В. П. Полозова

ENGLISH FOR STUDENTS OF ANIMAL SCIENCE
Учебное пособие по английскому языку

Нижний Новгород
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ENGLISH FOR STUDENTS OF ANIMAL SCIENCE

Учебное пособие

Допущено Учебно-методическим объединением высших учебных заведений Российской Федерации по образованию в области зоотехнии и ветеринарии в качестве учебного пособия для студентов высших учебных заведений, обучающихся по направлению подготовки (специальности) Ветеринария (квалификация (степень) «специалист») и направлению подготовки (специальности) Зоотехния (квалификация (степень) «бакалавр»).

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Рецензенты:

А. Р. Белоусова — кандидат филологических наук, зав. кафедрой иностранных языков Московской государственной академии ветеринарной медицины и биотехнологии им. К. И. Скрябина, профессор;

С. Н. Копылов — кандидат ветеринарных наук, декан факультета ветеринарной медицины Вятской государственной сельскохозяйственной академии, профессор;

А. В. Филатов — доктор ветеринарных наук, декан биологического факультета Вятской государственной сельскохозяйственной академии, профессор;

Е. А. Мишутина — кандидат филологических наук, зав. кафедрой иностранных языков Вятской государственной сельскохозяйственной академии, доцент;

А. В. Прожога — кандидат филологических наук, доцент кафедры иностранных языков для естественнонаучных и инженерных специальностей Мордовского государственного университета им. Н. П. Огарева.

II 523 Полозова В. П.


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Данное учебное пособие содержит текстовые материалы по зоотехнии и ветеринарии, лексико-грамматические упражнения и задания, направленные на развитие навыков перевода и устной речи. Предлагаемые тексты и задания позволяют не только развивать и совершенствовать навыки владения иностранным языком, но и способствуют формированию профессиональной направленности в обучении студентов, интереса к будущей профессии. Пособие рекомендуется для студентов сельскохозяйственных вузов, обучающихся по направлению подготовки бакалавриата «Зоотехния» и по направлению подготовки специальности «Ветеринария».

Во втором издании существенно обновлен текстовый материал в разделе “Some more texts to read, translate and discuss”, значительно расширена система лексико-грамматических тестов.

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ПРЕДИСЛОВИЕ КО ВТОРОМУ ИЗДАНИЮ

Настоящее учебное пособие предназначено для студентов сельскохозяйственных вузов, обучающихся по направлению подготовки бакалавриата — Зоотехния и по направлению подготовки специальности — Ветеринария.

Целью данного пособия является подготовка студентов к использованию английского языка в их будущей профессиональной деятельности, формирование у них разнообразных практических умений и навыков, таких как чтение и говорение на английском языке в сфере профессионально-ориентированного общения. Отобранный текстовой материал по своему содержанию, объему и характеру доступен для студентов и интересен в информационном плане, что благоприятствует созданию положительной мотивации на занятиях, дает стимул к самостоятельной работе над языком, а также является обязательным условием формирования профессионально-ценностного отношения студентов сельскохозяйственного вуза к изучению иностранного языка. Тексты аутентичны, в них представлена терминологическая лексика, необходимая для формирования навыка чтения специальной литературы.

Содержание пособия способствует формированию иноязычной (общекультурной) компетенции — «способность к коммуникации в устной и письменной формах на русском и иностранном языках для решения задач межличностного и межкультурного взаимодействия», в результате освоения которой студент должен

знать:
• иностранный язык в объеме, необходимом для возможности получения информации профессионального содержания из зарубежных источников;
• основы реферирования и аннотирования специальных текстов в устной и письменной формах;

уметь:
• самостоятельно читать иноязычную научную литературу с целью изучения научно-технической информации и получения зарубежного опыта в сельском хозяйстве;
• получать и сообщать информацию на иностранном языке в устной и письменной форме, используя различные источники информации, в том числе и глобальную компьютерную сеть, выступать с докладами и сообщениями на научных конференциях;

владеть:
• иностранным языком на уровне чтения и перевода специальной литературы;
• иностранным языком как средством общения.

Пособие состоит из трех частей: первая часть включает тексты профессиональной направленности для чтения и перевода с последующими заданиями преимущественно лексического характера. Эти задания можно расширить, предложив студентам выполнить ряд традиционных упражнений
по работе с текстом (аннотирование, выделение ключевых предложений, составление вопросов для дискуссии на занятиях и т. п.). Вторая часть, раздел “Some more texts to read, translate and discuss” включает дополнительные тексты о проблемах животного мира, взаимоотношении животных с человеком и т. д., опубликованные в различных периодических изданиях и интернет-ресурсах последнего десятилетия. При отборе текстового материала в качестве основного критерия служила информативная ценность текстов, их соответствие профессиональным интересам студентов, а также их направленность на формирование коммуникативно-компетентной личности будущего специалиста. После каждого текста следуют задания, способствующие развитию устной речи.

Система грамматического материала и упражнений вынесена в отдельную, третью часть пособия (“Grammar Revision”) и содержит основной грамматический материал, изучаемый в неязыковых вузах. Весь материал построен на основе специальной лексики и может прорабатываться во время занятий или быть предложен в качестве домашнего задания. В конце раздела предлагаются лексико-грамматические тесты разного уровня.

Приложение 1 предлагает информацию о наиболее часто встречающихся породах сельскохозяйственных животных, а Приложение 2 содержит наиболее часто употребляемые сокращения на английском языке.

Для снятия лексических трудностей при работе с текстами в конце пособия приводится англо-русский словарь профессиональных терминов.

По использованию пособия не предлагаются строгие методические рекомендации. Оно может быть применено в разнообразных условиях учебного процесса, и преподаватель сам определит конкретные методические приемы в зависимости от уровня подготовки студентов.

Автор выражает глубокую признательность заведующей кафедрой иностранных языков ФГОУ ВПО МГАВМиБ, кандидату филологических наук, профессору А. Р. Белоусовой за ценные советы и замечания, сделанные в ходе подготовки рукописи.
Livestock refer to domesticated animals, that may be kept or raised in pens, houses, pastures, or on farms as part of an agricultural or farming operation, whether for commerce or private use. The process of breeding, raising and caring for livestock is known as animal husbandry and is an important component of modern agriculture. The raising of livestock can be traced to the beginnings of human civilisation, when instead of hunting wild animals, humans began to capture animals for breeding.

Throughout history, livestock have been considered to be a form of wealth. Livestock are mentioned in many parts of the Bible and were used as forms of trade and given as gifts. In many cultures, livestock have historically been offered as animal sacrifices to atone for sin and appease the gods.

Many forms of livestock are herbivorous mammals. Various types of livestock are reared depending on the local conditions: climate, consumer demand, land type, native animals, and tradition all influence the predominant type of livestock in any given area. Given that there are over a hundred large land-based mammals it may be surprising that so few types are domesticated in some countries. The reason for this relative paucity is that a lot of mammals do not meet the basic prerequisites necessary for domestication, such as having a readily available food source that can be controlled or supplied by humans, a rapid rate of reproduction, a moderate temperament, and a social structure that meshes well with human intervention. However, some farmers overcome all of those difficulties if the animal produces something that is demanded by consumers.

In developed countries the question of the welfare of livestock animals has resulted in animal welfare laws which specify the minimum conditions of care, housing, and transportation. The animal rights lobby argues that these are inadequate and seeks tighter controls, and in extreme cases seeks the banning of the ownership of animals and the making of the consumption of meat, dairy and other animal products illegal. Some farmers have developed management techniques that they believe are more enlightened and progressive and that they feel address most of the concerns of lobbyists. Historically, livestock have provided the following benefits to humanity:

**Meat**

In many agricultural societies, livestock replaced wild game as the primary source of animal protein. Livestock frequently eat forage and other food sources that humans are unable (or prefer not) to eat and convert them to types of food that humans can eat.

**Dairy Products**

Mammalian livestock can be used as a source of milk, which can in turn easily be processed into other dairy products such as yogurt, cheese, butter, ice cream, kefir, and kumiss. In advanced dairying countries the number of products made from milk range in the 20 to 30 types. Using livestock for this purpose can often yield several times the food energy of slaughtering the animal outright.
Honey and Wax

Bees collect pollen and honey from plants and process them into products that are useful to human survival. Honey is a food and a medicinal product (for external application and internal use), beeswax is still used for expensive candles.

Raw Materials

A variety of useful materials are produced by livestock. Some animals, such as sheep, grow thick coats that can be shorn and used in textiles. Animals, such as cows, deer and sheep have a tough skin which can be made into leather. The bones, hoofs and horns of livestock have also been employed in a variety of industrial, cultural and decorative uses. Most animal offal and non-edible parts are transformed into products such as stock-feed and fertilizer. Larvae make silk that is woven into fabric.

Fertiliser

Livestock leave behind manure, which, after being spread on a field, can increase crop yields many times. This is an important reason why historically, plant and animal domestication have been intimately linked. Parts of animals that have been slaughtered, or animals that die on farms, are rendered into a variety of products, the main ones being blood and bone.

Labour

Livestock often serve as an important source of mechanical energy. Before the advent of steam power, livestock were often the only source of non-human labour available. Livestock can be used to pull ploughs and other agricultural equipment (again increasing farm yields), transport goods across large distances and to serve important military functions. Draft animals are often bred for desirable qualities such as endurance, strength and, in military usage, aggression.

Land Management

The grazing of livestock is sometimes used as a way to control weeds and undergrowth on an area of land. For example goats and sheep are used to eat dry scrub in areas prone to wild fires in order to remove combustible material and reduce fire risk.

Types of Livestock

There is no universally accepted definition of livestock. In many jurisdictions, the legal definition is any animal that has value to a farmer or other person. Such animals may include goats, sheep, beef or dairy cattle, horses, dogs, hogs or pigs, donkeys or mules, bees, poultry, rabbits or 'exotic' animals (those raised outside their indigenous environs) such as camels, llamas, emus, ostriches, or any animal, including reptiles, kept in an inventory that may be used for food, fiber or pleasure. The U.S. state of Nevada is an example of a jurisdiction where the legal definition of livestock is limited to the traditional categories of cattle, horses, sheep and pigs and "exotic livestock" are limited to deer and elk. In a broad sense, the term may also include cats, members of the weasel family or even butterflies.
Farming Practices

At the most basic level some kinds of animals are kept in enclosures of some sort, are fed by some means (given access to natural or human-provided sources of food), are usually bred (preferred breeding time, methods, and suchlike all depend on local conditions and tradition) and are either slaughtered for meat and animal by-products, or are milked or shorn for animal fibre.

Livestock may be kept in confinement in very small areas (cages or pens), as with poultry, rabbits or veal cattle, in sheds or barns, in fenced pastures or on large open ranges where they are only occasionally collected in "round-ups" or "musters". Herding dogs such as sheep dogs and cattle dogs may be used for mustering as are cowboys, musterers and jackaroos on horseback or in helicopters. Since the advent of barbed wire (in the 1870s) and electric fencing technology, fencing pastures has become much more feasible and pasture management has simplified. In some cases very large numbers of animals may be kept in indoor or outdoor feeding operations (on feedlots), where the animals' feed is processed, stored, then fed to the animals. Because of their size, the quantity of waste involved, fly and odour problems, potential for groundwater contamination, animal welfare and other factors these feedlots are highly regulated and are controversial in some areas.

Livestock may be branded, marked, or tagged to denote ownership or for inventory, breeding, health management, product identification and tracing, or other purposes.

Modern farming techniques mainly focus on the automation of the various tasks involved and human intervention to increase yield and improve animal health. Successive improvements of traditional techniques have mostly focused on these same goals. Economics, quality and consumer safety all play a role in how animals are raised. Drug use and feed supplements (or even feed type) may be regulated, or prohibited, to ensure that yield is not increased at the expense of consumer health, safety or animal welfare. Practices vary around the world, for example growth hormone use is permitted in the United States but not in the European Union or in countries selling meat in the EU such as Australia and New Zealand.

Disease

Livestock constitute a major source of epidemic diseases in humans; these diseases have had a significant impact on history. When an agricultural society, that raises livestock, comes in contact with a non-agricultural society their diseases often spread to the latter (who lack any resistance), which can have devastating consequences. Other diseases can be transmitted from animals. Mad cow disease is transmitted between cattle which are fed food containing cattle brains and spines. It is postulated that the disease vector causing mad cow disease can also be transmitted to humans who eat infected cattle, causing the fatal disease known as variant Creutzfeldt-Jakob disease (vCJD). Though this connection has not been conclusively proven, over 95% of identified cases of vCJD are in Britain, which suffered a mad cow disease epidemic in the mid to late 1980s. Mad cow disease has led to a ban on using cattle by-products in cattle feed.

Other diseases that may be transmitted from livestock to humans include bird flu and some may originate from the bacteria E. coli O157:H7. Also, anthrax was called the
woolsorter's disease because the skin form of the disease could be contracted from handling raw wool. Anthrax may be contracted from cattle, sheep, goats, camels and antelopes as well as directly from infected soil.

The use of antibiotics in animals that end up in the human food chain is controversial. The issue of antibiotic resistance has limited the practices of preventative dosing such as antibiotic-laced feed.

Livestock are also subject to other diseases. Veterinary certificates are often required before transporting, selling or showing animals. Disease-free areas are often rigorously enforced. Foot and mouth disease (FMD) led to a massive government sheep and cattle kill in the north of England in 2001. Six million animals were killed to stop an outbreak with 2000 confirmed cases. Bison which wander out of Yellowstone National Park are routinely shot to prevent the possible spread of brucellosis to Montana cattle.

Livestock Transportation and Marketing

Since many livestock are herd animals, they were historically driven to market "on the hoof" to a town or other central location. During the period after the American Civil War, the abundance of Longhorn cattle in Texas and the demand for beef in Northern markets led to the popularity of the Old West cattle drive. This method is still used in some parts of the world. Truck transport is now common in developed countries. Local and regional livestock auctions and commodity markets facilitate trade in livestock. In other areas livestock may be bought and sold in a bazaar, such as may be found in many parts of Central Asia, or a flea market type setting such as the First Monday Trade Days in Canton, Texas.

Animal Welfare and Rights

The intensive rearing of livestock has led to practices that some people consider repugnant and unethical. This has resulted in laws that specify minimum welfare levels and in political campaigns by those who wish to see them extended. Animal welfare groups campaign for tighter laws and more enforcement. Animal rights groups may go even further and seek the end to all exploitation of livestock.

There are some animal husbandry practices that have led to legislation in some countries and that may be the subject of current campaigns.

- Confinement of livestock in small and unnatural spaces.
  For economic reasons animals may be kept in the minimum size of cage or pen with no space to turn or exercise (mostly applied to chickens and pigs).
- Restricted and unnatural diets.
  Feed companies produce pellet-feed with little visibility of its contents or origin or both. This leads to herbivores being fed the processed protein of other animals including their own species and leads directly to BSE (Bovine Spongiform Encephalopathy).
- Unnatural living environments.
  Even when allowed to move, animals may be denied environment essential to their health. For example ducks may be kept in free-range barns but have no access to water in which to swim.
• Gratuitous use of pharmaceuticals and hormones.
The stressful conditions in which some livestock are kept, in turn, lead to a deterioration of their health and the necessary large-scale use of antibiotics to prevent disease. Antibiotics and hormones are also fed to livestock simply to produce rapid weight gain.
• Overwork and exhaustion of animals.
Where livestock are used as a source of power they may be pushed beyond their limits to the point of exhaustion. The public visibility of this abuse meant it was one of the first areas to receive legislation in the nineteenth century in European countries but it still goes on in parts of Asia.
• Unwarranted modification to the bodies of living animals.
Broiler hens may be de-beaked, pigs have teeth pulled, cattle may be de-horned and branded, dairy cows have tails cropped, merino sheep mulesed, many types of male animals castrated.
• Long distance transportation of livestock.
The advent of the railway, ship and road transport has meant that to find the best price the farmer may send livestock long distances to market and slaughter. Overcrowded conditions, heat from tropical-area shipping and lack of food, water and rest breaks have been subject to legislation and protest.
• Slaughter of livestock.
Slaughter was an early target for legislation. Campaigns continue to target Halal and Kosher religious ritual slaughter.

Environmental Impact
Livestock can have an enormous impact on their local environment. Since livestock are often kept in huge numbers, or unnaturally concentrated numbers, their most basic needs can place huge burdens on ecosystems. The most obvious problem is with their waste matter. If improperly handled it can seep into groundwater with devastating results. Browsing species, such as goats, sheep and deer can completely defoliate certain areas, destroying rare plants and the animals that depend on them and sometimes leading to erosion.

Most environmental impacts can be eliminated or lessened by regulating the numbers of animals in a given area and by other animal husbandry techniques.

I. Give the Russian equivalents for:
livestock; domesticated animals; pens; pasture; private use; breeding; caring for; animal husbandry; wealth; herbivorous mammals; animal welfare laws; cereal crops; wool; forage; dairy products; honey; raw materials; fertilizer; land management; disease; beef cattle; to convert feeds into useful food; to breed both swine and poultry; a ruminant animal

II. Translate into English:
1. Процесс разведения, выращивания и ухода за скотом известен как животноводство и является важным компонентом современного сельского хозяйства. 2. Многие виды скота — травоядные млекопитающие. 3. Животные часто едят пищу, которая является несъедобной для людей. 4. Молочный скот
There was a farmer who had a herd of pigs. One day someone went to the farm and asked the farmer: “What do you use to feed your pigs?” “Well, I give them acorn, corn, and things like that. Why?” “Because I am from the Animals Protection Association and I think you don't feed them like you should, they shouldn't eat wastes.” Then he fined the farmer.

Some days later, another person arrived and asked the same question. The farmer answered: “Well, I feed them very well. I give them salmon, caviar, shrimp, steak...why?” “Because I am from the United Nations Organization and I think it's unfair that you feed your pigs like that when there are people dying with nothing to eat.” And he fined the farmer.

Finally, another man came in and asked just the same question. The hesitant farmer answered after a few minutes: “Well, I give five dollars to each pig so they can buy whatever they want.”

**ANIMAL HUSBANDRY**

Animal husbandry is the agricultural practice of breeding and raising livestock. As such, it is a vital skill for farmers, and in many ways as much art as it is science. The science of animal husbandry, called animal science, is taught in many universities and colleges around the world. Students of animal science may pursue degrees in veterinary medicine or zootecniis following graduation, or go on to pursue master's degrees or doctorates in disciplines such as nutrition, genetics and breeding, or reproductive physiology. Graduates of these programs may be found working in the veterinary and human pharmaceutical industries, the livestock and pet supply and feed industries, or in academia. It is one of the oldest world professions. Historically, certain sub-professions
within the field of Animal Husbandry are specifically named according to the animals which are cared for.

A swineherd is a person who cares for hogs and pigs (older English term: swine). A shepherd is a person who cares for sheep. A goatherd cares for goats. A cowherd cares for cattle. In previous years, it was common to have herds which were made up of sheep and goats. In this case, the person tending them was called a shepherd. In more modern times, cowboys (or in Spanish: gauchos) rode horses and participated in cattle drives to watch over cows and bulls raised primarily for food.

Today, herd managers often oversee thousands of animals and many staff. Farms and ranches may employ breeders, herd health specialists, feeders, and milkers to help care for the animals. Techniques such as artificial insemination and embryo transfer are frequently used not only as methods to guarantee that females are bred but to help improve herd genetics. This in turn improves the ability of the animals to convert feed to meat, milk, or fiber more efficiently and improves the quality of the final product.

I. Fill in the blanks with the required words:
   1. A swineherd is a person who …
   2. A goatherd …
   3. … is a person who cares for sheep.
   4. … cares for cattle.
   5. Farms and ranches may employ … .

II. Answer the questions:
   1. What is animal husbandry?
   2. Where is animal science taught?
   3. Who usually watches over cattle?
   4. What techniques are used to improve herd genetics?

III. Give verbs of the same root and translate them into Russian:
   breeding; raising; following; teaching; graduation; reproductive; working;
careful; employment; milker;
insemination; feeding; improvement; ability

ANIMAL ECOLOGY

The word “ecology” originates from the Greek language and means “the study of the place to live”. Ecology is a branch of biology dealing with the relationships between living organisms and their environment. Animal ecology began to develop rapidly only in the middle of 20th century. This area of ecology studies population dynamics, distribution, behaviour and the interrelations of animals and their environment.

Ecology is mainly based on the ecosystem concept which is applied to units of various sizes such as a pond, a field, a pasture, a forest, etc. If an ecologist is going to analyse any ecosystem, he has to study the living organisms which inhabit this specific area, the physical environment and all interrelations in this particular region. The term “environment” includes both physical surroundings and biotic communities. Different plants and other organisms that share the organism habitat are known as biotic communities.
Within the ecosystem, species are connected and they depend upon one another in the food chain, and exchange energy and matter between themselves and with their environment. Human interference in the development of ecosystems is widely spread. Farming is the deliberate maintenance of such an ecosystem which is highly productive but relatively unstable. Consequently, the proper management of ecosystems for optimal food production as well as thorough study and analysis of various natural cycles are very important to ecologists.

Farmers have widely adopted intensive systems of crop and animal production which provide bases for reliable food production. However, there are some advantages and disadvantages of intensive farming. On the one hand, if farmers apply modern cultivation practices and fertilization in order to increase the soil fertility, yields of forage crops will be higher and farm animals will be provided with enough amounts of feed. Farmers widely use intensive methods for producing animal products which include confinement of poultry in small cages, swine in small pens and sheep and cattle in small lots. The study of the relationships between farm animals and their surroundings such as temperature, air and light conditions is especially important to ecologists. It is known that proper lighting management may increase both poultry and livestock production, so lightening is controlled on any type of farm now. Furthermore, it has been found that confinement leads to saving in labour, feed and other production costs. Besides, when animals are kept in individual pens, it will be easier to ensure proper disease control. So, the introduction of new methods of intensive farming has enabled farmers to satisfy the needs of population in animal food products.

At present, ecology is a multi-disciplinary science which involves plant and animal biology, physiology, genetics, behaviour, geology, sociology etc. It is difficult to draw a sharp line between ecology and any of these sciences. The knowledge of ecology provides the necessary basis for proper management and conservation of natural resources as well as for maintenance of essential ecological processes and ecosystems.

Ecology is widely studied as one of the most important aspects of biology as it has become clear that such problems as the increase in population, food scarcity, environmental pollution, and some sociological and political problems are to a great degree ecological.

I. Answer the questions:
1. What does animal ecology study?
2. What does the term “environment” include?
3. What are the advantages and disadvantages of intensive farming?
4. What is the role of ecology in modern science?

II. Place the missing words in their proper order:
1. … deals with … between … organisms and their … (relationships, ecology, environment, living).
2. Human … in the …of ecosystems is … spread (widely, interference, development).
3. Farmers have intensive … of crop and … production (animal, system).
4. … apply … cultivation …in order to increase soil … (fertility, farmers, practices, modern).
5. The study of ... and light ... is very important for ... (conditions, ecologists, temperature).

III. Get ready to speak about animal ecology using the following words and word combinations:

- a branch of biology; relationships between living organisms and their environment; an ecosystem concept; to analyse an ecosystem; to inhabit; biotic communities; human interference; proper management; advantages; disadvantages; disease control; natural resources; environmental pollution

Unit 2. CATTLE BREEDING

Cattle are domesticated ungulates, a member of the subfamily Bovinae of the family Bovidae. They are raised as livestock for meat (called beef and veal), dairy products (milk), leather and as draught animals (pulling carts, plows and the like). In some countries they are subject to religious ceremonies and respect.

Cattle were originally identified by Carolus Linnaeus as three separate species. These were Bos taurus, the European cattle, including similar types from Africa and Asia; Bos indicus, the zebu; and the extinct Bos primigenius, the aurochs. The aurochs is ancestral to both zebu and European cattle. More recently these three have increasingly been grouped as one species. Complicating the matter is the ability of cattle to interbreed with other closely related species. Hybrid individuals and even breeds exist, not only between European cattle and zebu but also with yaks, gaur, and bison, a cross-genera hybrid.

Terminology

Older English sources refer to livestock in general as cattle. Additionally other species of the genus Bos are often called cattle or wild cattle. Young cattle are called calves. A young male is called a bull-calf; a young female is called a heifer. Male cattle bred for meat are castrated unless needed for breeding. The castrated male kept for draft purposes is called an ox (not to be confused with the related wild musk ox). An intact male is called a bull. An adult female over two years of age (approximately) is called a cow. The adjective applying to cattle is bovine.

Cattle raised for human consumption are called beef cattle. Cows of certain breeds that are kept for the milk they give are called dairy cows. Herds are counted as, for example, “one hundred head”.

The terms “bull” and “cow” are also used for the male and female of some other species, such as moose, elephants, whales, and sea lions.

Biology

Cattle are ruminants, meaning that they have a unique digestive system that allows them to synthesize amino acids. This allows them to thrive on grasses and other vegetation. A popular misconception about cattle (primarily bulls) is that they will become extremely enraged upon seeing the colour red. This is incorrect; cattle are totally colour blind, and can only see in greyscale. The main source of this rumour is the fact
that Matadors traditionally use red coloured capes to provoke bulls into attacking. In fact red is merely a tradition, the movement of the cape is the attractant.

**Uses of Cattle**

Cattle occupy a unique role in human history. Some consider them the oldest form of wealth. Their ability to provide meat, dairy and draft while reproducing themselves and eating nothing but grass has furthered human interests dramatically through the millennia.

In Hinduism, the cow is said to be holy (and thus should not be eaten): “The cow is our Mother, for she gives us her milk.” In Latin America, Australia and the western North America cattle are grazed on large tracts of rangeland called ranchos or ranches. In Portugal, Spain and some Latin American countries, bulls are used for the sport of bullfighting; in many other countries this is illegal.

The recent outbreaks of mad cow disease have reduced or prevented some traditional uses of cattle for food, for example the eating of brains or spinal cords.

Oxen (plural of ox) are cattle trained as draft animals. Often they are adult, castrated males. Usually an ox is over four years old due to the need for training and for time to grow to full size. Oxen are used for plowing, transport, hauling cargo, grain-grinding by trampling or by powering machines, irrigation by powering pumps, and wagon drawing. Oxen were commonly used to skid logs, and sometimes are still in low-impact select-cut logging, in forests.

An ox is nothing more than a mature bovine with an "education." The education consists of the animal's learning to respond appropriately to the teamster's (ox driver's) commands: in North America such as (1) get up, (2) whoa, (3) back up, (4) gee (turn to the right) and (5) haw (turn to the left). In addition to intelligence (the ability to learn), American ox trainers favored larger breeds for their ability to do more work; for the same reason, the typical ox is the male of a breed, rather than the smaller female. Also, the gait of the ox is often important to ox trainers, since the speed the animal walks should roughly match the gait of the ox driver who must work with it. Oxen must be painstakingly trained from a young age. Their teamster must make or buy as many as a dozen yokes of different sizes as the animals grow. Ox teams are steered by commands or noise (whip cracks) and many teamsters were known for their voices and language.

Oxen can pull harder and longer than horses, particularly on obstinate or almost unmovable loads. This is one of the reasons that teams were dragging logs from forests long after horses had taken over most other draught uses in Europe and the New World. Though not as fast as horses, they are less prone to injury because they are more sure-footed and do not try to jerk the load. Many oxen are still in use worldwide, especially in developing nations.

I. **Answer the following questions:**

1. What are young cattle called?
2. What are beef cattle raised for?
3. Where is the cow said to be holy?
4. What are oxen used for?
II. Translate the following words into Russian:

ungulate; beef; veal; leather; draught animals; ancestral; related species; calf; heifer; ox; bull; ruminant; colour blind; mad cow disease; plowing; breed; mature; outbreak

III. Chose the proper words from those given in brackets and translate the sentences:

1. A young female is called a (bull; heifer; calf).
2. Male cattle are bred for (milk; wool; meat).
3. Herds are counted as, for example, "one hundred (leg; hand; head)".
4. Cattle are (ruminant; carnivorous; omnivorous) animals.
5. Oxen are cattle trained as (dairy; beef; draft) animals.

DAIRY FARMING

Dairy farming is a class of agricultural enterprise, raising female cattle for long-term production of milk, which may be either processed on-site or transported to a dairy for processing and eventual retail sale. Most dairy farms sell the male calves borne by their cows, sometimes for veal production, rather than raising non-milk-producing stock. Many dairy farms also grow their own feed, typically including corn, alfalfa, and hay.

On many farms, cows are given growth hormones (known as “BST” or “rBGH”) to increase milk production. It is also common to include antibiotics in the animals' feed, to reduce the transmission of infection arising from the close quarters in which dairy cattle are typically housed. Both of these practices are controversial and prohibited under organic farming codes of conduct.

Most milk-consuming countries have a local dairy farming industry, and most producing countries maintain significant subsidies and trade barriers to protect domestic producers from foreign competition. In large countries, dairy farming tends to be geographically clustered in regions with abundant natural water supplies (milk is mostly water) and relatively inexpensive land (even under the most generous subsidy regimes, dairy farms have poor return on capital).

In the United States, dairy farming is an important industry in Vermont, Pennsylvania, Wisconsin, and Minnesota, but the largest state in dairy production is California. In Europe, Denmark, northern France (particularly Normandy), and Switzerland are particularly known as centers of dairy production.

I. Give the Russian equivalents for:

female cattle; retail sale; male calves; veal production; milk-consuming countries; to protect domestic producers; dairy farming industry

II. Answer the questions:

1. What is dairy farming?
2. What food is given to the cows to increase milk production?
3. Where is dairy farming considered to be an important industry?
4. What measures do most producing countries take to protect domestic producers from foreign competition?
III. Fill in the blanks with the proper words from the text and translate the sentences:

1. Dairy farming is a class of … enterprise raising female cattle for production of ….
2. Male calves are mainly sold for … production.
3. Many dairy farms … their own feed.
4. Most … countries have a local dairy farming industry.
5. Trade barriers are maintained to protect domestic producers from ….

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A young college student had stayed up all night studying for his zoology test the next day. As he entered the classroom, he saw ten stands with ten birds on them with a sack over each bird and only the legs showing. He sat right on the front row because he wanted to do the best job possible.

The professor announced that the test would be to look at each set of bird legs and give the common name, habitat, genus, species, etc. The student looked at each set of bird legs. They all looked the same to him. He began to get upset. He had stayed up all night studying, and now had to identify birds by their legs. The more he thought about it, the madder he got. Finally, he could stand it no longer. He went up to the professor's desk and said, "What a stupid test! How could anyone tell the difference between birds by looking at their legs?" With that the student threw his test on the professor's desk and walked out the door.

The professor was surprised. The class was so big that he didn't know every student's name, so as the student reached the door the professor called, "Mister, what's your name?"

The enraged student pulled up his pant legs and said, "You guess, buddy! You guess!"

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**DAIRY CATTLE**

Dairy cattle are domesticated animals bred to produce large quantities of milk. A young dairy animal is known as a calf. A female calf which has not given birth to a calf and is less than thirty months old is called a heifer. When more than seven months pregnant with its first calf, a female heifer is known as a springer. After calving, or when more than thirty months old, a female dairy animal is known as a cow.

A male dairy animal is called a bull at any stage of life, unless castrated, in which case he is known as a steer. A dairy animal's mother is known as its dam. Similarly, a dairy animal's father is known as its sire.

**Historical Background**

Cattle were first domesticated around 6,500 B.C. Early cattle served a triple-purpose, providing meat, milk and labor.
Modern Times

Dairy cattle are now specialized animals, focused primarily on producing milk. This milk is made into various products, including cheese, yogurt, and ice cream, and is consumed around the world.

Dairy Farms

Dairy cattle may be found in herds on farms where dairy farmers own, manage, care for, and collect milk from them. These herds range in size from small boutiques of fewer than five cows to large conglomerates of 25,000 cows or more. The average dairy farmer in the United States owns about one hundred cows and is about 53 years old.

Life of Dairy Cattle

Dairy cattle are distinguished by gender at birth. Cows are unique in their ability to produce milk, and thus heifers, young cows, are generally considered more valuable than bulls, which are used solely for beef production and breeding purposes. Most dairy calves are separated from their dams within a few hours of birth. Such separation ensures decreased risk of disease passing from dam to calf and also allows the dam to begin producing milk for human consumption as soon as possible. However, the dam's first milk, called colostrum, is rich with antibodies unfit for human consumption – but required for newborn calves to survive. A calf must drink two quarts of colostrum within twelve hours of birth or its future may be in jeopardy. The dam's milk quickly changes into that most suitable for humans, and within three days after calving, a cow's milk is already on its way to human hands. Most young stock then subsist on milk replacer, a commercial feed additive used to take the place of the cow's natural milk, until old enough to consume more solid foods.

The Bull

In New Zealand and some other countries male calves are slaughtered at two to four days for their abomasum (fourth stomach), for the rennet that is extracted and sold as a curdling agent for milk. In Europe and North America most newborn dairy bulls will be slaughtered for veal before reaching six weeks of age. Many bulls, however, will be raised as steers and butchered for dairy-beef when about eighteen months old.

A select few high-quality bulls, however, will be raised for breeding purposes. These bulls will generally have excellent conformation, or type (for the breed), outstanding pedigrees and, early in their breeding life, produce progeny that is superior in dairy production.

Herd bulls, or bulls that live with dairy cows and provide direct, natural breeding, will service up to one hundred and fifty cows at any given time. Such a bull will be used in one herd for up to two years before the risk of inbreeding and the bull's increasingly hostile temperament forces a farmer to move the bull to a new herd.

The Cow

Dairy heifers are treated most generously by farmers, as the heifers form the farmer's future herd of cows. As a cow cannot produce milk until after calving (giving birth), most farmers will attempt to breed heifers as soon as they are fit, at about fifteen
months of age. A cow's gestation period is about nine months (279 days) long, so most heifers give birth and become cows at about two years of age.

A cow will produce large amounts of milk over its lifetime. Certain breeds, of course, produce more milk than others; however, each breed normally used in dairy production ranges from 28,000 to 18,000 pounds of milk per annum.

About 70 days after calving, a cow's milk production will peak. The cow is then bred. The cow's production slowly dwindles until, at about 305 days after calving, the cow is 'dried', when the farmer stops milking her. About sixty days later, one year after her previous calf was born, a cow will give birth again.

When kept inside year-round most dairy cows live to be five or six years old before their annual milk production decreases to the point where it is no longer profitable for a farmer to keep them. Grazing cows have a longer lifetime, up to 12 years depending on production that is measured monthly. The cow is then butchered and sold for its hamburger meat.

Recently, certain practices have been enacted to ensure that high quality cows' progeny is more widespread than what is naturally possible. Some cows are 'flushed', where 7-12 embryos are removed from their reproductive systems. These embryos are then transferred into other cows who serve as surrogate mothers. This process is called an 'embryo transfer' and has been used in New Zealand for many years.

I. Fill in the blanks with the required words:
1. Dairy cattle are domesticated animals bred …
2. A female dairy animal is known …
3. … is called a bull.
4. Most dairy calves are … within a few hours of birth.
5. A cow will produce …

II. Agree or disagree with the following statements using the information from the text:
1. A young dairy animal is known as a bull.
2. A male animal is called a heifer.
3. Cattle were domesticated around 6500 B.C.
4. The average dairy farmer in the USA owns about one thousand cows.
5. Young cows are considered less valuable than bulls.
6. The dam’s first milk is called colostrum.
7. Colostrum is very good for human consumption.
8. High-quality bulls are usually raised for breeding purposes.
9. A cow’s gestation period is about five months.
10. Grazing cows have usually a longer lifetime up to 12 years.

III. Ask questions about the words in italics:
1. Dairy cattle are bred to produce large quantities of milk.
2. After calving a female dairy animal is called a cow.
3. A male animal is called a bull.
4. Milk is consumed around the world.
5. The average dairy farmer in the United States owns about one hundred cows.
6. Most dairy calves are separated from their dams within a few hours of birth.
7. The dam’s first milk, called colostrum, is required for newborn calves to survive.
8. Select high-quality bulls are raised for breeding purposes.
9. Dairy heifers are treated most generously by farmers, as the heifers form the farmer’s future herd of cows.

Two cows were talking in the field one day.
First Cow: “Have you heard about the Mad Cow disease that’s going around?”
Second Cow: “Yeah, makes you glad you’re a penguin, doesn’t it?”
CATTLE BREEDS

Dual-Purpose Cattle

The term “dual-purpose” is used to describe those breeds of cattle which are bred for both milk and beef production in contrast with those called special-purpose, which are bred primarily for either milk or beef. However, the question of beef production in connection with that of milk is of great importance since practically all dairy cattle are used for beef when their usefulness as milk producers is at an end. Much of the discussion regarding the question of dual-purpose as compared with special-purpose cattle comes from erroneous ideas of what constitutes a dual-purpose animal. The dual-purpose cow also serves a useful purpose in many cases as an intermediate step in changing from a system of beef production to milk production when conditions make such change necessary.

Shorthorn Cattle

The Shorthorns vary in type from the extreme beef conformation to the dual-purpose, with a few of real dairy form. The latter are exceptional, and not typical of the breed in America. Shorthorn cows of the milking types weigh usually between 1,200 and 1,350 pounds when mature. A typical cow of this type loses considerable flesh when in milk; when dry she fattens rapidly, and shows much more of the beef characteristics. Red, white, and roan are the typical Shorthorn colors, and the disposition is quiet and gentle. Reproductive ability is only fair. More difficulty is experienced with failure to breed than with certain other breeds, and the calves at birth are only medium in vigor. At birth, calves range between 70 and 80 pounds in weight and represent about 6 per cent of the weight of their dams. While the Shorthorn breed is not counted among the dairy breeds, still enormous numbers of grade cows of this breed are milked, especially in the butter-producing states of the Mississippi valley. As in the case of other breeds, it is difficult to get satisfactory data concerning the production of Shorthorn cows under practical farm conditions. A compilation of records published by experiment stations shows an average of 6,017 pounds of milk and 218 pounds of fat in a year for thirty-seven animals represented. The average per cent of fat for these animals is 3.63. These figures are about typical of results in herds in which careful attention has been paid to selection of the individual animal, and in which good conditions of feeding and management are maintained. Such an average is considerably higher than that realized on the ordinary farm. From the data available it is safe to say that a herd of dairy Shorthorns should be expected to average between 5,000 and 5,500 pounds of milk and from 200 to 225 pounds of fat. A high figure for a herd average would be 6,500 pounds of milk or more, while less than 5,000 pounds as an average indicates lack of care in selection of
individuals or improper conditions of feeding and management. The fat content will vary as a rule between 3.50 and 4.25 per cent with an average of not far from 3.8 per cent.

**Dexter Cattle – The Smallest European Cattle Breeds**

Dexter cattle are known as the smallest of the European cattle breeds. The Dexter breed originates from Ireland and it was brought to England in 1882. Dexters reside in North America, South Africa, Australia, and much of Europe. The Dexter is a small breed with mature cows weighing between 600–700 pounds (270–320 kg) and mature bulls weighing about 1,000 pounds (450 kg). Dexters come in two different types: short-legged and long-legged. Purebred cows ideally average around 100 centimeters (40 inches) in height, with the bulls some 5 centimeters (2 inches) taller. Colour is usually Black, Red, or Dun. The breed is typically a dual-purpose type used for milk and beef. Dexters produce a rich milk, relatively high in butterfat (4 %), reasonably can be expected to produce 2 to 2.5 gallons (7.6 to 9.5 liters) per day. They are also known for easy calving and exceptionally good mothers. They will produce enough milk to feed 2-3 calves.

Dexters as a breed have great advantages for the small farmer. They are quiet and easy to handle, requiring less in the way of fencing and yards than larger animals. They are fine milkers and produce excellent beef providing smaller cuts. Dexters are easy to get in calf and calve easily; they can also be used for multiple suckling. And on top of all this, as light weights they are better for the land, especially under wet conditions.

**Brown Swiss Cattle**

In appearance, animals of this breed are plain, substantial, and well proportioned and give the impression of being somewhat coarse in the bone and in general make-up. The head and neck especially are large, as contrasted with the English breeds of cattle. The back is well developed and the hair abundant and soft. As a rule the skin is of unusually fine quality. The hind quarters are full, round, and inclined to be distinctly beefy. The cows have large, fairly well-shaped udders with teats of sufficient size to be milked conveniently. Milk veins and milk wells are of medium development. In size, the cows reach an average weight of about 1,200 pounds and the bulls from 1,600 to 2,000 pounds. The colour varies considerably in shade. It is called brown, but more of a mouse colour is prevalent. In disposition this breed is especially good, being quiet and docile and easily handled.

**Ayrshires Cow**

In size the Ayrshires rank between the Jersey and Holstein breeds. The average cow weighs about 1,000 pounds at maturity, while some exceed this figure considerably. The bulls range from 1,400 to 2,000 pounds. The tendency in America has been to favor a rather larger type than that considered most desirable in Scotland. The common colour is
spotted red or brown and white, in varying proportions. In the old American type the red or brownish-red usually predominated, with only a small amount of white; while in the modern or Scotch type, the white generally predominates. The two colours are distinct, and do not blend to form a roan. The horns are rather long, and as a rule curve outwards and upwards and in some cases slightly backwards. The bulls have very heavy horns.

I. Using the words from the text complete the sentences:
1. Dual-purpose cattle are used for both …
2. All dairy cattle are used for beef when …
3. When mature Shorthorn cows usually weigh …
4. The typical Shorthorns colors are …
5. Dexter cattle are known as …
6. Dexters have two different types …
7. As a breed the Dexters have great …
8. In appearance, Brown Swiss cattle are …
9. The cows of Brown Swiss breed have large, well-shaped …
10. The horns of the Ayrshires are rather … and … .

II. Answer the following questions:
1. What does the term “dual-purpose cattle” mean?
2. Are Shorthorn cattle bred primarily for milk or beef?
3. What breed is believed to be the smallest of the European cattle?
4. What advantages have Dexters as a breed for the small farmer?
5. What is the common color of the Ayrshires?

III. Prepare an oral presentation about one of the cattle breeds (its advantages and disadvantages; main characteristics, etc.)

BEEF AND VEAL

Beef is flesh of mature cattle. The best beef is obtained from early maturing, special beef breeds. High-quality beef has firm, velvety, fine-grained lean, bright red in colour and well-marbled, the fat being smooth, creamy white, and well distributed. In young beef, the bones are soft, porous, and red; the less desirable mature beef has hard white bones. Beef tenderness and flavour are improved by ageing.

Veal is meat of calves slaughtered between 3 and 14 weeks, delicate in flavour, pale grayish white in colour, firm and fine-grained, with velvety texture. It has no marbling, and the small amount of fat covering is firm and white. In modern livestock farming, calves bred to yield high-quality veal are raised indoors under controlled temperatures. Although the meat of an animal from 15 weeks to one year is technically called calf, it is frequently marketed as veal.

I. Answer the question:
What is the difference between beef and veal?

II. Give Russian equivalents to the following English words:
beef; veal; flesh; mature; to obtain; high-quality; firm; fat; to distribute; bone; desirable; tenderness; flavour; to improve; calf; to slaughter; texture; amount; to raise; to market
MILK

Milk is known to be highly nutritious, versatile food that has been used by humans since the beginning of recorded time. People enjoy drinking milk in its natural form and also use it to make a wide range of food products (cream, butter, yoghurt, cheese, ice cream).

Humans drink the milk produced from a variety of domesticated mammals including cows, goats, sheep, camels, reindeer, buffaloes, llama. But cow milk is the main type of milk used for commercial production and consumption throughout the world. Cow milk has been found to contain about 3.5 to 5 per cent fat, which is dispersed throughout the milk in globules. Scientists consider sweet taste of milk to be due to lactose, a kind of sugar found only in milk. The most important protein in milk is casein, accounting for 80 per cent of milk protein. Other proteins present in milk include albumin and globulin.

Milk contains many minerals, the most abundant of which are calcium and phosphorus. It also has been proved to be an excellent source of vitamins A and B. The milk to be sold commercially should be fortified with vitamin D.

Many factors influence the composition of milk, including breed, genetic constitution of the cow, age of the cow, stage of lactation, interval between milkings and certain disease conditions. In general, the type of feed only slightly affects the composition of milk.

In most countries, almost half of the milk consumed is sold as fresh pasteurized whole, low-fat or skim milk. The rest part of the milk is processed into more stable dairy products of worldwide commerce, such as cream, butter, cheese, dried milks, ice cream, condensed milk.

Milk in its natural form, directly from a cow, is called raw milk. It is an extremely versatile product from which a countless number of commercial products are derived.

Dairy farming dealing with production and use of milk and milk products is one of the important branches of agriculture in many countries. Dairy husbandry includes the management of dairy cows, the cultivation of crops for feed, the production of milk and cream, and the manufacture of butter, cheese, ice cream. Individual high milk-producing cows can produce up to 10,000 litres of milk annually. The best cows can be selected and poor producers can be replaced by better cattle.

The introduction of labour-saving machinery, especially the vacuum milking machine, has made the dairy farmer’s work much easier. Besides, modern improvements in refrigeration and transportation have eliminated the influence of climate and adverse weather conditions on milk delivery.

I. Answer the following questions:

1. What kind of animal is considered to be the main producer of milk?
2. What characteristics of dairy cows are valued most of all?
3. What are the most important dairy products?
4. What can you tell about dairy farming in Russia?
5. Is milk rich in proteins?
6. Why is it important for man to consume dairy products daily?
II. Agree or disagree with the following statements:

1. Milk has been used by humans since the beginning of recorded times.
2. Many food products are made from milk.
3. Sheep milk is the main type of milk used for commercial production.
4. Scientists consider sweet taste of milk to be due to lactose.
5. Lactose is a kind of sugar found in many products.
6. Milk is poor in minerals.
7. Age of the cow doesn’t influence the composition of milk.
8. The type of feed greatly affects the quality of milk.
9. Milk in its natural form is called raw milk.
10. The introduction of machinery has made the dairy farmer’s work more difficult.

III. Complete the sentences using the words from the text:

1. People use milk to make a wide range of dairy …
2. … milk is the main type of milk used for … throughout the world.
3. Scientists consider sweet taste of milk to be due to … .
4. The most important protein in milk is … .
5. Milk has been proved to be an excellent … of vitamins A and B.
6. Many factors … the composition of milk.
7. Milk in its natural form, directly from a cow, is called … milk.
8. Dairy farming is one of the important … of agriculture in many countries.

Unit 3. GOAT BREEDING

A goat is an animal in the genus Capra, which consists of nine species: the Ibex, the West Caucasian Tur, the East Caucasian Tur, the Markhor, and the Wild Goat. A goat is any of several species of medium-sized grazing animal. All goats (and sheep) belong to the subfamily Caprinae of the family Bovidae. In common use, however, goat is usually understood to mean the Domestic Goat, a subspecies of the Wild Goat of south-west Asia and eastern Europe.

Female goats are referred to as does or nannies, intact males as bucks or billies. Castrated males are wethers, offspring are kids. Goat meat is sometimes called chevon.

Goats seem to have been first domesticated roughly 10,000 years ago in the Zagros mountains of Iran. They are kept for the production of milk and hair. They are also harvested for their meat. Domestic goats are generally kept in herds that wander on hills or other grazing areas, often tended by goat herders who are frequently children or adolescents, similar to the more widely known shepherd.
Goats are reputed to be willing to eat almost anything. Contrary to this reputation they are quite fastidious in their habits, preferring to browse on the tips of woody shrubs and trees, as well as the occasional broad leaved plant. Goats are very fond of wheat grain. They will seldom eat soiled food or water unless facing starvation. They certainly do not consume garbage, tin cans, or clothing. But they do eat canes. Their reputation for doing so is most likely due to their intensely inquisitive and intelligent nature: they will explore anything new or unfamiliar in their surroundings. Lacking hands and fingers, they do so primarily with their prehensile upper lip and tongue. This causes them to investigate clothes by chewing.

Reproduction

In some climates goats are, like humans, able to breed at any time of the year. In northern climates and among the Swiss breeds, the breeding season commences as the day length shortens, and ends in early spring. Does of any breed come into heat every 21 days for from 2-48 hours. Bucks (intact males) of Swiss and northern breeds come into rut in the fall as with the doe's heat cycles. Rut is characterized by a decrease in appetite, obsessive interest in the does, fighting between bucks, display behavior and most notably, a strong, foul-smelling, musky odor. This odor is singular to bucks in rut- the does do not have it unless the buck has rubbed his scent onto them or the doe is in actuality a hermaphrodite- and is instrumental in bringing the does into a strong heat. In addition to live breeding, artificial insemination has gained popularity among goat breeders, allowing for rapid improvement and access to a wide variety of bloodlines.

Gestation length is 148 days. Twins are the usual result, with single and triplet births also common. Less frequent are litters of quadruplet, quintuplet, and even sextuplet kids. Birthing, known as kidding, generally occurs uneventfully with few complications. The mother often eats the placenta.

Freshening (coming into milk production) occurs at kidding. Milk production varies with the breed, age, quality, and diet of the doe; dairy goats generally produce between 660 to 1,800 L (1,500 and 4,000 lb) of milk per 305 day lactation. Meat, fiber, and pet breeds are not usually milked and simply produce enough for the kids until weaning.

I. Complete the sentences:

1. All goats belong to …
2. Domestic goats are kept in …
3. Goats are very fond of …
4. Gestation length is …
5. Milk production varies …

II. Answer the following questions:

1. When and where were goats first domesticated?
2. What are they kept for?
3. Domestic goats are usually kept in herds, aren’t they?
4. What food do goats prefer?
5. Why are goats fond of chewing?
6. How long does goat’s gestation last?

III. Restore the original sentences:

1) are; kept; of milk; goats; hair; and; for; the production
DAIRY GOATS

There are six types of dairy goats that are recognized by the American Dairy Goat Association. They are Nubians, LaManchas, Alpines, Oberhaslis, Togenburgs, and Saanens. More people drink goat’s milk than cow’s milk.

Nubians have very long, floppy ears and they can be any colour. They have a convex nose and are one of the larger breeds of goats. Their milk tends to be higher in protein and butter fat than other breeds. They tend to be a little bit more stubborn than other dairy goats.

LaManchas have ears that are so small that it looks like they don't have ears and they can also be any colour. They have a straight nose and are a small breed. They are more calm and gentle than other breeds.

Alpines can be almost any colour except solid white and light brown with white markings (toggenburg colour); their face should be dished or straight. They have erect ears and are a medium-large breed. They are popular with dairies due to the amount of milk they produce.

Oberhaslis have very specific colour standards. They are a bay colour, known as Chamoise, with a black dorsal strip, udder, belly, and black below the knees. They should also have a nearly black head. Another acceptable colour would be all black but this is only acceptable for does. They have erect ears and are a medium-small breed.
Toggenburgs also have very specific colour requirements. They are light brown and have white ears and lower legs. The side of the tail and two stripes down the face must also be white. They have erect ears and have the smallest height requirements of all the breeds. They grow a shaggier coat than other dairy goat breeds. They also are popular with dairies.

Saanens are usually pure white. They usually have a large udder capacity and are popular with dairies due to the quantity of milk they produce.

Goat milk is used for human consumption. Goat milk is similar nutritionally to cow milk, but it contains smaller fat globules and as a consequence it is easier for some people to digest and it does not require homogenization. Goat milk is also used to feed many other animals.

I. Complete the sentences:
1. Milk of the Nubians tends to be …
2. Alpines can be almost any color except …
3. Goat milk is similar nutritionally to …

II. Answer the following question:
What are the main types of dairy goats? Describe them.

III. Looking at the picture (p. 39) give the Russian equivalents of the parts of the dairy goat. Look up the words in the vocabulary at the end of the book if necessary.

GOAT CHEESE

Although cow's milk and goat's milk have similar overall fat contents, the higher proportion of medium-chain fatty acids such as caproic, caprylic and capric acid in goat's milk contributes to the characteristic tart flavour of goat's milk cheese.

Goat milk is often consumed by young children, the elderly, those who are ill, or have a low tolerance to cows' milk. Goat milk is more similar to human milk than that of the cow, although there is large variation among breeds in both animals. Although the West has popularized the cow, goat milk and goat cheese are preferred dairy products in much of the rest of the world. Because goat cheese is often made in areas where refrigeration is limited, aged goat cheeses are often heavily treated with salt to prevent decay. As a result, salt has become associated with the flavour of goat cheese, especially in the case of the heavily brined feta.

Goat cheese has been made for thousands of years, and was probably one of the earliest made dairy products. In the simplest form, goat cheese is made by allowing raw
milk to naturally curdle, and then draining and pressing the curds. Other techniques use an acid (such as vinegar or lemon juice) or rennet to coagulate the milk. Soft goat cheeses are made in kitchens all over the world, with cooks hanging bundles of cheesecloth filled with curds in the warm kitchen for several days to drain and cure. If the cheese is to be aged, it is often brined so it will form a rind, and then stored in a cool cheese cave for several months to cure.

Goat cheese softens when exposed to heat, although it does not melt in the same way many cow cheeses do. Firmer goat cheeses with rinds are sometimes baked in an oven to form a gooey, warm cheese, which is ideal for spreading on bread with roasted garlic, or alone.

I. Restore the original sentences:

1) consumed; the elderly; is; young children; goat milk; and; often; by
2) is; in areas; often; is; limited; made; where; goat cheese; refrigeration
3) salt; with; the flavour; has become; cheese; associated; of; goat

Unit 4. SHEEP BREEDING

A sheep is any of several woolly ruminant quadrupeds, but most commonly the Domestic Sheep (Ovis aries), which probably descends from the wild moufflon of south-central and south-west Asia.

Sheep breeders know female sheep as ewes, intact males as rams, castrated males as wethers, and younger sheep as lambs. Note the adjective applying to sheep: ovine; and the collective terms for sheep: flock and mob.

Many breeds of sheep occur, generally sub-classable as:
• wool breeds, or
• meat breeds, or
• dual use breeds.

Farmers develop wool breeds for superior wool quantity and quality (fineness of fibers), wool staple length and degree of crimp in the fiber. Major wool breeds include Merino, Rambouillet, and Lincoln.

Breeders of meat sheep concentrate on fast growth, multiple births, ease of lambing, and hardiness. Breeds of meat sheep include Suffolk, Hampshire, Dorset, Columbia, and Texel.

Dual-use breeds include the Corriedale. The Finnish Landrace sheep has a reputation for multiple births. Some breeds, called hair sheep, like the Katahdin and Dorper, have little or no wool.

Cultural Significance

For centuries, sheep have had associations with many cultures, especially in the Mediterranean area and Wales, where they form the most common type of livestock. Selective breeding of sheep has frequently occurred.

A wide symbology relates to sheep in ancient art, traditions and culture. Judaism uses many sheep references including the Passover lamb. Christianity uses sheep-related images, such as: Christ as the good shepherd, or as the sacrificed Lamb of God; the
bishop's Pastoral; the lion lying down with the lamb. Greek Easter celebrations traditionally feature a meal of Paschal lamb. Sheep also have considerable importance in Arab culture.

Herding sheep plays an important historico-symbolic part in the Jewish and Christian faiths, since Abraham, Jacob, Moses, and King David all worked as shepherds.

**Economic Importance**

Raising sheep occupied many farmers in ancient economies, given that this animal can give milk (and all its derivative products, such as cheese), wool and meat. In the 21st century, sheep retain considerable importance in the economies of areas such as Australia, New Zealand and Uruguay. In some places, like Sardinia, sheep-breeding has become the principal and characteristic activity.

Even in the 21st century, sheep can provide a return on investment of up to 400% of their cost annually (including reproduction gains). Sheep breeding has played a role in several historic conflicts, such as the Highland clearances, the US range wars, and the English "enclosing of the commons".

**Domestication of Sheep**

Domestic sheep are descended from the moufflon (Ovis orientalis) that is found from the mountains of Turkey to southern Iran. It has been found by DNA analysis to be one of two ancestors of domestic sheep. Although the second ancestor has not been identified, both the urial and argali have been ruled out.

The urial (Ovis vignei) is found from northeastern Iran to northwestern India. It has a higher number of chromosomes (58) than domestic sheep (54) which makes it an unlikely ancestor of the latter, but as it interbreeds with the moufflon. The argali sheep (Ovis ammon) of inner Asia has 56 chromosomes and the Siberian snow sheep (Ovis nivicola) with 52 chromosomes.
The European moufflon (Ovis musimon) found on Corsica and Sardinia as well as the Cretan and the extinct Cypriot wild sheep are probably descended from early domestic sheep that turned feral. Primitive breeds, like the Scottish Soay sheep have to be plucked, not sheared, as the kelps are still longer than the soft fleece, (a process called rooing) or the fleece must be collected from the field after it falls out.

Cuisine

Chefs and diners commonly know sheep meat prepared for food as lamb or mutton (compare the French word for “sheep”: mouton). The meat of immature sheep, also termed lamb, generally has a reputation as more tender and appears more often on tables in some western countries. Mutton tastes more flavorful but often seems tougher and fattier than lamb. Lamb commonly features in Mediterranean and Middle Eastern cuisine.

Ethology

Sheep follow others, hence one can refer to people as “sheep” when they follow a group of other people. This can occur because such people trust the group, or it can happen because people do not think for themselves. Such sheep-like behaviour can have advantages if the group leads to something positive (like the group of sheep leading the main mob to grass). It can have disadvantages if the group leads the other sheep to something negative.

Sheep follow each other so reliably that special names apply to the different roles sheep play in a flock. One calls a sheep that roams furthest away from the others an outlier (the term also occurs in statistics). This sheep undertakes to go out further away from the safety of the flock to graze, but takes a chance that a predator like a wolf will attack it first, because of its isolation. Another sheep, the bellwether, which never goes first but always follows an outlier, signals to the others that they may follow in safety. When it moves, the others will also move. The tendency to act as outliers or as bellwethers, or to stick in the middle of the flock, seems to stay with sheep throughout their whole life. Genes may make them repeat this role behaviour.

Sheep are relatively smart. According to the spokesperson of the British National Sheep Association, "Sheep are quite intelligent creatures and have more brainpower than people are willing to give them credit for." For example, in Yorkshire sheep found a way to get over cattle grids by rolling on their backs.

Sheep as a rule do not roam far. Since the outbreak of foot and mouth disease in the UK new flocks have had to be trained to new areas.

I. Answer the following questions:
1. What are sheep kept for?
2. Is raising sheep economically important? Why?
3. What is the difference between mutton and lamb?
4. What are the bodies of sheep covered with?
5. What is the role of the bellwether?

II. Put the words in the proper order:
1) wool; are; sheep; for; kept
2) form; sheep; type; the most; livestock; common; of
3) culture; have; in; importance; Arab; considerable; sheep;
4) from; domestic; are; moufflon; sheep; descended
5) sheep; the meat; called; immature; lamb; of; is

III. Here are some answers. Give the appropriate questions:
1. It is ruminant.
2. They are Merino, Rambouillet, and Lincoln.
3. They belong to dual-use breeds.
4. Wool, meat and milk.
5. Since the Bronze Age.
6. I think, the people who do not think for themselves.

IV. Looking at the picture of a sheep (p.44) translate into Russian all the words. Use the dictionary if necessary.

THE PURPOSE OF SHEEP BREEDING

Sheep are mainly raised for the purpose of obtaining pelts and wool clothing and carpets. The quality and the market value of wool vary greatly with the fineness, curliness and lightness as well as the length of the fibre it consists of. Moreover, the wool is light in relation to its value and is relatively imperishable, both of which qualities have made it a valuable item of trade and export. In addition to providing wool, sheep produce meat in the form of lamb and mutton, and milk for drinking and cheese-making. Sheep can be used to a small extent as pack-animals. Recently, sheep-raising in some areas has decreased in favour of more profitable cattle.

Sheep bred for their fine wool account for nearly half the world sheep population. They are adapted to semiarid conditions and are characterized as medium in size, with the ability to produce large amounts of wool fibres 20 micrometers or less in diameter. Most sheep of this type belong to the Merino breed. The other major breed of fine-wool sheep is Rambouillet, which is similar to the Merino.

Commercial sheep today represent two-breed or three-breed crosses, with white-faced crossbred ewes preferred in the range areas and a black-faced sire, such as Suffolk or Hampshire, preferred for market lambs, which are either finished for slaughter or sold as breeding ewes.

Sheep are excellent foragers and, being ruminants, can utilize both pasture forage and harvested roughage. Selective in their grazing habits, they prefer short grass when available. Pregnant ewes can run on late pasture as long as it is available and abundant but in winter they may subsist on legume hay or mixed hay carrying a high percentage of legume. Corn silage is relatively inexpensive and palatable feed for sheep. However, lactating ewes and lambs raised for market usually require some concentrate, with corn favoured because of its high energy content and reasonable cost. Broad spectrum antibiotics at the rate of five to ten milligrams per 500 grams of feed are normally used in all lamb rations to prevent digestive disturbances and infections.

I. Give the appropriate questions to the following answers:
1. They produce meat and milk.
2. As pack-animals.
3. To the Merino breed.
4. They prefer short grass.
5. Corn silage.

II. Translate into English:
1. Овцам выращивают в основном для получения шерсти.
2. Качество шерсти зависит также и от ее длины.
3. Овцы также производят мясо (баранину) и молоко.
4. Овцы – травоядные, они предпочитают невысокую траву.
5. В рацион ягнят должны добавляться витамины.

III. Retell the text in short.

**SHEEP CARE**

In addition to food, water, exercise, and shelter, a few preventative procedures are necessary to keep your sheep healthy. First, in the United States lambs usually have their tails docked, or cut close to the tailhead, for hygienic reasons (to prevent the accumulation of manure that would attract flies). Second, periodic worming is needed – at least twice a year, though the frequency will vary according to climate, terrain, and herd condition. We find pastewormers the easiest to use, especially for those sheep that resist swallowing boluses or pills. Third, three types of vaccinations are needed by pregnant ewes and, later, their lambs. These include BoSe, a mineral/vitamin combination used as a supplement in all regions where feed is deficient in the mineral selenium, a nutrient needed to prevent birthing problems and white muscle disease. The other preventative vaccinations are for tetanus and enterotoxemia or "overeating disease" and can be administered separately or with a dual purpose Clostridium vaccine. Young lambs that have not yet been vaccinated should receive tetanus antitoxin at castration and docking time for immediate protection against tetanus. Fourth, hooves should be trimmed and checked periodically for "foot rot," an odorous fungus infection common in neglected feet that have been standing in wet mud.
Shelter and Environment

Sheep are kept in mobs in paddocks; in pens or in a barn. In cold climates, sheep may need shelter if they are freshly shorn or have baby lambs. Freshly shorn hoggets, especially, may be very susceptible to wet, windy weather and can succumb to exposure very quickly. Sheep have to be kept dry for one to two days before shearing so that the fleece is dry enough to be pressed and to protect the health of the shearers.

Sheep, particularly those kept inside, are vaccinated when they are newborn lambs. The lambs receive their first antibodies via their mother's colostrum in the first few hours of life, and then via a vaccination booster every six weeks for next three months and then by booster every six months.

Weaning is a critical period in the life of young sheep as it is this time when more problems occur than at any other stage of a sheep’s life. Sheep of this age need careful observation as to their general health by noting any weaners that are hollow, have a pale skin or are falling behind the mob etc. Weaners are very susceptible to the deadly Barbers Pole worm (*Haemonchus*), fly strike, scabby mouth, mycotic dermatitis, occasionally pneumonia, fluctuations in feed availability.

Farmers work with animal nutritionists and veterinarians to keep sheep healthy and to manage animal health problems. Lambs may be castrated and have their tails docked for easier shearing, cleanliness and to help protect them from fly strike. Shearers or farmers need to remove wool from the hindquarters, around the anus, so that droppings do not adhere. In the southern hemisphere this is called *dagging* or crutching.

Water, Food and Air

Sheep need fresh water from troughs or ponds, except that in some countries, such as New Zealand, there is enough moisture in the grass to satisfy them much of the time.

Upon being weaned from ewe's milk, they eat hay, grains and grasses. The lambs are weaned due to increasing competition between the lamb and ewe for food. Sheep are active grazers where such feed is available at ground or low levels. They are usually given feed twice a day from troughs or they are allowed to graze in a pasture.

Sheep are most comfortable when the temperature is moderate, so fans may be needed for fresh air if sheep are kept in barns during hot weather. In Australia, sheep in pasture are often subjected to 40 °C (104 °F), and higher, daytime temperatures without deleterious effects. In New Zealand sheep are kept on pasture in snow for periods of 3 or 4 days before they have to have supplemental feeding.

Flock Management

A sheep farmer is concerned with keeping the correct ratio of male to female sheep, selecting traits for breeding, and controlling under-/over-breeding based on the size and genetic diversity of the flock. Other tasks include sheep shearing, crutching and lambing the sheep. Sheep breeders look for such traits in their flocks as high wool quality, consistent muscle development, quick conception rate (for females), multiple births and quick physical development.

Another concern of a sheep farmer is the protection of livestock. Sheep have many natural enemies, such as coyotes (North America), foxes (Europe), dingoes (Australia), and dogs. Newborn lambs in pasture are particularly vulnerable, also falling prey
to crows, eagles and ravens. In addition, they are susceptible in some areas to flystrike which in itself has led to invention of practices such as mulesing. Sheep may be kept in a fenced-in field or paddock. The farmer must ensure that the fences are maintained in order to prevent the sheep from wandering onto roads or neighbours' property. Alternatively, they may be "heafed" (trained to stay in a certain area without the need for fences). The hardy Herdwick breed is particularly known for its affinity for being heafed.

A shepherd and a Livestock guardian dog may be employed for protection of the flock. On large farms, dogs and riders on horseback or motorcycles may muster sheep.

Marking of sheep for identification purposes is often done by means of sheep tags – a type of ear tag. In some areas sheep are still identified through the use of notches cut in the ear known as ear marking, using either specially designed tools (ear marking pliers) or other cutting implements.

**Lambing**

Lambing is term for the management of birth in domestic sheep. In agriculture it often requires assistance from the farmer or shepherd because of breeding, climate or the individual physiology of the ewe.

Australian farmers generally arrange for all the ewes in a mob to give birth (the lambing season) within a period of a few weeks. As ewes sometimes fail to bond with newborn lambs, especially after delivering twins or triplets, it is important to minimize disturbances during this period.

In order to more closely manage the births, vaccinate lambs, and protect them from predators, shepherds will often have the ewes give birth in “lambing sheds”; essentially a barn (sometimes a temporary structure erected in the pasture) with individual pens for each ewe and her offspring.

**Life Cycle**

Ewes are pregnant for just under five months before they lamb, and may have anywhere from one to three lambs per birth. Some ewes can have seven or eight lambs. Twin and single lambs are most common, triplets less common. A ewe may lamb once or twice a year. Lambs are weaned at three months. Sheep are full grown at two years weighing between 60 and 125 kilograms. Sheep can live to eleven or twelve years of age.

I. Complete the following sentences using the information from the text:

1. Sheep need shelter if they …
2. Sheep are vaccinated when they …
3. Lambs are castrated and tail-docked for …
4. Sheep are usually given feed …
5. Natural enemies for sheep are …
6. Sheep breeders must look for …
7. On large farms sheep are mustered by …
8. Ewes may lamb …

II. Translate the following questions into English and answer them:

1. Где должны содержаться овцы?
2. Как называется детеныш овцы?
3. Чем обычно питаются овцы?
4. Какая температура для них наиболее комфортная?
5. Какие животные представляют опасность для овец?
6. Как долго живут овцы?

III. Give sentences with the following words and word combinations from the text:

- to keep a sheep healthy
- to dock a tail
- periodic worming
- to prevent birthing problems
- a lamb
- a barn
- windy weather
- to keep dry
- weaning
- a sheep farmer
- supplemental feeding
- protection of the flock
- twice a day
- natural enemies

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**Some More Sheep Facts**

- Body Temperature: 100.9 °F–103.8 °F
- Pulse/heart rate: 70–80 beats per minute
- Respiration rate: 12–20 breaths per minute
- Estrus (“heat”) cycle: 18 days
- Length of each “heat”: 28 hours
- Gestation (length of pregnancy): 145 days
- Breeding season: August through fall
- Weight: Adult sheep average between 150 lbs. and 200 lbs. for ewes.

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**MUTTON AND LAMB**

Lamb, mutton and hogget are the meat of domestic sheep. The meat of a sheep in its first year is *lamb*; that of a juvenile sheep older than 1 year is *hogget*; and the meat of an adult sheep is *mutton*.

The strict definitions for lamb, hogget and mutton vary considerably between countries. In New Zealand for example, they are defined as follows:

- **Lamb** — a young sheep under 12 months of age which does not have any permanent incisor teeth in wear.
- **Hogget** — a sheep of either sex having no more than two permanent incisors in wear.
- **Mutton** — a female (ewe) or castrated male (wether) sheep having more than two permanent incisors in wear.

The meat of a lamb is taken from the animal between one month and one year old, with a carcase (*carcass* in American English) weight of between 5.5 and 30 kilograms (12 and 65 lbs). This meat is generally more tender than that from older sheep and appears more often on tables in some Western countries. Hogget and mutton have a stronger flavour than lamb because they contain a higher concentration of species-characteristic fatty acids. Mutton and hogget also tend to be tougher than lamb (because of connective tissue maturation) and are therefore better suited to casserole-style cooking, as in Lancashire hotpot, for example.
Lamb chops are cut from the rib, loin, and shoulder areas. The rib chops include a rib bone; the loin chops include only a chine bone. Shoulder chops are usually considered inferior to loin chops; both kinds of chop are usually grilled. Breast of lamb (baby chops) can be cooked in an oven.

**National Cuisines**

Meat from sheep features prominently in several cuisines of the Mediterranean, for example in Greece; in North Africa and the Middle East. In Northern Europe, mutton and lamb feature in many traditional dishes, including those of the North Atlantic islands and of the United Kingdom, particularly in the western and northern uplands, Scotland and Wales. It is also very popular in Australia. Lamb and mutton are very popular in Central Asia and South Asia, and in certain parts of China – where other red meats may be eschewed for religious or economic reasons. Barbecued mutton is also a specialty in some areas of the United States and Canada. However, meat from sheep is generally consumed far less in North America than in many European, Central American and Asian cuisines. In Mexico lamb is the meat of choice for the popular dish, in which the lamb is roasted or steamed wrapped in maguey leaves underground.

**I. Complete the following sentences using the information from the text:**

1. Lamb and mutton are the meat of …
2. The meat of an adult sheep is …
3. Lamb is more tender than …
4. Hogget and mutton have a stronger flavour than lamb because …
5. Lamb chops are cut from …

**II. Answer the following questions:**

1. What is the difference between lamb and mutton?
2. How does lamb consumption vary throughout the world?

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**Unit 5. PIG BREEDING**

The domestic pig is usually given the scientific name Sus scrofa, though some authors call it S. domesticus, reserving S. scrofa for the wild boar. It has been a domesticated animal for approximately 5,000 to 7,000 years. The animal is found across Europe, the Middle East and extends into Asia as far as Indonesia and Japan. The distinction between wild and domestic animals is slight, and domestic pigs have become feral in many parts of the world (for example, New Zealand). Feral pigs can cause substantial environmental damage. The family Suidae also includes about 12 separate species of wild pig, most also classified in the genus Sus.

Pigs are intelligent animals, and some are kept as pets. They are reportedly more intelligent and more trainable than dogs and cats. Pigs were brought to southeastern North America from Europe by De Soto and other early Spanish explorers, where escapees became feral and became freely used by Native Americans as food.
Pigs, like humans, are omnivores, making them easy to raise: on a small farm or in a large household they can be fed kitchen scraps as part or all of their diet. Pigs are among the few mammals not to have sweat glands. Thus they must have access to water or mud to cool themselves during hot weather.

Many different words in English identify different types of pigs:

- Adult male pigs are called boars.
- Adult females are called sows.
- Juvenile animals are called piglets and farrows.
- Young pigs between 100–180 pounds (50 to 90 kg) are called shoats.
- A gilt is an immature female pig.
- A barrow is a castrated male pig.
- Hog is used as a synonym of pig in the United States; in its original sense it means a castrated boar.
- Swine is a plural noun meaning pigs.

Pigs (or swine) that are allowed to forage may be watched by swineherds. A litter of piglets typically contains between 10 and 12 animals. Meat from pigs is called pork in general and ham, bacon or bologna when it has been part-preserved by brine or some other processing. Their trotters are often sold as the jelly-like dish of pig's feet. Hog jowls are a popular soul food. The American pig-raising industry calls pork a white meat, as opposed to beef; "white meat" (such as poultry) is often considered healthier than "red meat." Both Islam and Orthodox Judaism forbid the eating of pork in any form, considering it to be an unclean animal: no form of pig meat can be kosher or halal.

While pigs are raised mostly for meat, their skin is used as a source of leather. Their bristly hairs are also traditionally used for brushes.
I. Translate into English:
1. Свиньи – умные животные, и некоторые содержат их в качестве домашних питомцев.
2. Взрослый самец свиньи называется хряк.
3. Свиней разводят в основном из-за мяса, а из шкур получают кожу.
4. Свиньи – вседневные, и это упрощает их разведение.
5. Свиное мясо называют свининой.

II. Place the missing words in their proper places:
1. The … pig is usually given the … name Sus scrofa (scientific; domestic).
2. Feral … can cause substantial environmental … (damage; pigs).
3. Adult … pigs are called … (boars; male).
4. … is a … noun meaning … (plural; pigs; swine).
5. … from … is called … (pork; meat; pigs).
6. Pigs’ … is used as a … of … (leather; skin; source)

III. Give the English equivalents of the Russian words:
ухо; лоб; щеки; поясница; хвост; круп; живот; подвздохи; пупо; колено; копытце; копыто; плечо; бедро; задняя нога; передняя нога

INTENSIVE PIG FARMING

Intensive piggeries (or hog lots) are a type of factory farm specialized in the raising of domestic pigs up to slaughter weight. In this system of pig production, grower pigs are housed indoors in group-housing or straw-lined sheds, whilst pregnant sows are housed in pens and give birth in farrowing crates.

Pigs are kept in large stalls with large numbers of pigs per square metre. The temperature is raised which allows the pig to spend less energy on keeping its body heat at the right temperature so it gets fat quicker enabling the process to be much more efficient.

Intensive Piggeries

Intensive piggeries are generally large warehouse-like buildings. Indoor pig systems allow the pigs' conditions to be monitored, ensuring minimum fatalities and increased productivity. Buildings are ventilated and their temperature regulated. Most domestic pig varieties are susceptible to heat stress, and all pigs lack sweat glands and cannot cool themselves. Pigs have a limited tolerance to high temperatures and heat stress can lead to death. Maintaining a more specific temperature within the pig-tolerance range also maximizes growth to feed ratio. Indoor piggeries have allowed pig farming to be undertaken in countries or areas with unsuitable climate or soil for outdoor pig raising (e.g., Australia). In an intensive operation, pigs will lack access to a wallow (mud), which is their natural cooling mechanism. Intensive piggeries control temperature through ventilation or drip water systems (dropping water to cool the system).

Pigs are naturally omnivorous and are generally fed a combination of grains and protein sources (soybeans, or meat and bone meal). Larger intensive pig farms may be surrounded by farmland where feed-grain crops are grown. Obviously, piggeries are reliant on the grains industry. Pig feed may be bought packaged, in bulk or mixed on-
site. The intensive piggery system, where pigs are confined in individual stalls, allows each pig to be allotted a portion of feed. The individual feeding system also facilitates individual medication of pigs through feed. This has more significance to intensive farming methods, as the proximity to other animals enables diseases to spread more rapidly. To prevent disease spreading and encourage growth, drug programs such as antibiotics, vitamins, hormones and other supplements are administered pre-emptively.

Indoor systems, especially stalls and pens, allow for the easy collection of waste. In an indoor intensive pig farm, manure can be managed through a lagoon system or other waste-management system. However, waste smell remains a problem which is difficult to manage.

The way animals are housed in intensive systems varies. Breeding sows will spend the bulk of their time in sow stalls (also called gestation crates) during pregnancy. The use of stalls may be preferred as they facilitate feed-management, growth control and prevent pig aggression (e.g., tail biting, ear biting, vulva biting, food stealing). Sows are moved to farrowing crates, with litter, from before farrowing until weaning, to ease management of farrowing and reduce pig loss from sows laying on them. Dry or open time for sows can be spent in indoor pens or outdoor pens or pastures. Houses should be clean, well ventilated but draught free.

Piglets can be subjected to a range of treatments including castration, tail docking to reduce tail biting, teeth clipping (to reduce injuring their mother's nipples) and ear notching for litter identification. Treatments are usually made without pain killers. Weak runts may be slain shortly after birth. Injections with a high availability iron solution are often given, as sow's milk is low in iron.

Piglets are weaned and removed from the sows at between two and five weeks old and placed in sheds, nursery barns or directly to growout barns. Grower pigs – which comprise the bulk of the herd – are usually housed in alternative indoor housing, such as batch pens. Group pens generally require higher stockmanship skills. Such pens will usually not contain straw or other material. Alternatively, a straw-lined shed may house a larger group (i.e., not batched) in age groups. Larger swine operations use slotted floors for waste removal, and deliver bulk feed into feeders in each pen; feed is available ad libitum.

Many countries have introduced laws to regulate treatment of farmed animals. In the USA, the federal Humane Slaughter Act requires pigs to be stunned before slaughter, although compliance and enforcement is questioned. There is concern from animal liberation/welfare groups that the laws have not resulted in a prevention of animal suffering and that there are "repeated violations of the Humane Slaughter Act at dozens of slaughterhouses".

I. Agree or disagree with the following statements:
1. All pigs lack sweat glands and cannot cool themselves.
2. Mud is pig’s natural cooling mechanism.
3. Pigs are naturally carnivorous.
4. The individual feeding system enables diseases to spread more rapidly.
5. Indoor systems allow for the easy collection of waste.
6. The use of stalls cannot prevent pig aggression.
7. Castration, tail docking and teeth clipping are usually made with pain killers.
8. Piglets are weaned and removed from sows at between two and five weeks old.

II. Match the beginnings of the sentences with their endings:

1. Intensive piggeries specializes
2. Pigs are kept
3. Intensive piggeries are
4. Most domestic pig varieties
5. Pigs have a limited
6. Pigs are
7. Pigs farms may be
8. Houses should be
9. Treatments are usually made
10. Piglets are removed
11. Many countries have introduced

a) in large stalls.
b) clean and well-ventilated.
c) in the raising of domestic pigs up to slaughter weight.
d) naturally omnivorous.
e) surrounded by farmland.
f) without pain killers.
g) from the sows at between two and five weeks old.
h) large warehouse-like buildings
i) tolerance to high temperatures.
j) laws to regulate treatment of farmed animals.
k) are susceptible to heat stress.

III. Translate into Russian:

to raise a domestic pig; a slaughter weight; a piglet; to house in sow stalls; to be susceptible to heat stress; sweat glands; unsuitable climate; omnivorous; protein sources; feed-grain crops; a portion of feed; to prevent disease spreading; to encourage growth; waste; growth control; litter; pain killers

PIG PRODUCTION

Swine are reared under more intensive conditions than cattle and sheep. Such enterprises fall into three groups: production of purebred breeding stock, production of feeder pigs, and growing and finishing of feeder pigs for sale and slaughter. Some producers carry out all three activities, and recently many of them have formed cooperatives and built large farrowing units, where up to 1,000 sows can give birth. When the young feeder pigs are weaned at these large units, the individual members of these cooperatives buy them back for feeding and finishing.

Under confinement, diseases are controlled by vaccinations, by control of wildlife carriers of diseases, by use of antibiotics, and in some cases, by eradication of the disease-producing organisms. Compounds that can control the reproductive cycle, the length of the gestation period, and the timing of births have made it possible to control the breeding and farrowing so that a minimum of labour is required during weekends, when such labour is more expensive.

I. Translate into English:

II. Retell the text in short.
FEEDING PIGS

Pigs are non-ruminant animals. They have a single stomach in contrast to such animals as cattle and goats. To grow rapidly and efficiently, swine need a high energy, concentrated grain diet that is low in fiber (cellulose) and is supplemented with adequate protein.

Farm grains are the most common and best source of energy feeds for swine. Corn is an excellent energy feed, and is ideal for finishing feed because it is high in digestible carbohydrates, low in fiber, and is very tasty to pigs. But corn alone will not keep pigs growing and healthy. Corn must be supplemented with vitamins to keep pigs healthy.

Other good sources of feed are barley, oats, and wheat. But like corn all these sources should be supplemented with protein supplements. Some people add antibacterial compounds to their feed to slow the growth of harmful bacteria that occurs naturally in most feeds. In low levels, these compounds increase the growth of pigs and lower feeding costs. They benefit younger pigs (under 100 to 125 pounds) more than finishing hogs. If you decide to use an antibacterial compound, make sure that you pay attention to the withdrawal period listed on the label (the withdrawal period is the amount of time when medicated feeds must be removed from a hog's diet before slaughter).

Pigs weighing 40 to 125 pounds are referred to as growing pigs. From 125 pounds to market weight (about 230 pounds) pigs are called finishing pigs. As a pig grows, the total amount of dietary protein it needs each day also increases; pigs should be switched from the grower (nutrient dense/more protein) to the finisher (less dense) diet when they weigh about 125 pounds.

Pigs should be self-fed (given all the feed they will eat) throughout the feeding period. Self-feeding allows a pig to grow as fast as possible.

Water is the most important part of a pig's diet. One-half to two-thirds of a pig's body is made up of water. Pigs should be supplied with as much clean, fresh water as they will drink. Pigs can live longer without feed than without water.

I. Answer the following questions:
1. What feeds do pigs need to grow rapidly and efficiently?
2. What are the advantages of self-feeding?
3. Why is water the most important part of a pig’s diet?
4. Is there any difference between “growing” pigs and “finishing” pigs?

II. Here are some answers. Give the appropriate questions:
1. They have a single stomach.
2. To keep pigs healthy.
4. Throughout the feeding period.
5. Water.

III. Put the words in the proper order:
1) feed; excellent; energy; corn; an; is
2) wheat; sources; barley; and; are; good; feed; of
3) water; the most; is; part; a; diet; important; pig's; of
4) water; pigs; live; without; cannot; long
PORK

Pork is flesh of hogs, usually slaughtered between the ages of six months and one year. The most desirable pork is grayish pink in colour, firm and fine-grained, well-marbled, and covered with an outer layer of firm white fat. About 30 per cent of the meat is consumed as cooked fresh meat; the remainder is cured or smoked for bacon and ham, used in sausage, and also to produce lard. Because pigs may be infected by the parasitic disease trichinosis, pork must be cooked to an internal temperature of 71°C in order to destroy the disease-causing organism.

Pork carcasses are graded according to the amount of edible meat they will yield. In the United States, where individual cuts are not graded, a US Number 1 carcass is the one having the most satisfactory ratio of fat to lean. Utility-grade pork, which is usually from mature animals, has too little fat and is less firm. The main cuts of pork are hams, spareribs, lion chops, bellies, picnic shoulders.

Pork is one of the most popular types of meats and is consumed around the world. However, it is prohibited by the dietary laws of Judaism and Islam, so pork is virtually unknown in the cuisines of the Middle East and those of some local populations in Asia and Africa.

I. Restore the original sentences:
1) pork; pink; colour; in; the most; is; desirable
2) pigs; by; disease; be; infected; may
3) one; the most; of; types; pork; of; is; meats; popular
4) prohibited; pork; by; the laws; is; Islam; of
5) must; temperature; be; pork; cooked; at; high

II. Retell the text in short.

-- Jokes, Laughs, Smiles --

On a drive in the country, a city slicker noticed a farmer lifting a pig up to an apple tree and holding the pig there as it ate one apple after another.

“Maybe I don’t know what I’m talking about”, said the city slicker, but if you just shook the tree so the apples fell to the ground, wouldn’t it save a lot of time?”

“Time?” said the farmer. “What does time matter to a pig?”

-- Jokes, Laughs, Smiles --

During an action of exotic pets, a woman who had placed a winning bid told the auctioneer, “I’m paying a fortune for that parrot. I hope he talks as well as you say he does”.

“I guarantee it, madam”, replied the auctioneer. “Who do you think was bidding against you?”

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The Horse (Equus caballus) is a large ungulate mammal, one of the seven modern species of the genus Equus. It has long played an important role in transportation; whether ridden, or when pulling a chariot, carriage, horse-drawn boat, stagecoach, tram, also as plough horse, as well as for food. The most common date of domestication of the horse and its first use as a means of transport is circa 2000 BC. Until the mid 20th century, armies used horses extensively in warfare: soldiers still call the groups of machines that now take the place of the horse on the battlefield “cavalry” units, sometimes keeping traditional names (Lord Strathcona's Horse, etc.)

Evolution of the Horse

In comparison to our understanding of the development of most animals, evolutionists have a good grasp on the evolution of the horse from the very early (around 55 million years ago) Hyracotherium or eohippus to the wild equids listed below. By natural selection, the toes of early horse ancestors reduced to the single central toe which forms the hoof of the modern equine. (Compare animals with “cloven” hooves (2 toes), like cows, pigs and sheep.) Vestiges of other toes remain as the splint bones, the callus-like “chestnuts” on the inner sides of all four legs, and the “ergots” hidden in the hair of the underside of the fetlock joint.

In nature, horses function as prey animals. They have a natural tendency to flee from danger, though they will fight if cornered. Their eyes lie to the side of the head, giving them a wide view while grazing (slightly less than 180 degrees to each side, overlapped in front and leaving a blind spot in the rear). Even domesticated horses startle easily and must, for the safety of riders, undergo careful introductions to strange objects and situations.

Horses live in family groups in primarily grassland habitats. These normally consist of a mature stallion, his harem of about one to ten mares, and the mares' offspring. Once young males reach breeding age and begin to attempt to breed with mares or to challenge the herd stallion, the latter drives them out of the herd to form "bachelor bands" with other young stallions. Usually not until a stallion reaches 7 or 8 years old does he stand a real chance of acquiring mares, eventually becoming, if successful in the attempt, a “band stallion”, i.e. having a harem of his own, having separated female equids from another stallion's band.

An alpha mare dictates the direction in which a family herd travels, while the stallion brings up the rear, "herding" his family. Recently, researchers have observed that a form of democracy appears to exist among horses. For instance, if the majority of the herd wants to stop and eat, the whole herd follows suit.

Domestication of the Horse and Surviving Wild Species

The earliest evidence for the domestication of the horse comes from Central Asia and dates to about 3,000 BCE. Competing theories exist about the time and place of domestication. However, wild species continued into historic times, including the Forest Horse, Equus caballus silvaticus (also called the Diluvial Horse); it is thought to have evolved into Equus caballus germanicus, and may have contributed to the development of the heavy horses of northern Europe, such as the Ardennais.
The Tarpan, Equus caballus gmelini, became extinct in 1880. Its genetic line is lost, but a substitute has been recreated by "breeding back", crossing living domesticated horses that had features selected as primitive, thanks to the efforts of the brothers Lutz Heck (director of the Berlin zoo) and Heinz Heck (director of Tierpark Munich Hellabrunn). The resulting animal is more properly called the Wild Polish Horse.

Only one true wild-horse species survives: Przewalski's Horse, Equus caballus przewalskii Polaikov, a rare Asian species. Mongolians know it as the taki, while the Kirghiz people call it a kirtag. Wild populations exist in Mongolia.

**Wild vs. Feral Horses**

One can distinguish between wild animals, whose ancestors have never undergone domestication, and feral animals, who had domesticated ancestors but who now live in the wild. Several populations of feral horses exist, including those in the West of the United States (often called "mustangs") and in parts of Australia (called "brumbies") and in New Zealand called "Kaimanawa horses". These feral horses may provide useful insights into the behavior of their ancestral wild horses.

The Icelandic horse (pony-sized but called a horse) offers an interesting breed from a historic and behavioural point of view. Introduced by the Vikings into Iceland, Icelandic horses missed out on the intensive selective breeding that took place in Europe from the middle ages onwards, giving us a picture of what horses looked like and behaved like in those times.

**As Food**

In 2001, people consumed an estimated 153,000 tonnes of horse meat worldwide. Meat from injured horses that vets have put down with a lethal injection is not used for consumption: the carcasses of such animals are cremated. In Europe, horses are raised just for their meat, these horses run wild and are not trained as carriage animals.

**Words Relating to Horses**

- horse – adult equine of either sex over 14.2 hh (58 inches, 1.47 meters)
- pony – equine 14.2 hh or less (58 inches, 1.47 meters)
- mare – adult female horse
- stallion – adult, uncastrated male horse
- gelding – adult, castrated male horse
- foal – infant horse of either sex
- filly – female horse from birth to sexual maturity (about 24 months)
- colt – male horse from birth to sexual maturity (about 24 months)
- yearling – male or female horse one year old
- weanling – a young horse who has just been weaned (usually 6 months or a little older)
- green – a term used to describe an inexperienced horse

**The Origin of Modern Horse Breeds**

Horses come in various sizes and shapes. The draft breeds can top 20 hands (80 inches, 2.03 meters) while the smallest miniature horses can stand as low as 5.2 hands (22 inches, 0.56 meters). The Patagonian Fallabella, usually considered the smallest
horse in the world, compares in size to a German Shepherd Dog. These differences relate to breed, not to species: the individuals could interbreed.

Several schools of thought exist to explain how this range of size and shape came about. These schools grew up reasoning from the type of dentition and from the horses' outward appearance. One school, which we can call the "Four Foundations", suggests that the modern horse evolved from two types of early domesticated pony and two types of early domesticated horse; the differences between these types account for the differences in type of the modern breeds. A second school -- the "Single Foundation" -- holds only one breed of horse underwent domestication, and it diverged in form after domestication through human selective breeding (or in the case of feral horses, through ecological pressures). Finally, certain geneticists have started evaluating the DNA and mitochondrial DNA to construct family trees.

I. Read the text and say:
1) what role the horse has long played;
2) what you think of the evolution of the modern horse;
3) what you can retell about the domestication of a horse;
4) what horse’s breeds you know.

II. Form the verbs from the following words and translate them:
grinding; pulling; keeping; comparison; development; selection; grazing; leaving; riders; introduction; breeding; researchers; domestication; population; behavior; consumption; evaluating, definition

III. Complete the sentences using the words from the text:
1. The horse has long played an important role in … .
2. Horses have a natural tendency to … .
3. Horses live in family groups in … .
4. The group normally consists of … .
5. Feral horses had domesticated ancestors but now live … .
6. In Europe, horses are raised for … .
7. The school “Four Foundations” suggests that the modern horse evolved from … .

DESCRIPTION OF THE HORSE

As a result of deliberate breeding by humans, horses display a remarkable variation in size, body shape and coat colour. Traditionally, a horse’s size is measured at the withers, the highest part of a horse’s back. The measurement is made in hands; one hand equals about 10 cm.

The horse is often considered to be the most intelligent among subhuman animals. A horse’s head is composed of the skull, and the face, distinguished by a long muzzle consisting of the nose and lower and upper lips. The skull encloses the animal’s large, complex brain, well-developed in those areas that direct muscle coordination. The muzzle provides enough distance between the horse’s mouth and its eyes so that it can graze and watch for danger at the same time. The top of a horse’s head is the poll.

Horses have the largest eyes of any land mammal. The large eyes protrude from the sides of the head, enabling horses to see almost directly behind themselves, even while
facing forward. Their night vision is excellent. Horses have limited colour vision, so they perceive red and blue, but they cannot distinguish between green and shades of grey.

Horses can close their wide nostrils against dusty winds, and they can move their large ears to detect sounds from various directions. The senses of smell and hearing are sharper than in human beings.

The horse, like other grazing herbivores, has typical adaptations for plant eating: powerful teeth and jaws to grind and break down plant fibres. The lower jaw is called the cheek. As horses get older, their teeth surfaces wear down providing a reliable method of judging a horse’s age.

A horse’s head is held by its long, flexible neck, which lets the horse both reach down to the ground to feed and rise high enough to sight danger. Its long neck and high-set eyes enable the horse to notice a possible threat even while eating low grasses.

The horse’s body has a wide chest, which holds its enormous lungs and heart; and a muscular back, beneath which lie the horse’s internal organs for digesting food and reproducing. A horse’s ability to carry weight is dependent on the size of its chest. If the chest is narrow, a horse usually does not do well with draft work but may be fine in harness or with light rider. On the other hand, narrowness in the chest may result from immaturity, poor body condition, inadequate nutrition, or underdeveloped breast muscles from a long time in pasture and lack of consistent work. Horses may have two types of shoulders: either straight, upright, or vertical shoulders and laid-back or sloping ones. The former is best for pack showing, parade horses, and activities requiring a quick burst of speed, like Quarter Horse racing. A sloping shoulder is most advantageous for jumping, polo, driving, racing and endurance. A horse’s long, flowing tail helps keep its hindquarters warm and is used to swish away insects. The croup is the part of the back of a horse near the tail.

The horses with short croup such as Arabs, Quarter Horses, draft breeds are best suited for pleasure and trail, harness, non-speed and non-jumping events. The flat or horizontal croup found especially in Saddlebreds, Arabians, and Gaited horses is best for distance trail, showing and carriage driving.

The horse’s general characteristic is an animal of speed. Long, light legs allow a horse to reach speeds of 70 km/h. Proper conformation of both the front and hind legs of the horse is very important. It is surprising that some parts of the horse’s legs have the same names as in a human. For example, the front leg consists of the arm, the elbow and the knee, which are similar to the human arm, elbow and ankle respectively. The part of the back leg, that is equivalent to the lower thigh in humans is known as the gaskin or the second thigh. The joint in the hind leg of a horse corresponding to the human ankle is called the hock. The foot of a horse as well as of a cow is covered with bony material forming the hoof. The thicker back part of a horse’s leg near the hoof is the fetlock and the thin part of a horse’s leg between the fetlock and the hoof is the pastern. The upper part of a horse’s hoof where the horn of the hoof meets the skin of the pastern is the coronet.

Many types of horses are distinguished by the colours and patterns of their hairy coat, a tail and a mane. The latter is long hair on the head and neck of a horse, while a ridge along the neck of a horse from which hair grows is known as the crest. The front part of a horse’s mane falling forward between its eyes on the forehead is called the forelock.

A heavy winter coat grows in the fall and sheds in the spring. Among the most important colours are black, brown, grey, gold, cream and white. The mane and tail can be the same or different from the body colour, and many variations in colour can result from inherited traits.

**I. Give the English equivalents for the following words:**
- холка; щека; плечо; грива; колено; скакательный сустав; локоть; путовый сустав; грудная клетка; ноздри; рот; гибкий; шея; узкий; сердце; скорость; хвост

**II. Complete the following sentences with the words from the text:**

1. Horses display a remarkable variation in … .
2. The highest part of a horse’s back is … .
3. The horse is considered to be the most … .
4. A horse’s head consists of … .
5. The top of a horse’s head is … .
6. The largest eyes of any land mammal belong to … .
7. Horses cannot distinguish between … .
8. A horse’s teeth are able … .
9. The long, flexible neck lets the horse … .
10. A horse’s ability to carry weight is dependent on … .
11. The long, flowing tail is used to …
12. The front leg consists of … .
13. The part of the back leg is known as … .
14. The thicker back part of a horse’s leg near the hoof is … and the thin part of a horse’s leg between the fetlock and the hoof is … .
15. A heavy winter coat … in the fall and … in the spring.
III. Answer the following question:

Do you agree that the horse is the most intelligent among subhuman animals? Prove it.

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**Jokes, Laughs, Smiles**

While driving down a steep and curvy logging road, a group of biologists lose control of their 4-wd "Jimmy" and careen down the hill. The truck piles up at the bottom of the canyon, and everyone aboard perishes. Surprisingly, they all go to heaven. At an orientation they are asked, “When you are in your casket and your friends and family are mourning about your death, what would you like to hear them say about you?”

The first guy, a well known botanist says, “I would like to hear them say that I was one of the greatest botanists of my time, and left an eternal contribution to the botanical world.”

The second guy, an ornithologist, says, “I would like to hear that I was a wonderful birder and made a huge difference in the recovery of our bird populations.”

The last guy, a scruffy mammalogist, replies,

“I would like to hear them say... 'LOOK, HE'S MOVING!!!’ “

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**Unit 7. Poultry Breeding**

Poultry is the class of domesticated fowl (birds) used for food or for their eggs. These most typically are members of the orders Galliformes (such as chickens and turkeys), and Anseriformes (waterfowl such as ducks and geese). The word “poultry” is often used to refer to the flesh of these birds.

In a more general sense, the word “poultry” may refer to the flesh of other birds, such as pigeons or doves, or games like pheasants.

On poultry farms, the male chicken is called “the rooster” or “the cock”. The female (more than a year old) is called “the hen”; the female (less than a year old) is called the pullet; the immature male is known as the cockerel; very young chickens of either sex are called chicks; and castrated males are called capons.

It is required that the birds bred for meat should reach a specific weight, so they are to be grown for a particular amount of time. Thus, in poultry markets, fowl commonly means a full-grown female bird. The females, both mature hens and pullets, are mainly raised for meat and edible eggs; while cocks as well as capons are raised to become meat birds. Seven-week-old chickens are classified as broilers or fryers, and those that are 14 weeks old as roasters.
Chicken Production

Chicken meat and eggs have become mass-production commodities due to modern high-value poultry farms where such operations as feeding, watering and cleaning as well as egg gathering are highly mechanized. To control heat, light and humidity, commercial farms widely use the battery system for raising chickens, that is, birds are confined in separate cages arranged in rows one above the other throughout the year. It has been found that this system increases production, lowers mortality, reduces diseases, improves culling and reduces both space and labour requirements.

Among the world’s agricultural industries, meat chicken breeding is one of the most advanced and it is presently considered the model for other animal industries. The broiler industry is leading in advanced agricultural technology and efficiency. Today, one person can care for 25,000 to 50,000 broilers that reach market weight in three months’ time, giving an annual output of from 100,000 to 200,000 broilers. A modern broiler chick gains over 43 times its initial weight in an eight-week period. As to the achievement in egg production, annual egg production per hen has considerably increased. Poultry breeders predict further increase in the demand for poultry production in the future.

I. Give sentences with the following words:
  chicken; a cock; a hen; weight; to grow; mature; broiler; production; to control; advanced; disease; to feed; to reduce; a breed; annual

II. Answer the question:
  What are poultry used for?

III. Retell the text in English.

DESCRIPTION OF THE POULTRY

The domestic fowl is adapted for living on the ground where it finds its natural food. The bird’s foot consisting of four toes with sharp claws is designed for scratching the earth. The first toe, called a hallux, points backwards. Birds have two legs; the lower part of each leg is called the tarsus or the shrank, and the top part of the leg is known as a thigh. A pointed extension or a sharp outgrowth on the legs of male birds (roosters) is known as a spur.

Various breeds show great diversity in size and shape. However, the large and heavy body with the round and full breast and short wings make most breeds of domestic poultry incapable of flying except for short distances. The back is usually broad and tapering to the tail with saddle feathers in great abundance. The bird’s neck is often of medium length and it is covered with feathers described as hackle feathers. Either of two long curving feathers in the tail of a rooster is called main tail feathers or sickles. The length of the tail feathers varies greatly. The rooster’s tail is usually carried in an erect position.

The bird’s wing consists of two main types of feathers: hard or cover wing feathers which are in the middle of the wing and flight feathers which are at the end of the wing and they are usually covered by the saddle feathers. The flight feathers are subdivided into the primary feathers or main flight wing feathers which grow on the
outer half of a bird’s wing sickle feather and the secondary feathers growing along the inner edge of a bird’s wing.

Because feathers of birds’ wings are nonliving structures that cannot repair themselves when worn or broken, they must be renewed periodically. Most adult birds molt, that is lose and replace their feathers, at least once a year.

Plumage of various fowl ranges in colour through white, grey, yellow, blue, red, brown and black. The colour of fluff and feathers of the wings may be the same or quite different.

Birds have toothless, lightweight jaws, called beaks or bills. Unlike humans or other mammals, birds can move their upper jaws independently of the rest of their heads opening their mouths extremely wide.

Birds’ beaks occur in a wide range of shapes and sizes depending on the type of food a bird eats. Both female and male beaks are commonly short, stout, well curved, hooked and its colour depends on the breed.

In adults of both sexes the head is decorated with the wattles and the comb. The former are below the beak and the latter is a naked, fleshy crest on the top of the bird’s head. The comb is more developed in the male and is variously shaped depending on the variety of the domestic fowl. The comb structure can range from a simple, single, erect or drooping, serrated appearance to more elaborate forms, such as the rose, the pea, the leaf, the strawberry combs, the V-shaped comb etc. The wattles as well as the comb usually vary in colour from pink to red.

The ears of birds are completely internal, with openings placed just behind and below the eyes. Special textured feathers called earlobes, usually red in colour, form a protective screen that prevents objects from entering the ear. Birds rely on their ears for hearing and also for balance, which is especially critical during flight.
The eyes of birds protected by the eyelids are large and provide excellent vision. These lids moisten and clean the eyes as well as protect them from wind and bright light.

I. Fill in the blanks with the required words from the text:
1. The bird’s foot consists of four … with sharp … .
2. The first toe is called … .
3. The top part of the leg is known as … .
4. The most breeds of … poultry cannot fly because of short … .
5. The bird’s body is covered with … .
6. The head of both sexes is decorated with … and … .
7. The … of birds are completely internal.
8. The eyes of birds are protected by …

II. Make up questions to which the following sentences are the answers:
1. It’s called a hallux.
2. The top part of the leg.
3. No, only male birds.
4. They may be different in size and shape.
5. No, they are not. They fly for short distances.
6. It’s covered with hackle feathers.
7. At least once a year.
8. As a rule, they are short, well-curved and hooked.
9. It varies in colour from pink to red.

III. Choose English equivalents to the following Russian words:
коготь; шпора; гребешок; плюсна; задний палец; поясничные перья; хвостовые перья; клюв; бородка (у петуха); крыло; покрывать; хвост; петух; сломать; твердый; обновлять; линять; беззубый; внутренний

FUR FARMING

Fur farming is an industry which raises animals in order to kill them for their fur. The first fur farms in North America appeared in the 1860s. The animal which is most commonly farmed is the mink. The country which has the largest fur farming industry is Denmark with 35 % of the world's production in 2003.

Since the late 1970s, the wearing of fur for clothing has become controversial in some countries and, as a result, fur farming is less common than it once was.

Answer the following questions:
1. What is the purpose of fur farming?
2. What animal is most commonly farmed?
Unit 8. PETS’ WORLD

A pet or companion animal is an animal that is kept by humans for companionship and enjoyment, rather than for economic reasons. The most popular are noted for their loyal or playful characteristics or their beautiful appearance or song.

While in theory one could keep a blue whale as a pet, in practice a small number of species of mammals, especially dogs and cats, and other animals such as birds have dominated the pet scene for a very long time. Fish have joined them more recently. Many of these are domesticated while others, often considered novelty pets, are not. With the exception of iguanas and non-venomous snakes, few reptiles and amphibians make good pets.

The glofish, a genetically modified zebrafish with a bright red fluorescent colour is the first genetically modified (GM) animal to be engineered as a pet.

A pet can be acquired from a pet store, an animal shelter, a breeder, and sometimes from people who have too many due to births.

I. Fill in the blanks with the words from the text:
1. A pet is an animal that …
2. Dogs and cats have dominated the pet scene …
3. The glofish is the first …
4. Birds also… for a very long time.

II. Answer the following questions:
1. What animals do we usually call pets?
2. What animal would you like to have as a pet? Why?
3. Where can a pet be acquired from?

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Jokes, Laughs, Smiles

The Difference Between Dogs and Cats

A dog thinks: Hey, these people I live with feed me, love me, provide me with a nice warm, dry house, pet me, and take good care of me … They must be gods!

A cat thinks: Hey, these people I live with feed me, love me, provide me with a nice warm, dry house, pet me, and take good care of me … I must be a god!

A Dog’s New Year Resolutions

I don’t need to suddenly straight up when I am lying under the coffee table.

I must shake the rainwater out of my fur BEFORE entering the apartment.

The sofa is not a face towel. Neither are Mom and Dad’s laps.

My head does not belong in the refrigerator.

I will not play tug-of-war with Dad’s underwear when he is on the toilet.
DO YOU OWN A PET?

Britain is traditionally considered really crazy about pets. Fifty per cent of British families own a pet. There are 5.3 million dogs in 4.5 million households; 4.6 million cats in 3.3 million households and 2.5 million budgies in 1.7 million households. The British are so mad about animals that they started a society on June 1824 to prevent cruelty to them. Today it is called the RSPCA (Royal Society for the Prevention of Cruelty to Animals). The first royal supporter of the society was the Duchess of Kent in 1835. The RSPCA inspectors investigate complaints about cruelty to animals; inspect livestock markets where animals are sold for food, give talks at schools, painlessly put down animals that are old or sick. It also finds new homes for unwanted pets.

Answer the questions:
1. Have you got a pet? Why?
2. Are the British fond of animals?
3. How does mixing with pets influence our life, mood and health?

CAT

The cat (also called domestic cat or house cat) is a small feline carnivorous mammal. Its scientific name is Felis silvestris catus or Felis silvestris domesticus, but the species is sometimes referred to as Felis domesticus or Felis catus. Felis catus is the more current species name.

The cat has been living in close association with humans (although never entirely domesticated as dogs are) since at least 3500 years ago, when the Ancient Egyptians routinely used cats to keep mice and other rodents away from their grain. Currently, the cat is one of the world's most popular household pets. A male cat is usually called a tom cat; a female cat is called a queen. A young cat is called a kitten (as are baby rats, rabbits, hedgehogs, and squirrels). A cat whose ancestry is officially registered is called a purebred cat, a pedigreed cat, or a show cat. The owners and breeders of show cats compete to see whose animal bears the closest resemblance to the "ideal" definition of the breed. Less than one percent of the total feline population are purebred cats—the remaining 99% have mixed ancestry, and are referred to as domestic longhairs and domestic shorthairs. In the U.S., a non-purebred cat is often called an alley-cat, even if it is not a stray.

Characteristics

Relative to size, domestic cats are one of the world's top predators, if not the best. The domestic cat can kill or eat several thousand species—many big cats will eat fewer than 100. However, because of their small size, cats pose almost no danger to humans—the only hazard is the possibility of infection (or, rarely, rabies) from a cat bite. Cats are, however, historically very dangerous to ecosystems where they were not native and which did not have time to adapt to their introduction. In some cases, cats have contributed to or caused extinctions. They ambush and dispatch prey using tactics similar to those of leopards and tigers -- by pouncing and delivering a neck bite with their long canine teeth that sever the victim's spinal cord or asphyxiate it by crushing the windpipe.

Cats are thought to be "the perfect carnivores," and have highly specialized teeth and a digestive tract that reflect this. The premolar and first molar together comprise the
carnassial pair on each side of the mouth, which efficiently functions to shear meat like a pair of scissors. While this is present in canines, it is highly developed in felines. Unlike virtually all other carnivores cats eat almost no vegetable matter. Whereas bears and dogs commonly supplement their diet of meat with fruits, berries, roots, and honey when they can get them, cats feed exclusively on meat, usually freshly killed. In captivity cats cannot be adapted to a vegetarian diet because they cannot synthesise all the amino acids they need from plant material; this contrasts with domesticated dogs, which commonly are fed a mixture of meat and vegetable products and have been adapted in some cases to a completely vegetarian diet. Despite its reputation as a solitary animal, the domestic cat is social enough to form colonies, but does not attack in groups as do lions.

While each cat holds a distinct territory (sexually active males having the largest territories and neutered cats have the smallest) there are “neutral” areas where cats watch and greet one another without territorial conflict or aggression. Outside of these neutral areas, territory holders usually vigorously chase away strangers, at first by staring, hissing, and growling, and if that doesn't work by short but noisy and violent attacks. Fighting cats make themselves look larger by raising their fur and arcing their backs. Attacks usually comprise powerful slaps to the face and body with the forepaws as well as bites, but serious damage is rarely done, and usually the loser runs away with little more than a few scratches to the face. Sexually active males may be engaged in many fights over their lives and often have decidedly weathered faces, often with obvious scars and cuts to the ears and nose. It is not just males that fight; females will also fight over territory or to defend their kittens and even neutered cats will defend their small territories vigorously.

The wild cat ancestor of the domestic cat is believed to have evolved in a desert climate, as evident in the behavior common to both the domestic and wild forms. Cats enjoy heat and solar exposure, often sleeping in a warm area during the heat of the day. Their feces are usually dry, and cats prefer to bury them in sandy places. They are able to remain motionless for long periods of time, especially when observing prey and preparing to pounce. In North Africa there are still small wildcats that are probably closely related to the ancestors of today's domesticated breeds.

Being closely related to desert animals, cats can withstand the heat and cold of a temperate climate, but not for long periods of time. They have little resistance against fog, rain and snow, although certain breeds such as the Norwegian Forest Cat and Maine Coon have developed more protection than others; and struggle to maintain their 39 °C (102 °F) body temperature when wet. Most cats dislike immersion in water. One exception is the Turkish Van cat.

Cats have excellent diurnal and night-vision. In very bright light, the slit-like iris closes very narrowly over the eye, reducing the amount of light on the sensitive retina, but greatly limiting the cat's field of view. An organ called the tapetum lucidum is responsible for their strong low-light vision, as well as for the varied colours of cats' eyes in flash photographs. As with most predators their eyes are both forward-facing, affording depth perception at the expense of field of view.

When there is too little light for even cats to see, they use their whiskers (technically called vibrissae) to aid with navigation and sensation. Whiskers can detect very small shifts in air currents, enabling a cat to know they are near obstructions without actually seeing them.

Cats have a third eyelid, the nictitating membrane, which is a thin cover which closes from the side and appears when the cat's eyelid opens. This membrane partially closes if the cat is sick, although a very sleepy and happy cat can also show this membrane. If a cat chronically shows the third eyelid, it should be taken to a veterinarian.

The unique sound a small cat makes is written “meow” in American English, “miaow” in British English, “miaou” in French, and various ways in other languages. The cat's pronunciation of “miaow” varies significantly depending on meaning. Cats can also produce a purring noise that many humans find comforting or pleasurable. As the purr is not a vocal sound, it is possible for a cat to meow and purr simultaneously, although it is unusual for a cat to do so. Most cats also growl or hiss on occasion.

Cats are also very clean, as they groom themselves by licking their fur. Their saliva is a powerful cleaning agent, but it can provoke allergic reactions in humans. They also occasionally vomit up hair balls of fur that have collected in their stomachs.

Cats conserve energy by sleeping more than most animals. Daily durations are variously reported as 12–16 hours, with 13–14 a possible average, but some cats sleep as much as 20 hours in a 24 hour period. In English, the term “cat nap” refers to the cat's ability to fall asleep for a brief period of time and someone who nods off for a few moments is said to be “taking a cat nap.”
Domestication

Like domesticated animals, cats live with humans, but have done so for a much shorter time than almost all domesticated animals, and the degree of domestication of cats is somewhat disputed. Since the benefit of removing rats and mice from humans' food stores outweighed the cost of allowing a formerly-wild animal to enjoy the relative safety of a human settlement, the relationship between cat and human flourished. However, unlike other more domesticated species, housecats' ancestors did not hunt socially or enjoy the safety of a herd, as other more domesticated animals did. This evolutionary history may be the reason cats do not "understand" the desires of humans in the same way that dogs do: before humans, cats had fewer social relationships to benefit from. This may also contribute to a sense common among pet owners that cats are both more aloof and more self-sufficient than other pets. However, cats can be very affectionate towards their humans, especially if they imprint on them at a very young age and are treated with consistent affection.

Humans still keep cats for companionship as pets and to hunt mice and rats. Farms often have dozens of cats living semi-wild in the barns. Hunting in the barns and the fields, they kill and eat rodents that would otherwise eat large parts of the grain crop. Many pet cats successfully hunt and kill mice, rabbits, birds, lizards, frogs, fish, and large insects by instinct, but might not eat their prey. They may even present such victims (dead or maimed) to a beloved owner, often expecting reward. Almost all cats are skilled predators.

Some environmentalists claim that the domestication of cats is harmful to the environment, and that excessive cat populations result in the overhunting of many small animals and birds in both urban and rural areas, possibly disrupting the food chain and limiting local species' populations. Throughout the centuries, as humans took advantage of the domestic cat's hunting skills, few had regard for their habitat and care, and far fewer thought to practice good animal husbandry. This created many pockets of excessive populations and local imbalances; however, with intervention and management, most especially spay and neuter programs, the disruptions and chaos in both the feline's life cycle as well as its prey can easily be avoided, and the positive effects these small and vital predators have in the appropriate environments can be observed and appreciated.

History and Mythology

The exact history of human interaction with cats is still somewhat vague. The earliest written records of the attempt to domesticate cats date to ancient Egypt circa 4000 BC, where cats were employed to keep mice and rats away from grain stores. However, a recently discovered gravesite in Shillourokambos, Cyprus, dating to 7500 BC, contains the skeletons of a ceremonially buried human and a type of young cat. The cat found in the Cyprus grave was more similar to the ancestral wildcat species than to modern housecats.

In the Middle Ages, cats were often thought to be witches' familiars, and during festivities were sometimes burnt alive or thrown off tall buildings. Some historians theorize that widespread superstition-induced enmity towards cats accelerated the Black Death (generally held to have been an outbreak of Bubonic Plague). The speed with which the Black Death spread through 14th century Europe led many to believe that...
the Devil was responsible for the disease. This belief led the Pope to declare that cats, who were known to roam freely, were in league with the devil. Because of the declaration, a great many cats were killed in Europe. The sudden decrease in the cat population led to a massive increase in the number of rats, the number of plague-carrying fleas that fed upon them, and the number of human plague victims, which is what the declaration had aimed to reduce.

Today some people still believe that black cats are unlucky, or that it is unlucky if a black cat crosses one’s path, while others believe that black cats are lucky. Cats are also still to this day associated with witchcraft. Black cats in particular are associated with Halloween festivities.

I. Ask questions about the words in italics:
1. The cat has been living in close association with humans since at least 3500 years ago.
2. A young cat is called a kitten.
3. The domestic cat can kill or eat several thousand species.
4. Cats are historically very dangerous to ecosystem.
5. Cats have highly specialized teeth.
6. Fighting cats make themselves look larger by raising their fur and arching their back.
7. Their feces are usually dry.
8. Cats have excellent diurnal and night-vision.
9. Their saliva can provoke allergic reactions in humans.

II. Insert the missing adjectives from the text:
1. The cat is a small … carnivorous mammal.
2. The cat is one of the world’s most … household pets.
3. A … cat is called a queen.
4. A … cat is called a kitten.
5. Almost all cats are … predators.
6. The … cat ancestor of the … cat is believed to have evolved in a desert.
7. Cats have … resistance against fog, rain and snow.
8. Cats have … diurnal and night-vision.
9. Their saliva is a … … agent.

III. Arrange antonyms in pairs:
   a) noisy; domestic; close; female; purebred; dangerous; developed; social; wet; bright; sick; happy; clean; dead; skilled; harmful; excessive; urban; positive; vague
   b) male; safe; unhappy; non-purebred; undeveloped; distant; rural; negative; dirty; quiet; individual; dry; healthy; wild; dark; scarce; alive; unskilled; distinct; useful

IV. Answer the questions:
What purposes do humans keep cats for?
Do you agree that cats don’t “understand” the desires of humans in the same way that dogs do? Give examples to illustrate your point.
What superstitions connected with cats do you know? Do you believe them?

V. Speak on the main characteristics of a cat.
A kangaroo kept getting out of his enclosure at the zoo. Knowing that he could hop high, the zoo officials put up a ten-foot fence. He was out the next morning just roaming around the zoo. A twenty-foot fence was put up. Again he went out. When the fence was forty feet high, a camel in the next enclosure asked the kangaroo, “How high do you think they’ll go?”

The kangaroo said, “About a thousand feet, unless somebody locks the gate at night!”

**DOG**

The dog is a canine omnivorous mammal that has been domesticated for somewhere between 14,000 and 150,000 years. In this time, the dog has developed into hundreds of breeds with a great degree of variation. For example, heights ranging from just a few inches (such as the Chihuahua) to nearly three feet (such as the Irish Wolfhound), and colours ranging from white to black with reds, grays, and browns also occurring in a tremendous variation of patterns. The dog is known for its trainability, its playfulness, and for its ability to fit into human households and social situations.

Dogs fill a variety of roles in human society. Working dogs of all kinds do traditional jobs such as herding and new jobs such as detecting contraband. For dogs that do not do their traditional jobs, a wide range of dog sports provide the opportunity to exhibit their natural skills. In many countries the most common and perhaps most important role of dogs is as companions.

**Man's Best Friend**

Modern dog breeds show more variation in size, appearance, and behavior than any other domestic animal. Within the range of extremes, dogs generally share attributes with their wild ancestors, the wolves. Dogs are predators and scavengers, possessing sharp teeth and strong jaws for attacking, holding, and tearing their food.

Their legs are designed to propel them forward rapidly, leaping as necessary, to chase and overcome prey. Consequently, they have small, tight feet, walking on their front toes; their rear legs are fairly rigid and sturdy; the front legs are loose and flexible.

Dogs have a form of colourblindness that affects how they see red (same as yellow), green, and blue (both appear white). Because the lenses of dogs' eyes are flatter than humans', they cannot see as much detail; on the other hand, their eyes are more sensitive to light and motion than humans' eyes.

Dogs detect sounds as low as the 20 to 70 Hz frequency range (compared to 16 to 20 Hz for humans) and as high as 70,000 to 100,000 Hz (compared to 20,000 Hz for humans), and in addition have a degree of ear mobility that helps them to rapidly pinpoint the exact location of a sound. They can identify a sound's location much faster than can a human, and they can hear sounds up to four times the distance that humans can.

Dogs have about 220 million smell-sensitive cells (compared to 5 million for humans). Some breeds have been selectively bred for excellence in detecting scents, even compared to their canine brethren.
All dogs have a tremendous capacity to learn complex social behavior and to interpret varied body language and sounds, and, like many predators, can react to and learn from novel situations.

**Anatomy**

Like most predatory mammals, the dog has powerful muscles, a cardiovascular system that supports both sprinting and endurance, and teeth for catching, holding, and tearing.

The dog's ancestral skeleton provided the ability to run and leap. Although selective breeding has changed the appearance of many breeds, all dogs retain the basic ingredients from their distant ancestors. Dogs have disconnected shoulder bones that allow a greater stride length for running and leaping. They walk on four toes, front and back, and most have vestigial dewclaws on their front legs.

The dog's ancestor was about the size of a Dingo, and its skeleton took about 10 months to mature. Today's toy breeds have skeletons that mature in only a few months, while giant breeds such as the Mastiffs take 16 to 18 months for the skeleton to mature. Dwarfism has affected the proportions of some breeds' skeleton, as in the Basset Hound.


**Ancestry and History of Domestication**

Molecular systematics indicate that the domestic dog is descended from a wolf-like ancestor, and dogs and wolves can still interbreed. The domestication of the dog probably occurred at least 14,000 years ago, and perhaps long before that. There is archaeological evidence of dog remains, showing the characteristic morphological differences from wolves, from at least 14,000 years ago, while wolf remains have been found in association with hominid remains that are at least 400,000 years old. The molecular genetic data suggest that the domestic lineage separated from modern
wolves around 150,000 years ago. In the early 2000s, some research indicated that domestication in fact had already begun to occur as early as 100,000 years ago.

Dogs were, and are, valued for their aid in hunting. Dog burials at the Mesolithic cemetery of Svaerdborg in Denmark indicate that in ancient Europe, dogs were valued companions.

Some evidence suggests that several varieties of ancient wolves contributed to the domestic dog, with deliberate or unintentional interbreeding taking traits from one or more of the ancestral wolf lines. Although all wolves belong to the species Canis lupus, there are (or were) many subspecies that had evolved somewhat distinctive appearance, social structure, and other traits. For example, the Japanese wolf, which became extinct in the early 20th century, was much smaller than most wolves, generally had a gray coat with reddish underbelly, and possibly had a more solitary hunting habit; the North American wolf, which still exists in limited ranges, is much larger than many wolf subspecies, displays many coat colours from nearly white through solid black, and exhibits a complex social structure involving highly formulaic dominance and submission rituals.

The Indian or Asian wolf probably led to the development of more breeds of dogs than other subspecies. Many of today's wild dogs, such as the dingo and pariah dogs, are descended from this wolf, along with sighthounds such as the Greyhound. Recent genetic evidence shows that most modern dog breeds are related to Asian canines, contradicting earlier hypotheses that the dog, like humans, had evolved originally in Africa. The Asian wolf also likely interbred with descendants of the European wolf to create the Mastiffs — the Tibetan Mastiff being an example of a very ancient breed — leading eventually to the development of such diverse breeds as the Pug, the Saint Bernard, and the Bloodhound.

The European wolf, in turn, may have contributed many of its attributes to the Spitz dog types, most terriers, and many of today's sheepdogs. The Chinese wolf is a probably ancestor to the Pekingese and toy spaniels, although it is also probable that descendants of the Chinese and European wolves encountered each other over the millennia, contributing to many of the oriental toy breeds.

The North American wolf is a direct ancestor to most, if not all, of the North American northern sled dog types; this mixing and crossing still goes on today with dogs living in the Arctic where the attributes of the wolf that enable it to survive in a hostile environment are still valued. Additionally, accidental crossbreeding occurs simply because dogs and wolves live in the same environment.

Current research indicates that domestication, or the attributes of a domesticated animal, can occur much more quickly than previously believed, even within a human generation or two with determined selective breeding. It is also now generally believed that initial domestication was not attained deliberately by human intervention but through natural selection: wild canines who scavenged around human habitation received more food than their more skittish counterparts; those who attacked people or their children were probably killed or driven away, while those more tolerant animals survived, and so on.
Favourite Activities

Dogs enjoy spending time interacting with other dogs. Roughhousing and chasing one another are favorite activities. Off-leash dog parks can be good places for dogs to exercise and interact with other dogs. When seeking relaxation, dogs enjoy lying about with their companions, favoring spots with a good view of their surroundings.

Dogs as Working Partners

The relationship between dogs and humans is ancient. Dogs serve humans in many ways. There are guard dogs, hunting dogs, and herding dogs. Dogs have served as guides for the blind, as commandos, and have flown into outer space. Most modern working dogs are put in positions which capitalize on their sensory or strength and endurance advantages over normal humans. For example, a new and particularly effective role of working dogs is that of the drug- or bomb-sniffing dog. All canines have olfactory sensitivity thousands or millions of times more sensitive than humans. This allows them to pick up on the subtle smells of distinctive chemicals, such as cannabis or plastic explosive. Airport security frequently tours concourses and baggage areas with a dog trained to respond to such chemicals.

K-9 police units typically feature a long-term human-canine team, in which the dog is trained to home in on the scents of particular people, and to facilitate their arrest once located. Most criminals find being wrestled to the ground by an aggressive dog much more frightening than being tackled by a human. Such dogs are also frequently used to find missing persons, especially in the wilderness.

Several cities in Italy are experimenting with working dogs as rescue swimmers. In this situation, a strong and well-trained dog is equipped with flotation devices and dropped in the water near a floundering swimmer. The swimmer then grabs onto the dog, and the animal tows the swimmer to shore. The Newfoundland has long been used for water rescue, not only on shore, but from fishing boats as well.

Dogs are commonly used as search and rescue workers in cases of disasters. The St. Bernard has been historically used for such purposes in Europe in the case of avalanche. In the aftermath of the 9–11 attacks in New York, rescue dogs were brought in to search for survivors in the rubble. Some of the dogs became so disturbed at being unable to find any survivors that people had to be “planted” for the dogs to find so that they did not become depressed at their failure.

Dogs as Pets

Relationships between humans and dogs are often characterized by strong emotional bonds. Consequently, dogs are popular as pets and companions, independent of any utilitarian considerations. Many dog owners consider having unconditional acceptance from a friend who is always happy to see them to be quite utilitarian, particularly if the dog also leads them to regular exercise. Dogs are quite dependent on human companionship and may suffer poor health without it. Some research has shown that dogs are able to convey a depth of emotion not seen to the same extent in any other animal; this is purportedly due to their closely-knit development with modern man, and the survival-benefits of such communication as dogs became more dependent on humans for sustenance.
Nevertheless, it is often unwise to anthropomorphize the responses of dogs. Despite understandably positive interpretations by dog owners, it is questionable whether these animals are truly capable of feeling emotions on a human level. More research is needed to determine the intelligence level of dogs, and the motivations behind their responses to their masters.

In some places (such as parts of East Asia) dogs are raised for their meat, causing friction with people who keep dogs as pets. In times of great stress, such as when the Vikings of Greenland starved to death in the "little ice age", humans have been known to eat their pets.

**Dog Reproduction**

Unlike undomesticated canine species, where the females typically come into estrus (also called in season or in heat) once a year, usually in late winter, and bear one litter of young, the female of the domestic dog can come into season at any time of the year and usually twice a year. Most bitches come into season for the first time between 6 and 12 months, although some larger breeds delay until as late as 2 years. Like most mammals, the age that a bitch first comes into season is mostly a function of her current body weight as a proportion of her body weight when fully mature rather than age, with the different maturation rates of the various sizes of dogs accounting for this variation in age of first season. The amount of time between cycles varies greatly among different dogs, but a given dog's cycle tends to be consistent through her life.

Dogs bear their litters roughly 9 weeks after insemination. An average litter consists of about six puppies, especially for breeds that have not strayed too far from their wild ancestors. However, litters of many more or only one or two puppies are also common. Some breeds have a tendency to produce very large litters. Since a mother can provide milk for only a few of those puppies, humans must assist in the care and feeding when the litter exceeds eight or so.

Some breeds have been developed to emphasize certain physical traits beyond the point at which they can safely bear litters on their own. For example, the Bulldog often requires artificial insemination and almost always requires cesarean section for giving birth.

Puppies often have characteristics that do not last beyond early puppyhood. For example, eyes are often blue when they first open but change to other colours as the puppy matures. As another example, Kerry Blue Terrier puppies have black coats when they are born and their distinctive "blue" colour appears gradually as the puppy nears maturity. The ears of erect-eared breeds such as the German Shepherd Dog are softly folded at birth but straighten as the puppy grows.

Dog experts advise that dogs not intended for further breeding should be spayed or neutered so that they do not have undesired puppies, which are often abandoned or are euthanized due to lack of space and resources in shelters. Abandoned dogs often go feral and form predatory packs that attack livestock and occasionally also prove dangerous to humans. Spaying and neutering can also help prevent diseases such as breast cancer and prostate cancer that occur as the unneutered animal ages (due to hormonal changes). Also, it is not required for a female dog to either experience a heat cycle or have puppies.
before spaying; likewise, a male dog does not need the experience of mating before neutering. These myths account for numerous health problems and unwanted puppies.

**Dangers**

As evidenced by their attacks on other creatures, both wild and domestic, dogs can be voracious, aggressive predators. Their sharp teeth and powerful jaws can inflict serious injuries; their sharp claws have powerful muscles behind them. Scratches from dogs are easily infected. Although confrontations between man and dog ordinarily stop well short of harm, human ignorance or stupidity can lead to severe injury from even the most well-tempered dog. Contrary to myth, barking dogs can bite a person who fails to recognize the warning. Likewise, a wagging tail indicates an excited state, which is not always a result of "happy" excitation; a wagging dog is not equivalent to a purring cat.

Although most dogs are not inherently aggressive (unless they are feral, trained to attack intruders, threatened or provoked), it is important to remember that they are predatory by nature and instinct is something that never disappears.

**Dogs and Perspiration**

A common misconception is that dogs do not sweat. Primarily, dogs regulate their body temperature in a completely different way, through their tongue. That is why after a dog has been running or on a hot day you will see its mouth wide open and tongue hanging out. In addition, dogs effectively sweat through the pads of their feet. Again, on a warm day and after exercise, a dog's naturally wet footprints might be visible on a smooth floor.

**A Fine Sense of Direction**

It has been observed that a lost dog can often find its way home, sometimes traveling over long distances. It is believed that dogs and cats know the correct position of the sun at their homes. When lost, the animal notes the angle of the sun as it travels, and moves in the direction that indicates that the angle is becoming correct.

**Dangerous Foods**

Some foods commonly enjoyed by humans are dangerous to dogs.

- Dogs like the flavour of chocolate, but chocolate in sufficient doses is lethally toxic to dogs (and horses and possibly cats). Chocolate contains theobromine, a chemical stimulant that, together with caffeine and theophylline, belongs to the group of methylxanthine alkaloids. Dogs are unable to metabolize theobromine effectively. If they eat chocolate, the theobromine can remain in their bloodstream for up to 20 hours, and these animals may experience racing heartbeats, hallucinations, severe diarrhea, epileptic seizures, heart attacks, internal bleeding, and eventually death. A chocolate candy bar can be sufficient to make a small dog extremely ill or even kill it. In case of accidental intake of chocolate by a dog, contact a veterinarian or animal poison control immediately; it is commonly recommended to induce vomiting within two hours of ingestion.

- Grapes and raisins can cause acute renal failure in dogs. The exact mechanism is not known. As little as one raisin can be fatal to a ten pound dog and other dogs have eaten as much as a pound of grapes or raisins without ill effects. The dog
usually vomits a few hours after consumption and begins showing signs of renal failure three to five days later.

- Onions and to a significantly lesser extent garlic contain thiosulfate which causes hemolytic anemia in dogs (and cats). Thiosulfate levels are not affected by cooking or processing. Small puppies have died of hemolytic anemia after being fed baby food containing onion powder. Occasional exposure to small amounts is usually not a problem, but continuous exposure to even small amounts can be a serious threat.
- Macadamia nuts can cause stiffness, tremors, hyperthermia, and abdominal pain. The exact mechanism is not known. Most dogs recover with supportive care when the source of exposure is removed.
- Alcoholic beverages pose much the same temptation and hazard to dogs as to humans.

A human diet is not ideal for a dog; in addition, table scraps often consist of fatty scraps rather than meat, which is no better for dogs than it is for humans. Lastly, many people overfeed their dogs by giving them all the table scraps that the dogs will eat—which is usually all the table scraps they are fed, which is often too much food.

I. Answer the following questions:
1. When was the dog domesticated?
2. Why are dogs called Man’s best friend?
3. What can you say about dog’s legs?
4. How many smell-sensitive cells have dogs?
5. What animal is the domestic dog descended from?
6. What are dogs valued for?
7. In what ways do dogs serve people?
8. What are dog’s favourite activities?
9. What can you say about dogs as pets?
10. Is a human diet ideal for a dog? Why?

II. Say whether these statements are true or false:
1. The dog is a ruminant mammal.
2. Dogs are predators.
3. Dogs have nothing in common with wolves.
4. Dogs’ eyes are not so sensitive to light and motion as humans’ eyes.
5. The dog’s ancestral skeleton provided the ability to run and leap.
6. The relation between dogs and humans is ancient.
7. Dogs have never been popular as pets or companions.
8. In some places dogs are raised for their meat.
9. Dogs bear their litters about four weeks after insemination.
11. Dogs do not sweat.
12. A human diet is ideal for a dog.
Clever Dogs
Two men were speaking about their dogs. "My Spot is the cleverest dog I’ve ever seen”, one of them said. “He switches on the telly and watches it, and then switches it off!” “That isn’t news to me”, the other man said. “I’ve known it for a long time.” “Really? And who told you?” “My Patch!” was the answer.

Talking Parrot
A man bought a parrot and tried to teach him to talk English. He repeated for several minutes the word: “Hello, hello, hello.” At the end of the lesson the parrot opened one eye and answered drowsily: “The line is busy”.

Jokes, Laughs, Smiles

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III. Translate the words into English:
возможность; умение; размер; поведение; предок; волк; хищник; острый; челюсть; быстро; добыча; преследовать; чувствительный; звук; запах; способность; выносливость; происходить от; охотиться; род (вид); овчарка; скрещивание; поколение; вмешательство; отбор; выживать; бедствие; щенок; искусственный; кастрация; лаять; потеть; чувство

IV. Speak on
a) the history of dog’s domestication;
b) the relationship between dogs and humans.

V. Give advice to a dog owner on how to feed his dog.

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Unit 9. AQUACULTURE

The broad term “aquaculture” refers to the breeding, rearing, and harvesting of plants and animals in all types of water environments, including ponds, rivers, lakes, and the ocean. Similar to agriculture, aquaculture can take place in the natural environment or in a manmade environment. Using aquaculture techniques and technologies, researchers and the aquaculture industry are “growing,” “producing,” “culturing,” and “farming” all types of freshwater and marine species.

Aquaculture means the propagation and husbandry of aquatic organisms for commercial, recreational and scientific purposes. The main aim of aquaculture is to ensure the production of aquacultural crops for human consumption and for use by industries and agriculture. Aquaculture is also known to produce aquatic bait animals, aquarium fishes, aquatic animals used to increase natural population for capture and sport fisheries. Aquaculture is considered to be an agricultural activity though there are many differences between aquaculture and terrestrial agriculture.
Tilapia, a commonly farmed fish due to its adaptability

Marine aquaculture refers to the culturing of marine species, while freshwater aquaculture focuses on the culturing of freshwater species. For example, marine aquaculture production includes oysters, clams, mussels, shrimp, and salmon, while freshwater aquaculture operations produce trout, catfish, and tilapia.

Fish is known to be cold-blooded aquatic vertebrates, some species of which are especially valued as food due to high content of protein, phosphorus, iodine and vitamins A and D.

A lot of other aquatic organisms are also produced through aquaculture, including crustaceans (shrimps, crayfish, prawns), mollusks, algae (a seaweed) and some aquatic plants. Aquaculture requires human intervention in the organisms’ productivity to result in yields that exceed those from the natural environment alone. Stocking water with juvenile organisms, fertilizing the water, feeding the organisms and maintaining water quality are supposed to be common examples of such intervention.

Various methods enable aquaculturists to rear aquatic organisms artificially in fresh, brackish or salt water. In addition, aquacultural production can develop not only in natural waters but in artificial aquatic impoundments (earthen ponds, concrete pools or cages into open water). In these enclosures, the fish can be supplied with adequate food and protected from many natural predators. Earthen ponds have been found to be suitable for fish and crustacean aquaculture. These ponds are usually equipped with water inlets and outlets providing independent control of water addition and discharge. Management practices vary from pond fertilization, which increases the number of natural food organisms, to the supply of a complete feed providing all nutrients necessary for growth. Animals that have reached market size are harvested from the ponds.

Fish can also be raised in cages or raceways. Fish breeders consider raising fish in cages to be a good method in case of using the water of lakes, bays or the open ocean. Rainbow trout are grown in raceways in many places, including Chile, Europe, the United States. Salmon are grown in cages, and Norway ranks the first in the world production of farmed salmon.

A method known as ocean ranching has recently appeared in aquaculture. It means the rearing of fish and shellfish under artificially controlled conditions. According to this method young fish are bred in the controlled environment until they become mature enough to be released into the open sea. Using this approach, oysters, scallops and mussels are raised throughout the world. Moreover, ocean ranching is very valuable for raising carp, trout, catfish and tilapia. Experiments with ocean ranching led to the economically successful aquaculture of lobsters.
By introducing advanced technologies aquaculture has assumed commercial importance. The commercial production of shrimp, crayfish, prawns, trout, salmon, and oysters are of great importance for the economy of many countries.

One of the main tasks of aquaculture is to breed edible fish in special ponds for sale to meet the increasing demand of population for fish. Consumer demand for fish continues to increase, especially in developed countries. World aquaculture production has been experiencing a boom since the mid-1980s and today it continues to expand in almost all world regions. But there exist some problems preventing further growth of aquaculture production such as the lack of investment capital for producers in the developing countries, environmental pollution and problems of product safety.

While most fish farming is devoted to the commercial food market, sport fishing is considered to be one of the most popular forms of recreation in the world which allows people to enjoy fishing from shore and from boats, for almost every type of game fish. In addition, there exists a steady commercial market for goldfish and other decorative fish because many people want beautiful fish to swim in their home aquariums. Nowadays in many cities people can visit special water parks where they can watch various fish species swimming, eating and communicating with each other in the surroundings closer to their natural habitats.

I. Answer the following questions:
1. What does the term “aquaculture” include?
2. What is the main aim of aquaculture?
3. Is aquaculture considered to be an agricultural or industrial activity?
4. What is the difference between marine and freshwater aquaculture?
5. What do you know about the method of ocean ranching?
6. Why is fish valued as food for people?
7. Can aquacultural production develop only in natural waters?
8. Why has aquaculture assumed commercial importance?
9. Why is sport fishing so popular nowadays?

II. Translate the following English words and word-combinations from the text into Russian:
- aquatic organisms; aquacultural crops; human consumption; bait animals; capture and sport fisheries; terrestrial agriculture; marine species; freshwater aquaculture; marine aquaculture; oyster; clam; mussel; shrimp; salmon; trout; catfish; cold-blooded vertebrates; crustacean; aquatic plant; human intervention; stocking water; juvenile organisms; brackish water; earthen pond; concrete pool; natural predator; water inlets and outlets; market size; fish breeder; ocean ranching; rearing of shellfish; controlled environment; to breed edible fish; consumer demand; sport fishing; game fish; natural habitat

III. Complete the sentences:
1. The main aim of aquaculture is … .
2. Marine aquaculture refers to … .
3. Freshwater aquaculture focuses on … .
4. Fish is valued as food due to … .
5. To the artificial aquatic impoundments belong . . . .
6. Earthen ponds are usually equipped with . . . .
7. The method known as ocean ranching means . . . .
8. Sport fishing allows people to enjoy . . . .

AQUACULTURE IS AN ANCIENT ART

Aquaculture is the newest and fastest growing food production service in the world. It is vital to the overall sustenance of our Earth’s inhabitants. “Never before has the ocean’s natural fish and shellfish population been in such severe decline.”

Aquaculture as we know it today has Ancient roots. It is well documented that Aquaculture had its beginnings in China somewhere around 2,500 BC. Carp were held up in artificial ponds for use as a source of protein and their “brood” were used to feed their exotic, and much coveted, silkworms. Through breeding and genetic mutation, those Carp became what we know today as the common Goldfish. The Romans kept fish ponds for both food and enjoyment. The Ancient Hawaiians pioneered aquaculture raising both fish for food and plants for consumption, and aesthetic beauty. Their aquaculture centered on lore and mythical gods and deities. Thus aquaculture had a very significant role in their everyday life aside from being “just for food.”

Modern aquaculture, as we know it, is a new animal. It is relatively “new” because the need for a reliable source of healthy, sustainable food has steadily increased as our Earth’s population has exploded. Only the ocean can yield so much.

Following the tradition of the Ancients, the wise thing to do was to create a better way to feed the Earth’s population. “Underwater Agriculture,” “The Blue Revolution,” “Fish and Shrimp Farming,” – call it what you like, the reality is the same.

We cannot “Save the entire World,” yet. However, what we can do, is start by making sure that in our communities people are being educated about Modern Aquaculture Technology. We can start by pioneering fresh, new ways to produce disease-free seafood. We can start a new way of looking at how we eat and what we eat.

I. Answer the following question:
What is the role of aquaculture nowadays?

II. Make up questions to which the following phrases are the answers:
1. It has Ancient roots.
2. For food and enjoyment.
3. It was the wisest thing to do.

AQUACULTURE IN THE UNITED STATES

Aquaculture includes the production of hatchery fish and shellfish which are grown to market size in ponds, tanks, cages, or raceways and released into the wild. Aquaculture is used to support commercial and recreational marine fisheries as well as to enhance or rebuild wild stock populations. Aquaculture also includes the production of ornamental fish for the aquarium trade and plant species used in a range of food, pharmaceutical, nutritional, and biotechnology products. There are also related industries such as equipment production, feed, and nutrition companies, and aquaculture consulting service firms that provide support to the global aquaculture industry.
Additional domestic seafood production will reduce the nation’s dependence on imports. Right now, the United States is a major consumer of aquaculture products – they import 84% of our seafood and half of that is from aquaculture – yet they are a minor producer. U.S. aquaculture (freshwater and marine) supplies about 5% of the U.S. seafood supply and U.S. marine aquaculture less than 1.5%. Driven by imports, the U.S. seafood trade deficit has grown to over $9 billion annually – the highest it’s ever been.

Many other countries are investing more heavily in aquaculture than the United States. According to the United Nations Food and Agriculture Organization, the United States ranked 10th in total aquaculture production in 2004, behind China, India, Vietnam, Thailand, Indonesia, Bangladesh, Japan, Chile, and Norway. The United States imports significant volumes of marine aquaculture products from these and other countries, resulting in an annual seafood trade deficit of over $9 billion.

**U.S. Marine Aquaculture**

The U.S. marine aquaculture industry is relatively small compared with overall U.S. and world aquaculture production. Total U.S. aquaculture production is about $1 billion annually, compared to world aquaculture production of about $70 billion. Only about 20% of U.S. aquaculture production is marine species.

The largest single sector of the U.S. marine aquaculture industry is molluscan shellfish culture (oysters, clams, mussels), which accounts for about two-thirds of total U.S. marine aquaculture production, followed by salmon (about 25 percent) and shrimp (about 10 percent). Current production takes place mainly on land, in ponds, and in coastal waters under state jurisdiction. Recent advances in offshore aquaculture technology have resulted in several commercial finfish and shellfish operations in more exposed, open-ocean locations in state waters in Hawaii, California, and New Hampshire.

**I. Match the sentences beginnings with the endings:**

1. Hatchery fish and shellfish are grown to market size
   a) the production of ornamental fish.
2. Aquaculture also includes b) significant volumes of marine aquaculture products.
3. The United States is c) land, in ponds, and in coastal waters.
4. Current production takes place mainly on d) in ponds, tanks or cages.
5. The United States imports e) about $1 billion annually.
6. Total U.S. aquaculture production is f) a major consumer of aquaculture products.

**II. Restore the original sentences:**

1. fisheries; supports; recreational; aquaculture; commercial; and 2. the production; aquaculture; fish; includes; of; ornamental 3. many; are; countries; heavily; investing; aquaculture; in 4. products; the US; significant; imports; marine; of; volumes;
FISH

Fish are cold-blooded vertebrate animals living in the fresh or salt waters of the world. Living species vary from the primitive, jawless lampreys and hagfishes through the cartilaginous sharks, skates and rays to the abundant and diverse bony fishes. They are poikilothermic and reproduce by laying eggs. An animal whose body temperature varies with that of its surroundings is said to be poikilothermic. The temperature of such an animal is usually a few degrees above that of its environment, but a rise or fall in the temperature of the air or water in which it lives will result in a corresponding change in the animal’s body temperature. Thus, the rate of activity of fish depends to a large extent on the surrounding temperature.

The bony fishes or true fishes usually have a complete bony skeleton and an air bladder. Fish are streamlined in shape and their bodies are covered with scales (bony plates made in the skin that grow throughout the fish life). In sharks, rays and dogfish the scales grow out through the skin but in other fish they are covered by skin. They overlap each other and give a protecting covering. Under the microscope, rings can be seen in the scales, and from these rings the age of the fish can be estimated.

An important sensory system in fishes is the lateral line system (a fluid-filled canal just below the skin). It opens to the water outside by a series of tiny pores. Its function is to detect movements in the water. Any movements in the water and changes in pressure will cause the fluid in the tube to vibrate. The canal is lined with nerve endings which are stimulated by vibrations and send impulses to the brain. The system allows a fish to detect the direction and intensity of water currents, thus helping the fish to orient itself to the various changes that occur in the physical environment or to avoid enemies even if its vision is poor, for instance in muddy water.

The swimming movements are produced by the whole muscular body of the fish, and in only a few fish the fins contribute any propulsive force. The main function of fins is to control the stability and direction of movement during the fish swimming. There are

1 – scales; 2 – lateral line; 3 – dorsal fin; 4 – caudal fin; 5 – anal or ventral fin; 6 – pelvic fin; 7 – eye or pupil; 8 – mouth; 9 – operculum or gill cover; 10 – pectoral fin
two types of fins: the median fins, such as dorsal, the ventral and the anal fins, and the paired ones (the pelvic and the pectoral fins). The first type of fins controls the rolling and yawning movements of the fish by increasing the vertical surface area presented to the water. The paired fins act as hydroplanes and control the pitch of the fish, causing it to swim downwards or upwards according to the angle to the water at which they are held by their muscles. The pectoral fins lie in front of the centre of gravity and are mainly responsible for sending the fish up and down. The paired fins are also the means by which the fish slows down and stops.

The nostrils of fish do not open into the back of the mouth as do those of mammals and are not used for breathing. They lead into organs of smell which are very sensitive, so that a fish can detect the presence of food in the water at considerable distance.

Sight is extremely important in most fishes. The eye of a fish is basically like that of all other vertebrates, but the eyes of fishes are greatly varied in structure and adaption. As a rule, fishes living in dark and dim water habitats have large round pupils which do not vary in size. Fishes living in brightly-lighted shallow waters often have relatively small but efficient eyes. Experimental evidence indicates that many shallow-water fishes have colour vision and see some colours especially well but bottomdwelling shore fishes apparently are unable to respond to colour differences.

Sound perception and balance are intimately associated senses in a fish. Although fish have no ears visible externally, the organs of hearing are entirely internal, located within the scull, on each side of the brain and somewhat behind the eyes. However, sound waves, especially those of low frequencies, travel readily through water and impinge directly upon the bones and fluids of the head and body, to be transmitted to the hearing organs. Fishes readily respond to sound, though compared with humans the range of sound frequencies heard by fishes is greatly restricted. Many fishes communicate with each other by producing sounds in swim bladders, and throats by rasping teeth, or in other ways.

The mouth serves for taking in food; also for the breathing current of water. Some fish have a wide gape, and filter microscopic plants and animals out of the surface waters as they swim along, trapping them in gill rakers before the water is expelled from the operculum.

Bony fishes also have an operculum which is a bony structure covering and protecting the gills; it plays an important part in the breathing mechanism. Oxygen dissolved in the water is absorbed by the gills. The movements of the mouth and operculum are coordinated to produce a stream of water, in through the mouth, over the gills and out of the operculum. There are usually four gills on each side consisting of a curved bony gill bar bearing many fine filaments.

I. Answer the following questions:
1. Have you ever caught a fish?
2. In what way do fishes reproduce?
3. What does the activity of the fish depend on?
4. What are fishes’ bodies covered with?
5. In what way can the age of the fish be estimated?
6. What is the function of the lateral line system?
7. What are the two types of fish fins?
8. Why do fishes easily detect food in water at considerable distance?
9. In what way do fishes communicate with each other?

II. Give the words described by the following definitions. All the words you can find in the text:

1. Cold-blooded vertebrates living in the fresh or salt waters.
2. An animal whose body temperature varies with that of its surroundings.
3. Bony plates covering the bodies of fishes.
4. A fluid-filled canal just below the skin.
5. The means by which the fish control the stability and direction of movement during swimming.
6. The organs where the fish produce sounds to communicate with each other.
7. The organs serving for taking in food and for breathing current of water.

III. Give the English equivalents of the words in brackets:

1. The temperature of such an animal is usually a few degrees above that of its (окружающая среда).
2. The rate of activity of fish (зависеть от) the surrounding temperature.
3. Nerve endings send impulses to the (мозг).
4. The fish have two types of (плавники).
5. The (грудные плавники) lie in front of the centre of gravity and are responsible for sending the fish up and down.
6. With the help of the (анальный и грудной плавники) the fish slows down and stops.
7. Many shallow-water fishes have colour (зрение).
8. (Жаберная крышка) plays an important part in the breathing mechanism.
9. Oxygen dissolved in the water is absorbed by the (жабры).

Jokes, Laughs, Smiles
At a gift shop, a customer noticed an unusual necklace. “Excuse me,” she called to the clerk, “what’s this necklace made of?” “Alligator teeth.” “But it’s more expensive than a pearl necklace”. “Well,” replied the clerk, “everyone can open an oyster.”

FISH FARMING

Fish farming is the principal form of aquaculture, while other methods may fall under mariculture. Fish farming involves raising fish commercially in tanks or enclosures, usually for food. A facility that releases young (juvenile) fish into the wild for recreational fishing or to supplement a species’ natural numbers is generally referred to as a fish hatchery. The most common fish species raised by fish farms are salmon, carp, tilapia, European seabass, catfish and cod.
Major Categories of Fish Farms

There are two kinds of aquaculture: extensive aquaculture based on local photosynthesetical production and intensive aquaculture, in which the fish are fed with external food supply. The management of these two kinds of aquaculture systems are completely different.

Extensive Aquaculture

Limiting for growth here is the available food supplied by natural sources, commonly zooplankton feeding on pelagic algae or benthic animals, such as crustaceans and mollusks. Tilapia species filter feed directly on phytoplankton, which makes higher production possible. The photosynthetic production can be increased by fertilizing the pond water with artificial fertilizer mixtures, such as potash, phosphorus, nitrogen and micro-elements. Because most fish are carnivorous, they occupy a higher place in the trophic chain and therefore only a tiny fraction of primary photosynthetic production (typically 1%) will be converted into harvest-able fish. As a result, without additional feeding the fish harvest will not exceed 200 kilograms of fish per hectare per year, equivalent to 1% of the gross photosynthetic production.

A second point of concern is the risk of algal blooms. When temperatures, nutrient supply and available sunlight are optimal for algal growth, algae multiply their biomass at an exponential rate, eventually leading to an exhaustion of available nutrients and a subsequent die-off. The decaying algal biomass will deplete the oxygen in the pond water because it blocks out the sun and pollutes it with organic and inorganic solutes (such as ammonium ions), which can (and frequently do) lead to massive loss of fish.

In order to tap all available food sources in the pond, the aquaculturist will choose fish species which occupy different places in the pond ecosystem, e.g., a filter algae feeder such as tilapia, a benthic feeder such as carp or catfish and a zooplankton feeder (various carps) or submerged weeds feeder such as grass carp.

Intensive Aquaculture

In these kinds of systems fish production per unit of surface can be increased at will, as long as sufficient oxygen, fresh water and food are provided. Because of the requirement of sufficient fresh water, a massive water purification system must be integrated in the fish farm. A clever way to achieve this is the combination of hydroponic horticulture and water treatment. The exception to this rule are cages which are placed in a river or sea, which supplements the fish crop with sufficient oxygenated water. Some environmentalists object to this practice.

Essential here is aeration of the water, as fish need a sufficient oxygen level for growth. This is achieved by bubbling, cascade flow or aqueous oxygen.

The risk of infections by parasites like fish lice, fungi, intestinal worms, bacteria, and protozoa is similar to animal husbandry, especially at high population densities. However, animal husbandry is a larger and more technologically mature area of human agriculture and better solutions to pathogen problem exist. Intensive aquaculture does have to provide adequate water quality (oxygen, ammonia, nitrite, etc.) levels to minimize stress, which makes the pathogen problem more difficult. This means,
intensive aquaculture requires tight monitoring and a high level of expertise of the fish farmer. Within intensive and extensive aquaculture methods there are numerous specific types of fish farms, each has benefits and applications unique to its design.

**Irrigation Ditch or Pond Systems**

These use irrigation ditches or farm ponds to raise fish. The basic requirement is to have a ditch or pond that retains water, possibly with an above-ground irrigation system (many irrigation systems use buried pipes with headers.) Using this method, one can store one's water allotment in ponds or ditches, usually lined with bentonite clay. In small systems the fish are often fed commercial fish food, and their waste products can help fertilize the fields. In larger ponds, the pond grows water plants and algae as fish food. Some of the most successful ponds grow introduced strains of plants, as well as introduced strains of fish.

Control of water quality is crucial. Fertilizing, clarifying and pH control of the water can increase yields substantially, as long as eutrophication is prevented and oxygen levels stay high. Yields can be low if the fish grow ill from electrolyte stress.

**Composite Fish Culture**

In this system both local and imported fish species, a combination of five or six fish species is used in a single fish pond. These species are selected so that they do not compete for food among them having different types of food habitats. As a result the food available in all the parts of the pond is used. Fish used in this system include catla and silver carp which are surface feeders, rohu a column feeder and mrigal and common carp which are bottom feeders. Other fish will also feed on the excreta of the common carp and this helps contribute to the efficiency of the system which in optimal conditions will produce 3000-6000 kg of fish per hectare per year.

**Cage System**

Fish cages are placed in lakes, bayous, ponds, rivers or oceans to contain and protect fish until they can be harvested. They can be constructed of a wide variety of components. Fish are stocked in cages, artificially fed, and harvested when they reach market size. A few advantages of fish farming with cages are that many types of waters can be used (rivers, lakes, filled quarries, etc.), many types of fish can be raised, and fish farming can co-exist with sport fishing and other water uses. Cage farming of fishes in open seas is also gaining popularity. Concerns of disease, poaching, poor water quality, etc., lead some to believe that in general, pond systems are easier to manage and simpler to start. Also, past occurrences of cage-failures leading to escapes, have raised concern regarding the culture of non-native fish species in open-water cages. Even though the cage-industry has made numerous technological advances in cage construction in recent years, the concern for escapes remains valid.

**Classic Fry Farming**

Trout and other sport fish are often raised from eggs to fry or fingerlings and then trucked to streams and released. Normally, the fry are raised in long, shallow concrete tanks, fed with fresh stream water. The fry receive commercial fish food in pellets. While
not as efficient as the New Alchemists' method, it is also far simpler, and has been used for many years to stock streams with sport fish.

**Indoor Fish Farming**

An alternative to outdoor open ocean cage aquaculture, in which the risk of environmental damage is high, is through the use of a recirculation aquaculture system (RAS). A RAS is a series of culture tanks and filters where water is continuously recycled and monitored to keep optimal conditions year round. To prevent the deterioration of water quality, the water is treated mechanically through the removal of particulate matter and biologically through the conversion of harmful accumulated chemicals into nontoxic ones.

Other treatments such as UV (ultraviolet) sterilization, ozonation, and oxygen injection are also used to maintain optimal water quality. Through this system, many of the environmental drawbacks of aquaculture are minimized including escaped fish, water usage, and the introduction of pollutants. The practices also increased feed-use efficiency growth by providing optimum water quality.

**Slaughter Methods**

Tanks saturated with carbon dioxide have been used to make fish unconscious. Then their gills are cut with a knife so that the fish bleed out before they are further processed. This is no longer considered a humane method of slaughter. Methods that induce much less physiological stress are electrical or percussive stunning and this has led to the phasing out of the carbon dioxide slaughter method in Europe.

I. **Answer the following questions:**

1. What are the most common fish species raised by fish farms?
2. What is the difference between extensive and intensive aquaculture?
3. Do you know any advantages of fish farming with cages?
4. What system can be an alternative to outdoor open ocean cage aquaculture?
5. What methods of slaughter can be considered more humane? Why?

II. **Explain why algal bloom can lead to massive loss of fish.**

III. **Complete the following sentences and translate them into Russian:**

1. The most common fish species raised by fish farms are ….
2. Extensive aquaculture bases on ….
3. In intensive aquaculture the fish are fed with ….
4. A sufficient oxygen level can be achieved by ….
5. A ditch retains water with ….
6. Waste products of the fish can help ….
7. Yields can be low if the fish ….
8. Fish used in the composite culture system include ….
9. Cage farming of fishes in open seas is gaining ….
10. Fish cages are placed in ….
11. Normally, the fry are raised in ….
12. Tanks saturated with carbon dioxide have been used to make fish ….
13. Methods that induce much less physiological stress are ….
FISHING INDUSTRY IN RUSSIA

The coastline of the Russian Federation is the fourth longest in the world after the coastlines of Canada, Greenland, and Indonesia. The Russian fishing industry has an exclusive economic zone (EEZ) of 7.6 million km² including access to twelve seas in three oceans, together with the landlocked Caspian Sea and more than two million rivers. This made Russia the ninth leading producer of fish, with 2.3 percent of the world total.

Management

Fisheries management is regulated by Russian federal laws. Starting in 1992, the fishery authority has been reorganized at least five times. The head of the fishery authority was replaced seven times, and not one of these heads was a fishery professional. The issues involved in regulating fishing capacity were never really recognized. However, consistent fishery policies are starting to be developed now. The extreme bureaucracy involved for a fishing vessel to make a port call and land fish results in coastal processing being bypassed. Instead, the seafood is just directly exported, unprocessed. Similarly, there are many bureaucratic difficulties in developing aquaculture. Getting a licence to use water and the necessary sanitary certificates is very time consuming, although it does guarantee environmental and health safety.

Artisanal

There is no legally adopted term in Russia for artisanal fisheries. Artisanal or subsistence fishing usually refers to fishing mainly with traditional gear, with production delivered to the market but also used for subsistence. In Russia, the term covers also several kinds of fisheries classified as industrial, such as salmon, chars, whitefish, navaga, flounders and greenling fisheries in the Baltic, the Arctic and the Far Eastern Seas. Subsistence fishing by indigenous groups is also an issue. Indigenous fishers mainly work estuaries, lagoons and rivers (for anadromous fish). Legally, they are bound to use their catch for local consumption only. They are not allowed to sell their catch, but in reality, this is not always the case.

In Russia, poverty contributes to poaching and other threats to fishery resources. Poverty can leave people depending on natural resources to feed themselves. There may be little perceived incentive to protect fish and other aquatic life and to use them in a sustainable way. Lack of awareness and lack of public involvement in managing local resources can result in poaching, overfishing, and other kinds of illegal activities.

Recreational

Recreational fishing occurs everywhere in Russia. The Fishing Rules do not distinguish recreational fishing from artisan fishing, so both are regulated under the same rules. In some areas, tourist fishing is growing. In 1999, recreational and subsistence fishers took 4,300 tonnes, mostly perches and cyprinids. Later estimates are not available. The most significant recreational fishery by value is the Kola Peninsula Atlantic salmon fishery.
**Wild Fisheries**

Russia's marine fisheries are based on twelve seas from three oceans which surround Russia, the landlocked Caspian Sea, and the high seas beyond Russia’s exclusive economic zone (EEZ).

The three oceans are: the Atlantic: with the Sea of Azov, Black Sea, Baltic, Barents Sea and White Sea;
- the Arctic Ocean: with the Kara Sea, Laptev Sea, East Siberian Sea and Chuckchi Sea;
- the Pacific Ocean: with the Bering Sea, Sea of Okhotsk and Sea of Japan.

**Aquaculture**

Over sixty species of fish, invertebrates and seaweed are commercially cultivated by aquaculture or fish farming in Russia. Aquaculture is based mainly on buffalo, grass and silver carp, rainbow trout, scallops, mussels and laminaria. In 2007 there were 300 aquaculture enterprises.

Aquaculture can be freshwater or marine (mariculture):
- Freshwater aquaculture – occurs northwest of European Russia where a lot of trout are farmed, in the Far East, and south of Siberia. Production 2003 to 2006 was about 100,000 tonnes.
- Mariculture – occurs mainly in Primorye Province on the coast of the Sea of Japan. In 2006, marine farms in Primorye covered 10,000 hectares, which produces 1,340 tonnes, mainly of Laminaria, blue mussel and the scallop *Mizuhopecten yessoensis*.

**Research**

In Soviet times, the Ministry for Fishery Industry operated many institutes which undertook comprehensive research in oceanography, marine biology, the assessment of fishery resources, fishery management regimes, and the technology of fishing gear and fish processing. The Ministry also operated research ship on the high seas to meet the needs of Russian distant water fisheries. After the breakup of the Soviet Union, these institutes, basically responsible for research in fisheries science, were coordinated by VNIRO, the central fishery institute in Moscow.

**Education**

Five technical universities are geared to train specialists in fisheries. There are programmes for biology, navigation and marine engineering, fish processing, processing machinery, the economics of fisheries and aquaculture. Four professional schools graduate middle level professionals.

Nine universities graduate about 120 aquaculture specialists each year. The biological departments of several universities also graduate specialists in fish biology and fishery oceanography.

The institutes that are traditionally of most importance are the St. Petersburg Hydrometeorological Institute, the geographical departments of St. Petersburg and Moscow universities, the biological department of Moscow State University, the Far Eastern National University, Kazan State University and Perm State University.
I. Ask questions about the words in italics:
1. Fisheries management is regulated by Russian federal laws.
2. Lack of awareness resulted in poaching and overfishing.
3. The most significant recreational fishery is the Kola Peninsula Atlantic salmon fishery.
4. In 2007 there were 300 aquaculture enterprises.
5. After the breakup of the Soviet Union, these institutes were coordinated by VNIRO.
6. Nine universities graduate about 120 aquaculture specialists each year.

II. Translate the following word-combinations into Russian:
Russian federal law; fishery authority; to regulate fishing capacity; consistent fishery policy; to get a licence; sanitary certificate; health safety; artisanal fishery; subsistence fishing; indigenous fisher; local consumption; fishery resource; to lead to poaching; aquatic life; lack of awareness; illegal activity; fishing rules; wild fishery; freshwater aquaculture; assessment of fishery resources; fish processing; marine engineering; middle level professional; aquaculture specialist

III. Form nouns from the following verbs:
to lead; to fish; to produce; to manage; to regulate; to replace; to develop; to result; to use; to consume; to adopt; to market; to classify; to contribute; to depend; to threaten; to feed; to protect; to involve; to grow; to cultivate; to graduate;

CARP

Carp is a common name for certain fish belonging to the minnow family which can be also called the carp family. In the wild, the olive-brown common carp comes in three forms: the leather carp, almost scaleless; the mirror carp, with a few large scales; and the scale carp, covered with scales. The first two varieties have been domesticated. Ornamental varieties of the common carp, known as koi, may be of various forms and colouration; they were bred in the late 1800s and are still popular today. There exist other species, for example the grass carp, which has been introduced into the US as a biological control for aquatic vegetation.

A large-scaled, hardy, greenish brown fish with two barbells on each side of its upper jaw, the carp lives alone or in small schools in quiet, weedy, mud-bottomed ponds, lakes, and rivers. It is omnivorous bottom feeder and can survive in polluted waters. In winter, the carp becomes torpid (inactive), stays near the bottom, and stops feeding. It usually spawns in spring (from May to July), when the female lays numerous eggs among water plants, usually in shallow water. The eggs hatch four to eight days later. Carp grow rapidly, attain sexual maturity about the third year, and in captivity may live more than 40 years.
Carp are prolific and breed rapidly, and they are bred and fished commonly in Asia, Europe, southern Africa and the US. Carp raising is a good example of advanced techniques. For the whole life cycle, at least three different types of ponds are used in Europe: 1) special shallow and warm ponds with rich vegetation provide a good environment for spawning; 2) after spawning, the parent fish are separated from the eggs and taken to a second pond; 3) the fry, which hatch after a few days, are transported to shallow, plankton-rich nursing ponds, where they remain until the fall of the year or the next spring. Bigger ponds are needed for rearing the fish in the second year of life. For feeding carp in ponds, soybean meal, rice bran and similar agricultural products are used. In central Europe, carp are ready for the market after the third summer.

I. Find in the text the English equivalents to the following Russian words:
зеркальный карп; чешуя; раскраска; травяной карп; верхняя челюсть; пруд; озеро; всеядный; выживать; загрязненные воды; метать икру; плодовитый; разведение карпа; обеспечивать

II. Answer the questions:
1. What family does the carp belong to?
2. Where does the carp usually live?
3. Can carp survive in polluted waters?
4. How long can carp live in captivity?
5. What products may be used for feeding carp?

III. Complete the following sentences using one of the words given below:
1. Carp belong to the minnow ….  
2. Carp are the … fish in aquaculture.  
3. Carp can … in polluted waters.  
4. In winter, the carp becomes ….  
5. It usually spawns in ….  
6. The female lays numerous … among water plants.  
7. Carp raising is a good … of advanced techniques.  
   (dominant; survive; example; family; inactive; eggs; spring)

TROUT

Trout is a common name for many species of fish belonging to the salmon family. Trout are usually restricted to fresh water, though a few types migrate to the sea between spawnings. Trout remain among the most difficult fishes to classify due to great differences in anatomy of the body and from great variation in colour and habits. Trout belong mainly to two genera: Oncorhynchus and Salvelinus. Members of the two genera are chiefly distinguished by differences in body colouring, the shape of the vomer bone in the roof of the mouth, and the teeth. The brown trout is common European trout that has been widely introduced into suitable waters around the world. Salmon trout is
a common name for the brown, lake, cutthroat and sea-run rainbow trout. Sea trout is a common name for various trout and chars that enter the sea.

Most of the species live in cool fresh water and are found in most of the lakes and streams of northern regions. Trout, like salmon, spawn during the spring or occasionally in the autumn.

The most widely distributed species is the brook trout, which is similar to the brown trout of Europe. It is recognized by its large mouth, violet mantle, dark mottlings and red lateral spots, the general colouring being dark grey or green. The male has a reddish band running along the side of the body. Brook trout vary in size, the average weight is about 1 kg. Trout spawn between fall and spring and bury their eggs in a gravel nest scooped out by the female on a streambed. The eggs take two to three months to hatch and the newly hatched trout, or fry, become known as fingerlings when they leave the nest and begin feeding on plankton. Their diet consists of insects, small fishes and their eggs and crustaceans.

Trout are important sport fishes and are often raised in hatcheris for later transfer to habitable bodies of water.

Trout are cold-water fish and must have a constant supply of sufficient oxygen. Trout farms are therefore usually located in mountainous areas where pure water is available. The young fish are obtained chiefly by artificial fertilization; thus, hatchery buildings with low-temperature water and good filters are the centre of this type of pond fishery. There the eggs are kept under control during breeding in special small tanks. As soon as the hatched fry can swim and eat on their own, they are transplanted to rearing ponds for feeding.

Trout are carnivorous; meat-packaging by-products are used for feed. Such food may be released into the ponds at regular intervals automatically. In many countries, rearing is done in concrete-lined ponds or concrete tanks, which are easy to keep clean and permit disinfectant application. The time necessary to rear fish and the yield per hectare depend on feeding. Some trout farms sell their fish not only fresh and frozen but also smoked and filleted.

For trout and salmon, a new system of fish cultivation has been introduced. Instead of ponds, enclosures of netting or other materials are placed in natural waters, such as lakes, and also in brackish waters. By this means, areas formerly of low value can be farmed intensively. Farming trout in brackish water or seawater is of especial interest.

I. Answer the following questions:
1. Why are trout difficult to classify?
2. What are the main characteristics of the brook trout?
3. Where are usually trout farms located? Why?
4. Are trout omnivores or carnivores?
5. When are the hatched fry transplanted to rearing ponds?

II. Choose the proper words from those given in brackets and translate the sentences:
1. Trout is a common name for many species of (animals; mammals; fish) belonging to the salmon family.
2. Trout are usually restricted to (fresh; dirty; salty) water.
3. Trout belong mainly to two (families; kinds; genera): *Oncorhynchus* and *Salvelinus*.
4. Sea trout is a common name for various trout and chars that enter the (sea; river; lake).
5. Most of the species live in (hot; cool; warm) fresh water and are found in most of the lakes and streams of (southern; western; northern) regions.
6. Trout, like salmon, spawn during the (winter; spring; summer) or occasionally in the autumn.
7. The brook trout is recognized by violet (ears; eyes; mantle) and (red; green; yellow) lateral spots.
8. The average (length; growth; weight) of brook trout is about 1 kg.
9. The eggs take two to three months to (grow; raise; hatch).
10. The diet of fingerlings consists of (insects; barley; birds).
11. Trout farms are usually located in (desert; mountainous; forest) areas where pure water is available.
12. As soon as the hatched fry can (fly; swim; walk), they are transplanted to rearing (ponds; rivers; streams) for feeding.
13. Trout are (ruminant; carnivorous; omnivorous).
14. The time necessary to rear fish and the yield per hectare depend on (weather; management; feeding).

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### Jokes, Laughs, Smiles

A policeman was directing traffic one day, when he saw a man driving a truck full of penguins very fast down the highway. He blew his whistle and waved the truck over to the side of the road.

“Where do you think you’re going with that truck full of penguins?” he shouted at the man. “Take them to the zoo, right now!” The man looked a little surprised, but said, “Okay.”

The next day, the same policeman was directing traffic, when he saw the same man driving the same truck, and it was still full of penguins. Except today, the penguins were all wearing sunglasses. “Where do you think you’re going?” he shouted.

“I thought I told you to take those penguins to the zoo!”

“I did take them to the zoo,” the man answered. “And we had such a good time that today we’re going to the beach.”

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### SHRIMP FARM

A shrimp farm is an aquaculture business that cultivates marine shrimp or prawns for human consumption. Commercial shrimp farming began in the 1970s. Global production of farmed shrimp reached more than 1.6 million tonnes in 2003, representing a value of nearly 9 billion U.S. dollars. About 75% of farmed shrimp is produced in Asia, in particular in China and Thailand. The other 25% comes mainly from Latin America, where Brazil is the largest producer. Thailand is the largest exporting nation.
History and Geography

Indonesians and others have farmed shrimp for centuries, using traditional low-density methods. Indonesian brackish water ponds, called tambaks, can be traced back as far as the 15th century. They used small scale ponds for monoculture or polycultured with other species, such as milkfish, or in rotation with rice, using the rice paddies for shrimp cultures during the dry season, when no rice could be grown. Such cultures often were in coastal areas or on river banks. Mangrove areas were favored because of their abundant natural shrimp. Wild juvenile shrimp were trapped in ponds and reared on naturally occurring organisms in the water until they reached the desired size for harvesting.

Industrial shrimp farming can be traced to the 1930s, when Japanese agrarians spawned and cultivated Kuruma shrimp for the first time. By the 1960s, a small industry had developed in Japan. Today, there are marine shrimp farms in over fifty countries.

Farming Methods

When shrimp farming emerged to satisfy demand that had surpassed the wild fisheries' capacity, the subsistence farming methods of old were rapidly replaced by the more productive practices required to serve a global market. Industrial farming at first followed traditional methods, with so-called "extensive" farms, compensating for low density with increased pond sizes; instead of ponds of just a few hectares, ponds of sizes up to 100 hectares (1.0 km²) were used and huge areas of mangroves were cleared in some areas. Technological advances made more intensive practices possible that increase yield per area, helping reduce pressure to convert more land. Semi-intensive and intensive farms appeared, where the shrimp were reared on artificial feeds and ponds were actively managed. Although many extensive farms remain, new farms typically are of the semi-intensive kind.

Until the mid-1980s, most farms were stocked with young wild animals, called 'postlarvae', typically caught locally. Postlarvae fishing became an important economic sector in many countries. To counteract the depletion of fishing grounds and to ensure a steady supply of young shrimp, the industry started breeding shrimp in hatcheries.

Hatcheries

Small-scale hatcheries are very common throughout Southeast Asia. Often run as family businesses and using a low-technology approach, they use small tanks (less than ten tons) and often low animal densities. They are susceptible to disease, but due to their small size, they can typically restart production quickly after disinfection. The survival rate is anywhere between zero and 90 %, depending on a wide range of factors, including disease, the weather, and the experience of the operator.
Greenwater hatcheries are medium-sized hatcheries using large tanks with low animal densities. To feed the shrimp larvae, an algal bloom is induced in the tanks. The survival rate is about 40%.

Galveston hatcheries (named after Galveston, Texas, where they were developed) are large-scale, industrial hatcheries using a closed and tightly controlled environment. They breed the shrimp at high densities in large (15 to 30 ton) tanks. Survival rates vary between zero and 80%, but typically achieve 50%.

In hatcheries, the developing shrimp are fed on a diet of algae and later also brine shrimp nauplii, sometimes (especially in industrial hatcheries) augmented by artificial diets. The diet of later stages also includes fresh or freeze-dried animal protein, for example krill. Nutrition and medication (such as antibiotics) fed to the brine shrimp nauplii are passed on to the shrimp that eat them.

Nurseries
Many farms have nurseries where the postlarval shrimp are grown into juveniles for another three weeks in separate ponds, tanks, or so-called raceways. A raceway is a rectangular, long, shallow tank through which water flows continuously.

In a typical nursery, there are 150 to 200 animals per square meter. They are fed on a high-protein diet for at most three weeks before they are moved to the growout ponds. At that time, they weigh between one and two grams. The water salinity is adjusted gradually to that of the growout ponds.

Nursing is not absolutely necessary, but is favored by many farms because it makes for better food utilization, improves the size uniformity, helps use the infrastructure better, and can be done in a controlled environment to increase the harvest. The main disadvantage of nurseries is that some of the postlarval shrimp die upon the transfer to the growout pond.

Growout
In the growout phase, the shrimp are grown to maturity. The postlarvae are transferred to ponds where they are fed until they reach marketable size, which takes about another three to six months. Harvesting the shrimp is done by fishing them from the ponds using nets or by draining the ponds. Pond sizes and the level of technical infrastructure vary.

Feeding the Shrimp

While extensive farms mainly rely on the natural productivity of the ponds, more intensively managed farms rely on artificial shrimp feeds, either exclusively or as a supplement to the organisms that naturally occur in a pond. A food chain is established in the ponds, based on the growth of phytoplankton. Fertilizers and mineral conditioners are used to boost the growth of the phytoplankton and to accelerate the
growth of the shrimp. Waste from the artificial food pellets and shrimp excrement can lead to the eutrophication of the ponds.

Artificial feeds come in the form of specially formulated, granulated pellets that disintegrate quickly. Up to 70% of such pellets are wasted, as they decay before the shrimp have eaten them. They are fed two to five times daily; the feeding can be done manually either from ashore or from boats, or using mechanized feeders distributed all over a pond.

**Ecological Impacts**

Shrimp farms of all types, from extensive to super-intensive, can cause severe ecological problems wherever they are located. For extensive farms, huge areas of mangroves were cleared, reducing biodiversity. During the 1980s and 1990s, about 35% of the world’s mangrove forests have vanished. Shrimp farming was a major cause of this, accounting for over a third of it according to one study; other studies report between 5% and 10% globally, with enormous regional variability. Other causes of mangrove destruction are population pressure, logging, pollution from other industries, or conversion to other uses such as salt pans. Mangroves, through their roots, help stabilize a coastline and capture sediments; their removal has led to a marked increase of erosion and less protection against floods. Mangrove estuaries are also especially rich and productive ecosystems and provide the spawning grounds for many species of fish, including many commercially important ones. Many countries have protected their mangroves and forbidden the construction of new shrimp farms in tidal or mangrove areas.

**I. Answer the following questions:**

1. When did commercial shrimp farming appear?
2. What is the largest country exporting shrimp?
3. Why did the industry start breeding shrimp in hatcheries?
4. What is the difference between Greenwater and Galveston hatheries?
5. How long are the postlarvae shrimp grown in nurseries?
6. Why is nursing favoured by many farms?
7. What is the main disadvantage of nurseries?
8. Where are the shrimp grown to maturity?
9. How is harvesting the shrimp done?
10. What do farms use to accelerate the growth of the shrimp?
11. Can shrimp farms cause any ecological problems? What are they?
II. Choose the proper words from those given in brackets and translate the sentences:

1. A shrimp farm is an (agricultural; aquaculture; industrial) business that cultivates marine shrimp or prawns for human consumption.
2. Commercial shrimp farming began in the (1970s; 1960s; 1950s).
3. Indonesians used the (oat; wheat; rice) paddies for shrimp cultures during the dry season.
4. Mangrove areas were favored because of their abundant natural (fish; shrimp; algae).
5. Postlarvae (hunting; fishing; harvesting) became an important economic sector in many countries.
6. To feed the shrimp larvae, an (alfalfa; bait; algal bloom) is induced in the tanks.
7. A raceway is a rectangular, long, shallow tank through which water flows (from time to time; continuously; sometimes).
8. In the (hatchery; nursery; growout) phase, the shrimp are grown to maturity.
9. The shrimp are fed two to five times (weekly; daily; monthly).

DIFFERENT SPECIES OF FISH

**Cutthroat trout**

Several subspecies of cutthroat trout are found in Colorado, of which three are native – the Greenback, the Rio Grande and the Colorado. The range of these fish has decreased due to a variety of habitat factors, and extensive recovery efforts are undertaken by the Division of Wildlife. Cutthroat trout can be distinguished from rainbows by heavier spotting toward the tail and the presence of a red slash on their "throat." Anglers may find these trout in high lakes and streams.

**Brown trout**

The brown trout was first brought into Colorado in the 1890s and is now abundant from high mountain streams to broad rivers flowing onto the plains. These fish can be difficult to catch, but many anglers have good success during their fall spawning runs. A large dark spotting pattern and reddish dots can help anglers distinguish these fish from rainbows and cutthroats.
**Brook trout**
An entry to Colorado in the late 1800s, the brook trout feeds on aquatic and terrestrial insects and will rise to a large range of small lures, baits and flies. Brook trout have white spots (worm-shaped on top) on a dark background with tri-coloured outlined fins (orange, black and white). This prolific fish often becomes overpopulated and can out-compete other trout. They are typically found in higher elevation lakes, beaver dams and streams.

**Lake trout**
Lake trout, also known as Mackinaw, are the largest trout in North America. Mackinaws have white spots on a dark background with a deep fork in their tail. As the name suggests, these fish are found in mountain lakes and are usually in deeper water. Anglers also enjoy success with this species during the fall and spring in shallower areas and when ice-fishing.

**Splake**
Splake are a hybrid species of lake and brook trout with the best features of both fish. They can be difficult to distinguish as they hold characteristics from both parents. Splake have tri-coloured pelvic fins like brook trout and their tails are slightly forked. Splake are found in high mountains lakes and have been used since the 1980s to thin out stunted brook trout populations. Anglers relish their large sizes (up to 18 pounds) and find success with flies, lures and bait during the summer.

**Kokanee salmon**
Kokanee (land-locked Pacific sockeye salmon) are suited to the large, fluctuating mountain reservoirs of Colorado. These silver fish with black spots on the upper half of their bodies can be found swimming in compact schools feeding on zooplankton, a food source unaffected by the drawing down of reservoirs. They turn reddish in colour and males develop a "hook jaw" during the fall spawning season. Trolling with cowbells at medium depths provides angling success. Special snagging seasons are offered on some areas during spawning runs, and provide much of the catch for these delicious salmon. Kokanee die after spawning.
**Grayling**

These arctic imports provide some additional excitement to mountainous lakes. A large sail-like dorsal fin extending over their silver bodies makes them easy to identify. Grayling have extremely small mouths and can usually be caught only on small flies or lures. Even though grayling are relatively small in stature (usually less than 12 inches), they can be a nice challenge to anglers, not to mention a great photo opportunity.

**Mountain whitefish**

These fish have larger scales than trout and still possess an adipose fin (small flap of skin on their back toward the tail). A weak mouth means delicate hooking and handling is required to land this fish. Smoked whitefish are considered a delicacy in many parts of the country.

**Wiper**

Introduced into eastern Colorado lakes in the early 1980s, this fish is a hybrid between white bass and striped bass. Wiper have become a very popular sportfish because of their hard fighting. Wiper are schooling fish that can be found "busting" prey fish on the surface during the summer. Casting shad imitations or various lures at the "busting" prey and holding on tight is a fun method for catching wiper. Trolling can also be effective.

**Saugeye**

This hybrid of walleye and sauger has been stocked into reservoirs throughout the eastern plains of Colorado since the 1980s. Saugeye can be distinguished from walleyes by black mottling marks on their bodies, tails that do not have a white tip and black pigmentation between dorsal spines. Saugeye don't grow as big as walleye, but are just as tasty. Anglers have luck catching saugeye by trolling live bait or slowly retrieving jigs over bottom humps and points.

**Yellow perch**

Another long ago introduced species, the yellow perch may be Colorado's most abundant game fish and one of the most table worthy. Yellow perch have two separate dorsal fins with large vertical dark stripes on their yellowish sides. These fish can be found in large schools and are caught by using bait or
small spinners. Yellow perch are usually less than one pound, but can be found over two pounds in some waters.

**Black, white crappie**

Introduced in 1882, crappie are now abundant in eastern Colorado waters. Crappie are a pan-shaped fish with black splotches on a silver background, whose dorsal spines and rays get longer as they approach the tail. Crappie are schooling fish that often congregate around vertical structures. Anglers have the most success for crappies jigging by structure in the early spring. Typically, crappie weigh 1/2 to 3/4 pounds, but specimens in excess of four pounds have been caught.

**Bluegill**

This sunfish has a short and deep body. As with all sunfish, the dorsal (top) fin is not split. The bluegill has a small mouth on a short head and a dark gill flap with no trim. There are parallel vertical bars on the side with long, pointed pectoral (side) fins. A male bluegill in breeding colours has brilliant blue fins and a red-orange stomach. The female bluegill is dark on the back with vertical stripes on the body. Bluegill are best caught in the morning or evening using small tackle ranging from a bobber and worm to delicate dry flies. Once one bluegill is located, others will be nearby. Bluegill spawn in colonies from late spring to August, building nests on gravel, sand, mud, leaves, or sticks in 1-4 feet of water. As summer heat becomes extreme, these fish move to deeper water and the shade of weed beds.

**Green sunfish**

This fish is similar in appearance to the bluegill, but has a larger mouth and is olive in colour with short, rounded pectoral fins and yellow trim on the fins. This stocky fish is found in both streams and impoundments and spawns in shallow areas from June to mid-August. Like most sunfish, this sporty panfish can be taken with crickets, worms, and other bait rigged under a bobber, or with small lures, jigs, and flies.

**Northern pike**

The Northern Pike is one of the most ferocious fish swimming in Colorado waters. They are found in many mountain lakes and rivers, as well as in a few lakes on the plains. Big, flashy baits are most effective for these fish when fished in and around shallow vegetation. Some people do well with big flies.
**Tiger muskie**

The tiger muskie is a hybrid of northern pike and muskie. These fish were introduced into Colorado in the 1980s. The biggest fish ever caught in Colorado was a tiger muskie. Their long snout filled with teeth and dark tiger striped sides on a light body make them easy to identify. Many anglers relish the trophy fishing opportunities provided by these denizens of the deep, that in Colorado may reach over 40 pounds. The best opportunity to catch a tiger muskie would be by throwing large lures over vegetation during the summer.

I. Read these short descriptions of different species of fish. Be ready to speak on the main characteristics of each of them.

II. Read the following descriptions of different fish and find in the text the proper name for each of them:

1. Their long snout filled with teeth and dark tiger striped sides on a light body make them easy to identify.
2. The fish have heavy spotting toward the tail and a red slash on their "throat."
3. They are olive in colour, have short, rounded pectoral fins and a yellow trim on the fins.
4. These fish have white spots (worm-shaped on top) on a dark background with tri-coloured outlined fins (orange, black and white).
5. These silver fish have black spots on the upper half of their bodies. They turn reddish in colour and males develop a "hook jaw" during the fall spawning season.
6. These are fish with a short and deep body. They have a small mouth on a short head and a dark gill flap with no trim. There are parallel vertical bars on the side with long, pointed pectoral (side) fins.
7. They can be distinguished by black mottling marks on their bodies, and tails without a white tip.
8. The fish have a large sail-like dorsal fin extending over their silver bodies and an extremely small mouth.

III. Give the verbs corresponding to the following nouns and translate them into Russian:

variety; recovery; presence; success; run; entry; feed; name; water; enjoyment; characteristics; development; death; excitement; requirement; smoke; introduction; growth; weight; location; appearance; fish
LOVE FOR ANIMALS

Have you ever thought about what happens to zoo animals during times of war? Most of us don’t think about innocent animal casualties. But thankfully, one South African man – Lawrence Anthony – did. When the US military invaded Baghdad in 2003, Anthony did what most people would never be brave enough to do. He ran into a war zone instead of out of it, all because of his love for animals. When the war started, he couldn’t stand the idea of the animals dying in their cages. So just eight days later, he flew from South Africa and arrived at the border. With relentless begging, he convinced border guards to let him enter Iraq. His next challenge came when he saw that of 600 zoo animals, only 36 were alive. He found himself in the middle of a horror story. Animal carcasses were swarming with flies. The zoo’s deputy director was in tears. Monkeys and baboons ran wild, while escaped birds circled overhead. A bear had even killed some looters. The animals that survived were mostly big predators like tigers, lions and bears. Now they too were starving and traumatized. There was no food or water. There are few things more dangerous than working with huge starving predators. At first, Anthony wanted to give up. But with the help of soldiers from both sides of the war, American and Iraqi, he stuck it out. Soldiers began working together who had been fighting against each other. Within six months, the zoo was finally restored. The surviving animals were healthy, their cages were clean, and they had plenty of food and water. Even though many people have never heard of Anthony Lawrence, he was truly a hero. In his native country of South Africa, he became known as the elephant whisperer because of the amazing way he connected with elephants. With only words and gestures, he persuaded herds of elephants to stay on reserves for their own good. He warned them that those who left the reserve could be shot. And incredibly, after months of previously escaping, the elephants finally decided to stay. When Anthony passed away in 2012 of a heart attack, the elephants showed just how special and heroic he was. Two herds walked half a day to his home in a funeral-like procession to mourn his passing even though there was no apparent way they could have known he died. They stayed for two days. One man’s heart stops and hundreds of elephants’ hearts grieved. How could this be possible?

Find synonyms from the text to the following words and phrases. Use them in the sentences of your own.

hate (someone/something); constant effort; dead animal; people who rob stores often during an emergency or crisis; animals that hunt and eat other animals; stop trying; continue through difficulty; someone who can communicate with animals; group of animals that move together; protected area for plants and animals; for their/your own benefit; die
CLEVER BIRDS

Birds aren’t usually the first animal that people think about when they think about smart animals. In English, calling someone birdbrained means that they are stupid. And saying something is ‘for the birds’ means that it’s trivial or worthless. However, these expressions couldn’t be more wrong. Some birds, particularly crows, can be amazingly smart. In fact, their problem-solving abilities are as good as those of a seven-year-old child. In one experiment, a crow worked out how to solve a complex three-step problem using tools. The crow was given a stick hanging on a string, a long stick out of reach in a box, and a piece of food also out of reach in an even deeper box. The crow removed the stick from the string, then used that stick to reach the longer stick, and then used the longer stick to reach the food in the deeper box. Crows not only use tools, they are also the only non-primate animals to make tools. In another experiment crows were given a straight piece of wire and food that was out of reach in a tube. Unable to remove the food with the wire, one crow was recorded bending the wire to make a hook.

Even more amazing is that crows seem to use language. Researchers at the University of Washington began capturing crows for identification. However, after the first few times, the scientists found that catching new crows was becoming harder. The crows were learning to recognize the face of the person that captured them and then telling other crows that that person was a threat. To test how well crows could do this, the scientists started wearing a rubber mask when they captured crows. Soon after, the crows were sending off warning cries whenever anybody with that mask approached. Later, the scientists observed that crows that had never been captured were giving the same warning cries in reaction to the mask. Over the months that followed, they reported that eventually 89% of the crows, most of which had never been captured, were attacking anyone wearing the mask.

What do you think? If tool use and language is a sign of intelligence, is it possible that given a few hundred thousand more years, crows might develop human-like intelligence? Give your arguments.

CAN ANIMALS FEEL THE FUTURE?

In the early morning of December 26th, 2004, there was a large earthquake under the ocean close to Indonesia. This earthquake started a tsunami sending giant waves to Indonesia, Sri Lanka and Thailand. Over 200,000 people lost their lives that day. It was a tragic day that no one could have predicted. In both Sri Lanka and Thailand, elephants ran up hills away from the ocean an hour before the tsunami hit. Birds flew away from low-lying areas, and zoo animals hid. There were also reports of 2 ocean loving dogs that refused to go to the beach with their owner, 90 minutes before the tsunami. Even bats were acting strangely that day. There were stories of bats, active and awake 30 minutes before the tsunami, even though they’d normally be sleeping during the day.

What was going on with these animals? There are many theories. Maybe they are able to feel vibrations in the earth, before an earthquake. Maybe earthquakes release gases from the earth that the animals can smell. It’s also possible that earthquakes cause sounds that humans can’t hear, but animals can. There are many possible reasons why animals might know about an earthquake before it happens, but some people believe
there is something more mysterious happening. They think that animals might have some psychic ability that allows them to feel what is about to happen.

Can animals really see or feel the future? Rupert Sheldrake believes so. Sheldrake is a biochemist and the author of the book “Dogs That Know When Their Owner Is Coming Home”. Sheldrake surveyed dog and cat owners about whether their animals seemed to know when they were on their way home. 50% of dog owners and 30% of cat owners said yes. Intrigued by this, Sheldrake set up experiments with over 100 dog owners. He videotaped these animals to see if they would come to the door or window before the owner came home. He knew that some dogs might have a habit of waiting at a fixed time, so he had the owners leave work at random times. Some animals might hear their owner coming to the door, so he decided to measure only if the dogs knew when their owner was leaving work.

Sheldrake showed in his experiments, that dogs did seem to have the ability to know when their owner is coming home. In one of the most successful cases, he filmed a dog named Dick, in Manchester, England. In this experiment, Sheldrake chose random times for Dick’s owner Pam to return home. During the time that Pam was at work, Dick was only at the window 4% of the time, but when Pam was on her way home, Dick was at the window 55% of the time. Can dogs really read our minds or is there something else happening here?

Place the missing words in their proper places:
1. This … started … sending giant … to Indonesia (earthquake; a tsunami; waves.
2. … ran up hills away from … an hour … the tsunami hit (elephants; before; the ocean).
3. Some … dogs refused to go to … with their owner (the beach; ocean loving).
4. Animals are able … vibrations in … before an earthquake (the earth; to feel).
5. Sheldrake set up … with over 100 … owners (dog; experiments).
6. He videotaped these animals … if they would come to … or window before … … home (to see; came; the owner; the door).

**OSCAR THE CAT**

Since ancient times, animals have shown to have the ability to predict the future. It is no secret that they can even feel when a natural disaster is coming. And it is fact that cats are the most likely of all animals to predict a misfortune. Cats can even announce a person’s death.

This is the case of Oscar, an American cat that lives on the roof of a mental hospital in Rhode Island. Oscar has proven that he can predict the death of terminally ill patients. When a patient is near death, Oscar somehow knows. He curls up in bed with the man or
woman and purrs. Within 2–4 hours that person passes away. The two-year old cat had predicted correctly the death of over 100 patients. The staff trusts Oscar so much that when they see him laying next to a patient, they immediately call the patient’s family members to say goodbye. According to Dr. David Dosa, a professor at Brown University, who has studied Oscar’s abilities, the cat makes few mistakes. Specialists have two explanations for Oscar’s six sense. They believe that his ability may be connected with the fact that most patients can’t move or that Oscar is able to smell ketones, which are biochemicals released by dying cells. Apparently diabetes smells like nail polish remover, liver disease smells like raw fish, and Rubella smells like freshly plucked feathers. Researchers are studying new ways in which electronic sensors and even dogs can be used to identify the smells of different diseases and medical problems. In the future, smell might be a valuable tool for medical diagnosis.

While most families are grateful to Oscar for the heads up, some ask the medical staff to take the cat out of the salon. When Oscar is forced to stay on the hallway, he gets mad and starts to do laps outside the front door, whining. On the other hand, Oscar is not at all seen as the cat that brings death, but he is loved by all those who live at the hospital. He became famous when Dr. David Dosa published his study in the New England Journal of Medicine. Three years later, the geriatrician released a book about Oscar, called “Making Rounds With Oscar: The Extraordinary Gift of an Ordinary Cat”. Moreover, Oscar became the leading star in various radio or TV shows, song, and short movies.

I. What do you think about Oscar the cat that predicts deaths? Do you think he is actually capable of predicting people’s deaths?

II. Choose the right statements according to the text:

1. The cat became famous because of its strange ability to predict when a person is going to become ill.
2. Oscar has any supernatural power with which it uses in predicting people’s death.
3. Scientists say it is likely that when Oscar smells the ketones from dying patients, then he would go and curl up to the patients.
4. Oscar notices the lack of movement in patients who are about dying and curl up and sleep beside them.
5. Oscar became popular for his extraordinary ability when Dr. David Dosa made a movie about him and his extraordinary abilities.

THE SMART DOG

It was Monday, October 13, 2008. The scene was the People's Building Center parking lot in Dayton, Texas. The SNAP mobile clinic was full of dogs and cats, 22 of them to be spayed or neutered. Dr. Johnson had arrived, and Chris and Michele were prepping a dog for surgery. There was a lot of barking coming from outside. The crew looked out the window and saw a little brown five-pound Chihuahua barking at a dark blue Jeep Liberty. This dog literally would NOT let this car move. The driver started edging forward very slowly, but the Chihuahua got right in front of the front wheel. The little fellow kept barking and wouldn't budge. Soon a crowd gathered in the parking lot.
One of the onlookers suggested the driver back up. When she tried, the Chihuahua quickly ran around to the back of the car and wouldn't let the driver go backwards either.

A few moments later a Dayton policeman arrived. Everyone thought that the problem would quickly be solved because the dog had a collar and tag. The Chihuahua wouldn't let the officer or anyone else come near enough to read it though.

The standoff went on for 45 minutes or so. The lady kept saying she needed to be somewhere. The SNAP team offered ideas on how to secure the pup and even supplied food to be used to bribe him away from the Jeep. The Chihuahua would have none of it. Finally the parking lot group decided on a plan. The lady in the dark blue Jeep Liberty started driving ahead very slowly with the passenger door open very slowly as in one mile per hour. The Chihuahua ran along the passenger side of the car. The Dayton Police car followed, and behind him were two other cars. They led the Chihuahua in this way to a fenced area behind the People's Building Center supermarket. There they were finally able to catch the Chihuahua and read the tag on his collar.

Imagine everyone's surprise when the Chihuahua's guardian turned out to be the owner of a dark green Jeep Liberty! They had driven to a Walgreens drug store near the People's Building Center a day or so earlier. There, the Chihuahua had jumped out of the car. The guardian had discovered the dog was missing after returning home and had returned to the drug store several times to try to find him but without success.

Once the whole story was known, everyone realized just how smart the little Chihuahua had been. He recognized that the Jeep matched his guardian's car. (The color was off a bit, but dogs can't distinguish most colors.) He also recognized that the person in the car was the wrong person. He thus decided that the best approach was to keep the car there until the right person came along. It was his intelligence that ultimately enabled the smart little guy to find his way home. He taught us how smart a dog can be in the process.

**The main idea of the text is:**

1. Dogs are not able to distinguish most colors.
2. The Chihuahua wouldn’t let the car move.
3. The dog recognized that the person in the car was not his owner.
4. The story tells us how intelligent and smart a dog can be to find his way home.

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**THE CAT AND THE GRIZZLY**

This grizzly bear had come to us as an orphaned cub six years ago, after being struck by a train in Montana. He'd been rescued by a Blackfoot Indian, had lain unconscious for six days in a Montana hospital's intensive care unit, and ended up with neurological damage and a blind right eye. As he recovered, it was clear he was too habituated to humans and too mentally impaired to go back to the wild, so he came to live with us as a permanent resident.
Grizzly bears are not generally social creatures. Except for when they mate or raise cubs, they're loners. But this grizzly liked people. I enjoyed spending time with Griz, giving him personal attention on a regular basis. That July afternoon, I approached his cage for our daily visit. He'd just been served his normal meal – a mix of vegetables, fruit, dog kibble, fish and chicken. Griz was lying down with the bucket between his forepaws, eating, when I noticed a little spot of orange coming out of the blackberry brambles inside the grizzly's pen. It was a kitten. Probably six weeks old, it couldn't have weighed more than ten ounces at most. What should I do? I was afraid that if I ran into the pen to try to rescue it, the kitten would panic and run straight for Griz. So I just stood back and watched, praying that it wouldn't get too close to the huge grizzly.

But it did. The tiny kitten approached the enormous bear and let out a purr and a mew. I winced. With any normal bear, that cat would be dessert. Griz looked over at him. I cringed as I watched him raise his forepaw toward the cat and braced myself for the fatal blow. But Griz stuck his paw into his food pail, where he grabbed a piece of chicken out of the bucket and threw it toward the starving kitten. The little cat pounced on it and carried it quickly into the bushes to eat. I breathed a sigh of relief. That cat was one lucky animal! He'd approached the one bear of the sixteen we housed that would tolerate him – and the one in a million who'd share lunch.

A couple of weeks later, I saw the cat feeding with Griz again. This time, he rubbed and purred against the bear, and Griz reached down and picked him up by the scruff of his neck. After that, the friendship blossomed. We named the kitten Cat. These days, Cat eats with Griz all the time. He rubs up against the bear, bats him on the nose, ambushes him, even sleeps with him. And although Griz is a gentle bear, a bear's gentleness is not all that gentle. Once Griz accidentally stepped on Cat. He looked horrified when he realized what he had done.

Their love for each other is so pure and simple; it goes beyond size and species. Both animals have managed to successfully survive their rough beginnings. But even more than that, they each seem so happy to have found a friend.

(by Dave Siddon
http://www.wildlifeimages.org/)

Choose the right statements according to the text:
1. It was impossible for the grizzly bear to live in the wild because his right eye was blind.
2. Grizzly bears are usually very sociable with people.
3. The kitten came to the bear because it was very hungry.
4. The cat and the bear became enemies.

ELVIS AND LUNA

Elvis settled in remarkably well, given that I've never had a steer before. All he wants, besides grass, is love and attention, yet everyone flees at his approach. Which is understandable. Whenever someone opens the gate, no matter where in the pasture Elvis is, he comes thundering down the slope toward his visitor. It's a true test of nerves. Elvis weighs nearly 2,300 pounds. It isn't easy for him to slow or stop. I've taught him to "stay" (more or less) when I approach, but once or twice he's gotten overexcited, swung
his huge head, and sent me sprawling. He shows remorse, leaning over to lick me with his enormous tongue, like a two-story Newfoundland. When I came out in the morning, he was always waiting for me, and same thing just before dusk, when I made my final rounds. I never imagined that I could love a steer. Still, Elvis was lonely. Several times a day, he came up to the pasture gate – to get closer to the donkeys and the sheep. Except for the baby donkey Jesus, who was willing to check Elvis out from the other side of the fence, they would all quickly scuttle as far away as they could get.

And as fond as I was of Elvis, I didn't really want him strolling around the farm trying to make friends. He could (and did) walk through any unelectrified fence I had, practically without noticing. Elvis would think nothing of putting his head through a kitchen window if he smelled something good to eat. While getting scratched, he might suddenly drop an enormous cowpie that landed like a giant boulder on the ground. Or unleash a prodigious whiz that trickled down to the road. He didn't really know how to play well with animals of normal size. A few times, I'd tried bringing the donkeys and the sheep into the paddock with him. He appeared delighted to have company, but when he galloped into their midst, the sheep fled and the donkeys hid behind trees. He looked disappointed.

A few months ago, I got a telephone call from my friend, Nicki. Nicki and her husband had to move and they tried to find good homes for their animals, particularly their favorite cow, Luna, a brown and white mixed-breed 3-year-old. Nicki didn't want to send Luna to a dairy farm. She wanted her to live where she could graze freely and continue to get special grain treats, and where some idiot would feed her forever. Naturally, I agreed.

Elvis' head came up as soon as he saw the trailer and heard Luna's moo. Hers was a guttural alto bray; his was deeper. He began to dance around. “A friend like me! Maybe a girlfriend!” The two animals started talking to each other right away.

Elvis' dancing around the pasture was a sobering sight, causing woodchucks to dive into holes, the sparrows to flee the barn, and all the humans to back up quickly. Elvis was beside himself with joy. He sniffed Luna, and then the two of them took off, frisking around the pasture. I'm not sure what a happy pair of cows ought to look like, exactly, but these two seemed quite pleased to meet. Elvis literally kicked up his heels. His manners improved. He was disarmingly sweet. When it was time for grain, he stood at one end of the trough, she at the other until their heads and noses met in the middle. From the first day, they were inseparable. At night, they go off to sleep under an apple tree, Luna sometimes resting her head on Elvis' monstrous back. Elvis still comes
running when I show up in the pasture, especially since I started bring carrots, potatoes, or Snickers bars, all of which he is crazy about. But I am no longer the center of his universe, and he no longer stands waiting for me. There are no more lonely moos.

(By Jone Katz)

http://blog.bedlamfarm.com/index.cfm/2008/12/15

Complete the sentences according to the text:
1. Everyone ran away at Elvis’ approach because …
2. Elvis was lonely because …
3. Nicki wanted her favorite cow to live where …
4. Elvis was beside himself with joy because …
5. When it was time for grain …
6. From the first day, Elvis and Luna …

SOME INTERESTING FACTS ABOUT PIGS

An old English adage claims: 'Dogs look up at you, cats look down at you, but pigs are equal.' There is some truth in this. Pigs are more or less the same size as human beings and resemble us in many ways. Their organs are so similar to our own that pig heart valves are used to replace human aortic or mitral valves. The fact that pigs will become extremely friendly with human beings, given half a chance, is something of a miracle, considering how we treat them. Perhaps pigs themselves are aware of our resemblance and so regard us as cousins. Handled with affection, even an adult pig might well become as friendly as a dog who has always lived with the family. One has to wonder why the pig came to be despised by both Jews and Muslims. Was it its flesh that was distrusted, or the pig itself, as an animal? People have usually believed the former, claiming that because pig meat was so easily prone to spoiling and trichinosis, the consequent human diseases led them to avoid the meat.

But the late F. E. Zeuner, an expert on domestication, rejects this view, pointing out that pork is no more likely to spoil than any other meat in a hot country, and in any event there are tropical islands where pork is the main meat eaten. He proposes a human interpretation. Nomads would once have despised the settled farmers who bred pigs, and that feeling in some way transferred to the animals themselves. It is undeniable that we share a great deal in common with pigs, though people have been reluctant to acknowledge the similarities. Like us, pigs dream and can see colours. They are sociable. (On warm summer nights pigs snuggle up close to one another and for some reason like to sleep nose to nose.) The females form stable families led by a matriarch with her children and female relatives. Piglets are particularly fond of play, just as human children are, and chase one another, play-fight, play-love, tumble down hills, and generally engage in a wide variety of enjoyable activities. As Karl Schwenke points out in his classic book “In a Pig’s Eye”: 'Pigs are gregarious animals. Like children, they thrive on affection, enjoy toys, have a short attention span, and are easily bored.' One can witness the interaction and affection when pigs greet each other, snout to snout, sometimes with love grunts' soft, open-mouthed greetings given when a pig is feeling amorous, or maybe just sweetly affectionate. Pigs can also be cliquish: an older new arrival may not easily find acceptance.
Like humans, pigs are omnivores. Though they are often fed garbage, their food of choice would be similar to our own. When pigs are offered mango or a head of broccoli, they will always take the mango. They have a sweet tooth, and a pastry will always win over a healthy vegetable. Remind you of somebody?

They get easily bored with the same food. They love melons, bananas and apples, but if they have had them for a few days, they will set them aside and eat whatever other food is new first. We don't often associate pigs and cleanliness but, if permitted, they will be more fastidious in eating and in general behaviour than dogs. When offered anything unusual to eat, a pig will sniff at it and nibble gently.

If we are to consider pigs as sentient beings with intelligence and a full range of emotions, perhaps we should feel guilty when a pig gives us that look knowing he will soon be off to his death.

I. Explain the phrase 'Dogs look up at you, cats look down at you, but pigs are equal.' Give the arguments from the text.

II. Answer the following questions:
1. Why do some peoples avoid eating pork? Do you support the points of view given in the text? What is your opinion?
2. What are the similarities between people and pigs?
3. What is the main idea of the text?

GRIEVING ANIMALS

We all know there are many differences between humans and animals. The ability to use advanced tools or cook our food is one thing that sets us apart. Many people feel that animals aren’t capable of having the same emotions as humans. As a result, those people don’t always feel the need to treat animals as well as they treat humans. Is this a correct way to think about things though? Or is it just a misunderstanding of how animals think about things? For example, are animals capable of feeling grief when a loved one dies?

The feeling of grief can be hard to stomach for a person who experiences tragedy. Everyone grieves in a different way too. Some people shut down and other people try to forget about the tragedy. New studies show that animals go through a similar process when a loved one dies. For example, when a herd of elephants comes across a dead member of their pack, it’s hard to say they don’t mourn the loss. Instead of just moving on, they will gather around the body, sometimes for hours. The immediate family will be the most affected, but the whole pack will be there to show their support.

Chimpanzees go through a similar process. Already much like humans, chimpanzees have reactions like humans after the death of a loved one. After discovering the dead body of a loved one, chimpanzees will rarely leave it unattended. Most of the time, the mother and father will sit and sulk with the body for hours. Later, the mother will carry her child’s body away with her. This is not all that different to the normal human process of grieving and burial.

So it’s easy to see that loss affects these animals. It goes to show that animals do have human-like emotions. This discovery is leading scientists to other interesting
questions. If animals are capable of feeling grief, then what other human emotions are they capable of? And are there any emotions that animals display that humans don’t express?

Choose the proper synonyms to the words in bold from the text:

difficult to endure; makes us different from; a terrible event that causes great emotional sorrow; able to; proves; to feel sorrow or sadness; to grieve about the death or loss of someone or something; be silent and non-communicative; to remain silent in a bad mood

BRITS’ BEST FRIENDS

LONDON: British pet owners spend 407 million pounds a year buying their animals haute couture accessories and sophisticated toys as part of an effort to combat “busy parent” guilt, a research report claims.

The research, from consumer analysts Mintel, reveals that pet spending has grown by 20 per cent over the last five years and that almost a fifth of working pet owners feel guilty about leaving their animal alone. A Mintel analyst, Claire Hatcher, said that retailers of pet’ toys and hygiene products were increasingly reaping the rewards of the “pet pound”. “Like many full-time working parents, pet owners today are now lavishing more money on their pets simply to try and relieve their guilt for not spending enough time with them,” said Hatcher.

Mintel predicts that the market for accessories and healthcare could reach 516 million pounds by 2007 as working pet owners lavish guilt-gifts on their companions.

The survey, conducted among 1,000 owners across Britain, clearly shows that the working-day separation of animal-lover and pet is not always through choice. Three quarters of owners say they treat their pets as one of the family and 7 per cent say they do not get enough time with their dog or cat.

But animal behaviourist David Appleby, who runs the Pet Behaviour Centre in Defford, central England, said the gifts might not be doing the job. “An animal isn’t interested in the material worth of a gift, it’s down to how engaging they find it. You can’t buy an animal’s love, it’s a social bond that builds up over time.”

Psychotherapists have expressed fears that the passion for pets driving the spending boom is misplaced and unhealthy.

Phillip Hodson, a fellow of the British Association for Counselling and Psychotherapy, said: “Pets are objects of displacement for all sorts of feelings. There are people who believe pets are human, and they treat them as such and leave their fortunes to them, which is ridiculous.”

Vets have warned that the pampering is creating an obesity epidemic in domestic pets. Rodney Zasman, owner of the Zasman Vet Centre in London, said: “We have seen an increase in pets coming in with weight problems, but dental hygiene has improved as people buy pet toothbrushes and special chews that help keep teeth clean.

“ Spending on things like fashionable collars and coats – which you would never have seen 10 years ago – is a good thing, because it strengthens the bond between owner and pet”
Read the text and answer the questions:

1. What is your personal attitude to pets? Give your arguments.
2. Do you think your pet understands you well enough? And what about you?

**CAN ANIMALS THINK?**

In a sun-dappled pool not far from the glamour of Waikiki Beach, two female dolphins poke their heads out of the water, waiting for a command. “O.K.”, says Louis Herman, founder and director of the Kewalo Basin Marine Mammal Laboratory, “now let’s try a tandem creative.” First the humans ask the dolphins to pay attention by holding a finger high in the air. Then they tap the index fingers of each hand together, forming the gesture that has been taught to mean tandem. Next they throw their arms up in an expansive gesture that signifies creative. The dolphins have just been told, “Do something creative together”.

The dolphins ... submerge in the 6-feet-deep water, where they can be seen circling until they begin to swim in tandem. Once they are in synch, the animals leap into the air and simultaneously spit out jets of water before plunging back into the pool. The trainers flash huge smiles at their flippered pupils and applaud widely. The animals also seem delighted and squeak with pleasure.

What is going on here? Do the dolphins actually understand the command *tandem creative* as a request to make some joint artistic statement through the movement? Did they communicate in some fashion to choose a routine and coordinate their movements? In order to spit, for instance, they both must take water into their mouths before they leap into the air – a trick that takes some forethought. Other request for tandem creative has yielded a variety of results, including a synchronized backward swim culminating in a simultaneous wave of the tails. Or could it be that these routines are nothing more than one dolphin following the lead of other? In the wild, after all, dolphins are extraordinary skilled at tuning their actions to the movements of others in their group.

In cluttered quarters at the University of Arizona – half lab, half toy-strewn nursery – Alex, the voluble African gray parrot, is, as usual, commenting on all he sees. “Hot!” he warns in a sweet, childlike voice, as a visitor picks up a mug of tea. Alex spots a plateful of fruit and announces his choice: “Grape”. Everyone knows parrots can talk, but for the past 15 years ethologist Irene Pepperberg has been working with Alex, exploring the degree to which the birds understand what they are saying. She picks up an object from a crowded tray and inquires, “What toy?” Alex promptly answers, “Block”. He then responds to questions about the plaything, describing its colour, shape, what it is made of (“wood”) and whether it is bigger or smaller than other objects on the tray. After incorrectly answering how many rose-coloured pieces of wool are mixed in with other objects on the tray, he says, “I am sorry”. A moment later the obviously frustrated bird says, “I am gonna away” and turns his feathered back on the offending tray. Does Alex know what he is saying, or is “I’m gonna away” merely a collection of sounds he emits when frustrated?

Since antiquity, philosophers have argued that higher mental abilities – in short, thinking and language – are the great divide separating humans from other species … Darwinism raised a series of tantalizing questions for future generations: If other...
vertebrates are similar to humans in blood and bone, should they not share other characteristics, including intelligence? Even to raise these questions challenges humanity’s belief that it occupies an exalted place in the universe. Moreover, scientists have historic reasons to be skeptical of claims concerning animal intelligence. At the turn of the century, a wonder horse named Clevel Hans wowed Europeans with his apparent ability to solve math’s problems, expressing the answers by tapping a hoof. Dutch psychologist Oskar Pfungst ultimately showed that Hans was merely responding to inadvertent cues from his human handlers, who, for instance, would visibly relax when the horse had tapped the proper number of times. When blindfolded, Hans ceased to be so clever.

Not surprisingly, then, accounts of the first language experiments with apes in 1970s produced one of the most fractious debates in the history of the behavioral sciences. Washoe the chimp and Koko the gorilla became famous for their linguistic feats using sign language, but scientists argued bitterly over the significance. Did the “speech” of these animals reflect a genuine ability to think symbolically and communicate thought, or was it largely the result of role conditioning or of cuing? – a la Hans – by trainers?

But the skepticism also served as a challenge. A number of scientists launched innovative probes of animal intelligence, while those who remained in language work designed careful experiments to meet the objections of critics. Their aim is to determine, as precisely as possible, what animals know and how well they communicate it.

**Answer the question:**

1. Do you believe animals can think? Is it just a question of training?

Give examples to illustrate your point.

**THE BOY WHO WAS TAUGHT TO TALK BY DOLPHINS**

*(After three days dolphins help boy break lifelong silence)*

For young Nikki Brice, the daily swimming sessions with the dolphins in a pool in Florida, USA, were simply part of a fun holiday with his family. But the real purpose was to see if swimming with dolphins could motivate him to talk.

When Nikki was born, he was starved of oxygen. All his life he had never spoken a word, even though he had the physical ability to speak. All the techniques which were tried in Britain had failed, so eventually, in desperation, Tabitha, his mother, took him to the dolphin pool in Florida to try to get him to talk.

Tabitha Brice, from Weston-super-Mare in Somerset, flew to Florida with Nikki after raising £10,500 with the help of family, friends and celebrities. Nikki was given a combination of conventional speech therapy and daily forty-minute swimming sessions in a pool with a team of eight dolphins. After just three days of the seventeen-day treatment at the Dolphin Human Therapy Centre in Miami, Nikki spoke his first magic word.

It was one marvelous morning that the breakthrough came. Nikki’s mother was taking him out of the pool when he firmly grabbed her hand, pointed to the dolphins in the pool and said: “In”. “He was telling us that he wanted to get back in the water”, said Mrs. Brice. “We just stood there in shock because it was so unexpected”. Since that first
word Nikki has gone from strength to strength, and has spoken other words like ‘please’ and ‘duck’.

Doctors at the Miami centre say they are very pleased that Nikki has spoken so soon after starting his treatment. A speech therapist in London said that this kind of treatment would not repair any brain damage but if a child was suffering from lack of confidence, swimming with dolphins might help.

Before Nikki’s breakthrough, Mrs. Brice said that they had only heard about, but not seen, children getting better. “I had never expected Nikki to make such good progress so quickly but now we are seeing it before our eyes. I’m hoping that his next words will be ‘Hello, Mum’! There is something magical that happens between children and dolphins, something I don’t think we will ever fully understand”.

I. Read the text and find words or phrases which mean the same as the following:

1. encourage
2. deprived of
3. methods
4. in despair
5. famous people
6. normal or usual
7. sudden good results
8. seized
9. surprising
10. mend

II. Answer the questions:

1. What was wrong with Nikki?
2. What had happened to him earlier in life?
3. Why did his parents decide to take him to Miami?
4. How did they raise the money for it?
5. How do medical experts explain the success of the treatment?

ARE HUMAN BEINGS REALLY THE MOST ADVANCED CREATURES ON THE PLANET?

We think we are the most advanced creatures on the planet. But if we look a little deeper, we will realize that all our inventions, which make life easier, are really just copies of things already found in nature. Here are a few examples of the incredible things animals can do.

We may have invented heat-seaking cameras which find disaster victims, but snakes can ‘see’ heat. Rattlesnakes have sensors which can detect small changes in temperature. They ‘see’ us by the heat that surrounds us, so they can find their prey in the dark. Even our footprints leave some warmth, which can be detected long after we have passed. This means snakes know where we are and where we have been.

We discovered electricity and ways of looking for it. However, creatures which live in the sea have electrosensors which can detect electricity. A swimmer who is injured gives off electricity – his heartbeat and his nerves flashing on and off in panic. A shark wouldn’t ‘see’ him through its eyes, which are very small, but it would feel the swimmer’s fear.

We spend millions trying to predict the weather, using complicated science and equipment. Ladybirds know, in advance, exactly what kind of winter we will have. Each autumn, they choose a place to spend the winter. If it is going to be cold, they find a site
where there is plenty of warmth – for example, under leaves. If the winter is going to be mild, they go somewhere where there is more air. Nobody knows how they do it.

**What animals can do the following?**

a) follow someone’s footprints  
b) predict the weather  
c) sense a person’s fear

**HEALER DOG**

The healer dog is what the Mexicans call the xolo. The Indians believed that this sun-loving creature had the ability to cure people of a host of diseases. Interestingly, the ‘healing technique’ involves sleep and direct skin contact. Jesuit priests who lived in Mexico in the 17-th and 18-th centuries said that any respectable Indian host would offer his guests two or three xolos instead of hot-water bottles for the night. As for the dogs’ therapeutic effect for various kinds of neurosis, etc. (that is, when the problem is functional and not organic), it has been described by quite a few European authors. These authors noted also that the dogs developed symptoms similar to the human invalid’s, but soon recovered after sun bathing and burrowing in the silt and mud of swallow streams and waterholes.

**Read the text and answer the question:**

What did Indians offer their guests instead of hot-water bottles?

**RUSSIA WELCOMES UNCHANGED FUR RULES**

By Jeanne Whalen  
Russian officials welcomed the European Union’s decision to ignore objections from animal rights activists and continue importing furs of animals caught by leg-hold traps. Officials said the traps, which the EU has said it would like banned worldwide as inhumane, are essential to the economic survival of the native populations of Russia’s northern regions. Leg-hold traps typically break an animal’s leg and cause the animal to die in five minutes, a period considered inhumanely long by many animal rights groups. Russia has pledged to eliminate leg-hold traps within the next five years with financial assistance from the EU. But this financial assistance is not likely to arrive because the EU has not budgeted for the expense, said David Bowles, European officer of England’s Royal Society for the Prevention of Cruelty to Animals, or RSPCA.

Europe has been Russia’s biggest fur customer, snapping up roughly $ 50 million in pelts last year, according to Russia’s State Environmental Committee. Sable is by far Russia’s largest fur export, with a lynx a distant second. About 70 percent of animals caught in the wild are killed by a gun, while 30 percent are caught in the leg traps. Outlawing trapping would immediately seriously harm the economic welfare of Russia’s hunters.

One animal activist in Moscow scoffed the idea that Russia’s indigenous, northern people could not survive without leg-trap hunting. “What has been done to the northern people in other ways is much more of a threat to their life than eliminating trapping,” said Tatyana Pavlova, director of the Centre for the Ethical Treatment of Animals. She
said widespread alcoholism and housing “not fit for living” are more of a threat to the native populations (based on The Moscow Times)

**Answer the following questions to the text:**

1. Why is leg-trap hunting so popular in Russia?
2. Do you think the reasons given in the article sufficient enough not to ban this kind of hunting? Why?
3. Why do some people like to wear fur coats, hat, etc?

**GREY AND RED SQUIRRELS**

In 1876 a landowner imported some grey squirrels from America; before that, the only squirrels in Britain were red. Since then the grey squirrels have spread rapidly and the red ones are now in danger of extinction.

The main reason why the two species cannot live together is diet. Grey squirrels eat hazelnuts before they are ripe while the reds prefer to wait until they ripen so they easier to digest. Therefore if the two species live in the same forest, there are no nuts left for the reds when they want them.

In other respects, their tastes are different; grey squirrels like acorns from oak trees while reds like pine and spruce cones. Consequently, grey squirrels are happier in forests with deciduous trees or mixed forests; reds are only better off in coniferous forests, like those in Scotland.

**Retell the text.**

**ANIMALS WIN RIGHTS**

Moscow State Agricultural Academy announced Wednesday that it will stop experimenting on animals for educational purposes. Students will instead use videos and computer software provided by InterNICHE – the International Network for Humane Education – to develop their understanding of the human body. “Computer programs and videos of professionally carried out experiments on different animal species will help us avoid problems with students who refuse to experiment on animals for ethical reasons”, TASS reported Tatiana Blokhin, a representative of the academy, as saying.

The Moscow agricultural institution takes it lead from the St. Petersburg Veterinary Academy, which began phasing out the use of vivisection for educational purposes in October 2005, making it the first of such Russian institutions to do.

Nick Jukes, the co-coordinator of the network, said that he sees “increasing momentum for the replacement of harmful animal experiments” in Russia. He also said that “alternative, humane education can provide a more economical approach”, since mannequins and videos can be reused, whereas new animals are required for each vivisection experiment.

Jukes said, that experiments on live animals “desensitize students and show them that animals are disposable.” He also claimed that “caring is a clinical skill which it is impossible to learn through animal experimentation.” He added that teachers generally found students more interested in classes when alternative technology was used instead of live animal experimentation.

**Read the text and tell your own opinion.**
MUSCOVITES ADOPT ZOO ANIMALS

Raccoons, penguins and kangaroos are the most popular animals among those of the city residents who “adopt” animals in the Moscow Zoo, spokesperson Raisa Koroleva told RIA Novosti.

She said that the “Adopt an animal” program was introduced more than ten years ago. People can help their favourite animals by signing a special agreement with the zoo and making donations over a chosen period of time, usually from three months to one year.

“Raccoons, penguins, and kangaroos are very popular with private donors. Foxes also receive some attention. We have only one jerboa in the zoo and it is already spoken for, but those willing to adopt this very animal keep calling. Muscovites love chinchillas as well. Only one of them is available at the moment,” Koroleva said.

According to her, companies prefer more “substantial” animals, like bears. All the brown bears at the zoo have been adopted already.

“The polar bear is being supported by the company which has a polar bear on its trademark. A company which produces bags has chosen a kangaroo. The largest rodent, the capybara, has been taken into care as well. An ecological movement has sponsored the white tiger”, the spokeswoman continued.

“Before, the adoption agreements were mostly signed by companies,” Koroleva said. “But lately, the proportions of private persons is rising. In 2007, we had 70 caretakers of whom 35 were companies and 35 were private individuals, while in the previous year we had 56 caretakers of whom 39 were organizations.”

She said that parents like to adopt an animal for their children. The giver pays for it and the recipient of the gift is mentioned on the information plaque on the animal’s cage.

The plaques, which the caretakers rarely refuse, can be installed only if the donation amounts to at least 10,000 roubles per year, Koroleva added.

“The largest payments are about 500,000 rubles on average. This was the sum donated, for example, by one lady who is taking care of the white tiger. And one company has transferred about 2,000 rubles per year for a magpie,” she said.

Answer the following questions:

1. When was the “Adopt an animal” program introduced?
2. What animals are most popular with private donors?
3. What animals do companies prefer?

PET HOTELS

How good are you at leaving your pets with strangers when you go off on holiday? Do you trust them enough to take care of your four-legged be-whiskered family members? Although some people are lucky enough to have relatives or friends they can ask to look after their pets, hoping they might include a few pats on the head and the occasional cuddle as they come in twice a day to feed the animals, some have more difficulty in finding people they trust to provide their pets with the care and affection they need. This is why more and more people are resorting to pet hotels, which have
sprouted up in Moscow over the past few years. Currently, there are 41 pet hotels that operate in Moscow, although a large number of these are far from the city centre.

Gankhor is one of the pet hotels in Moscow with the longest experience. Tucked away in a green area in south Moscow, it is situated only 30 minutes from the centre and an ideal location for pets. The cats and dogs are kept in isolated buildings so as to minimize stress. Prices depend on the menu chosen by the owners, as well as the size of the animal.

Upon arrival, animals are examined by the vet and provided with their own individual cards on which owners stipulate what special treatment is required, how many walks per day, feeding habits, etc. Throughout their stay, the animals are monitored daily by the staff vet, having their eyes, ears cleaned and even their claws trimmed.

Cats are housed in one or two-roomed suites with a carpeted house for their claws and climbing frames. Owners are advised to leave their cats with blankets and toys from home as familiar smells in new surroundings are very important to them. Dogs are lodged in two adjoining rooms with a little sofa, as well as a covered terrace so they can go out for fresh air. Walking areas are isolated and each dog can be walked without a lead and is provided with toys, balls and tires to play with.

Special attention is given to the animals’ food, which is selected by the owners in advance. The “favorite” menu consists of ordinary canned food or biscuits (such as Pedigree for dogs and Whiskas for cats). The “home” menu offers the animals a more varied selection of meat such as beef or chicken, and dogs can also get pasta and rice. Costs varies according to the menu and, with dogs, to size.

Another popular pet hotel located at a reasonable distance from the centre is Pets Hotel, not far from Vykhino.

With 16 years of experience, they not only take in dogs and cats but also birds, rabbits and rodents. Cats are provided their own little house and scratching posts, and dogs have the privilege of taking walks two to four times a day in a nearly birch forest.

Although kennels are thoroughly disinfected after each animal’s stay, pet hotels usually will not accept animals unless they are vaccinated against infectious diseases, with proof of these in their papers. They should also have been treated against worms and parasites.

**Answer the following question:**

If you had a chance would you leave your pet in a pet hotel? Why?

**PET BURIALS**

As experienced pet-owners know, loosing one’s four-legged companion can be a traumatic experience. When an animal who has been part of your family household for a number of years finally succumbs to the grim reaper of the animal underworld, it can feel as though you have lost a relative. But what happens after your pet’s death? The usual custom at veterinary clinics is for the clinic to incinerate the remains. But many would prefer a more dignified end. Moscow’s first pet cemetery, the Ceremonial Services Center for Pets, a collaboration between the Moscow City government and private investors, has responded to the demand.
“Lots of people come to us when their pets have died,” said a spokeswoman for the centre. “People remember their pets for life and want to give them a proper burial.” Situated on Mashkinskoe Shosse in Kurkino, a district in North-East Moscow, the centre stands on two hectares of land with space for 30,000 animals. It offers cremation services for pets as well as transportation from owners’ homes to the premises. Urns are then buried in plots of land or laid in slots within the necropolis walls. Urns vary in shapes and prices, coming in oak wood, ceramic and metal amongst others.

Owners sometimes like to witness the individual cremations, to know exactly what is happening to their pets. Individual cremation costs from 3,500 rubles and increases according to the size and weight of the animal. Farewell ceremonies may be provided, even with background music.

The farewell ceremony is just a way of saying goodbye. The owners can look at their pet one last time, say a few words. Collective cremations are available at 1,000-2,000 rubles too, for owners who are not so concerned with urns and headstones but want to have their pet’s remains dealt with more decorously than the vet’s incinerator can manage.

When the centre opened, some animal rights’ organizations claimed that the concept was simply a gimmick for the benefit of the rich and that people should learn first how to treat living animals. The cemetery even boasts a “Heroes’ Alley” where purebred pets can be buried together, away from more ordinary strays and mongrels.

The relatively new complex in Kurkino, however, appears to be well organized and also includes a pet hotel and veterinary clinic. “Of course it is mainly cats and dogs that are buried here,” the spokeswoman said, “but we do have horses as well. No fish,” she chuckles. “Not yet anyway.”

Make a short speech defending the author’s point of view. Say why you agree with him, cite pieces from the article and give your own examples to support your argument.

**IT’S A DOG’S LIFE**

*Russia does not have an established culture of keeping animals as pets, which results in animals thrown out on the streets.*

Protestors against the culling of stray dogs held a rally on Novopushkinskay Square Thursday. Slogans such as “Animals and Humans in need of a Humane Solution!” set the tone. Participants called for humane alternatives to culling, which they claimed was not always done painlessly.

The protest, which had received official permission to be held, was organized by VITA, the Center of Animal Rights’ Protection, with the assistance of the Council of the Animal Rights Movement in Russia.

“The stray dog situation in Moskow at the moment is critical,” VITA announced in a press release. “Animal protection organizations have recorded a growing number of complaints from Moscovites that animals who are picked up [by dog catchers] disappear. The number of complaints has escalated since January 2008” VITA announced.

“Muscovites are worried by various TV reports that stray animals are extremely dangerous, that they have attacked people on many occasions, that they spread disease
and that there are huge numbers of dogs roaming the streets,” the release said. Russia media have reported that 7-8 people are bitten everyday in the capital, and that injuries from stray dogs this year number exceed 7,000, according to conservative estimates.

Unofficial data, based on reports from clinics, gives a figure that is three-times higher. “The numbers that they present range up to 100,000, while the official statistic is 26,000 [from the A.N. Sevrov Institute of Ecology and Evolution, last updated 2006].”

The number of stray dogs is overwhelming,” the Moscow resident told The Moscow News. “I really do think that these people should be more worried about the welfare of people than dogs.”

Rather than culling the animals, animal activists advocate a program of sterilization and breeding restrictions. “The sterilization of stray animals at animal shelters is only as effective as additional measures taken also, while the real goal is to put breeding under strict government control,” VITA said.

I. Answer the following question:
Why do stray dogs become a critical problem in cities?

II. Make a presentation objecting the writer’s point of view. Tell why you disagree with him, quote the text and supply your own examples to support your argument.

SOME MORE INTERESTING FACTS ABOUT ANIMALS

FACT: There are between 4,500 and 5,000 species of mammals. Of all mammal groups, the most diverse are the rodents which includes over 1,700 species. Other diverse mammal groups include bats (977 species), primates (356 species), insectivores (365 species), and marsupials (292 species). Mammal groups with the fewest number of species include the aardvark (1 species), dugongs and manatees (4 species), and the flying lemurs (2 species).

FACT: The first mammals appeared approximately 200 million years ago during the Jurassic Period. The ancestors of mammals were a group of reptiles known as the therapsids. The first true mammals to have evolved diverged from the therapsids during the Jurassic Period. Of all the mammal groups alive today, the monotremes are the oldest, followed by the marsupials.

FACT: Mammals are tetrapods. Mammals have four limbs, a characteristic that places them among the group of animals known as tetrapods. It should be noted that although some mammals such as whales, dugongs, and manatees have lost their hind limbs during the course of evolution, they are tetrapods by descent.

FACT: Mammals are warm-blooded. Mammals are warm-bodied or 'endothermic' which means they generate their own, internal heat.

FACT: All mammals have hair. Hair is a defining characteristic of mammals, no other organisms possess true hair and all mammals have hair covering at least part of their body at some time during their life. An individual hair consists of a rod of cells that are reinforced by a protein known as keratin. Hair grows from skin cells called follicles. Hair can take on several different forms including fur, whiskers, spines, or horns. Hair serves numerous functions. It can provide insulation, protect the skin, serve as camouflage, and provide sensory feedback.
FACT: Mammals are amniotes. Amniotes are a terrestrial vertebrates whose eggs are characterized by having several layers of protective membranes (the amnion, chorion and allantois). Reptiles, mammals, and birds are all amniotes.

FACT: The Cenozoic Era is the 'Age of Mammals'. The Cenozoic Era (65 million years ago until the present day) is considered to be the Age of Mammals because it represents the time period during which mammals diversified and became the dominant land vertebrates.

FACT: The largest mammal is the blue whale. The blue whale is the largest mammal and is also the largest animal alive today. It may even be the largest animal ever to have lived. Blue whales weigh up to 176 tons and mature individuals measure as much as 98 feet in length. The fin whale (Balaenopteraphysalus) comes in a close second in size to the blue whale, weighing up to 82 tons and measuring as much as 72 feet in length.

FACT: The smallest mammal is the bumblebee bat. The bumblebee bat, also called the Kitti's hog-nosed bat, is the smallest of all mammals, measuring just over an inch in length and weighing a mere 2g. The bumblebee bat is a vulnerable species that inhabits limestone caves in Thailand and Burma.

Find the correct definitions to the following English proverbs and idioms. Use them in sentences of your own. Try to find Russian equivalents.

1) take the bull by the horns  a) reveal a secret
2) when pigs fly  b) when there is no boss around, do whatever you want
3) when the cat is away, the mice will play  c) uncomfortable
4) curiosity killed a cat  d) everyone will get a chance
5) don’t look a gift horse in the mouth  e) try to get someone make a compliment to you
6) a bull in a china shop  f) very clever
7) every dog has his day  g) to have failed
8) as smart as a fox  h) very quickly
9) as happy as a clam  i) being very curious can get you into trouble
10) crocodile tears  j) be brave and active in the very beginning; face a difficulty with courage
11) be a dead duck  k) everything has its own characteristics
12) fish for a compliment  l) very silent
13) let the cat out of bag  m) be ready to take any given present and say “thank you”
14) like a fish out of water  n) have a strong will
15) a bird may be known by its song  o) very awkward, rough and clumsy
ANIMALS AND MORALITY

A mother and her six children were accused of killing a five-year-old boy in Savigny, France in 1457. The mother and children were brought before a court to answer for their crimes. The mother was found guilty and sentenced to death by hanging, but her children were freed. Although the six children had blood on them, no one had witnessed them attacking the 5-year-old boy. It was a standard court case with villagers who had witnessed the crime, a defense attorney, prosecutors and a judge. The only unusual thing was that the mother who was sentenced to death was a pig, and her six children were piglets.

By modern standards, bringing an animal to court sounds ridiculous, but in the Middle Ages in Europe, it was not uncommon. There are records of pigs, horses, dogs, cows, and goats being judged in court for crimes. Today, if an animal were to kill a human, the animal would probably be put down, but there would be no trial. To judge an animal by human standards requires the belief that animals have the same level of free will and the same sense of morality that humans do. That is exactly how some medieval Europeans saw things. In the case of the six piglets that were set free, the judge said that they were too young to make correct moral choices. Furthermore, their law-breaking mother had been a poor role model to them.

While the days of treating animals like people are long gone, some people are suggesting that we should start treating robots as people. Currently, robots are considered inanimate objects that are the property of humans. In a future where robots may one day become intelligent, we might have to rethink this. A committee of the European parliament is discussing plans to treat robots as “electronic persons.” Some of their proposals include giving robots the right to own and trade money, copyright their creations, and force their owners to pay into a pension. What do you think? Is robot rights a modern day version of medieval pigs on trial, or is artificial intelligence really on the horizon?

I. Find in the text the words with the same meaning:

blame someone of a crime; see; declare a punishment by a judge for a crime committed; kill; principles of what is right and wrong; the period in Europe between the 5th and 15th century; a person whose behavior is emulated by others, especially young people; the law making body of a government; money you receive on a regular basis after you retire; coming soon
II. Choose the right variant:

**not alive**
- inanimate
- morality
- accuse
- sentence

**coming soon**
- put down
- free will
- pension
- on the horizon

**money you receive on a regular basis after you retire**
- put down
- long gone
- pension
- sentence

**declare a punishment by a judge for a crime committed**
- sentence
- pension
- witness
- medievel

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**VIBRATING BALLS OF BEES**

From the land of Pokemon, Hello Kitty, and all that is cute come some pretty dangerous creatures of the wild. From bears and wild boar, to centipedes and snakes, to sharks and poisonous jellyfish, there are all sorts of animals in Japan that can do you harm. But by far the most deadly to humans is the Japanese giant hornet. It is the largest of its kind in the world, with adults reaching close to 5 centimeters in length. The hornets are fast, aggressive and venomous, and are responsible for an average of up to 40 human fatalities a year in Japan.

But it isn’t humans who should be most worried about the giant hornet; it’s actually European honeybees, which are plentiful in Japan. You see, giant hornets love to eat honeybees. And since European bees did not evolve in the vicinity of giant hornets, they have no defense against their attack.

The result is a scene straight out of a horror flick. The hornets grab each bee, decapitate it with their powerful, scissor-like jaws, rip off their limbs, and take the big juicy thorax as their prize. A single Japanese hornet can kill an average of 40 European bees a minute. This means, a swarm of 30 hornets can wipe out a colony of 10,000 bees in just an hour. Now that’s a massacre! But what about the Japanese bees? Well, over thousands of years they’ve developed a clever defense against these voracious predators, and it involves heat. Japanese honeybees can survive temperatures of up to 50 degrees Celsius, while the giant hornet can only withstand temperatures of up to 46 degrees.
When a hornet comes near, they don’t attack it one-by-one like their European cousins do. Instead, they passively lure the hornet inside the hive. At that point, they swarm around the hornet, enclosing it in a tight, vibrating ball of bee bodies. Within minutes they are able to raise the internal temperature of the ball up to 47 degrees. This roasts the giant hornet to death, leaving the bees completely unharmed. It’s a remarkable solution to what would otherwise be certain death. We often laud humans for their ability to solve problems in new and creative ways. But the solutions that nature provides can be equally, if not more ingenious.

I. Find in the text the words with the same meaning:
by a great degree; poisonous; deaths; local area or region; movie; cut the head off of; middle section of an insect; large group or number of flying insects working together; destroy; extremely hungry for lots of food; animals that hunt and kill other animals for food; attract for a selfish purpose; cooks; creative and intelligent

II. Choose the right variant:

animals that hunt and kill other animals for food
• predators
• by far
• venomous
• roast

large group or number of flying insects working together
• laud
• swarm
• flick
• lure

extremely hungry for lots of food
• voracious
• ingenious
• roasts
• venomous

destroy; kill
• wipe out
• ingenious
• venomous
• vicinity

ANIMAL SUICIDE
Throughout history, there have been stories of animals committing suicide. Two thousand years ago, Aristotle wrote about a horse that was so ashamed after unknowingly mating with his own mother, that he killed himself. While these types of stories sound improbable, there are cases where animals kill themselves, and no one knows why.
Every year, up to 2,000 whales and dolphins swim dangerously close to the shore and end up on dry land in a phenomenon called ‘beaching’. In 2015, a group of 200 whales beached themselves on a beach in New Zealand. Conservationists tried to return as many of them to the ocean as they could, but 100 of them died. Strangely, 60 of the whales that were returned to the water beached themselves again. There are many theories about why whales and dolphins beach themselves. Sickness or confusion caused by man-made sonar are possible reasons, but some people claim it’s suicide.

In recent news, Erika Poremski’s dog, Polo, sacrificed his own life to save Erika’s 8-month-old baby, Viv. Erika noticed her house was on fire when she stepped outside to get something from her car. She ran back into her house and up the stairs, but she couldn’t get through the smoke and flames. Erika tried multiple times, running in and out of the house trying to get up the stairs to her baby. At one point, she burned her face, and the skin on her hand melted off from grabbing the stairway rail. Eventually, the doorway burst into flames, and there was no way for Erika to get in again.

As Erika stood crying outside the burning house, the firefighters finally arrived. When they got into the house and up the stairs, they found Polo’s dead body covering the baby to protect her from the fire. Because of Polo’s sacrifice, the baby was only burned on her arm and side. Viv is now in the hospital suffering from likely brain damage, but she owes her life to Polo. Erika said, “He was my first baby before Viv. He was like my child.”

No one knows if animals have the ability to understand death, but Erika believes Polo knew what he was doing. She believes that Polo could have escaped, but made a conscious choice to stay and protect the baby.

Find in the text the words with the same meaning:
- kill yourself; embarrassed in a guilty way; to have sex for the purpose of reproduction; a person committed to protecting the environment; to offer; to appear quickly and unexpectedly; with awareness

**BEAR SAVES WOMAN FROM DEATH**

Joanne Barnaby was deep in the Canadian wilderness hunting wild mushrooms when she heard the growl of a wolf. She turned to see her dog facing off with a big black wolf. The wolf looked skinny and hungry, but was still twice the size of her dog. Joanne had made the near fatal mistake of leaving her gun in her truck. It was at this point that she went from being the hunter to being the hunted.

Joanne said the wolf was smart. “He was actually being very, very strategic in trying to separate me from my dog and wear me down. I don’t think he was strong enough to take us both on.” Joanne tried many times to head back to the road where she left her truck, but each time the wolf cut her off forcing her and her dog deeper into the forest. The sun was setting, and the wolf was slowly wearing them down.

They had no food and no water, and the air was so thick with mosquitoes she could barely see. As she rubbed her face, her hands became red with blood and mosquitoes. Joanne and her dog soon became exhausted as the wolf pushed them deeper and deeper into the wilderness throughout the night.
Joanne is part Inuit and grew up hunting and hiking in the wilderness. Her knowledge of the forest is what saved her life. As dawn approached, she had been on the run for 12 hours. She was at her breaking point, when she heard the sounds of a mother bear calling its cub. Joanne realized that this was her chance. While most people would do anything to avoid getting in between a mother bear and her cub, ‘desperate times call for desperate measures.’ She moved toward the cub hoping to pit the mother bear against the wolf, and that is exactly what happened. “All of a sudden I could hear this crashing behind me and this yelping and growling and howling,” she said. “I just got out of there as fast as I could—from all of them, the cub, the mama bear and wolf.”

I. Find in the text the words with the same meaning:

preparing for a fight; deadly; planning related to war or politics; move towards; stopped her from moving in a direction; tiring them; extremely tired; the point where someone loses control due to stress; to set someone against another; to come out of something and become visible

II. Choose the right variant:

move towards
- fatal
- pit
- emerge
- head

to set someone against another
- fatal
- pit
- head
- emerge

deadly
- head
- pit
- head
- emerge

attempting to escape from someone or something
- cut her off
- head
- on the run
- emerge

BLACKIE THE TALKING CAT

While dogs have been used for protection for thousands of years, parrots are a new twist. “Run, run, you are going to get caught,” cried Lorenzo the parrot as the police arrived. Lorenzo was one of 1,700 parrots trained to warn their drug-dealing owners in Barranquilla, Colombia. Lorenzo’s warnings weren’t enough to stop the police from
arresting four men and seizing 200 guns, a stolen motorcycle and a large amount of drugs.

While Lorenzo was on the wrong side of the law, a parrot in South Carolina was the hero in the case of one woman, named Gloria, who abused her elderly mother. One day in 2010, Gloria called an ambulance after her 98-year-old mother was having trouble breathing. The paramedics arrived at the filthy house that smelled of rotting flesh and animal feces. They found the elderly woman in pain and covered in bedsores. The police arrived soon after and discovered the family parrot repeating “help me, help me” followed by maniacal laughter. The police believed that the parrot was echoing the mother’s cries for help, and her cold-hearted daughter’s laughter. The mother died the next day, and Gloria was arrested.

Blackie the cat wasn’t owned by drug dealers or abusive criminals, but his ability to talk did get his owner in trouble. When Blackie was just a kitten, Blackie’s owner Carl says a voice popped into his head that said, “The cat is trying to talk to you.” Carl spent a year and a half teaching Blackie to talk. Blackie learned to say, “I love you” and “I want my mommy.” Blackie became famous around town and people on the street would pay Carl to hear Blackie speak. Blackie’s fame grew, and he even appeared on TV and the radio. Things took a turn for the worse when Miles took his talking cat show to Georgia. The police charged Carl and his wife with running a business without a license. Carl argued that this was an infringement on Blackie’s freedom of speech. The United Nations and the United States both have laws protecting freedom of speech, but the judge wasn’t having it. He said that Blackie was not a “person” and even if he was a person, Miles shouldn’t be arguing for Blackie’s freedom of speech. “Blackie can clearly speak for himself,” said the judge.

Choose the right variant:

decaying, decomposing

- abusive
- echoing
- feces
- rotting

causing harm to others

- maniacal
- rotting
- abusive
- echoing

MAN DIES AND ELEPHANTS TRAVEL TO HIS FUNERAL

Have you ever thought about what happens to zoo animals during times of war? Most of us don’t think about innocent animal casualties. But thankfully, one South African man – Lawrence Anthony – did. When the US military invaded Baghdad in 2003, Anthony did what most people would never be brave enough to do. He ran into a war zone instead of out of it, all because of his love for animals. When the war started, he couldn’t stand the idea of the animals dying in their cages. So just eight days later, he flew from South Africa and arrived at the border. With relentless begging, he convinced
border guards to let him enter Iraq. His next challenge came when he saw that of 600 zoo animals, only 36 were alive.

He found himself in the middle of a horror story. Animal carcasses were swarming with flies. The zoo’s deputy director was in tears. Monkeys and baboons ran wild, while escaped birds circled overhead. A bear had even killed some looters. The animals that survived were mostly big predators like tigers, lions and bears. Now they too were starving and traumatized. There was no food or water.

There are few things more dangerous than working with huge starving predators. At first, Anthony wanted to give up. But with the help of soldiers from both sides of the war, American and Iraqi, he stuck it out. Soldiers began working together who just two weeks before had been fighting against each other. Within six months, the zoo was finally restored. The surviving animals were healthy, their cages were clean, and they had plenty of food and water.

Even though many people have never heard of Anthony Lawrence, he was truly a hero. In his native country of South Africa, he became known as the elephant whisperer because of the amazing way he connected with elephants. With only words and gestures, he persuaded herds of elephants to stay on reserves for their own good. He warned them that those who left the reserve could be shot. And incredibly, after months of previously escaping, the elephants finally decided to stay.

When Anthony passed away in 2012 of a heart attack, the elephants showed just how special and heroic he was. Two herds walked half a day to his home in a funeral-like procession to mourn his passing even though there was no apparent way they could have known he died. They stayed for two days. One man’s heart stops and hundreds of elephants’ hearts grieved. How could this be possible?

And how different might the world be if more humans opened their hearts to animals like Lawrence Anthony did?

Retell the text.
Часть III. Семантическая референция

Недетерминированные местоимения some, any

Недетерминированные местоимения some, any обычно определяют существительное, часто заменяя артикль. Как правило, some употребляется в утвердительных предложениях со значением: какой-нибудь, несколько, некоторые, немного или приблизительно, около. Any, как правило, употребляется в вопросительных предложениях со значением какие-нибудь, сколько-нибудь. В утвердительных предложениях any имеет значение любой, всякий, каждый.

Examples: some crops — некоторые культуры, some nutrients — несколько питательных веществ, any food — какая-нибудь пища, any feed — любой корм.

Put in some or any. Translate the sentences into Russian:
1. There are … new varieties of potato in which farmers are especially interested.
2. The farmer does not use … additional workers on his farm.
3. It is important for … farmer to provide his animals with valuable feeds.
4. Are there … ruminant animals suitable for this area?
5. … herbivorous animals such as cows and goats can convert grasses into milk.
6. They raise … breeds of dairy cattle but there are not … beef cattle on his farm.
7. Are there … draft animals on this farm?
8. We don’t have … horses there.
9. These crops need … nitrogen.
10. These animals don’t need … additional feeds in their rations.
11. It is necessary for … farmer to have … knowledge in farm management.
12. Do you know … exotic animals?
13. … type of manure increases the yields of crops.
14. Are there… new departments at our Academy?
15. There is … work at … time on a farm.
16. – Do they have … work now? – No, they don’t have … .
17. There isn’t … manure on our fields.

Множественные местоимения much, little, many, few

Many много и few мало употребляются с исчисляемыми именами существительными. Much много и little мало употребляются с неисчисляемыми именами существительными.

A few означает несколько (употребляется с исчисляемыми именами существительными), а a little — немного (употребляется с неисчисляемыми именами существительными).

Examples: many cows — много коров; few calves — мало телят; much milk — много молока; little salt — мало соли; a few farms — несколько ферм; a little time — немного времени.
Put in much, many, few, little, a few, a little. Translate into Russian:

1. How … sheep are there in the picture?
2. In … poor African countries farmers are still using cows as draft animals.
3. We don’t have … money, so we can’t repair the old dairy machines.
4. It is necessary to buy … feed for our cattle.
5. … experiments have been conducted with laboratory animals.
6. … cats and dogs are kept in isolated buildings.
7. Dogs serve humans in … ways.
8. Today only … people still believe that black cats are unlucky.

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Past Form</th>
<th>Participle I</th>
<th>Participle II</th>
</tr>
</thead>
<tbody>
<tr>
<td>to open</td>
<td>opened</td>
<td>opening</td>
<td>opened</td>
</tr>
<tr>
<td>to speak</td>
<td>spoke</td>
<td>speaking</td>
<td>spoken</td>
</tr>
</tbody>
</table>

Write the main forms of the following verbs:

to do, to be, to breed, to develop, to buy, to raise, to feed, to give, to have, to ride, to let, to put, to leave, to read, to use, to domesticate, to convert, to think, to show, to rear, to grow, to begin, to attend, to start, to become

Видо-временные формы глагола в действительном залоге

<table>
<thead>
<tr>
<th>Время</th>
<th>Форма глагола</th>
<th>Пример</th>
<th>Наречия времени</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Simple</td>
<td>Инфинитив без частицы to (в 3-м лице – окончание –s)</td>
<td>I/You/We/They pay/breed He/She/It pays/breeds</td>
<td>always, usually, regularly, often, seldom, some- times, every day/week/month/year</td>
</tr>
<tr>
<td>Past Simple</td>
<td>Форма прошедшего времени</td>
<td>I/You/We/They He/She/It paid/bred</td>
<td>yesterday, last week, two years ago, in 2006</td>
</tr>
<tr>
<td>Future Simple</td>
<td>shall/will + инфинитив без частицы “to”</td>
<td>I /We shall/will pay/breed I/You/He/She/It/We/They will pay/breed</td>
<td>tomorrow, next year, in three weeks, in the future, in 2030</td>
</tr>
<tr>
<td>Present Continuous</td>
<td>am/is/are + Participle I</td>
<td>I am paying/ breeding He/She/It is paying/breeding You/We/They are paying/breeding</td>
<td>now, at the mo-ment, at present, nowadays</td>
</tr>
<tr>
<td>Past Continuous</td>
<td>was/were + Participle I</td>
<td>I was paying/ breeding He/She/It was paying/breeding You/We/They were paying/breeding</td>
<td>when he came/ yesterday at 12/ last Sunday at 6/ when the tele-phone rang</td>
</tr>
<tr>
<td>Время</td>
<td>Форма глагола</td>
<td>Пример</td>
<td>Наречия времени</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Present Perfect</td>
<td><em>have</em>/<em>has</em> +</td>
<td>I/You/We/They</td>
<td>ever, never, just,</td>
</tr>
<tr>
<td></td>
<td>Participle II</td>
<td><em>have paid/bred</em></td>
<td>already, yet, today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>He/She/It</td>
<td>this week/month/year, lately,</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>has paid/bred</em></td>
<td>recent -ly, since, for</td>
</tr>
<tr>
<td>Past Perfect</td>
<td><em>had</em> +</td>
<td>I/You/We/They</td>
<td>before/ after/ by/ when</td>
</tr>
<tr>
<td></td>
<td>Participle II</td>
<td><em>had paid/bred</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>He/She/It</td>
<td></td>
</tr>
<tr>
<td>Future Perfect</td>
<td><em>shall/will have</em> +</td>
<td>I/We <em>shall/will have</em></td>
<td>by 7 p.m. tomor-row/</td>
</tr>
<tr>
<td></td>
<td>Participle II</td>
<td><em>paid/bred</em></td>
<td>when you come</td>
</tr>
<tr>
<td></td>
<td></td>
<td>He/She/It/You/They</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE!** В придаточных предложениях времени и условия после союзов *if, when, after, before, till/until, as soon as* будущее время не употребляется: *Future Simple* заменяется *Present Simple*. На русский язык все переводится в будущем времени.

*Example:* If any unknown disease *develops*, there *will be* a nationwide crisis in milk production. – Если возникнет какая-либо неизвестная болезнь, производство молока охватит кризис национального масштаба.

**I. Use the correct form of the verb in brackets in the active voice. Translate the sentences into Russian:**

1. In early times people (to begin) domesticating wild animals.
2. I think the farmer (to increase) the yields of crops next year.
3. The scientists from our laboratory (to present) interesting reports at the conference recently.
4. Last year the farmers (not to rely) on feeds from pastures and (to grow) additional crops for their livestock.
5. The cow (convert) large quantities of different grasses into milk which (to be) a valuable product.
6. As our agronomist (to recommend) we (to spread) manure on this field now.
7. People (to keep) domesticated animals either in barns or on pastures.
8. The production of dairy products constantly (to increase) in Russia at present.
9. What animals (to use) people as draft animals in the 18*th* century?
10. For many centuries people in Africa (to breed) camels, but even now a white camel (to be) an exotic animal.
11. Last week the farmers (to keep) swine on pastures.
12. Poultry also (to convert) feed efficiently into protein and (to provide) people with meat and eggs.
13. If any species in the food chain (to disappear), there (to be) a disbalance in the whole ecosystem.
14. As soon as the environment of a species or a population (to develop) in an unfavourable way, it (to cause) an ecological crisis.
15. If ecologists (not/to make) soil and water analyses, they (not/to be able) to estimate the environmental pollution.

II. Translate the sentences into Russian. Pay attention to different forms of the verbs:

1. Farmers didn’t know much about nutrients in the 17th century.
2. After Columbus had discovered America he brought some new varieties of plants to Europa.
3. In 1870 Pavlov entered the University of St. Petersburg, where he studied chemistry and physiology.
4. The milk yields have fallen and some animals have become sick.
5. Scientists are going to continue their research in the field of animal nutrition.
6. Nowadays farmers are trying to satisfy the people’s requirements in highly nutritive products.
7. In the past, farmers had much difficulty in feeding cattle during the winter season.
8. Two centuries ago farmers used their own practical experience to satisfy animals with feeds.
9. Farmers often produce high-quality butter and cream from milk.
10. Farmers will rely on the record of an individual animal’s ancestors.
11. Chemical genetics remains a basis for all other topics in genetics.
12. At present farmers are using different breeding programmes to improve their herds.
13. They will have returned before you come home.
14. Before the dog attacks a potential enemy, it will show signs of hostility.
15. Recently, several organizations have established conservation programmes for endangered domestic breeds of cattle, sheep and swine.
16. When the weather is rainy, windy and cold, cattle will decrease the grazing time and drink little water.
17. Many naturalists have studied aspects of animal behaviour through the centuries.
18. If farmers apply modern cultivation practices, yields of forage crops will be higher.

Видо-временные формы глагола в страдательном залоге

Страдательный залог (The Passive Voice) употребляется, когда лицо или предмет подвергается действию извне.

Страдательный залог образуется при помощи глагола “to be” в соответствующем времени и причастия прошедшего времени (Participle II) смыслового глагола. Время, лицо и число определяется вспомогательным глаголом “to be”.
### Tense | Form | Example
---|---|---
Present Simple | I *am* | *given*
| He/She/It *is* |  
| You/We/They *are* | 
Past Simple | I/He/She/It *was* | *given*
| You/We/They *were* | *asked*
Future Simple | I/We *shall be* | *given*
| He/She/It/You/We/They *will be* | *asked*
Present Continuous | I *am being* | *given*
| He/She/It *is being* | *asked*
| You/We/They *are being* | 
Past Continuous | I /He/She/It *was being* | *given*
| You/We/They *were being* | *asked*
Present Perfect | I/You/We/They *have been* | *given*
| He/She/It *has been* | *asked*
Past Perfect | I/You/We/They *had been* | *given*
| He/She/It *had been* | *asked*
Future Perfect | I/We *shall have been* | *given*
| He/She/It/You/They *will have been* | *asked*

**Examples:** The professor *was asked* about the problems of animal physiology – Профессора спросили о проблемах физиологии животных.
The students of our group *will be given* the pictures of different sheep breeds. – Студентам нашей группы дадут изображения разных пород овец.

### Особенности употребления страдательного залога в английском языке

Часто в страдательном залоге употребляются глаголы с предлогами. Вот некоторые из них:

| to account for | отвечать (нести ответственность) за |
| to agree on (upon) | договариваться о |
| to deal with | иметь дело с; рассматривать ч-л |
| to insist on | настаивать на |
| to listen to | слушать к-л, ч-л |
| to look at | смотреть на |
| to look after | заботиться о |
| to look for | искать ч-л, к-л |
| to object to | возражать, протестовать |
| to refer to | ссылаться на |
| to rely on (upon) | полагаться на |
| to speak of (about) | говорить о |
| to send for | посылать за |
| to think of | думать о |
| to wait for | ждать ч-л, к-л |
| to pay attention to | обращать внимание на |
На русский язык такие предложения переводятся неопределенно -личными предложениями, а перевод следует начинать с предлога.

**Examples:** The problem of rational animal nutrition is often spoken about by our scientists. – О проблеме рационального питания животных часто говорят наши ученые.

This lecturer is always listened to with great attention. – Этого лектора всегда слушают с большим вниманием.

**Has the veterinarian been sent for?** – За ветеринаром послали?

**I. Translate the sentences into Russian. Pay attention to the Passive Voice:**

1. Any changes in animal feeding will be agreed on with the vet tomorrow
2. Yesterday the specialist in animal nutrition was asked to give some recommendations and he was listened to with great attention.
3. The young farmer has been already given some advice how to look after the cows during the winter period.
4. At the moment the plan for farm reconstruction is being discussed.
5. Some essential nutrients cannot be manufactured within the cell in the body of animals.
6. Human nutrition has been improved as a result of animal nutrition investigations.
7. The question how to influence the animal productivity at the genetic level has not been answered yet.
8. Calves are looked after properly, so they grew rapidly.
9. Sometimes water is referred to as the most essential substance for normal growth of animals.
10. Many specialists have been already invited to take part in the agricultural exhibition.
11. The introduction of modern machinery in agriculture was followed by the increase in food production.
12. The latest discoveries in the field of physiology were spoken much of by the scientists at the conference.
13. The most important characteristics of a particular horse are usually relied on while choosing the animal for racing.
14. The quality of cow’s milk is influenced by the composition of the diet.
15. All animal feeds may be classified into two large groups: concentrates and roughages.
16. Most of the time was spent on the analysis of the physiological data. 17. New crops will be grown on our farm next year.

**II. Translate the following sentences into Russian:**

1. Animals are bred for utility, sport, pleasure and research.
2. The planning of mating combinations was introduced in practice.
3. Much effort is being made to study the possibilities of utilizing agricultural and industrial waste in the nutrition of farm animals.
4. If animal manure is utilized for feed nutrients, some pollution problems will be solved.
5. Horses are being bred for sport.
6. The most significant progress in animal breeding has been done with dairy cattle.
7. It is necessary to examine young males that will be used for breeding.
8. When poultry and swine are kept in confinement, their manure will be collected, recovered and used for refeeding to cattle.
9. Ecology is widely studied as one of the most important aspects of biology.
10. Animals should be examined by veterinary surgeons regularly.
11. If a sick animal cannot be cured, it will have to be slaughtered.
12. The government officials must be informed by a farmer about the outbreak of a notifiable disease.
13. Human health may be influenced by certain animal diseases.
14. At present, different breeding programmes are being used by farmers to improve their herds.

Степени сравнения прилагательных и наречий
(The degrees of comparison of adjectives and adverbs)

<table>
<thead>
<tr>
<th>Положительная степень прилагательного/наречия</th>
<th>Сравнительная степень прилагательного/наречия</th>
<th>Превосходная степень прилагательного/наречия</th>
</tr>
</thead>
<tbody>
<tr>
<td>big</td>
<td>bigger</td>
<td>the biggest</td>
</tr>
<tr>
<td>early</td>
<td>earlier</td>
<td>the earliest</td>
</tr>
<tr>
<td>difficult</td>
<td>more/less difficult</td>
<td>the most/least difficult</td>
</tr>
<tr>
<td>quickly</td>
<td>more/less quickly</td>
<td>most/least quickly</td>
</tr>
<tr>
<td>good</td>
<td>better</td>
<td>the best</td>
</tr>
<tr>
<td>bad</td>
<td>worse</td>
<td>the worst</td>
</tr>
<tr>
<td>many/much</td>
<td>more</td>
<td>the most</td>
</tr>
<tr>
<td>little</td>
<td>less</td>
<td>the least</td>
</tr>
<tr>
<td>far</td>
<td>farther/further</td>
<td>the farthest/furthest</td>
</tr>
</tbody>
</table>

1. Союз as … as так же … как, такой же … как употребляется при сравнении двух одинаковых предметов или действий. Союз not so … as не такой … как употребляется, когда один из сравниваемых предметов уступает другому по степени своего качества или свойства. Сравнительная конструкция the … the перед прилагательным или наречием в сравнительной степени переводится на русский язык союзом чем … тем. Союз than переводится на русский язык как союз чем.

Examples: The problem of animal nutrition is as difficult as the problem of human diet. – Проблема кормления животных такая же трудная, как проблема питания человека.

The results of the latest experiments are not so interesting as the previous ones. – Результаты последних экспериментов не такие интересные, как предыдущие.

The better farm animals are fed, the longer is their life productivity. – Чем лучше животных кормят, тем продолжительнее период их продуктивности.
I. Use the correct form of the adjective or adverb in brackets. Translate the sentences into Russian:

1. Mother’s milk is (good) feed for calves and lambs.
2. The northern regions of Russia are (little) suitable for crop farming than the central regions.
3. The mechanization of agriculture in some African countries is (bad) than in Asian countries.
4. It was (easy) to cultivate this new field than the farmer had thought.
5. Nowadays we use (modern) machinery than ten years ago.
6. Some cattle breeds require (hot) climate for growth than others.
7. Farmers are interested in (cheap) fertilizers of (high) quality.

II. Fill the gaps with as … as; not so … as; the … the. Translate the sentences into Russian:

1. … better animal physiological functions are studied, … sooner scientists can control them for practical purposes.
2. The nutritional value of this feed is … high … farmers have expected.
3. Minerals are … important to normal growth and development of animals … proteins.
4. Chemical analyses were … developed in the 19th century … nowadays.
5. … richer animal rations are in succulents, … greater is the problem of digestive troubles.
6. Roughages are … easily digestible … concentrates.
7. … better is the quality of feeds, … higher is the animal productivity.
8. For ruminants fibre is … important … protein in daily rations.
9. … more natural feeds are consumed by animals, … better they develop.

Модальные глаголы (Modal Verbs)

Модальные глаголы must, can, may употребляются в сочетании с инфинитивом смыслового глагола без частицы to. Они не обозначают действия, а выражают отношение говорящего к действию, выраженного инфинитивом смыслового глагола.

Глагол must выражает необходимость, долженствование или вероятность совершения действия.

Глагол can выражает возможность, физическую или умственную, способность совершения действия.

Глагол may выражает разрешение, а также возможность, вероятность совершения действия.

Examples: You must measure the water level. – Вы должны измерить уровень воды.

Beef cattle can utilize both low- and high-quality roughages. – Мясной скот может использовать как низкокачественные, так и высококачественные грубые корма.

A breeder may use either progeny testing or performance testing in order to estimate the breeding value of young rams. – Селекционер может использовать или...
тестирование потомства по качеству, или тестирование по продуктивности для того, чтобы оценить значение для селекции молодых баранов.

**Эквиваленты модальных глаголов.** Наряду с *must* и взамен его недостающих форм употребляется глагол *to have + Infinitive*.

Эквивалент глагола *can* является глагол *to be able (to)*.

Для глагола *may* в значении разрешения используется его эквивалент *to be allowed to*.

**Examples:** I had to stay at the laboratory two hours more to complete the work. – Мне пришлось остаться в лаборатории еще на два часа, чтобы закончить работу.

Farmers *are not able to control* the epidemic in the region. – Фермеры не могут сдержать распространение эпидемии в регионе.

We *shall be allowed to go* home earlier. – Нам разрешат пойти домой раньше.

**Глагол to be в модальном значении.** Для выражения долженствования, необходимости, обусловленной договоренностью, заранее намеченным планом, приказом и т.п., употребляется глагол *to be + Infinitive*.

**Example:** We *are to increase* milk yields this year. – Мы должны увеличить надои молока в этом году.

**Модальные глаголы ought to и should.** В качестве модальных глаголов употребляются также глаголы *ought to* и *should*. Глагол *ought to* употребляется для выражения модального долга или совета, относящегося к настоящему или будущему времени.

Глагол *should* выражает более слабую степень долженствования (по сравнению с *must*) и переводится *следует, надлежит*.

**Example:** A farmer *ought not to feed* any sorts of silages to horses because animals are extremely susceptible to digestive troubles. – Фермеру не следует скармливать какие-либо виды силоса лошадям, так как животные крайне восприимчивы к пищеварительным расстройствам.

Puppies *should be examined* about every three months. – Щенки должны осматриваться примерно каждые три месяца.

I. Translate the sentences into Russian paying attention to the Modal Verbs:

1. A farmer must separate a sick animal immediately from the other animals in the herd.

2. A national breeding association is to publish the official record of the pedigree of purebred horses and dogs every year.

3. During the recent decades some species of animals had to move to new places and adapt to new environment conditions.

4. All animals and birds which are imported from foreign countries must be under severe quarantine for some period of time to prevent the introduction of any infections.

5. Scientists ought to carry out many experiments before the animal cloning may become a routine procedure in the breeding of farm animals.

6. If the weather is windy and rainy hill sheep and cattle will have to stop grazing to look for grounds and shelter.

7. According to the agreement with a farmer, a veterinary surgeon is to examine farm animals regularly.

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8. Livestock often eat forage and other food sources that humans are not able to eat, and convert them to types of food that humans can consume.

9. In order to maintain animals in healthy condition, each farmer must follow certain sanitary requirements.

10. During the Ice Age in order to survive, animals had to adapt to colder environmental conditions.

11. Some symptoms such as high temperature or fever may be noticed even by a non-specialist.

**II. Translate the following sentences into Russian:**

1. The results of experiments on animal behavior are to be analysed on the basis of scientific knowledge.

2. Certain animal diseases may greatly influence our health.

3. Preventive medicine should have considered the aspects of disease prevention and control.

4. The problems of the bird flu were to attract many scientists to take part in the conference.

5. Carries of animal infectious diseases can be easily transmitted by water and soil.

6. Mammalian livestock may be used as a source of milk.

7. Special laboratory tests must be done in order to find out the cause of a disease.

8. Calves and lambs should be provided with high-quality protein feeds.

9. One should remember that the teeth of the pig don’t provide conditions for very fine grinding.

10. Healthy lambs can withstand bad weather, provided the coat dries immediately after birth.

11. Ewes should be healthy and vigorous.

12. The foal is able to digest its food and absorb the food nutrients much more rapidly than other farm stock.

**Инфинитив (The Infinitive)**

Инфинитив – основная глагольная форма, от которой образуются все личные формы глагола во всех группах времен в действительном и страдательном залогах.

<table>
<thead>
<tr>
<th>Формы инфинитива</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>to help</td>
</tr>
<tr>
<td><strong>Passive</strong></td>
</tr>
</tbody>
</table>

**Функции инфинитива.** Инфинитив может выполнять функции подлежащего, дополнения, обстоятельства, определения, а также может быть именной частью сказуемого.
Examples: To supply calves and piglets with vitamins is a very important task for a farmer. – Обеспечить телят и поросят витаминами – очень важная задача для фермера.

He likes to feed chicken. – Ему нравится кормить цыплят.

Our task is to built a cowshed as soon as possible. – Наша задача – построить коровник как можно скорее.

To develop proper breeding programme, a breeder must rely on the pedigree of the sire. – Чтобы разработать правильную селекционную программу, селекционер должен положиться на родословную производителя.

We stopped for a minute (in order) to have a rest. – Мы остановились на минутку, чтобы отдохнуть.

He was looking for a horse to buy. – Он искал лошадь, которую можно купить.

Инфинитивная конструкция с предлогом “for” переводится на русский язык придаточным предложением с союзом «чтобы» («для того чтобы»), подлежащим которого становится существительное, а сказуемым – инфинитив, который переводится глаголом в прошедшем времени.

Examples: For calves to grow and develop rapidly, a farmer should provide the due care and feeding. – Чтобы телята росли и развивались быстро, фермер должен обеспечить соответствующий уход и кормление.

Объектный инфинитивный оборот (The Objective Infinitive Construction) состоит из существительного в объектном падеже или личного местоимения в объектном падеже и инфинитива. Употребляется после глаголов: to want – хотеть, to wish – желать, to require – требовать, to suppose – полагать, to assume – полагаться, считать, to believe – полагать, считать, to think – думать, to expect – ожидать, to consider – считать, полагать, to know – знать, to find – находить и др. После глаголов to see – видеть, to watch – наблюдать, to hear – слышать, to feel – чувствовать, to make – заставлять и др. инфинитив употребляется без частицы “to”.

Examples: The farmer wants the veterinarian to examine his sheep. – Фермер хочет, чтобы ветеринар осмотрел его овец.

If chickens are kept in separate cages, we see each bird consume its ration. – Если цыплят содержат в клетках, мы видим, как каждая птица потребляет свой рацион.

Субъектный инфинитивный оборот (The Subjunctive Infinitive Construction) состоит из существительного (местоимения) в именительном падеже в функции подлежащего и инфинитива в качестве части составного глагольного сказуемого.

В данной конструкции употребляются глаголы to know, to say, to believe, to suppose, to consider, to think, to find, to assume, to report и т.д. в страдательном залоге.

Examples: The new drug was expected to be efficient in treating this illness. – Ожидали, что новое лекарство окажется эффективным для лечения этого заболевания.
The new strain of the bird flu is known to be fatal both for wild and domestic birds. – Известно, что новый штамм птичьего гриппа смертелен как для дикой, так и для домашней птицы.

С глаголами to seem – по-видимому, казаться, to appear – по-видимому, казаться, to happen – случаться, to prove – оказываться, to turn out – оказываться, а также с сочетаниями to be likely – вероятно, to be unlikely – маловероятно, вряд ли, to be sure – точно, наверняка, to be certain – точно, наверняка субъектный инфинитивный оборот употребляется в действительном залоге.

Examples: Horse races appear to be very popular in many countries. – По-видимому, скачки лошадей очень популярны во многих странах.

This type of meat products is likely to be very cheap. – Этот вид мясных продуктов, вероятно, очень дешевый.

The sow has proved to be less prolific than the farmer expected. – Свиноматка оказалась менее плодовитой, чем ожидал фермер.

I. Translate the following sentences into Russian:

1. To raise sheep in semiarid or arid regions, farmers choose sheep breeds well-adapted to such conditions.

2. In order to maintain high-milk yields, milking cows are to be fed nutritious feeds.

3. To fatten cattle is a common practice on farms where beef cattle are bred.

4. For the beef cows to have some rest and be ready for the next calving, the calves should be weaned at eight to ten months of age.

5. For geese to fatten well, they should be fed grain for the last six weeks.

6. Farmers have found the method of fattening pigs on concentrates to be the most efficient one.

7. Scientists think severe exploitation of some fish species to result in their extinction in some years.

8. Sheep breeders believe sheep without any folds to be more desirable for wool production.

9. Many people consider duck eggs to possess strong taste and do not like eating them.

10. The entire length of this farm is supposed to be about twenty miles.

11. Interbreeding was found to improve the dominant trait in the breed.

12. Pavlov I.P. proved to be a distinguished physiologist of the 19th century.

13. The Moscovy duck seem to be the ancestor of all domestic ducks.

14. Crayfish are sure to be prized for its tail meat.

15. Bees are certain to be the most important pollinating insects.

16. Columbus is believed to have brought wild pigs to North America.

17. The horses are supposed to have been first used by a tribe of Indo-European origin.

18. Eggs to be used for hatching should be incubated not later than 10 days after collection.

19. In some areas pastures are too scarce to provide animals with sufficient amount of feed.

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20. The water in the pond is not fresh enough to be used for watering the cattle.  
21. The raw milk to be drunk by little children should be boiled.  
22. Our cow produces too much milk for the calf to consume it.

II. Translate the following sentences into Russian paying attention to the Infinitive and the Infinitive Constructions:

1. To be most effective the sunlight must be direct.  
2. To get their essential nourishing fuel, mammals, like other vertebrates, have to perform a whole series of complicated operations.  
3. The unused residue returns to the soil as manure to enrich the food supply on which future generations may feed.  
4. Copper is known to be the activator of certain enzyme systems.  
5. The pig is believed to be the world’s second largest provider of meat known as pork.  
6. To prevent meats from being contaminated by harmful bacteria, producers widely used vacuum-packing.  
7. Fermentation is supposed to have been an ancient form of food preservation used in the meat industry.  
8. Meat is considered to be an essential part of human diet.  
9. Milk is known to be highly nutritious food that has been used by humans since the beginning of recorded time.  
10. This boar is not vigorous enough to be used for mating.  
11. The lamb is not fat enough to be slaughtered this month.  
12. Ecologists have found a lot of bird species to be disappearing at a rapid rate now.  
13. Beekeeping is believed to have originated in the Middle East.  
14. These geese do not seem to have attracted the attention of genetics.  
15. The goat proved to be an important milk producer in China and India.  
16. Dairymen know buffáló’s milk to be produced in commercial quantities in some countries.  
17. Cow milk has been found to contain about 3.5 to 5 per cent fat.  
18. Scientists consider sweet taste of milk to be due to lactose.  
19. Dairy products are likely to be the best dietary source of calcium.  
20. The milk to be sold commercially should be fortified with vitamin D.  
21. Pasteurized milk to be kept refrigerated in closed containers may remain consumable for 14 days.  
22. Sour cream is known to be made from cream.  
23. Cheese is sure to be an important component of a balanced diet.  
24. Nutritionists think cheese to be a concentrated source of almost all the valuable nutrients found in milk.

Причастие (The Participle)

Причастие – неличная форма глагола, обладающая свойствами глагола, прилагательного и наречия. Причастие I образуется от формы инфинитива
прибавлением суффикса – **ing**. При переводе на русский язык причастию I соответствует причастие с окончанием -иций или деепричастие с окончанием –иа.

Причастие II стандартных глаголов образуется от формы инфинитива прибавлением суффикса -ed, а причастие II нестандартных глаголов приводится в соответствующих таблицах. На русский язык переводится причастиями с окончаниями –ий, -ый, -тьй.

Существуют простые и сложные формы причастия.

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<td>Participle II</td>
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<td>Perfect Participle</td>
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**Examples:** *Growing* young animals require high-protein rations. – Растущие молодые животные нуждаются в высокобелковых рационах.

*Growing* corn, the farmer provides his herd with fodder. – Выращивая кукурузу, фермер обеспечивает свое стадо кормами.

*Having grown* corn, the farmer provided his herd with fodder. – Вырастив кукурузу, фермер обеспечил свое стадо кормами.

The *bred* bulls will be used as sires. – Выведенные быки будут использоваться как производители.

**Being pollinated** by honeybees, crops produce higher yields. – Если культуры опыляются пчелами (будучи опыленные пчелами), они дают более высокие урожаи.

**Having been pollinated** by honeybees, crops produced higher yields. – После того как культуры были опылены пчелами, они дали более высокие урожаи.

**Независимый причастный оборот (The Absolute Participle Construction)** переводится на русский язык:

придаточным обстоятельственным предложением времени или причины с союзами так как, когда, если, после того как;

2) самостоятельным предложением (бессоюзным или с союзами причем, при этом, а, и, но), если причастный оборот стоит в конце предложения.

Независимый причастный оборот можно узнать в тексте по следующим формальным признакам: 1) независимый причастный оборот всегда отделен запятой, 2) перед причастием стоит существительное или местоимение в именительном падеже.

**Examples:** *Roughages being high in fibre*, pigs should not be given them. – Если грубые корма имеют высокое содержание клетчатки, то свиньям их давать не следует.

*The horse having been selected for racing*, its running abilities were valued first of all. – Так как лошадь отбиралась для скачек, ее беговые способности оценивались в первую очередь.

Feeds are composed of many substances, **some of them being required in small amounts for the proper development of cattle**. – Корма содержат много веществ, причем некоторые из них требуются в небольших количествах для правильного развития крупного рогатого скота.
I. Translate the following word-combinations with Participle I and Participle II into Russian:

varying conditions; grown sheep; feeds used; growing pigs; examined cattle; increasing needs; used terms; suffering animals; results obtained; domesticated mammals; nutrients consumed; raising cattle, farmers …; developing countries; bulls sold; investigating this problem, the scientists …; investigated problem

II. Translate the sentences into Russian paying attention to the Participle:

1. The methods recommended should help to control the spread of the disease.
2. Some investigated animal physiological processes are similar to human processes.
3. Knowing the nutritive value of feed supplements a farmer can provide his animals with rations accurately calculated.
4. The calf growing on a pasture will be healthier than that kept in a barn.
5. Only animal products satisfying all the necessary veterinarian standards can be sold in the market.
6. Keeping the records about the dates of artificial insemination of cows, a farmer will know the date of calving for each animal.
7. Being raised for mutton, sheep can be also sheared in order to obtain some wool.
8. Having been raised under severe conditions in mountains, lambs seemed to be healthier than the ones raised in the sheep-pen.
9. Being rich in such nutrients as essential amino acids, meat is highly valued as human food.
10. Having become more concerned about our diet, we began to eat more poultry, fish and fresh fruit and vegetables and fewer eggs and less pork.
11. Being obtained from different kind of animals, meats are usually classified by the type of animal.
12. Producers dealing with meat processing have already succeeded in new technologies having been introduced in order to satisfy the increasing demand for their products.

III. Translate the sentences with the Absolute Participle Construction into Russian:

1. Nearly all sheep breeds of mutton type having originated in England, the breed names were taken from the names of English countries.
2. Foals being weaned from the dam, they should not be able to see, hear or smell their dams again.
3. Modern agriculture having become highly mechanized, farm managers must possess a good technical knowledge to operate various farm machines.
4. The records having been kept accurately, the farmer is provided with all the necessary information.
5. Management has always been an important factor in operation of a farm, its role increasing nowadays.
6. The planning process having been completed, the farmer was able to choose the best alternative and put it into operation.

7. The income is considered to be the difference between the profit and the costs, the income being calculated for a definite time interval.

8. The statement of cash flows represents the sources and the use of the farm funds for operating activities, the data about additional financial support being included in it as well.

IV. Translate the following sentences into Russian:

1. Raising cattle, farmers should turn animals out on pastures as early as possible in spring.

2. Dairy cattle are susceptible to all the diseases and infections affecting beef cattle.

3. A balanced ration is the one consisting of several nutrients in proper proportions.

4. Propolis is a substance possessing antibacterial properties.

5. Another problem facing beekeepers is loss of forage due to habitat destruction by humans.

6. The leading honey exporters are China, Argentina, Mexico, while the leading importers are Germany, the Unites States and Japan.

7. Being obtained from different kinds of animals, meats are often classified by the type of animal.

8. The most widely consumed meat is beef.

9. Preserving meat, it is necessary to control spoilage by inhibiting the growth of microorganisms.

10. While stored for a long time, meat products may be subjected to the influence of many factors changing their quality and safety.

11. Due to the temperature being decreased under 3°C, one can prevent pathogenic bacteria from growing.


13. Meat being rich in amino acids, it is highly valued as human food.

14. Having increased the percentage of fat in a meat cut, it is possible to decline the percentage of water.

15. Programmes of agricultural diversifications have been carried out by some developing countries, the government acting as a kind of national farm manager.

16. Farms operating with large amounts of borrowed capital, financial statements may be of great importance for farm management.

17. Cows being leased, the owner of the cows may be a contracting firm, a local bank or an individual investor.

18. The world’s agriculture involves millions of farmers managing their resources in different ways, the efficiency of production resulting from technological possibilities and social and political conditions.

19. The fish is recognized by its large mouth, violet mantle, dark mottlings and red lateral spots, the general colouring being dark grey or green.
Герундий (The Gerund)

Герундий – неличная форма глагола, сочетающая в себе свойства глагола и свойства существительного.

Формы герундия

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Герундий употребляется после глаголов:

to avoid – избегать; to consider – рассматривать; to finish – заканчивать; to involve – включать; to prevent – предотвращать; to stop – останавливать; to suggest – предполагать и др.; а также после глаголов с предлогами:

to agree to – соглашаться на; to be interested in – интересоваться ч.-л; to concentrate on – сосредоточиться на; to depend on – зависеть от; to insist on – настаивать на; to involve in – вовлекать в; to object to – возражать против; to prevent from – предотвращать; to succeed in – преуспевать в; to rely on – полагаться на; to result in – приводить к

Examples: 

Breeding purebred animals is very important for animal husbandry. – Разведение чистокровных животных очень важно для животноводства.

Farmers are interested in breeding purebred cows. – Фермеры заинтересованы в выведении чистокровных коров.

By breeding purebred cattle farmers improved the herd. – Выводя чистокровный крупный рогатый скот, фермеры улучшили стадо.

Without breeding purebred animals farmers are not able to improve the herd. – Не выводя чистокровных животных, фермеры не смогут улучшить стадо.

Сложные формы герундия. Герундийный оборот с предшествующим притяжательным местоимением или существительным в притяжательном падеже обычно переводится на русский язык придаточным предложением с союзами что, чтобы, то что, того что, в том что.

Examples: 

We knew nothing of his being appointed to a new job. – Мы ничего не знали о том, что его назначили на новую должность.

Ecologists insist on fish being reared artificially to restock the sea. – Экологи настаивают, чтобы рыба выращивалась искусственно для восстановления запасов моря.

I. Translate the following sentences into Russian:

1. Before choosing cows for mating, breeders should estimate the performance of their progeny.

2. Raising and feeding cattle on pasture throughout the year is the most economical method.

3. This book deals with the planning of mating combinations.
4. The recording of individual performance in breeding populations of farm animals developed rapidly in 1970s.

5. Crossbreeding is a very popular method for increasing sheep population.

6. For centuries pigs have been used for obtaining edible fat and meat.

7. Both biologists and chemists are interested in developing new drugs for treating farm animals.

8. Large litters greatly depend on proper selecting of a sow.

9. By changing feeding rations of animals, one can improve the quality of farm products.

10. The shelf life of dried milk products was extended due to their having been dried less than three per cent moisture.

II. Translate the following sentences into Russian paying attention to the Gerund:

1. Besides possessing hair and producing milk, mammals also have a number of other internal characteristics.

2. Whitewashing the walls helps in maintaining sanitation.

3. Because of the covering of wool sheep can withstand cold temperatures better than cattle.

4. If shearing is delayed too long, the wool becomes dead and lifeless.

5. Frozen silage must be thawed before feeding.

6. Beekeepers earn their living from selling the honey and beeswax their hives produce.

7. What temperature do the bees stop flying at?

8. Winter is a good time for looking through the previous year’s records and planning next year’s campaign.

9. One more commonly used method of meat preservation is canning.

10. Renting or leasing land enables farmers to operate on a much larger scale.

11. Future agricultural progress depends on improving the quality of management.

Условные предложения (Conditional Sentences)

Условные предложения в английском языке наиболее часто вводятся союзами if если; unless если не; provided (that) если, при условии что и др. Условные предложения делятся на три типа: 1) реальные, 2) нереальные (маловероятные), относящиеся к настоящему или будущему времени; 3) нереальные, относящиеся к прошедшему времени.

1) Реальные условные предложения (I типа) обычно относятся к будущему времени и переводятся изъявительным наклонением, причем глагол – сказуемое в придаточном предложении употребляется в Present Simple, а в главном предложении – в форме Future Simple. На русский язык оба глагола переводятся в будущем времени.

Example: The cattle will be kept on pasture if it doesn’t snow. – Скот будет содержаться на пастбище, если не будет идти снег.

2) Предложения II типа выражают маловероятное условие, т.е. предложение, относящееся к настоящему или будущему времени. На русский
язык переводятся с глаголом в сослагательном наклонении с частицей бы. В английском языке в главном предложении употребляется глагол should или would с инфинитивом, а в условном придаточном предложении глагол-сказуемое употребляется в форме Past Simple.

Example: The cattle would be kept on pasture this week if it didn’t snow. – Скот содержался бы на пастбище на этой неделе, если бы не шел снег.

3) Для выражения нереального условия, относящегося к прошлому времени, используются формы сослагательного наклонения III типа. В английском языке в главном предложении употребляется глагол should или would с перфектным инфинитивом, а в условном придаточном предложении глагол-сказуемое употребляется в форме Past Perfect.

Example: The cattle would have been kept on pasture last week if the weather had been warm. – Скот содержался бы на пастбище на прошлой неделе, если погода была бы теплой.

В условиях предложениях II и III типа союзы if, unless, provided that могут быть опущены, если в придаточном предложении имеются глаголы were, had, could, might или should. В данном случае имеет место инверсия (обратный порядок слов). При переводе на русский язык союз употребляется.

Examples: Had the farmer paid more attention to the fodder, he would have improved the quality of milk. – Если бы фермер уделял больше внимания кормам, он бы улучшил качество молока.

Were I rich, I would buy the best milking machines. – Если бы я был богат, я бы купил лучшие доильные аппараты.

I. Translate the following sentences into Russian:

1. If cold milk is given to new-born calves, it will cause digestible troubles.
2. Unless there had been achievements in genetics, it would not be possible to improve cattle breeds.
3. Provided a farmer had raised sheep both for mutton and wool he would have increased the efficiency of his farm.
4. If the farmer used a purebred sire for breeding, he would improve his livestock.
5. If it had not been a large commercial farm, a farm manager wouldn’t have negotiated on the discount for animals feeds.
6. Provided livestock records were organized in the table form, it would save time in preparing various financial statements.
7. Young piglets may gain rapidly and reach the market faster provided they are supplied with all necessary feeds.
8. If farmer were provided with the required information concerning feeds and farm implements, one could expect him to make proper management decisions.
9. If we had considered the data concerning the number of pigs and their weight, we should have calculated the expected income.
II. Translate the following sentences into Russian paying attention to the Conditional Sentences:

1. Unless there had been achievements in genetics, it would not be possible to improve cattle breeds.
2. If cold milk were given to new-born calves, it would cause digestive troubles.
3. The bull would be provided with better feeding if it were to be used for breeding.
4. If the plan were developed for one farm it would not be satisfactory for another.
5. Provided the manager did not consider all the facts, he would not be able to analyze and estimate his resources.
6. If a farmer had borrowed some additional money to buy new equipment the uses of the funds at a given periods during the year would have been recorded in a cash-flow statement.
7. Unless there were certain changes in crops and livestock it would not have been possible to increase agricultural productivity.

III. Set your imagination free and complete the sentences:

1. If I had a chance to work abroad, I …
2. If I were invited to the international conference, I …
3. If I were a very rich person, I …
4. If I were a vegetarian, I …
5. If I were a famous scientist, I …
6. If I had a chance to visit any country, I …
7. If I were appointed the farm manager, I …

LEXICAL – GRAMMAR TESTS

TEST 1

I. Выберите правильную форму глагольного сказуемого:

1. This breed … ten years ago.
   a) will develop b) has been developed c) was developed
2. Farm animals … people with dairy products.
   a) supplies b) is supplied c) supply

II. Выберите правильную форму прилагательного:

1. Pigs require favourable conditions for their … growth.
   a) worst b) bad c) best
2. The black widow is … spider because its bite can kill a man in a few minutes.
   a) most dangerous b) the most dangerous c) more dangerous

III. Какое русское предложение соответствует английскому?

1. The quality of the milk obtained is high.
   a) Качество молока, полученного недавно, – высокое.
   b) Качество полученного молока – высокое.
   c) Качество молока, получаемого ежегодно, – высокое.
2. Fattening beef cattle, farmers should give it high-quality feeds.
   a) Фермеры дают высококачественные корма откормленному мясному скоту.
   b) Откормив мясной скот, фермеры дали ему высококачественные корма.
   c) Откармливая мясной скот, фермеры должны давать ему высококачественные корма.

IV. Выберите правильный перевод термина:
1. nutritional disorders
   a) нарушение обмена веществ
   b) нарушение роста
   c) нарушение питания

V. Выберите правильную форму глагола-сказуемого:
1. Nowadays the production of marine aquaculture … at a rapid rate.
   a) was increasing b) are increased c) is increasing
2. Last year our biologist … some improved crop varieties.
   a) were developed b) developed c) have developed

VI. Какое русское предложение соответствует английскому?
1. We know dairy products to affect human health.
   a) Как известно, молочные продукты влияют на здоровье человека.
   b) Нам известны молочные продукты, влияющие на здоровье человека.
   c) Мы знаем, что молочные продукты влияют на здоровье человека.
2. Good feeds are considered to improve milk quality.
   a) Считают, что хорошие корма улучшают качество молока.
   b) Корма считаются хорошими, если улучшают качество молока.
   c) Мы считаем, что хорошие корма улучшают качество молока.

VII. Выберите правильную форму герундия в предложении:
1. The way of … cattle on pasture is very economical.
   a) being fattened b) having fattened c) fattening

VIII. Какое русское предложение является правильным переводом английского?
1. The farmer could improve his herd by having provided it with the purebred sires.
   a) Фермер смог улучшить свое стадо, обеспечивая его чистопородными производителями.
   b) Фермер смог улучшить свое стадо, обеспечив его чистопородными производителями.
   c) Фермер смог улучшить свое стадо, так как оно было обеспечено чистопородными производителями.
2. Cereals are usually grown for obtaining grain, the latter being widely used as feed for livestock.
ИЗ ЛИСТОВ КНИГИ ЗЛАКОВЫЕ ОБЫЧНО ВЫРАЩИВАЮТСЯ ДЛЯ ПОЛУЧЕНИЯ ЗЕРНА, КОТОРОЕ ШИРОКО ИСПОЛЬЗУЕТСЯ В КАЧЕСТВЕ КОРМА ДЛЯ СКОТА.

ПОСЛЕДНЕЕ ШИРОКО ИСПОЛЬЗУЕТСЯ В КАЧЕСТВЕ КОРМА ДЛЯ СКОТА.

ПОТОМУ ЧТО ОНО ШИРОКО ИСПОЛЬЗУЕТСЯ В КАЧЕСТВЕ КОРМА ДЛЯ СКОТА.

IX. Выберите правильный вариант:

1. Animals will die if you … them.
   a) won’t water  b) don’t water  c) wouldn’t water

2. If sows … with plenty of legume hay, there would be no need to add other mineral supplements.
   a) is supplied  b) are supplied  c) were supplied

X. Прочитайте текст и выберите правильные варианты ответа:

All over the world people are changing the face of the planet. Wild areas are created for farming and new cities. As well as transforming the environment, we are destroying habitats, the homes of … (1) plants and animals.

Living things have evolved … (2) millions of years. Many animals and plants can only … (3) in certain environments. When such areas are destroyed, wildlife cannot always … (4) to the new conditions and some species may die out. Thousands of species of plants and animals face extinction because of human activities.

People can also … (5) from habitat destruction. When forests are cut down earth is washed away, this causes crop failure and starvation. Plants provide essential food and can also be used in medicines. If species … (6) extinct, their potential value will never be known.

1. a) both         b) each      c) every       d) either
2. a) for            b) in          c) during     d) since
3. a) persist       b) survive  c) go           d) attend
4. a) adapt        b) use        c) stand       d) bear
5. a) feel           b) suffer    c) damage   d) experience
6. a) get            b) die        c) become   d) resul

TEST 2

I. Выберите правильный вариант:

1. A breed may be defined as a group of … developed for a special function.
   a) people   b) animals   c) farmers

2. I watched my dog … with her puppies.
   a) played   b) playing   c) to play
   d) have been played

3. Dairy cattle breeds are kept primarily for … ….
   a) beef production  b) milk production  c) wool production

4. Hormones are proteins that regulate ….
   a) body organs and their function  b) minerals  c) body cells

5. The farmers said they … the horses.
   a) feed   b) are feeding  c) had fed
6. Salmon swim hundreds of miles to lay their... 
   a) eggs   b) tails   c) fins   d) gills
7. Most animals obtain an adequate supply of iron in their normal ... 
   a) life   b) food   c) pasture
8. There is a relationship between animal feeding and animal ... 
   a) health   b) disease   c) breeds   d) behavior
9. Gorillas ... their young for several years. 
   a) look in   b) look at   c) look after
10. Many species of fish ... sounds which help them communicate with each other. 
    a) have produced   b) producing   c) producer   d) produce

II. Прочитайте текст и выберите правильные варианты ответа:

Malaria is one of the most common ... (1) diseases in the world. So far the only kind of ... (2) implemented by the affected countries has been distributing mosquito nets and basic medicines. ... (3) and doctors have been working on a malaria vaccine for many years. However, although all vaccines produced so far have shown good results on monkeys their ... (4) in tests on humans was far less ... (5). Research on the malaria vaccine arouses ... (6) interest in Africa, Asian and South America countries, where malaria is ... (7) a most dangerous disease causing ... (8) loss of life and ... (9) problems. Everybody is then ... (10) waiting for good news about ... (11) trails of a new medicine as the future costs of malaria spreading are indeed ... (12).

scientists; prevention; patiently; economical; infectious; impressive; considerable; successful; really; predicative; patients’; effectiveness

TEST 3

I. Прочитайте текст и заполните пропуски соответствующими словами, приведенными ниже:

A dominant dog has the potential to be a dangerous dog. The last thing you want is a dangerous dog, so you must deal ... (1) dominance in a dog quickly and effectively, ... (2) the dog could be a danger to your family or other people.

Some people believe that only large dogs that are dominant are a problem. A large dog obviously has more power and the ... (3) to cause more harm, however even a small dog can do quite a bit of ... (4) to a child or another small animal. So no matter the size of the dog, dominance is an ... (5) that must be dealt with immediately.

If you are not sure whether your dog is a dominant one or not, there are some ... (6) for which to watch. One of the earliest to spot is that the dog tries to take control of every situation. He will be naturally competitive, prone to taking risks and just assertive in general. More subtle ... (7) of dog dominance, however, may be things like demanding to be petted or snatching food.

1. a) at              b) in            c) with           d) for
2. a) another     b) unless     c) others        d) otherwise
3. a) acting       b) ability     c) absence    d) availability
4. a) damage       b) hazard     c) message    d) problem
5. a) aisle         b) exit          c) issue    d) isles
6. a) cases    b) claws        c) claims    d) clues
7. a) excuses    b) paws        c) teeth        d) examples
II. Прочитайте пять небольших высказываний (5-7 мин.). Установите соответствие между каждым высказыванием и утверждениями 1 – 7. Какие два утверждения лишние?

1. The Groom Room was recently opened especially for pets. The four-legged feeders will be served beef tar-tar with carrots and asparagus, carpaccio from chicken breast, turkey meatballs, meat salad, Napoleon dog’s cake and other pet delicacies. The price of a dog’s dinner depends on the breed of the dog and its size. Not to be forgotten the café also offers lunch for animal owners shaped into dog and cat faces.

2. A lot of pets now have beauty salons, and many of them offer better service than those for people. The dog’s salon Richi offers grooming for various breeds and size. Washing and drying small dogs runs from 20 to 50 dollars. Cleaning teeth, ears, eyes and claws will hit your wallet for 5-10 dollars. The longer hair the pet has the more money you will pay for haircuts.

3. The American Animal Hospital Association offers 24-hour emergency service so you must remember that we are always here for your pets in case of emergency. Our hospital complies with the association’s high veterinary care standards. This is our way of ensuring that our client’s pets receive the best care we can offer.

4. There is nothing more joyful than playing with your dog. Well, there is a place where your dog can have its freedom to run around and meet other dogs as well. It is called Dog Beach. Dog Beach is the original dog beach and one of the most popular places to take your pet. The whole place is leash-free. Of course, you need to remember to clean up after your dog.

5. Pets Market is the largest independent pet supplies store in the West Coast of Scotland. Your pet is dear for you whether it is a cat, dog, fish, hamster, pig, snake, ferret, spider or any other animal. Pets Market has all the information that you need for your pet. Pet rabbits and pet goats information is provided as well as about feeding pet parrots and caring for freshwater aquariums. Our prices are reasonable and notable for their diversity.

1. This place might be dangerous for your pet.
2. You can make your pet prettier here.
3. You can buy a pet here.
4. You can get your pet treated here.
5. You can take you pet for a walk here.
6. You can leave your pet at this place for some weeks.
7. You can get your pet fed at this place.
APPENDIX 1. The names of breeds

Cattle Breeds:
- **Angus** – ангусская порода
- **Ayrshire** – эрширская порода
- **Brahman** – браманская порода
- **Brown Swiss** – бурая швицкая порода
- **Galloways** – галловейская порода
- **Guernsey** – гернзейская порода
- **Hereford** – gereford
- **Holstein (Friesian)** – голштинская (фризская) порода
- **Jersey** – джерсейская порода
- **Red Polled** – английская красная комолая
- **Shortthorn** – шортгорнская порода

Pig Breeds:
- **Berkshire** – беркшир (английская порода мясного направления)
- **Chester White** – белый честер (американская порода мясо–сального направления)
- **Duroc** – дюрок (американская порода сального направления)
- **Hampshire** – гемпшир (американская порода беконного направления)
- **Landrace** – ландрас (датская порода мясного направления)
- **Yorkshire** – йоркшир (английская порода белой масти беконного направления)

Sheep Breeds:
- **Corriedale** – корридель (новозеландская полутонкорунная порода мясо–шерстного направления)
- **Cotswold** – котсуолд (английская длинношерстная порода мясо–шерстного направления)
- **Dorset** – дорсет (английская короткошерстная порода мясо–шерстного направления)
- **Hampshire** – гемпшир (английская полутонкорунная короткошерстная порода мясо–шерстного направления)
- **Leicester** – лейстер (английская полутонкорунная длинношерстная порода мясо–шерстного направления)
- **Lincoln** – линкольн (английская длинношерстная порода)
Merino – меринос (тонкорунная порода шерстного направления)
Oxford – оксфорд (английская короткошерстная порода мясо–шерстного направления)
Rambouillet – рамбульс (французская тонкорунная порода шерстно–мясного направления)
Suffolk – суффолк (английская короткошерстная порода мясо–шерстного направления)
Targhee – тарги (американская полуторнорунная порода мясного направления)

Horse Breeds:
Arabian – арабская чистокровная порода
Cleveland Bay – кливленд (английская порода упряжных лошадей)
Morgan – морган (американская порода верховых лошадей)
Shire – шайр (английская порода тяжелоупряжных лошадей)
Suffolk – суффолк (английская порода тяжелоупряжных лошадей)
Thoroughbred – английская чистокровная порода верховых лошадей)

Poultry Breeds:
Plymouth Rock – плимутрок (американская порода мясо–яичного направления)
Barred Plymouth – полосатый плимутрок
Brahma – брама (азиатская порода мясного направления)
Cornish – корниши (английская порода мясного направления)
Australorp – австралорп (австралийская порода яичного направления)
Leghorn – леггорн (американская порода яичного направления)
Minorca – минорка (испанская порода яичного направления)
New Hampshire – нью–гемпшир (американская порода общепользовательского направления)
APPENDIX 2. Units of measure

a) Единицы веса:

ounce (oz) – унция
pound (lb) – фунт
16 ounces = 1 pound
1 ounce = ~28 grammes (g)
1 pound = ~0.45 kilogramme (kg)

b) Единицы длины и площади:

inch – дюйм
foot – фут
mile – миля
acre – акр
12 inches (in) = 1 foot (ft)
1 inch = 2.54 centimetres (cm)
1 foot = ~30 cm
1 mile = ~1.6 kilometres (km)
1 acre = ~0.4 hectare

c) Единицы объема жидкости:

gallon (gal) – галлон
(мера жидких и сыпучих тел; английский галлон = 4.55 л;
amERICANский = 3.79 л)
1 gallon = 4.55 litres or 3.79 litres (Am E)
## VOCABULARY

### A

<table>
<thead>
<tr>
<th>Term</th>
<th>Translation</th>
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<tbody>
<tr>
<td>abdomen n</td>
<td>брюшная полость</td>
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<td>abdominal a</td>
<td>брюшной</td>
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<td>abomasums n</td>
<td>сычуг — четвертый отдел желудка жвачных</td>
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<td>access n</td>
<td>доступ</td>
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<tr>
<td>acid n</td>
<td>кислота</td>
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<td>adult cattle n</td>
<td>зрелый (взрослый) скот</td>
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<td>выдержка, созревание (сыра, мяса)</td>
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<td>albumin n</td>
<td>альбумин — природный белок</td>
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### B

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<td>beak n</td>
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<td>chew</td>
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<td>clam</td>
<td>моллюск</td>
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<td>claw</td>
<td>коготь; лапа с когтями</td>
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<td>болезнь</td>
</tr>
<tr>
<td>ditch</td>
<td>канава, ров; траншея, котлован</td>
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</tbody>
</table>

**D**
diurnal a дневной
dock n обрубленный хвост
dogfish n морская собака (акула)
doe n самка
domestic a домашний, ручной
domestication n одомашнивание, приручение
draught a тягловый
draw v тянуть, тащить
dry a сухой
duodenum n двенадцатиперстная кишка
dwindle n уменьшаться; вырождаться

earlobe n мочка уха; наружное ухо
eel n угорь
edible a съедобный
elbow n локоть
eliminate v устранять
emu n эму
environment n окружающая среда
esophageal a пищеводный
esophagus n пищевод
estuary n эстуарий, дельта; устье реки
estrus n эструс, течка
estuary n дельта, устье реки
ewe n овца
excretion n выделение

farrow n пороситься
feather n перо, оперение
feces n осадок; фекалии
feed v кормить
feeding n кормление
feeds n корма
feline n животное из семейства кошачьих
female n самка
feral a дикий, неприручённый
fertilizer n удобрение
fetlock n путовый сустав (волосы за копытом у лошади)
fibre n волокно
filament n волокно, волосок
fillet v приготовлять филе из рыбы
fin n плавник
fine-fleece a тонкорунный
fingerling n  фингерлинг (подросшая молодь рыб)
fish n (fishing gear)  рыба (такелаж; рыболовные снасти)
flank n  бок
fleece n  руно, овечья шерсть
flock n  стадо, отара
flounder n  мелкая камбала
foal n  жеребёнок
fodder n  корм для скота, фураж
foot and mouth disease n  ящур
forelock n  челка
foreshank n  верх передней ноги животного
fowl n  домашняя птица
fry n  мелкая рыбешка, мальки

gall-bladder n  желчный пузырь
garbage n  мусор, пищевые отходы
gaskin n  голень
gaur n  гаур
germ n  зародыш, эмбрион
gestation n  стельность (коровы), период беременности
gill n  жабры
gland n  железа
goat n  козёл
goose n (pl geese)  гусь
greenling n  терпуг
growout n  питомник
gullet n  пищевод
grass n  трава
grazing v  пасти
grease n  жир (шерсти)
grind v  молоть, переламывать
grow v  расти; выращивать
growth n  рост

hagfishes n  миксины
hatch v  высиживать; выводить искусственно
hatching n  инкубирование, выведение
hay n  сено
health n  здоровье
herd n  стадо
heart n  сердце
hedgehog n  ёж
heifer n  тёлка
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<td>hen n</td>
<td>курица</td>
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<td>шкура, кожа</td>
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<td>hock n</td>
<td>скачательный сустав</td>
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<td>hog n</td>
<td>свинья, боров</td>
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<td>honey n</td>
<td>мёд</td>
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<td>hoof n</td>
<td>копыто</td>
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<td>horn n</td>
<td>рог</td>
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<td>horse n</td>
<td>лошадь</td>
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<td>hunger n</td>
<td>голод</td>
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<td>гипертермия</td>
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<td>игуана</td>
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<td>immature a</td>
<td>незрелый</td>
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<tr>
<td>improve v</td>
<td>улучшать</td>
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<td>in-calf a</td>
<td>стельная (о корове)</td>
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<td>заражать</td>
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<td>ingest v</td>
<td>глотать</td>
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<td>injure v</td>
<td>повреждать</td>
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<td>внутренний</td>
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<td>labour n</td>
<td>труд, работа</td>
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<td>(божья) коровка</td>
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<td>ягнёнок</td>
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<td>личинка</td>
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<td>минога</td>
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<td>кожа (выделанная)</td>
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<td>нога</td>
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<td>lick v</td>
<td>лизать, зализывать</td>
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<td>---------</td>
<td>---------</td>
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<tr>
<td>limb n</td>
<td>конечность</td>
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<td>lip n</td>
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<td>скот, поголовье скота</td>
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<td>llamas n</td>
<td>лама</td>
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<td>lobster n</td>
<td>омар</td>
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<td>loose a</td>
<td>свободный, просторный</td>
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<tr>
<td>lung n</td>
<td>лёгкое</td>
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**M**

<table>
<thead>
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<tbody>
<tr>
<td>macadamia nut</td>
<td>австралийский орех; киндаль</td>
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<td>mad cow disease n</td>
<td>коровье бешенство</td>
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<td>maggot n</td>
<td>личинка</td>
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<tr>
<td>maintain v</td>
<td>содержать; поддерживать</td>
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<td>male n</td>
<td>самец</td>
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<tr>
<td>mamma n</td>
<td>молочная железа</td>
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<td>mammal n</td>
<td>млекопитающее</td>
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<td>mane n</td>
<td>грива</td>
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<td>mangrove n</td>
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<td>навоз</td>
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<td>mare n</td>
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<td>марикультура</td>
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<td>мясо</td>
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<td>milking n</td>
<td>дойка</td>
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<td>mink n</td>
<td>норка</td>
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<td>minnow a</td>
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<td>mix v</td>
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<td>mob n</td>
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<td>рот</td>
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<td>овцебык, мускусный бык</td>
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<td>мидия</td>
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<td>баранина</td>
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<td>muzzle n</td>
<td>морда (у животного)</td>
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<table>
<thead>
<tr>
<th>Term</th>
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<td>Nanny-goat</td>
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<tr>
<td>Neuter</td>
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<td>Nourish</td>
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<td>Pad</td>
<td>лапа; подушечка на подошве</td>
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<td>Pain</td>
<td>боль</td>
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<td>болезненный</td>
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<td>Pastern</td>
<td>бабка, пuto (надкопытный сустав ноги)</td>
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<td>пастбище</td>
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<td>Paucity</td>
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<td>Pellet-feed</td>
<td>корм в виде шариков</td>
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<td>Pelvic</td>
<td>анальный; тазовый</td>
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<td>Pike</td>
<td>щука</td>
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<tr>
<td>Poach</td>
<td>браконьерствовать, незаконно охотиться</td>
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<td>яд</td>
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<td>Poll</td>
<td>затылак</td>
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<td>Poll v</td>
<td>срезать рога</td>
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<td>задний</td>
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<td>Poult</td>
<td>цыпленок, индюшонок</td>
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</table>
poultry $n$ домашняя птица
prawn $n$ пильчатая креветка
predator $n$ хищник
pregnancy $n$ беременность
pregnant $a$ беременная
premature $a$ преждевременный
prevent $v$ препятствовать; предотвращать
prey $n$ добыча; жертва
profit $n$ выгода, польза
progeny $n$ потомство; потомок
pupil зрачок
pure $a$ чистокровный

Q
quadruplet $n$ четверо близнецов
quintuplet $n$ пять близнецов

R
rabbit $n$ кролик
raceway $n$ лоток (в рыбоводстве)
ram $n$ баран
rapid $a$ быстрый, скорый
rat $n$ крыса
raw $a$ сырой
reduce $v$ понижать; уменьшать
rennet $n$ сычужок
respiration $n$ дыхание
reticulum $n$ сетка – второй отдел преджелудка жвачных
rodent $n$ грызун
rohu $n$ индийский карп
rotten $a$ прогнивший
rumen $n$ рубец – первый отдел преджелудка животных
ruminant $n$ жвачное животное
rump $n$ крестец
rut $n$ половое возбуждение (у самцов)

S
saliva $n$ слюна
salmon $n$ лосось, семга
sauger $n$ судак
salvelinus $n$ голец
scales $n$ чешуя
scallop $n$ гребешок, моллюск
scoop out $v$ выдалбливать; выкапывать; вычерпывать
seabass $n$ морской окунь
seaweed $n$ морская водоросль
<table>
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<tr>
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<tr>
<td>select v</td>
<td>выбирать, отбирать</td>
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<td>сыворотка (иммунная) крови</td>
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<tr>
<td>soft a</td>
<td>мягкий</td>
</tr>
<tr>
<td>solution n</td>
<td>раствор</td>
</tr>
<tr>
<td>sour n</td>
<td>кислый</td>
</tr>
<tr>
<td>source n</td>
<td>источник</td>
</tr>
<tr>
<td>sow n</td>
<td>свиноматка</td>
</tr>
<tr>
<td>species n</td>
<td>вид, род; порода</td>
</tr>
<tr>
<td>spinal cord n</td>
<td>спинной мозг</td>
</tr>
<tr>
<td>spawn v</td>
<td>метать икру</td>
</tr>
<tr>
<td>springer n</td>
<td>прыгун</td>
</tr>
<tr>
<td>squirrel n</td>
<td>белка</td>
</tr>
<tr>
<td>stable n</td>
<td>конюшня, стойло</td>
</tr>
<tr>
<td>steer n</td>
<td>кастрированный бычок</td>
</tr>
<tr>
<td>stiffness n</td>
<td>жесткость, негибкость</td>
</tr>
<tr>
<td>stifle n</td>
<td>коленная чашка</td>
</tr>
<tr>
<td>stock n</td>
<td>поголовье скота</td>
</tr>
<tr>
<td>stomach n</td>
<td>желудок</td>
</tr>
<tr>
<td>store n</td>
<td>запас, изобилие</td>
</tr>
<tr>
<td>straw n</td>
<td>солома</td>
</tr>
<tr>
<td>stream n</td>
<td>река, ручей; поток</td>
</tr>
<tr>
<td>strength n</td>
<td>сила; прочность</td>
</tr>
<tr>
<td>subsistence n</td>
<td>пропитание; средства к существованию</td>
</tr>
<tr>
<td>succulent n</td>
<td>сочный корм</td>
</tr>
<tr>
<td>suck v</td>
<td>сосать</td>
</tr>
<tr>
<td>suckle v</td>
<td>вскормливать</td>
</tr>
<tr>
<td>suckling calves n</td>
<td>телята-сосуны</td>
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<tr>
<td>suckling pigs n</td>
<td>поросята-сосуны</td>
</tr>
<tr>
<td>sunfish n</td>
<td>луна-рыб; солнечная рыба</td>
</tr>
<tr>
<td>supply v</td>
<td>снабжать</td>
</tr>
<tr>
<td>swallow v</td>
<td>глотать</td>
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</table>
swine n  свиньи
switch n  кисть хвоста

temperate a  умеренный (климат)
tender a  нежный
tension n  напряжение
thigh n  бедро
thorax n  грудная клетка
thrive v  быстро расти
throat n  горло, гортань
thurl n  тазобедренный сустав
tissue n  ткань
tongue n  язык
tooth (pl teeth) n  зуб
trace n  след
treatment n  лечение; обращение
tremor n  сотрясение
trotter n  рысак
trotter n (brook trout; cut
throated trout; sea trout)  форель (ручьевая форель;
красногорлый лосось; австралийский лосось)
turkey n  индейка

udder n  вымя
unborn n  нерождённый
undigested a  неусвоенный
ungulate  копытное животное
unshorn a  нестриженный (об овцах)
upper a  верхний
utility n  полезность, выгодность

valuable a  ценный
valve n  клапан (сердца)
veal n  телятина
vein n  вена
ventral a  брюшной
vertebrate n  позвоночное животное
vessel n  судно, корабль
vomer n  сошник

walleyes n  окуневые
wattle n  сережка (у птиц); бородка (петуха)
wean v  отнимать от груди
weasel n  ласка
<table>
<thead>
<tr>
<th>Word</th>
<th>Translation</th>
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</thead>
<tbody>
<tr>
<td>wether n</td>
<td>валух, кастрированный баран</td>
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<tr>
<td>windpipe n</td>
<td>дыхательное горло</td>
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<tr>
<td>withers n</td>
<td>загривок, холка</td>
</tr>
<tr>
<td>whale n</td>
<td>кит</td>
</tr>
<tr>
<td>wool n</td>
<td>шерсть</td>
</tr>
<tr>
<td>yoke n</td>
<td>ярмо; пара запряжённых волов</td>
</tr>
<tr>
<td>yolk n</td>
<td>желток</td>
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<tr>
<td>zebra n</td>
<td>зебра</td>
</tr>
<tr>
<td>zebrafish n</td>
<td>полосатая перуина; полосатый данио</td>
</tr>
</tbody>
</table>
4. FAO of the UN’s World Agricultural Centre: http://www.fao.org/
5. Agriculture: http://www.nationalacademies.org/agriculture/
7. US Fish and Wildlife Service (FWS) http://www.fws.gov/