

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

KHARKIV STATE ZOOVETERINARY ACADEMY

Faculty of Veterinary Medicine

Parasitology Department

**METHODOLOGICAL INSTRUCTIONS**

for performing a term paper «Case history»

for fifth-year students of the discipline «Veterinary parasitology»

for fourth-year students (Second education) of the discipline «Parasitology and  
invasive diseases of animals»

in specialty 211 – Veterinary Medicine

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Methodological instructions for performing a term paper «Case history» for fifth-year students of the discipline «Veterinary Parasitology» and for fourth-year students (Second education) of the discipline «Parasitology and invasive diseases of animals» in the specialty 211 – Veterinary Medicine / Yu.O. Prykhodko, O.V. Nikiforova, O.V. Mazanny, O.V. Fedorova. Kh., 2020. 20 p.

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## **GENERAL INFORMATION ABOUT CLINICAL WORK ON PARASITOLOGY**

One of the main requirements of today in the training of veterinarians is a high level of their clinical training.

Clinical training of a veterinarian consists of mastering the theoretical foundations of the relevant clinical discipline, mastering practical skills and abilities in the diagnosis, prevention and treatment of patients sick for parasitological diseases.

The final stage in clinical training in parasitology is the conduct, design and defense of a term paper "case history" performed on a group of infected animals or the result of treatment of one sick animal.

The work of collecting material, processing, draw up and defense aims to accustom the student to independent thinking and skillful practical application of theoretical knowledge in solving various practical situation, which in the future facilitates and reduces the novice specialist adaptation period in practical conditions.

In accordance with the working program of the discipline «Veterinary Parasitology», students of V courses and of the discipline «Parasitology and invasive diseases of animals», students of IV course (Second education) in specialty 211 – Veterinary Medicine perform practical work in the form of term paper or case history and complete their defense at the end of the 9<sup>th</sup> and 7<sup>th</sup> semesters. These types of clinical work, pursuing the above goal, have a number of features, which will be emphasized below. Both works are performed under the guidance of a teacher of the department, assigned to the period of study of the discipline for the group (subgroup) of students.

### **CASE HISTORY**

#### **1. General requirements for curation and registration of case history of animals with invasive diseases**

Depending on the capabilities and needs of the Department of Parasitology, students in 3rd and 4th year are required to perform practical work according to the following plan or to treat a sick animal with parasitological disease and submit the result in the form of a "Case History" for open defense in academic group or subgroup.

As there are no conditions for inpatient keeping and treatment of such animals at the department, students receive sick animals for curation, which are admitted to

the outpatient clinic with further observation and treatment at home if necessary. If a student has an infested animal on his parents' farm (at home), the curation can be performed on his own animal. Sick animals of enterprises or farms with which the department maintains contact can also be used for curation. In such cases, students receive advice from a supervisor – a teacher of the department. Examination of blood, urine, feces or other biosubstrates is performed by the student-interns themselves, who are assigned to no more than two per sick animal. The student-intern is obliged to attach to the case history a curatorial letter with the dynamics of the main indicators of the clinical status of the animal during the treatment period. It is also advisable to add photographs of the animal before and after treatment, other objective documentation relevant to the work.

During the clinical examination, the student-intern carefully studies the symptoms of the disease, identifies from them the general and specific features characteristic of the disease, comparing them with well-known data from textbooks and manuals. Student-intern get acquainted with the conditions of keeping, care and feeding of the animal, pay attention to the season, the age of the animal and opportunities for contact with other animals, register them.

Based on anamnestic data, the results of special studies and comparing the symptoms of the disease with laboratory and literature data, the student-intern substantiates the preliminary diagnosis, which is clarified and supplemented in the process of curation and observation of the animal. Diagnosis, choice of drugs, their doses and course of treatment the student-intern agrees with the teacher – the student's supervisor. Taking into account the general condition of the sick animal, identified morphological and functional changes, features of the course and severity of the disease, the possible end and duration of the treatment course, the student-intern determines the economic and biological feasibility of treatment of the animal. In resolving this issue the student-intern should keep in mind that the diagnosis can have three different purposes in veterinary practice: it allows you to determine the treatment and duration; it can be the basis for animal culling, if the treatment is not economically justified, and also allows you to decide on the planning of a complex of preventive general and special measures in a disadvantaged enterprise or farm.

Along with the substantiation of the diagnosis, differentiation of diseases with a similar manifestation and course, as well as the choice of a rational course of therapy, the correct definition of the prognosis is essential in veterinary practice.

Thus, for the curation of a sick animal requires:

- complete collection of anamnestic data;
- exclusion of acute contagious infectious diseases and isolation and transfer of this animal to the appropriate clinic;

- clinical and laboratory examination or research of the animal in order to identify the pathogen, its species and localization;
- substantiation of etiological and pathogenetic diagnosis;
- determination of the possible end of the disease, the duration of treatment, economic and biological feasibility of treatment, the use of the animal for meat, taking into account the requirements of veterinary examination;
- appointment and substantiation of the regime of maintenance, care, dietary feeding, the choice of effective treatment taking into account the data on the severity of the disease and the presence of concomitant pathological processes;
- implementation of medical procedures;
- making recommendations to the owner of the animal regarding its maintenance after treatment and prevention of reinvasion;
- keeping a case history and other documentation, photographing, weighing a sick animal before and after treatment;
- critical comprehension of the curation and preparation of the epicrisis, which is attached to the case history;
- hand over a term paper for verification after the end of curation to the teacher;
- defense of case history in an academic group or subgroup.

When the sick animal stays at the owner's home, the student-intern must receive and monitor the situation regarding feeding, doing motion, care for the animal and its general condition during the treatment.

In cases of death of the animal or its forced slaughter, the student participates in the autopsy, and the autopsy protocol is added to the case history.

## **2. The content and features of the case history**

The case history is a legal medical document that allows you to judge the probability of diagnosis, the peculiarities of the disease, its end, the relevance and effectiveness of treatment. The case history records both changes in the general condition of the animal and symptoms that indicate the peculiarities of the pathological process in the affected organs.

The case history is a record of all data on a sick animal, including data of clinical and laboratory researches stated in a certain form and with the corresponding analysis. This is a document on the activities of a doctor of veterinary medicine, using which you can establish everything that was noticed and done by the student-intern during the treatment of a sick animal. In addition, case history is valuable material for research and statistical work. Skillful keeping of the case history allows

keeping records of diseases, to study their causes and dynamics of development over a number of years, ways and means of their elimination.

At registration the case history should include:

- general information about the patient (registration and anamnesis);
- general information and data of clinical examination of the animal on the day of delivery to the clinic;
- description of the course of the disease, special and additional studies and applied treatment in accordance with the curatorial letter, the form of which is attached;
- epicrisis or analytical summing up of a case history;
- conclusions – the main conclusions and suggestions to the owner.

The title page of the case history is made according to the sample.

Registration of an animal is carried out according to the scheme (see the appendix). The species and nickname of the animal, its sex, age, color, weight, breed, address of the owner, date of admission of the animal in the clinic and more are recorded.

Anamnestic data are registered from the words of the owner and are presented only in the past tense. For the student-intern, information about the conditions of detention and the condition of the animal before its disease and how the disease manifested itself before the animal entered the clinic may be important. Thus, these data should reflect the condition and conditions of the animal before and after the disease.

When collecting anamnesis, special attention should be paid to feeding and caring for the animal.

After registration of anamnestic data, clinical (general and systemic) and special or laboratory examination is performed, with special attention paid to the affected systems, organs or tissues. These studies are conducted according to generally accepted methods. Special parasitological researches are carried out according to the parasitology department's scheme of inspection of sick animals.

On the basis of the conducted researches the student-intern forms and substantiates the initial diagnosis, referring to the anamnestic data and materials of clinical and special researches. Initial diagnosis can be refined and even changed in the course of treatment.

For in-depth substantiation of the diagnosis, this disease is differentiated from other diseases with a similar manifestation and course, primarily from invasive ones. The material for differential diagnosis is presented in the form of a comparison of similar and contrasting signs of these diseases with the obligatory exclusion of each of them.

In the section "Prognosis", based on the general condition of the animal at the time of examination, the results of a special study, and, in particular, the intensity of the invasion, complications, availability and quality of drugs, as well as taking into account the long-term prognosis after treatment, life and subsequent use of the animal after treatment.

A standard sample "Curatorial letter" is attached to the "Curatio" section. At the beginning of the unit the choice of drug is substantiated, it is characterized, the dose and duration of treatment are determined. The course of the disease, all appointments in the treatment process, recommendations for feeding, maintenance and care, prescribes medications should be recorded in the curatorial letter. All changes in the status of the animal and new appointments are recorded in the appropriate columns of the curatorial letter.

In the column, "Course of the disease" enter the most characteristic symptoms that reflect changes in the general condition of the sick animal during treatment.

In the column "Treatment», write prescriptions of drugs, both doses of specific antiparasitic drugs, and means of pathogenetic and symptomatic therapy. After 10 days, it also records the results of the final laboratory examination of a particular biosubstrate. If recovery has not occurred during this time, the animal is transferred to another student-intern for further treatment.

### **3. Analytical summing up of a case history or epicrisis**

In the epicrisis, based on the results of differential diagnostic research, materials of clinical examination of a sick animal in the process of curation, additional and final laboratory examinations substantiate the correctness of the diagnosis, describe the pathogenesis of the disease and features of its manifestation, analyze the applied treatment critically changes and additions are made to it in order to improve the condition of the animal.

Thus, the epicrisis is one of the main parts of the educational case history of the disease, in which the student-intern must demonstrate the acquired theoretical knowledge, medical thinking, practical skills and abilities to gather it all together, analyze and summarize the received clinical material.

Epicrisis is an analytical summing up of the disease, its manifestation, course, recommended and applied treatment and the end result – a scientific conclusion based on this case history.

When presenting the epicrisis, the student must show the ability to diagnose, substantiate the diagnosis, prescribe and monitor the effectiveness of the proposed course of treatment, which would be based on etiological and pathogenetic principles, and offer the owner of the animal quite effective prevention measures.

### Explanation a way of writing an epicrisis.

The presentation of the epicrisis should begin with the definition of the disease, its spread and the damage it causes.

Then should dwell on the main morphological and biological features of pathogens, highlighting those that are important in substantiating the etiological diagnosis.

When describing the features of the epizootology of the invasion should pay attention to the sources of the disease and the transmission of the pathogen, its reservoir, both in general and specifically, i.e. in relation to this case, as well as seasonal and age dynamics of animals for this invasion.

The clinical signs should be presented according to materials of the special literature and student-intern should include into the text of work the features of a concrete case. When writing this part of the epicrisis, the student-intern must understand what have been read and adapt to it the materials of the case history and, based on this, show how clinical signs of the disease change, laboratory tests in the natural course of the disease and in the case of drugs in combination with symptomatic therapy. At the same time, analyze the dynamics of changes in general condition, reactions to external and, in particular, painful stimuli (depression, excitation, position in space, etc.), changes in appetite, basic physiological parameters – temperature, pulse, respiration, heart rate, water intake, feed, paying attention to the motility of the stomach, intestines, productivity, defecation and urination. Against this background, it is necessary to describe the general and specific symptoms of this disease, to compare them with laboratory parameters. To add to this section of the epicrisis, if possible, illustrative material, such as photos of the animal before and after treatment.

The course of the disease and the pathogenesis are set out taking into account its typical and atypical development, reflecting the characteristics of a particular case, which was recorded in the case history.

Pathogenesis data, along with the etiological factors of the disease, is the basis on which the student-intern develops and implements a complex of treatment and prevention measures. The general condition of the animal, its reactivity, the stage of development of the disease and possible factors that complicate the course of the disease should takes into account.

Substantiation of the final diagnosis. In this part of the epicrisis, the student-intern confirms the correctness of the diagnosis or makes appropriate corrections to it on the basis of clinical examinations, additional laboratory tests, as well as methods of differential diagnosis. The latest will exclude diseases with a similar course by comparing epidemiological, clinical and laboratory parameters. Based on the materials of veterinary science, symptoms and course of the disease, the results

of the differentiation, the student-intern formulates a final diagnosis by logical statements.

The prognosis is adjusted taking into account the final diagnosis, clinical signs, course of the disease, emerging complications, laboratory data, as well as the results of the final special parasitological examination.

Substantiation of the treatment. This section of the epicrisis, based on the literature, provides an analysis of existing treatments and substantiate the treatment used by the student-intern, as well as indicates its effectiveness, taking into account the condition of the animal after its termination. The student-intern substantiates and confirms the correctness of the selected medicine and method of treatment during the curation, which were aimed primarily at removing the parasite or suppressing its vital functions, neutralization of enzymatic and toxic effects on the animal, normalization of trophism, overall metabolism. In addition, the appointment of a student-intern should improve the antitoxic and barrier functions of the liver, increase the resistance of the animal as a whole, stimulate the immune system, and improve the functions of other organs and systems. Taking into account just these requirements and it is necessary to choose means and methods of treatment of a concrete animal at a concrete disease, comparing and correcting them in the course of treatment according to the arising changes in an organism.

By critically analyzing the treatment, the student-intern makes a conclusion about the correctness of the treatment, its effectiveness, or points to inaccuracies, shortcomings in the choice of a specific etiotropic medicine, and mistakes in the treatment. Finally, the student-intern must present and scientifically substantiate the therapeutic agents that would lead to success.

The student-intern, taking into account the data obtained from textbooks and manuals, periodicals of recent years, using the services of a computer system «Internet», prescribes preventive measures.

Based on the achievements of veterinary science and practice, it is necessary first of all to formulate and set out a complex of general preventive measures, which would include proposals on zoohygiene, feeding, economic use of the animal in order to eliminate the identified shortcomings.

Next, it is necessary to set out measures for the special prevention of this disease, where comprehensive and qualified highlight the veterinary and sanitary issues. Preventive measures aimed directly against the pathogen are based on both biological and chemoprophylactic agents, which allow not only to prevent outbreaks of this disease, but also to prevent a number of other infectious diseases.

Thus, the student-intern, taking into account the economic situation and opportunities, develops proposals for implementation in the disadvantaged area. When student-interns are carried out the case history on small animals that are in

private use, develop recommendations for the owner primarily on the content, care and feeding, as well as on the further use of the animal, offer special prevention to prevent reinvasion.

Conclusion. In the last section of the case history, the student-intern summarizes the results of the curative. Taking into account the obtained data, the effectiveness of the treatment and the condition of the discharged animal are evaluated. The owner is provided with recommendations for further maintenance, care, feeding, corrective and adjunctive therapy, treatment costs are calculated. Based on this, a conclusion is made about the economic feasibility or inexpediency of treatment the animal with similar forms of manifestation and course of invasive disease. The substantiation of the remote prognosis and possibility of recurrence of the disease in the future should be given. Case-specific recommendations are summarized shortly.

At the end of the section, the student-intern puts the date and his signature!

On a separate page, the student give the list of the reference used in writing this case history.

### **Requirements for term paper**

The text of the work should be printed in English in the format of Microsoft Word 6.0 and higher.

Sheet format – A-4.

Font – Times New Roman.

Font size – 14 pt (Curatorial letter – 12 pt).

Line spacing – 1,5 (Curatorial letter – 1.0).

Width alignment.

Margins: left – 3 cm, right – 1.5 cm, top and bottom – 2 cm.

Paragraph indentation – 1.25 cm.

Mandatory page numbering: bottom, center.

**FORM OF A CASE HISTORY**

**KHARKIV STATE ZOOVETERINARY ACADEMY**

Faculty of Veterinary Medicine

Parasitology Department

**CASE HISTORY**

of horse Gordyi

Diagnosis: Parascariosis

Student-intern: from the 5<sup>th</sup> year, group \_\_ №

\_\_\_\_\_  
(Surname and name)

Supervisor: \_\_\_\_\_

(Teacher's Surname and name, affiliation)

Kharkiv-2020

## Case history

### 1. REGISTRATION

Animal species \_\_\_\_\_, nickname (inventory number) \_\_\_\_\_,  
breed \_\_\_\_\_, sex \_\_\_\_\_, age \_\_\_\_\_,  
weight \_\_\_\_\_, color or coat colour \_\_\_\_\_,  
identification marks \_\_\_\_\_.  
Additional features \_\_\_\_\_  
The owner of the animal \_\_\_\_\_  
Address \_\_\_\_\_, telephone \_\_\_\_\_  
The animal admitted to the clinic "\_\_\_" \_\_\_\_\_ 2020.  
The animal left the clinic "\_\_\_" \_\_\_\_\_ 2020.

### 2. ANAMNESES VITAE ET MORBI

Describe:

- the origin of the animal;
- conditions of keeping (confinement, close confinement, motion, characteristics of the room and ground litter), care, feeding (diet) and watering;
- purpose of the animal on the farm and its use;
- has the animal been ill before, if so, what diseases, when and for how long?
- when did the animal get sick and under what circumstances?
- what are the signs of the disease (change in general condition, fatness, etc.)?
- what medical care was provided to the animal, by whom and what were its results?
- epizootological condition of the farm (Did other animals suffer from a similar disease? Pay attention to their age, season, and time of detection of the disease.)
- was there a forced slaughter or autopsy of the dead animal?

### 3. STATUS PRAESENS on XX.XX.XX (year/month/date).

T = \_\_\_ °C; P = \_\_\_\_\_ rate/minute; R = \_\_\_\_\_ breath movements/min

#### Habitus

Build (strong, medium, weak).

Fatness (above-average, average, below-average, obesity, exhaustion).

Type of constitution (rough, tender, loose, dense).

Temperament (strong balanced, mobile; strong balanced, calm; strong unbalanced, weak; inert).

Posture of the body (natural, voluntary-physiological, forced-lying, standing hunched over, "Dog sitting" etc.).

Hair and skin

Cleanliness, density of hair, length, fixation, fit, shine, section, graying of hair, alopecia.

Congenital defects of skin: congenital ichthyosis, congenital hypotrichosis, epitheliogenesis imperfecta, vegetative dermatosis: congenital dermal asthenia, albinism:

Abnormalities on skin surface

Physiological properties of the skin

Color (pale pink, pale, bluish, jaundiced, redness).

Humidity (increased, decreased, dry, peeling).

Elasticity of skin (reduced, complete loss of elasticity, elastic).

Pain (general, local).

Smell (specific, ammonia, acetone, gangrenous, medicinal substances).

Temperature (high, moderately warm, low).

Integrity of the skin (wounds, abrasions, cracks, scars), the presence of edema, emphysema, primary and secondary elements of the rash.

Mucous membranes (indicate which are examined – conjunctiva, nose, mouth, vagina) – color, secretion, swelling, rash, damage.

Lymph nodes (indicate which ones have been examined).

Thermometry the temperature in the rectum (5–6 minutes).

### **Examination of circulatory system**

The presence of general signs of circulatory disorders (edema, cyanosis of the mucous membranes, shortness of breath and others).

#### Heartbeat

Localization, strength (moderate, weakened, strengthened, knocking), rhythm.

Percussion boundaries of the heart.

Top, back. The presence and magnitude of absolute dullness of the heart.

#### Heart tones

Frequency, clarity, nature of sound, amplification, attenuation and other changes. The presence of heart murmurs (endocardial, pericardial, pleurocardial, cardiopulmonary).

#### Arterial pulse

Character (rate, rhythm, amplitude, tone and pulse pressure).

Rate: number of vibrations/pulsations per minute, slow, increased pulse.

Rhythm: be regular or irregular.

Types of the rhythm:

- a. *The time between two peaks of the pulse waves.*
- b. *Amplitude of the waves, the irregular rhythm is observed during myocardial disease.*

Amplitude: the beat may be quick, strong, abrupt, long, slow, soft, very fast, and thin and thread.

Quality: full pulse, pulse wave, hard, strong, trembling, thready, wiry pulse.

Venous pulse (positive, negative, undulation)

### **Examination of respiratory system**

Types of respiration (costo-abdominal respiration, abdominal respiration, costal or thoracic respiration).

Rhythm (Cheyne-stokes respiration, Biot's respiration, Syncopic respiration).

Dyspnea (inspiratory, expiratory, indeterminate, hiccough).

Nasal discharge

- a) colour (colourless/clear, grey, greyish white, greyish yellow, green, rust coloured, bloody nasal discharge).
- b) quantity (slight, copious).
- c) consistency (serous, mucous, flocculent, clumpy, adhering nasal discharge, creamy).
- d) odour.

Additional nasal cavities (maxillary, frontal, air sacs).

Exhaled air (temperature, odor, strength).

Pharynx (presence of foreign bodies, enlargement of pharyngeal lymph nodes, tumors and cellulitis, paralysis, swelling, the inflammation).

Larynx (the laryngeal sounds, stenosis, oedema, enlargement of thyroid, and in anthrax, obstruction, paralysis).

Trachea pain, swelling and deformity; the tracheal sounds, the stenosis, inflammation.

Lungs localization, the borders of the lungs.

Examination of lungs by percussion, auscultation

Basic respiratory Sounds. Four groups of abnormal respiratory sounds: rales, dry rales, moist rales, crepitant rales, emphysematous sounds, frictional sounds.

Cough, its nature (dry, wet, frequency, soreness).

Temperature (local).

### **Examination of digestive system**

Appetite (inappetence, anophagia, anorexia, hyperorexia, polydipsia, depraved appetite).

On the basis of altered eating habits: coprophagia, osteophagia, infantophagia, allotriophagia.

Examine animal for presence (prehension, mastication, deglutition, eructation, vomiting, rumination)

Thirst – moderate, increased, decreased. Intake of food and water. The oral cavity and its organs. Pharynx and esophagus (pain).

Oral cavity examination.

Esophagus examination.

Stomach of ruminants (rumen – filling, sensitivity, frequency, rhythm and strength of its contractions in 2 minutes; reticulum – tests for traumatic reticulitis, reticulo-pericarditis or reticulo-peritonitis; omasum pain, percussion sound, the nature of peristaltic noises; abomasum – results of palpation, percussion, auscultation).

The stomach is single-chambered examination.

The results of general and special research methods.

Intestine (topography of thin and thick sections, the nature of peristalsis, pain).

Act of defecation (posture, frequency, quantity, physical properties of feces.

Results of rectal examination (if necessary).

Lymph nodes (smooth, firm and lobulation, mobile in relation to neighbouring tissue).

### **Examination of genitourinary System**

The act of urination – posture, frequency, pain, amount of urine and its general properties.

Kidneys - the results of ballot palpation.

Condition of the ureters and bladder – with internal or external palpation.

Catheterization, cystoscopy (if necessary).

Condition of external genitalia (in females – labia, vestibule, vagina; in males – foreskin, penis, scrotum) (color of the mucous membrane, the presence of edema, discharge, rashes, scars, pain, etc.).

### **Examination of musculoskeletal System**

In this system, the clinical examination of the affections of muscles, tendons, bones and joints.

Muscle tone (moderate, increased, decreased).

### **Examination of Nervous System**

The position of the animal in space and behavior (physiological, depressed, excited, aggressive).

Reaction to the approach of a person (calm, aggressive).  
 Skull and spine (bone configuration, softening, deformation).  
 Nervous system disorders (muscular atrophy, spasm, tetany, tremors, nystagmus, ataxia, forced movement).  
 Sensory disturbances (alteration in the touch, sight, smell, taste and hearing).  
 Sensitivity (absence of sensitivity, hyperesthesia/hypersensitivity, sensory aberrations).  
 Autonomic nervous system disturbances reflexes.  
 The reflex activity is either increased/decreased or absent.  
 Corneal/reflexes, pupillary reflexes, cutaneous reflexes, tendon reflexes.  
 The cutaneous reflexes are observed by (pudal reflexes, anal reflexes, cutaneous muscle reflex).  
 Movement coordination (movements are coordinated, ataxia is statistical or dynamic).  
 Type of autonomic nervous activity (normotonic, vagotonic, sympathotonic).  
 Examination of the blood system (with the exclusion or diagnosis of blood parasitic diseases).  
 Clinical examination of the animal is carried out by the student-intern already known and generally accepted in clinical practice methods. Pulse rate and respiration are calculated mostly in half a minute, but several times (until a stable result), and then the result is doubled, so the results should be even.

#### **4. INVESTIGATIONES SPECIALES**

(Special research)

Choose the method of examination of the animal from the following and describe in detail in accordance with the previous diagnosis.

1. The skin and its integuments are examined:
  - for the presence of ectoparasites – lice, biting louse, biting poultry louse, fleas, bloodsuckers, parasitic mites, eggs and larvae of botflies;
  - get scrapes from the affected areas of the skin to detect endo- and ectoparasitic acariformes mites – sarcoptidae, psoroptidae and knemidocoptidae;
  - study of the content of pustules and deep scrapings of the skin for the presence of demodex mites;
  - the use of intradermal allergic tests to establish early forms of invasion, in particular, for the diagnosis of a group of larval cestode infestations, opisthorchosis and some others;
  - obtaining skin sections for dermolarvoscopic examinations for onchocerciasis;

- study of the contents of the conjunctival cavities and leaks from the eyes for the presence of different stages of *Thelazias*;

- examination of the eye for the presence of *Setaria* larvae;

- obtaining and research of the changed lymph nodes at cattle for the purpose of establishment of a *Theileria* invasion;

2. Helminthoscopic examinations:

- examination of the respiratory organs of mammals for the presence of pathogens dictyocaulosis, protostrongylidosis, metastrongylosis, crenosomosis;

- examination of the trachea of birds for syngamosis;

- examination of feces by sedimentation methods for trematodes;

- examination of feces by flotation and combined sedimentation-flotation methods for coccidioidosis and nematodes;

- macro- and microscopic examination of feces for the presence of ptoglottides, fragments of cestodes, as well as adult nematodes and trematodes, acanthocephales and larvae of gastrointestinal botflies;

3. In the study of the genitourinary system spend:

- examination of birds for prostogonimosis;

- examination of cattle for trichomonosis – obtaining washes and scrapes from the vagina and urethra of bulls for microscopic examination;

4. In order to monitor the state of the nervous system in animals pay attention to the behavior and nature of animal movements, which change significantly in coenurosis, estrosis, moniesiosis and some other, in particular, infectious diseases of animals:

- the presence of paresis, sometimes paralysis, which is characteristic of mating trypanosomosis in horses, bovine hypodermosis, in birds with Eimeriosis and some other diseases.

5. Blood samples are examined:

- by the method of a thin smear stained by Romanovsky – for piroplasmidoses;

- by the method of a crushed drop – for trypanosomosis;

- examine capillary blood in the morning on the skin – for parafilariosis and gabronemosis of horses;

- examine the "evening" blood for heartworm disease in carnivores, setariosis of farm animals;

- for the purpose of early diagnosis of a number of invasive diseases serological tests are used – ELISA - test, IFA.

6. Examination of the muscular system by palpation, by functional tests or by microscopy of biopsied muscles for trichinosis or sarcocystosis.

To the student-intern's attention: when establishing the species or genus of the pathogen, the intensity of the infestation should be determined and the place of

pathogens of animals in the world animals system (classification) should be indicated!

## **5. DIAGNOSIS**

Based on the above data – anamnestic (specify which), general clinical (specify which) and special parasitological (specify which) – the initial diagnosis is substantiated.

In the appendices it is necessary to present (in the form of drawings or photos) morphological features of the pathogen or pathogens that caused the disease of the animal. In cases of detection of the association of parasites – the diagnosis should be named respectively – «Parascariosis et strongylidosis invasion».

## **6. DIFFERENTIAL DIAGNOSIS**

On the basis of epizootological, clinical, etiological, in some cases and necropsy data, differentiation of diseases of other nature, which have a similar course. First, diseases of invasive nature are excluded, which will help the methods of coproscopic examination.

During differentiation to specify features of morphology of activators or clinical display of diseases from which differentiation is carried out.

In the appendices or in the text it is desirable to present (in the form of figures) morphological features of pathogens of invasive diseases from which differentiation of the parasite, which caused a disease, is carried out.

## **7. PROGNOSIS**

When substantiating the prognosis, the clinical status of the animal, the type of pathogen, the intensity of the infestation, the course of the disease, the nature of complications, as well as the availability of highly effective treatments are taken into account.

## **8. CURATIO**

(with curatorial letter)

From the arsenal of available drugs, the student-intern chooses the best. It should be given clinical and pharmacological characteristics of medicines, calculated dose and course of treatment. A curatorial letter, i.e. an abbreviated "case history", is attached to the unit.

**Clinic of the Department of Parasitology of KhDZVA  
CURATORIAL LETTER**

Animal species \_\_\_\_\_, nickname (inventory number) \_\_\_\_\_,  
breed \_\_\_\_\_, sex \_\_\_\_\_, age \_\_\_\_\_,  
weight \_\_\_\_\_, color or coat colour \_\_\_\_\_,  
identification marks \_\_\_\_\_.

Additional features \_\_\_\_\_.

The owner of the animal \_\_\_\_\_.

Address \_\_\_\_\_, telephone \_\_\_\_\_.

The animal admitted to the clinic "\_\_\_" \_\_\_\_\_ 2020.

The animal left the clinic "\_\_\_" \_\_\_\_\_ 2020.

Date	T, °C	Pulse, rate/minute	Respiratory, movement/min	Clinical manifestation of the disease, features of the course and changes in the status of the animal	Treatment (recipes), recommendations for feeding, maintenance and care. Additional research. Conclusion.
1	2	3	4	5	6

For a 10-day period of treatment of the animal – 3-10 records (results of observation on the day of receiving the animal, giving the drug the next day, etc. on the 9th day of the condition and conclusion after giving the drug).

« \_\_\_ » \_\_\_\_\_ 2020

Student-intern: \_\_\_\_\_ / \_\_\_\_\_ /  
signature Name and surname of student

Note: duration of curation – 10 days (with some exceptions, more). If the treatment is not completed, the animal can be transferred to other student-intern.

**9. EPICRISIS**

(substantiation about the disease)

The epicrisis should have the following units:

- definition of the disease, its spread and economic losses caused by it;
- short morphological and biological characteristics of the pathogen;
- features of epizootology: age and seasonal dynamics, sources and reservoirs of invasion, ways of infection and spread with the analysis of a specific case;

- pathogenesis and picture of the clinical signs of the disease during the invasion with the analysis of a specific case;
- substantiation of the final diagnosis;
- medicines: analysis of the arsenal of medicines and substantiation for the use of the drug in this case, indicating the effectiveness of the analysis of the treated animal;
- prevention: the measures to be taken by the owner of the animal in a private or collective farm should be set out in order to prevent the spread of the infestation of the animal next time. Taking into account the materials of special literature, ways of disease prevention are recommended.

## 10. CONCLUSION

Analyzing the results of the curation, a conclusion about the done work is given.

The following questions should have been described in this section:

- give the description the condition of the animal after treatment, evaluates the applied treatment and, in particular, the etiotropic drug, and offers the owner of the animal recommendations for further recovery of the animal, its feeding, watering, keeping, care and use;
- give the substantiation of the remote prognosis and give addition of possibility of manifestation of a disease in the future;
- proposals for preventive measures in this case are provided

XX.XX.XX

Data

\_\_\_\_\_  
Signature of the student-intern

## 11. LIST OF REFERENCES

The student-intern lists the main native and foreign literature for the last 10 years, which were cited and related to the text of the work. It is allowed to compile a list of used literature either in alphabetical order or in the order of references in the text. Monographs, books – are cited regardless of the year of publication.

## 12. APPENDIX

Illustrative and documentary materials (photographs, drawings, schemes, instructions for use of medicine etc.) are numbered in the appendix to the case history, signed and have links in the text of the work!

**Table 1:** Normal body temperature, pulse rate, respiration rate of animals

Sr. No.	Animal species	Temperature		Pulse rate/min	Respiration rate/min
		°F	°C		
1.	Cattle	101.8-102.4	37,5-39,5	45-50	10-30
2.	Horse	100.4-100.8	37,5-38,5	36-42	8-16
3.	Sheep	101.3-105.8	38,5-40,0	70-80	12-20
4.	Goat	101.3-105.8	38,5-40,0	70-80	12-20
5.	Pig	100.9-104.9	38,0-40,0	70-80	10-20
6.	Dog	100.9-101.7	37,5-39,0	90-100	10-30
7.	Camel	99.5	37,5	28-32	5-12
8.	Cat	100.0-102.5	38,0-39,5	100-120	20-30
9.	Fowl	106.9	40,0-42,0	120-160	40-50

## Note

### Collection and preservation of zooparasites obtained during the term paper or case history

1. Collected after deworming helminths for long-term storage for use in the educational process or the manufacture of museum preparations are preserved in special environments.

Trematodes and cestodes are placed for a day in water, where they die. Then they are gently pressed for 30-40 minutes in a bacteriological cup with 70 ° alcohol between two slides and transferred to a jar with 70 ° ethyl alcohol.

The nematode is washed in water or saline and transferred to a vessel with Barbagallo solution (3% formaldehyde solution in saline). Cestode larvocysts are also preserved in Barbagallo solution. All helminthological material is labeled. In each vessel with the received parasites put a temporary label indicating the species of animal, the name of the organ or parasite, name and surname of the student who collected them.

After conservation of helminths, the temporary label is replaced by a permanent one, which indicates the species of animal, its number, or the autopsy number, the organ in which the parasite was found, count and record their numbers. On the other side of the label indicate the area, date of opening or deworming, full name of student. If the type of helminth is established, its name is written. The label is cut out of thick paper, and the signatures are made in ink or a soft simple pencil. Preserved and labeled material is stored in a tightly closed container to prevent it from evaporating, drying, and damage (destruction). Organs with parasites are fixed in 10% formaldehyde solution.

2. Collection of parasitic arthropods (ixodides, lice, biting poultry louse, sucking louse, and fleas) is carried out taking into account their localization on the body of the host. When collecting biting louse on the body of a bird or hair follicles in mammals, the animal's hair or feathers are moistened with a weak solution of butox or neostomazan, and then the ectoparasites are collected with tweezers, a hairbrush or fingertips, or combed with a thick comb and combed. Dead arthropods are sorted, preserved and prepared training preparation.

Arthropods are stored on a cotton mattress or in a preservative solution. For their storage use 70 ° alcohol, 5% aqueous solution of formaldehyde or Barbagallo solution. The volume of fluid should be 15 times the volume of collected ectoparasites. When the fixing solution becomes cloudy, it is changed. Labeled according to the same scheme as helminths.