (10).

DISSECTED LEFT HIND LEG - DOG



Here the **biceps femoris m.** (1) has been reflected, exposing the **sciatic nerve** (arrow) and the slender **caudal crural abductor m.** (2). The remaining major hamstring muscles are: **semitendinosus m.** (3) and, barely visible, the **semimembranosus m.** (double arrows). Caudal muscles of the crus are exposed (asterisk)

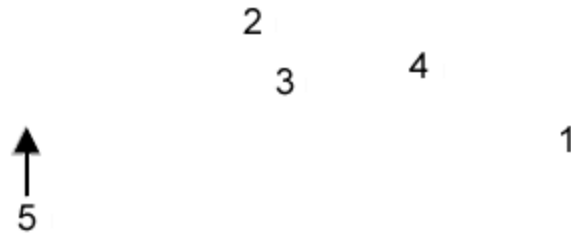


In this view of the medial thigh, the **gracilis m.** (1) has been reflected caudally and the **pectineus m.** (2) has been transected. Femoral vessels (arrows) run caudal to the **sartorius m.** (3). The **adductor m.** (4) has a slender second component called **adductor longus m.**, which is barely visible (5). Reflection of the gracilis m. reveals the two parts of the **semimembranosus m.** (6), which belongs to the hamstring muscle group



Dorsal view of the rump, the tail is at the bottom of the image. The lateral pelvic muscle group is cranial and dorsal to the **greater trochanter** (asterisk). The **tensor fasciae latae m.** (1) has cranial and caudal parts. The **superficial gluteal m.** (2), is elevated by probe. It partially covers the **middle gluteal m.** (3). Other identifiable muscles include: **biceps femoris** (4), **semitendinosus** (5), **sartorius** (6), and the external anal sphincter (7).

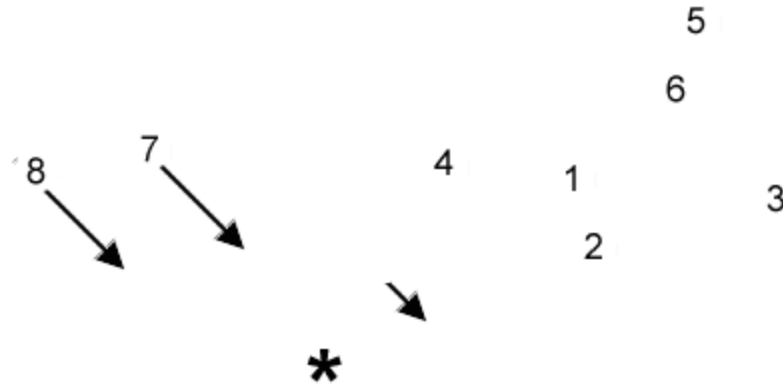
DISSECTED LOWER LEFT HIND LEG - DOG



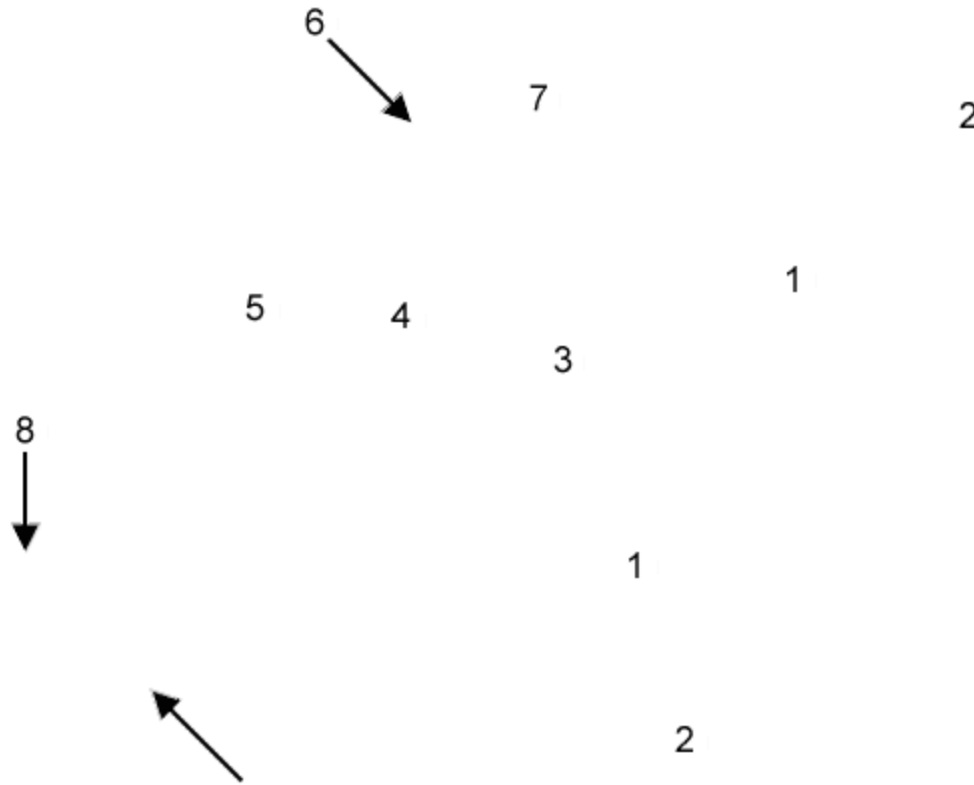
Crural deep fascia (to which **biceps femoris m.** (1) attaches) has been reflected (and held by forceps) in this lateral view of the crus. Three muscles of the *caudal group* can be seen: **deep digital flexor m.** (2), **superficial digital flexor m.** (3), and **gastrocnemius m.** (4).

The **calcanean tendon** (5) is composed of a core component formed by tendons of the **superficial digital flexor and gastrocnemius** muscles. The tendon also has deep fascia components contributed by **biceps femoris, semitendinosus, and gracilis muscles**. (In the cat, a soleus m. contributes to the tendon core.)

DISSECTED LOWER LEFT HIND LEG - DOG

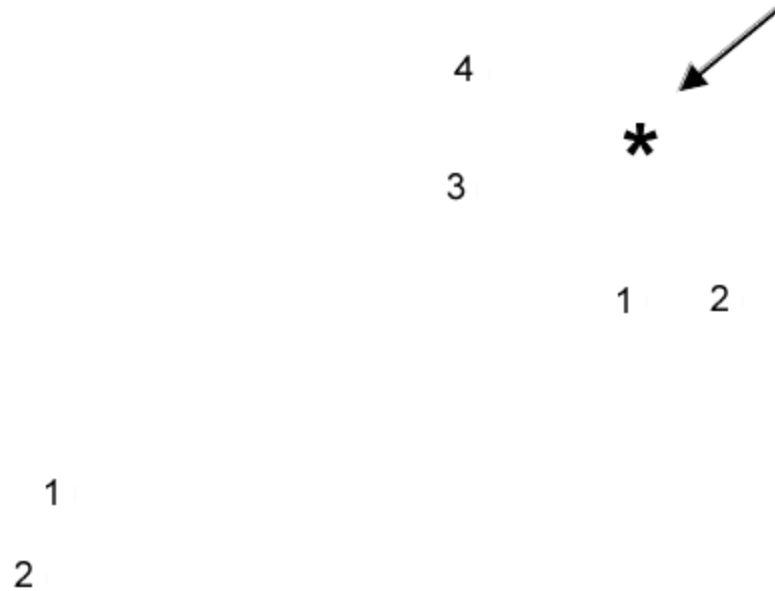


Lateral view of the crus (leg) and pes (foot). The caudal group of muscles of the crus includes: **deep digital flexor m.** (1), **superficial digital flexor m.** (2), and **gastrocnemius m.** (3). The tendon of the gastrocnemius m. (reflected by forceps) and the tendon of the superficial digital flexor m. (arrow) form the core of the calcanean tendon (asterisk). Also notice: the **long digital extensor m.** (4), the **cranial tibial m.** (5), the **peroneus longus m.** (6), and the **crural extensor retinaculum** (7) and tarsal **extensor retinaculum** (8).

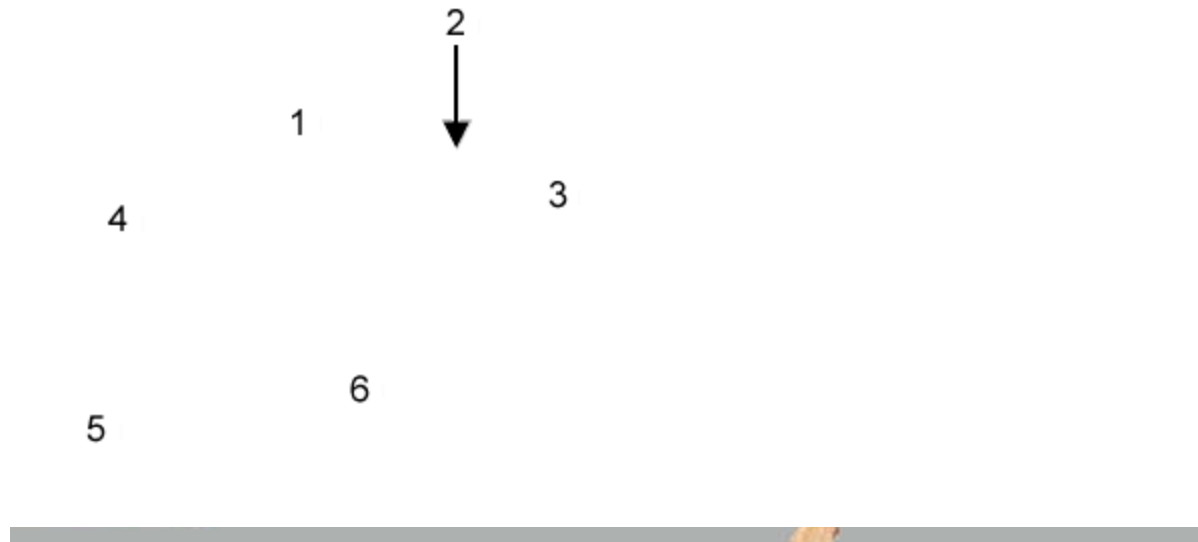


Here, the medial (1) and lateral (2) heads of the **gastrocnemius m.** have been transected and reflected. The **superficial digital flexor m.** (3) and the **deep digital flexor m.** (4) can be seen. Notice that the tendon of the gastrocnemius m. rolls laterally as it moves from a superficial to a deep position in the calcanean tendon (arrow). The position switch is necessary because the superficial digital flexor tendon continues distally to reach the digits.

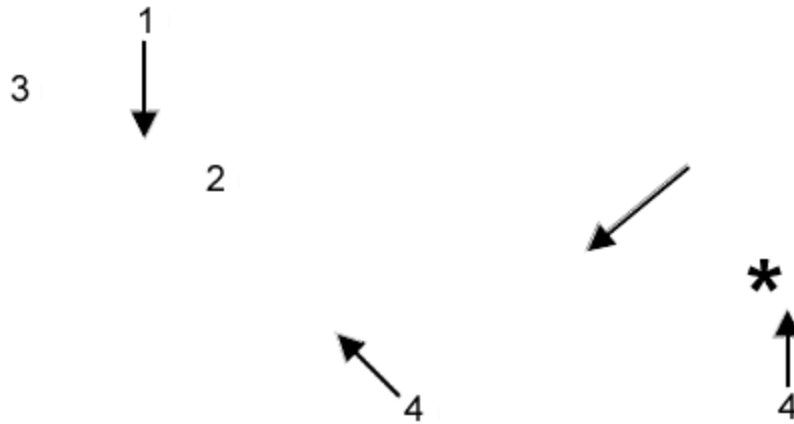
Also notice: the long digital extensor m. (5), the cranial tibial m. (6), the peroneus longus m. (7), and the crural extensor retinaculum (8).



In this caudal view, medial (1) and lateral (2) heads of the **gastrocnemius m.** have been transected and reflected. The **superficial digital flexor m.** (3), the **deep digital flexor m.** (4), and the tendon (arrow) of the **popliteus m.** (asterisk) can be seen.

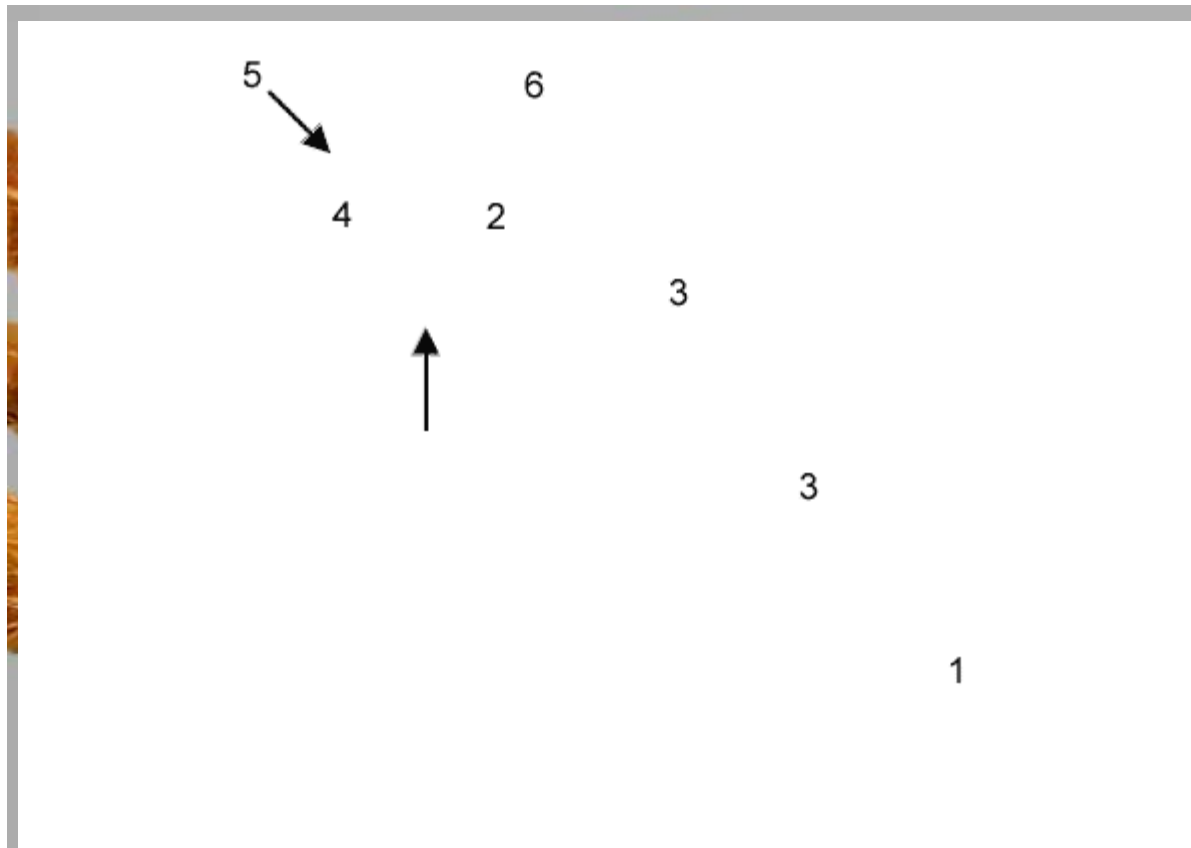


In this medial view, the **popliteus m.** (1) is exposed. The **deep digital flexor m.** is composed of a small medial head (2) and a large lateral head (3). The medial head (4) of the **gastrocnemius m.** is attached but the lateral head (5) and the **superficial digital flexor m.** (6) are pulled caudally



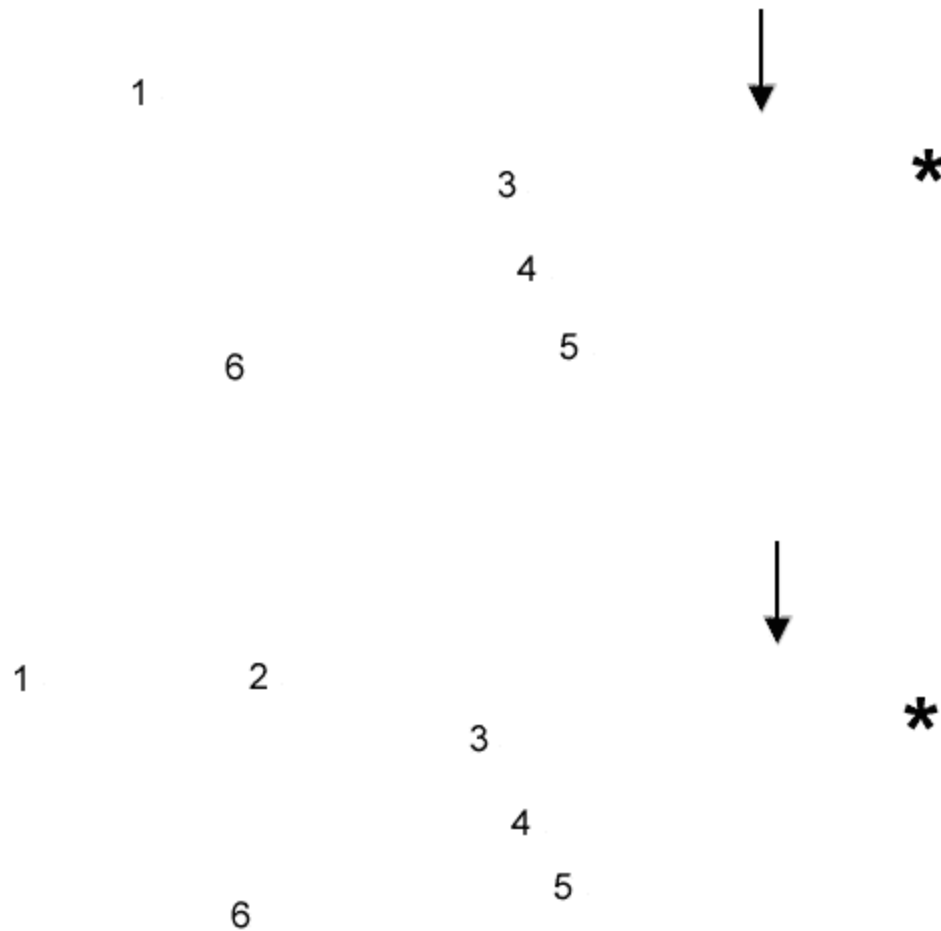
The tendon of the medial head (1) of the **deep digital flexor m.** is elevated by forceps. Notice that it joins the tendon of the **lateral head** (2) in the metatarsus (asterisk). Both tendons are bound to the tarsus by flexor retinaculum (arrow) which has been cut. Identify the **popliteus m.** (3) and the tendon of the **superficial digital flexor m.** (4).

DISSECTED LOWER LEFT HIND LEG - DOG

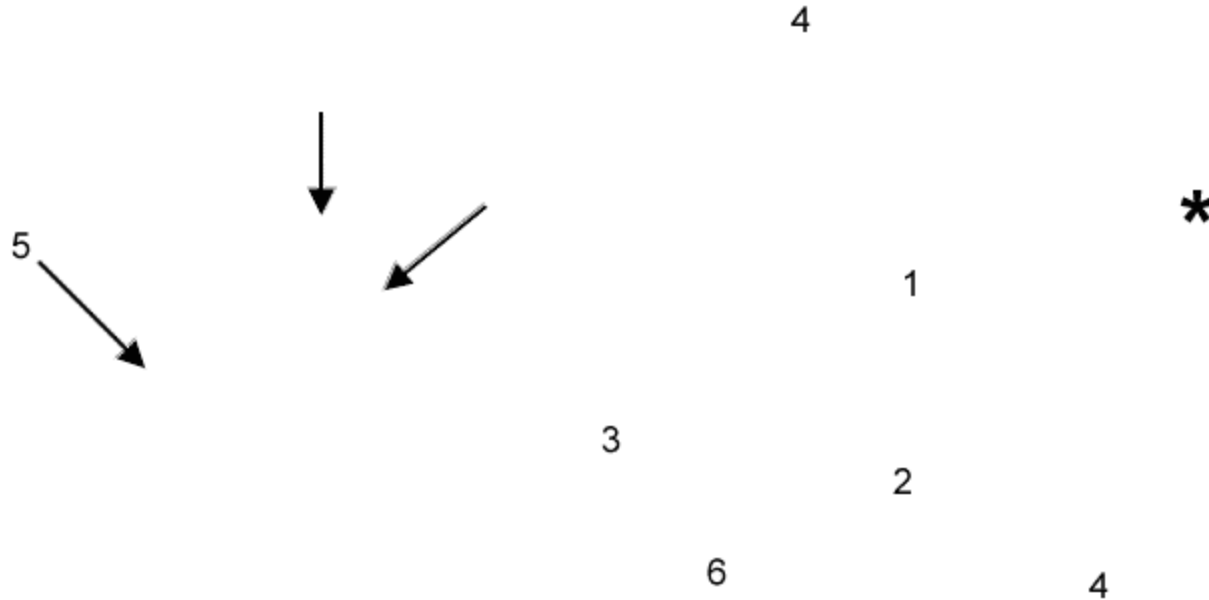


This lateral view of a cat pelvic limb shows two muscles that are present in the cat but not in the dog. The **caudofemoralis m.** (1) runs from fascia lata to tail vertebrae. The **soleus m.** (2), which joins the calcaneal tendon, is positioned lateral to the gasctocnemius m. (arrow).

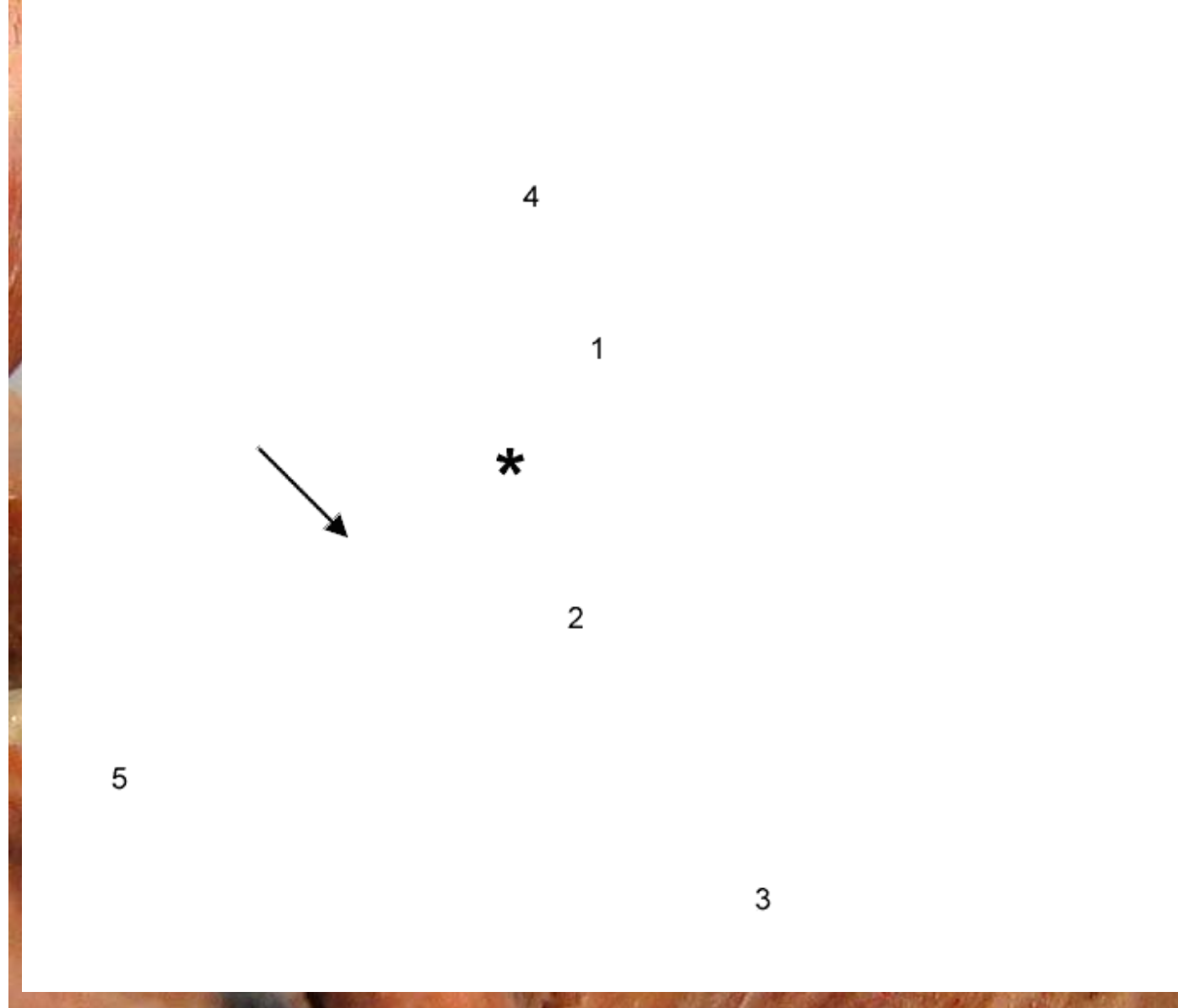
Other muscles include: **biceps femoris** (3), **deep digital flexor** (4), long digital extensor (5), and cranial tibial (6).



Muscles of the crus, cat. In the bottom image, the **gastrocnemius m.** (1) is reflected to expose the **superficial digital flexor m.** (2) and the **soleus m.** (3). Tendons of these three muscles form the core of the **common calcaneal tendon** (arrow). The asterisk is over the tuber of the calcaneus bone (tuber calcanei). The **deep digital flexor m.** (4) runs along the tibia. Cranial muscles of the crus include the long digital extensor m. (5) and the cranial tibial m. (6).

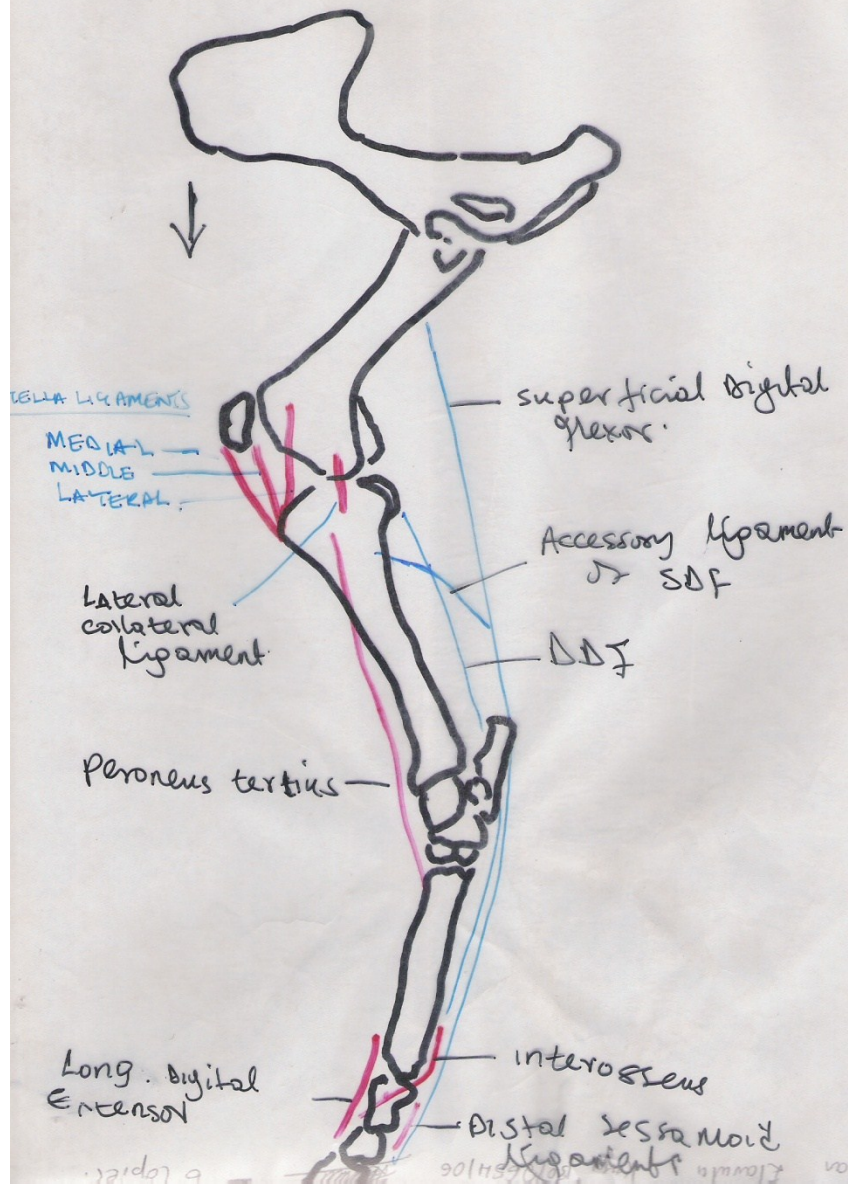


Crus of the cat, caudal muscles are dissected. The medial head (1) of the **gastrocnemius m.** is reflected to expose the lateral head (2) and the **soleus m.** (3). Notice that the fabella bone (asterisk) at the origin of the medial head is also reflected. The **superficial digital flexor m.** (4) is transected and reflected, exposing the calcaneal bursa (arrows) and lumbricales mm. (5). The **deep digital flexor m.** (6) is on the tibia



The joint capsule (1) is incised to expose the cavity of the coxofemoral joint of the cat. Notice the **ligament of the femoral head** (2), the **head of the femur** (asterisk), and the acetabular lip (arrow), which rims the acetabulum. Also identify the obturator foramen (3), articularis coxae m. (4), and femoral vessels (5).

PASSIVE STAY APPARATUS



Kalima 571820
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The Passive Stay Apparatus

Horses remain on their feet for long periods, much longer than other animals. Most of the weight when a horse is at rest is carried by the tendons ligaments and deep fascia of each leg. This means that when standing, the horse requires minimal muscle activity and does not tire quickly. The supportive mechanisms in both the fore and hind limbs are both very similar in the horse.

How *does* the stay apparatus function?

The stay apparatus transfers weight from the limb muscles to connective tissue structures that do not tire, namely **tendons, ligaments or bone**. With the weight shifted from muscle to connective tissue elements or bone, the horse requires less muscular activity to keep the limb stable and hold up the front end of the body.

The stay apparatus helps the limb resist gravitational forces that would otherwise cause the thoracic limb joints to flex and allow the body to collapse to the ground.

