**Выполните перевод текста на русский язык**

**The anatomy of domestic animals**

Anatomy is the branch which deals with the form and structure of the principal domestic animals. To understand the structure of the organism in light of the connection between form and function, anatomy uses the data of physiology. Two chief methods of study are employed – systematic and topographic. In the former the body is regarded as consisting of systems of organs or apparatus which are similar in origin and structure and are associated in the performance of certain functions. The approach of systematic anatomy is to divide the organism artificially into parts using the analytical method. The divisions of systematic anatomy are:

**1) Osteology (Osteologia**), the description of the **skeleton**;

**2) Arthrology**(Arlhrologia), the description of the **joints**;

**3) Myology**(Myologia); the description of the muscles and **accessory structures**;

**4) Splanchnology**(Splanchnologia), the description of the **viscera**. It includes the following subdivisions:

**4.1) Digestive**system (Apparatus digestorius);

**4.2) Respiratory**system (Apparatus respiratorius);

**4.3) Urogenital**system (Apparatus urogenitalis):

**a)** **urinary**organs (Organa uropoetica),

**b)** **genital**organs (Organa genitalia);

**5) Angiology**, the description of the organs of **circulation**;

**6) Neurology**, the description of the **Nervous**system;

**7) Aesthesiology,**the description of the **sense organs**and common **integument**.

Besides systematic anatomy there is topographic anatomy which studies the spatial relationships of the organs in the different body regions. The term topographic anatomy designates the methods by which the relative positions of the various parts of the body are accurately determined*.*It presupposes a fair knowledge of systematic anatomy. The consideration of anatomical facts in their relation to **surgery**, physical diagnosis, and other practical branches is termed **applied**anatomy*.*As animal is a part of nature, anatomy, the science studding animal`s structure, is part of biology. Animal body is the complex of living matter. The structure of living matter comprises not only the form but the function, not only the morphological but the functional peculiarities of the organism. Anatomy that studies the normal healthy organism is called normal anatomy,

as distinct from pathological or **morbid**anatomy, which is concerned with the study of the sick organism and the morbid changes in its organs.

Anatomy is also related closely to histology, the science of **tissues**, particularly to the branch of histology known as microscopic anatomy. Histology and cytology, the science of the **cell**, are considered independent branches of science. With the invention of the electron microscope, a new science, cytochemistry, was born at the junction of cytology and chemistry. As a result the structure of the animal organism is now studied at different levels: 1) at the level of systems and organs – macroscopic anatomy, micro-macroscopic anatomy, microscopic anatomy; 2) at the level of tissues – histology; 3) at the **cellular**level – cytology; 4) at the molecular level.

Thus, anatomy and histology are currently divided according to level and technique of examination. Anatomy, histology, cytology and embryology constitute the general science of the form, structure and development of the organism which is called morphology.

**Упражнение 1. Ответьте на вопросы.**

1. What is anatomy?

2. What does anatomy deal with?

3. What does anatomy use to understand the structure of the organism?

4. What sciences is anatomy connected with?

5. What are the chief methods of study?

6. How many parts does the systematic anatomy consist of?

7. What is physiology?

8. What is histology?

9. What is embryology?

10. What is osteology?

11. How is arthrology termed in Latin?

12. What is myology?

13. What is the Latin for splanchnology?

14. What subdivisions does splanchnology include?

15. What is the Latin term for urogenital system?

16. What organs does it include?

17. What is angiology?

18. What is neurology?

19. What does aesthesiology describe?

20. What does topographic anatomy study?

21. What is applied anatomy?

22. What is normal anatomy?

23. What is pathological anatomy?

24. What is microscopic anatomy?

25. How many levels is the animal organism studied at? What are they?

26. What is morphology?

**Выполните перевод текста**

**The anatomy and physiology of the cat**

**Mouth.**Cats have highly specialized teeth for the killing of prey and the tearing of meat: the **premolar**and first **molar**teeth. They present in **canids**, and are highly developed in **felines**. The cat's tongue has sharp **spines**, or papillae, useful for retaining and ripping flesh from a carcass. Cats use a variety of vocalizations for communication, including meowing, purring, hissing, growling, squeaking, chirping, clicking, and grunting. Their types of body language: position of ears and tail, relaxation of whole body, kneading of paws, all are indicators of mood.

**Ears.**Thirty-two individual muscles in each ear allow for a manner of directional hearing: a cat can move each ear independently of the other. Because of this mobility, a cat can move its body in one direction and point its ears in another direction. Most cats have straight ears pointing upward. When angry or frightened, a cat will lay back its ears, to accompany the growling or hissing sounds it makes. Cats also turn their ears back when they are playing, or to listen to a sound coming from behind them.

**Legs.**Cats, like dogs, are **digitigrades**. They walk directly on their toes, with the bones of their feet making up the lower part of the visible leg. Cats are capable of walking very precisely, because like all felines they directly register; that is, they place each hind **paw**(almost) directly in the print of the corresponding **forepaw**, minimizing noise and visible tracks. This also provides sure footing for their hind paws when they navigate rough terrain.

**Claws.**Cats have protractable claws. In their normal, relaxed position the claws are **sheathed**with the skin and fur around the toe **pads**. This keeps the claws sharp by preventing wear from contact with the ground and allows the silent stalking of prey. The claws on the **forefeet**are typically sharper than those on the **hind feet**. Most cats have five claws on their front paws, and four or five on their rear paws. However, domestic and **feral**are prone to **polydactylyism**, and may have six or seven toes. The fifth front claw is proximal to the other claws.

**Skin.**Cats possess rather loose skin; this allows them to turn and confront a predator or another cat in a fight, even when it has a grip on them. The particularly loose skin at the back of the neck is known as the **scruff**, and is the area by which a mother cat grips her kittens to carry them.

**Skeleton.**Cats have 7 **cervical vertebrae**, 13 **thoracic vertebrae**, 7 **lumbar vertebrae**, 3 **sacral vertebrae**, and 22 or 23 **caudal vertebrae**. The **extra**lumbar and thoracic vertebrae account for the cat's enhanced **spinal**mobility and **flexibility**, compared with humans. The caudal vertebrae form the tail, used by the cat as a counterbalance to the body during quick movements. Cats also have free-floating **clavicle bones**, which allow them to pass their body through any space into which they can fit their heads.

**Head.**The **masseter**is a great, powerful, and very thick muscle covered by a tough, shining **fascia**lying **ventral**to the **zygomatic arch**, which is its origin. It inserts into the posterior half of the **lateral surface**of the **mandible**. Its action is the elevation of the mandible (closing of the jaw).

The temporalis is a great mass of **mandibular muscle**, and is also covered by a tough and shiny fascia. It lies dorsal to the zygomatic arch and fills the **temporal fossa**of the skull. It arises from the side of the skull and inserts into the **coronoid process**of the mandible. It too, elevates the jaw. The two main integumentary muscles of a cat are the **platysma**and the cutaneous **maximus**. The cutaneous maximus covers the **dorsal**region of the cat and allows it to shake its skin. The platysma covers the neck and allows the cat to stretch the skin over the **pectoralis major**and **deltoid muscles**.

**Neck and Back.**The **rhomboideus**is a thick, large muscle below the **trapezius muscles**. It extends from the vertebral border of the scapula to the **mid-dorsal line**. Origin, neural spines of the first four thoracic vertebrae, insertion, vertebral border of the scapula, action, draws the scapula to the dorsal.

**Splenius**is the most **superficial**of all the deep muscles. It is a thin, broad sheet of muscle underneath the clavotrapezius and **deflecting**it. It is crossed also by the **rhomboideus capitis**. Its origin is the mid-dorsal line of the neck and fasica. The **insertion**is the superior nuchal line and atlas. It raises or turns the head.

**Serratus ventralis**is exposed by cutting the wing-like **latissimus dorsi**. The origin is from the first nine or ten ribs, and from part of the cervical vertebrae. The insertion is the vertebral border of the scapula. It draws scapula forward, backward and against the body.

**Serratus Dorsalis**is medial to both the scapula and the Serratus Ventralis. Origin, **apoeurosis**following the length of the mid-dorsal line, insertion, dorsal portion of the last ribs, action, draws ribs cranial. The **intercostals**are a set of muscles sandwiched between the ribs. They interconnect ribs, and are therefore the primary respiratory skeletal muscles. They are divided into the external and the internal **subscapularis**. The origin and insertion are in the ribs. The intercostals pull the ribs backwards or forwards.

**Pectoantebrachialis**muscle is just one-half inch wide, and is the most superficial in the pectoral muscles. Origin, **manubrium**of the sternum, insertion, in a flat **tendon**on the fascia of the proximal end of the ulna, action, draws the arm towards the chest.

**The pectoralis major**, also called, pectoralis **superficialis,**is a broad **triangular**portion of the pectoralis muscle which is immediately below the **pectoantebrachialis**. It is actually smaller than the pectoralis minor muscle. Origin, sternum and **median ventral raphe**, insertion, humerus, action, draws the arm towards the chest. The **pectoralis minor**muscle is larger than the pectoralis major. However, most of its **anterior border**is covered by the pectoralis major. Origin, ribs 3–5, insertion, **coracoid process**of scapula, Action, tipping of the scapula, elevation of ribs 3–5.

The most posterior, flat, thin, and long strip of pectoral muscle is the **xiphihumeralis**. It is a band of parallel fibers that is not found in humans, but in felines. Its origin is the **xiphoid process**of the sternum, the insertion is the humerus.

**Trapezius**covers the back, and the neck. They pull the scapula toward the mid dorsal line, anteriorly, and posteriorly.

**Clavotrapezius,**the most anterior of the trapezius muscles, is also the largest. Its fibers run obliquely to the ventral surface. Origin, **superior nuchal line**and **median dorsal line**, insertion, clavicle, action, draws the **clavicle dorsal**and towards the head.

**Acromiotrapezius**is the middle trapezius muscle. It covers the dorsal and lateral surfaces of the scapula. Origin, neural spines of the cervical vertebrae, insertion, in the **metacromion process**and fascia of clavotrapezius, action, draws the scapula to the dorsal, and holds the two scapulas together.

**Spinotrapezius**, also called **thoracic trapezius**, is the most posterior of the three. It is triangular shaped. Origin, neural spines of the thoracic vertebra, insertion, scapular fascia, action, draws the scapula to the dorsal and caudal regions. (from Wikipedia, the free encyclopedia)

**Упражнение 1. Ответьте на вопросы.**

1. Where are the organs of taste?

2. What teeth can you name?

3. What is the skeleton composed of?

4. How many bones and vertebrae of the cat body do you know?

5. What are the parts of the leg?

6. What is the normal body temperature of a cat?

7. How many muscles do the cats have? What muscles can you name?

8. What are the ears for?

9. What are the claws for?

10. How many hours a day can a cat sleep?