

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ОДЕСЬКИЙ ДЕРЖАВНИЙ ЕКОЛОГІЧНИЙ УНІВЕРСИТЕТ

П'янова І.Ю., Куделіна О.Ю., Бец О.О., Мітіна О.М.

НАВЧАЛЬНИЙ ПОСІБНИК З АНГЛІЙСЬКОЇ МОВИ

для студентів III року навчання

Спеціальність – 207 „Водні біоресурси та аквакультура”

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Затверджено вченою радою Одеського державного екологічного університету Міністерства освіти і науки України як навчальний посібник для здобувачів вищої освіти за спеціальністю «Водні біоресурси та аквакультура» (протокол №6 від 04. 07. 2019 р.)

Рецензенти:

доцент кафедри іноземних мов гуманітарних факультетів ОНУ ім.І.І.Мечникова,
кандидат філологічних наук Караваєва Т.Л.;
доцент кафедри українознавства ОДЕКУ кандидат філологічних наук А.О.Троян

П'янова І.Ю., Куделіна О.Ю., Бец О.О., Мітіна О.М. Навчальний посібник з англійської мови для студентів III року навчання за спеціальністю „Водні біоресурси та аквакультура”: навчальний посібник. Одеса, Одеський державний екологічний університет, 2019. 278 с.

Посібник призначений для проведення практичних занять з нормативної дисципліни «Іноземна мова» (Англійська мова) для студентів ОДЕКУ 3-го року навчання, спеціальність – 207 „Водні біоресурси та аквакультура ” і містить лексичний та теоретичний матеріал і вправи за основними розділами англійської граматики.

Поєднання в кожному з розділів збірки короткої теоретичної довідки за даною темою зі значним об'ємом практичних завдань забезпечує можливість розгляду окремих частин програмного матеріалу в режимі СРС.

Відносно велика кількість вправ в принципово важливих розділах уможливорює варіювання об'ємів і складності завдань для студентів з різним початковим рівнем мовної підготовки.

Питанням прямого і зворотного перекладу в збірці також надана достатня увага. Теоретичні розділи глав містять вказівки, що передують вправам на граматичні явища і випадки слововживання, які становлять найбільшу складність при перекладі з української/на українську мову.

В посібнику особлива увага приділяється специфіці лексичних засобів викладання змісту текстів за фахом, багатозначності службових і загальнонаукових слів, механізму словотворення, для усного мовлення в ситуаціях ділового спілкування. Усі відомості теоретичного характеру з техніки читання та граматики подаються в об'ємі, потрібному для набуття студентами умінь і навиків для ведення спілкування та дискусії в межах тематики і ситуацій.

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ПЕРЕДМОВА

Розширення зв'язків України із зарубіжними партнерами становить нагальну потребу не просто у висококваліфікованих спеціалістах, а в спеціалістах, які б поєднували в собі професійні знання зі знаннями іноземної мови. Володіння іноземною мовою стало не лише ознакою гарної освіти, але й невід'ємною характеристикою сучасного фахівця.

Майбутнім фахівцям потрібні навички практичного оволодіння іноземною мовою в різних видах мовленнєвої діяльності в обсязі тематики, зумовленої професійними потребами; одержування новітньої фахової інформації через іноземні джерела; користування усним монологічним та діалогічним мовленням у межах побутової суспільно-політичної загально екологічної та фахової тематики. Таким чином, метою навчання іноземної мови є формування необхідної комунікативної спроможності в сферах професійного та ситуативного спілкування в усній і письмовій формах.

Навчальний посібник для студентів III року денної форми навчання зі спеціальності *„Водні біоресурси та аквакультура”* включає 4 уроки. Головна мета навчального посібника є систематизація та поглиблення мовленнєвих навичок, що були надбані раніше.

Кожен урок забезпечений текстами та відповідним комплексом вправ: текстових, лексичних та граматичних.

Мета запропонованих текстів – розвинути навички читання, аналізу, перекладу текстів, а також їх переказу на матеріалі наукової літератури за фахом.

Лексичні вправи призначені для вивчення та закріплення лексичного матеріалу в кожному уроку та охоплюють лексику основних текстів.

Граматичні вправи, що подані у вигляді систематизованого комплексу з морфології відповідно до нормативного курсу граматики сучасної англійської мови, спрямовані на аналіз та відпрацювання, закріплення вивченого граматичного матеріалу. До окремих граматичних вправ використані уривки з текстів оригінальної англійської та американської літератур (Т. Драйзер, Ч. Діккенс, Дж. Голсуорсі, С. Моем, А. Крісті, Б. Шоу, Марк Твен та ін.), що поглиблюватиме розуміння особливостей морфології англійської мови.

Курс розраховано на 120 годин (I семестр – 60 годин; II семестр – 60 годин) і вивчається з метою удосконалення професійних знань і розвитку умінь використання цих знань у англомовній професійній діяльності. Навчальний посібник також спрямований на розвиток умінь усної та писемної комунікації.

Після вивчення даного курсу студенти повинні знати і вміти:

– читати та перекладати науково-технічну англомовну літературу за фахом для одержання необхідної інформації;

- розуміти зміст прочитаного та лексико-граматичний матеріал, наданий у методичних вказівках;
- розуміти і володіти відповідними граматичними конструкціями та матеріалом;
- брати участь в усному спілкуванні англійською мовою в обсязі матеріалу, передбаченого програмою.

LESSON I

Text A

Algae, Phytoplankton and Chlorophyll

Part A

What are Algae?

Algae are aquatic, plant-like organisms. They encompass a variety of simple structures, from single-celled phytoplankton floating in the water, to large seaweeds (macroalgae) attached to the ocean floor. Algae can be found residing in oceans, lakes, rivers, ponds and even in snow, anywhere on Earth.

So what makes algae only plant-like, instead of plants? While algae are often called primitive plants, other terms, like protists, can be used. Protist may be a more accurate term, particularly for the single-celled phytoplankton. However, larger, more complex algae, including kelp and chara, are often mistaken for submerged plants.

The difference between these seaweeds and submerged plants is in their structure. Macroalgae are simpler, and attach themselves to the seabed with a holdfast instead of true roots. Aquatic plants, whether floating, submerged, or emergent (starting in the water and growing out) have specialized parts such as roots, stems and leaves. Most plants also have vascular structures (xylem and phloem), which carry nutrients throughout the plant. While algae contain chlorophyll (like plants), they do not have these specialized structures.

Algae are sometimes considered protists, while other times they are classified as plants or chromists. Phytoplankton are made up of single-celled algae and cyanobacteria.

As algae can be single-celled, filamentous (string-like) or plant-like, they are often difficult to classify. Most organizations group algae by their primary color (green, red, or brown), though this creates more problems than it solves. The various species of algae are vastly different from each other, not only in pigmentation, but in cellular structure, complexity, and chosen environment. As such, algal taxonomy is still under debate, with some organizations classifying algae under different kingdoms, including Plantae, Protozoa and Chromista. While the overarching kingdom classification is not always agreed upon, the species, genus, family, class and phylum of each alga generally are.

To further complicate this nomenclature, single-celled algae often fall under the broad category of phytoplankton.

What are phytoplankton?

Phytoplankton are microorganisms that drift about in water. They are single-celled, but at times they can grow in colonies large enough to be seen by

the human eye. Phytoplankton are photosynthetic, meaning they have the ability to use sunlight to convert carbon dioxide and water into energy. While they are plant-like in this ability, phytoplankton are not plants. The term “single-celled plants” is a misnomer, and should not be used. Instead, phytoplankton can be divided into two classes, algae and cyanobacteria. These two classes have the common ability of photosynthesis, but have different physical structures. Regardless of their taxonomy, all phytoplankton contain at least one form of chlorophyll (chlorophyll A) and thus can conduct photosynthesis for energy.

Phytoplankton, both algae and cyanobacteria, can be found in fresh or saltwater. As they need light to photosynthesize, phytoplankton in any environment will float near the top of the water, where sunlight reaches. Most freshwater phytoplankton are made up of green algae and cyanobacteria, also known as blue-green algae. Marine phytoplankton are mainly comprised of microalgae known as dinoflagellates and diatoms, though other algae and cyanobacteria can be present. Dinoflagellates have some autonomous movement due to their “tail” (flagella), but diatoms are at the mercy of the ocean currents.

Microalgae

There are thousands of species of planktonic algae, or microalgae, floating in water all over the world. Green algae, diatoms and dinoflagellates are the most well-known, though other microalgae species include coccolithophores, cryptomonads, golden algae, yellow-green algae and euglenoids. There are so many diatoms drifting in the oceans that their photosynthetic processes produce about half of Earth’s oxygen. While diatoms and dinoflagellates are forms of planktonic algae, they can be incorrectly classified as red or brown algae. Red and brown algae are not considered phytoplankton as they are not free-floating. True red and brown algae are rarely single-celled, and remain attached to rock or other structures instead of drifting at the surface. Multicellular green algae is also not considered phytoplankton for the same reasons. To be considered a phytoplankton, the algae needs to use chlorophyll A in photosynthesis, be single-celled or colonial (a group of single-cells), and live and die floating in the water, not attached to any substrata.



Phytoplankton come in many different structures, but all except for cyanobacteria are algae. Collage adapted from drawings and micrographs by Sally Bensusen, NASA EOS Project Science Office

Cyanobacteria: Blue-Green Algae

Despite their ability to conduct photosynthesis for energy, blue-green algae are a type of bacteria. This means that they are single-celled, prokaryotic (simple) organisms. Prokaryotic means that the cyanobacteria do not have a nucleus or other membrane-bound organelles within their cell wall.

Cyanobacteria are the only bacteria that contain chlorophyll A, a chemical required for oxygenic photosynthesis (the same process used by plants and alga. This process uses carbon dioxide, water and sunlight to produce oxygen and glucose (sugars) for energy. Chlorophyll A is used to capture the energy from sunlight to help this process. Other bacteria can be considered photosynthesizing organisms, but they follow a different process known as bacterial photosynthesis, or anoxygenic photosynthesis. This process uses bacteriochlorophyll instead of chlorophyll A. These bacteria cells use carbon dioxide and hydrogen sulfide (instead of water) to manufacture sugars. Bacteria cannot use oxygen in photosynthesis, and therefore produce energy anaerobically (without oxygen). Cyanobacteria and other phytoplankton photosynthesize as plants do, and produce the same sugar and oxygen for use in cellular respiration.



In 2011, Lake Erie experienced the worst blue-green algae bloom in decades (Photo Credit: MERIS/NASA; processed by NOAA/NOS/NCCOS)

In addition to chlorophyll A, blue-green algae also contain the pigments phycoerythrin and phycocyanin, which give the bacteria their bluish tint (hence the name, blue-green algae). Despite not having a nucleus, these microorganisms do contain an internal sac called a gas vacuole that helps them to float near the surface of the water.

What is chlorophyll?

Chlorophyll is a color pigment found in plants, algae and phytoplankton. This molecule is used in photosynthesis, as a photoreceptor. Photoreceptors absorb light energy, and chlorophyll specifically absorbs energy from sunlight. Chlorophyll makes plants and algae appear green because it reflects the green wavelengths found in sunlight, while absorbing all other colors.

However, chlorophyll is not actually a single molecule. There are 6 different chlorophylls that have been identified. The different forms (A, B, C, D, E and F) each reflect slightly different ranges of green wavelengths. Chlorophyll A is the primary molecule responsible for photosynthesis. That means that chlorophyll A is found in every single photosynthesizing organism, from land plants to algae and cyanobacteria ¹. The additional chlorophyll forms are accessory pigments, and are associated with different groups of plants and algae and play a role in their taxonomic confusion. These other chlorophylls still absorb sunlight, and thus assist in photosynthesis. As accessory pigments, they transfer any energy that they absorb to the primary chlorophyll A instead of directly participating in the process.

The different forms of chlorophyll absorb slightly different wavelengths for more efficient photosynthesis.

Chlorophyll B is mainly found in land plants, aquatic plants and green algae ¹. In most of these organisms, the ratio of chlorophyll A to chlorophyll B is 3:1. Due to the presence of this molecule, some organizations will group the green algae into the Plant Kingdom. Chlorophyll C is found in red algae, brown algae, and dinoflagellates. This has led to their classification under the Kingdom Chromista. Chlorophyll D is a minor pigment found in some red algae, while the rare Chlorophyll E has been found in yellow-green algae. Chlorophyll F was recently discovered in some cyanobacteria near Australia. Each of these accessory pigments will strongly absorb different wavelengths, so their presence makes photosynthesis more efficient.

Other Color Pigments

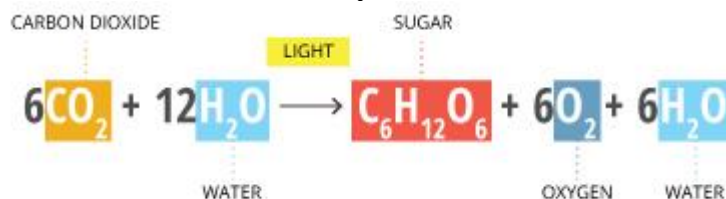
Chlorophyll is not the only photosynthetic pigment found in algae and phytoplankton. There are also carotenoids, and phycobilins (biliproteins). These accessory pigments are responsible for other organism colors, such as yellow, red, blue and brown. Like chlorophylls B, C, D, E and F, these molecules improve light energy absorption, but they are not a primary part of photosynthesis. Carotenoids can be found in nearly every phytoplankton species, and reflect yellow, orange and/or red light. There are two phycobilins found in phytoplankton: phycoerythrin and phycocyanin. Phycocyanin reflects blue light and is responsible for cyanobacteria's common name – blue-green algae. Phycoerythrin reflects red light, and can be found in red algae and cyanobacteria.

Each pigment absorbs and reflects different wavelengths, but they all act as accessory pigments to chlorophyll A in photosynthesis.

Some algae will appear green despite the presence of these accessory pigments. Just as in plants, the chlorophyll in algae has a stronger relative absorption than the other molecules. Like a dominant trait, the more intense, reflected green wavelengths can mask the other, less-reflected colors. In green algae, chlorophyll is also found at a higher concentration relative to the accessory pigments. When the accessory pigments are more concentrated (such as in red algae, brown algae and cyanobacteria), the other colors can be seen.

What is Photosynthesis?

Photosynthesis is the process by which organisms use sunlight to produce sugars for energy. Plants, algae and cyanobacteria all conduct oxygenic photosynthesis. That means they require carbon dioxide, water, and sunlight (solar energy is collected by chlorophyll A). Plants and phytoplankton use these three ingredients to produce glucose (sugar) and oxygen. This sugar is used in the metabolic processes of the organism, and the oxygen, produced as a byproduct, is essential to nearly all other life, underwater and on land.



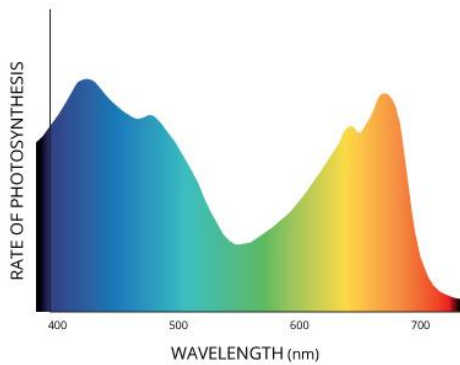
Photosynthesis uses water, carbon dioxide and sunlight to produce energy and oxygen.

Underwater Photosynthesis

Phytoplankton drifting about below the surface of the water still carry out photosynthesis. This process can occur as long as enough light is available for the chlorophyll and other pigments to absorb. In the ocean, light can reach as far as 200m below the surface. This region where sunlight can reach is known as the euphotic zone. Phytoplankton and other algae can be found throughout this zone.

What Affects Photosynthesis?

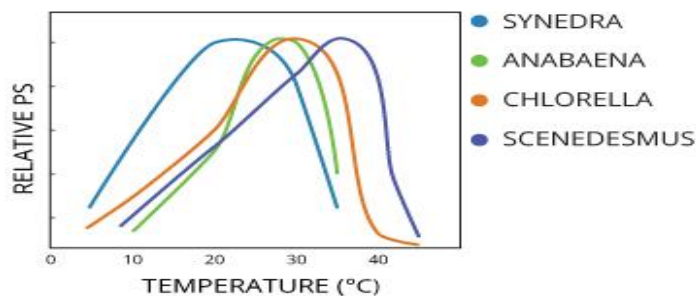
As light is required for photosynthesis to occur, the amount of light available will affect this process. Photosynthetic production peaks during the day and declines after dark. However, not all light can be used for photosynthesis. Only the visible light range (blue to red) is considered photosynthetically active radiation. Ultraviolet light has too much energy for photosynthesis, and infrared light does not have enough. If phytoplankton are exposed to too much UV light, the excessive solar energy can break molecular bonds and destroy the organisms' DNA.



Blue and red light are used more efficiently in photosynthesis.

Within the visible light spectrum, chlorophyll strongly absorbs red and blue light while reflecting green light. This is why phytoplankton, particularly cyanobacteria, can thrive at the bottom of the euphotic (sunlit) zone, where only blue light can reach. As blue light is both high in energy and strongly absorbed by chlorophyll, it can be used effectively in photosynthesis.

Turbidity, or the presence of suspended particles in the water, affects the amount of light that reaches into the water. The more sediment and other particles in the water, the less light will be able to penetrate. With less light available, photosynthetic production will decrease. In turbid water, photosynthesis is more likely to occur at the water's surface than on the lakebed, as more light is available. .



Temperature affects the photosynthetic rates of different algae.

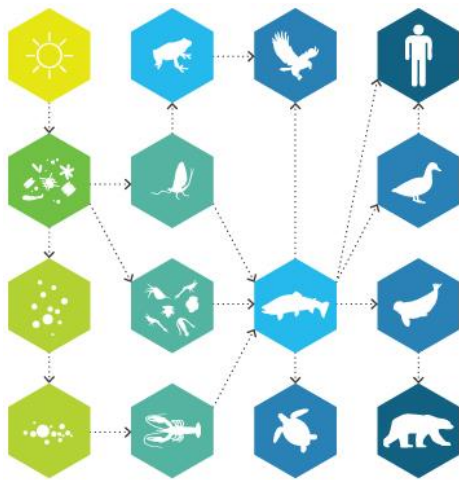
Water temperature will also affect photosynthesis rates. As a chemical reaction, photosynthesis is initiated and sped up by heat. As photosynthesis production increases, so will phytoplankton reproduction rates. This factors into the large, seasonal swings of phytoplankton populations. However, the extent to which temperature affects photosynthesis in algae and cyanobacteria is dependent on the species. For all phytoplankton, photosynthetic production will increase with the temperature, though each organism has a slightly different optimum temperature range. When this optimum temperature is exceeded, photosynthetic activity will in turn be reduced. Too much heat will denature (break down) the enzymes used during the process, slowing down photosynthesis instead of speeding it up.

Part B

Why are Phytoplankton Important?

Microscopic phytoplankton play some of the biggest roles in climate control, oxygen supply and food production. These single-celled organisms are responsible for more than 40% of Earth's photosynthetic production. That process uses up carbon dioxide, which helps regulate CO₂ levels in the atmosphere, and produces oxygen for other organisms to live.

Oceanic Food Web



Phytoplankton create their own energy from sunlight. All other organisms consume them, whether directly or indirectly as a carbon source.

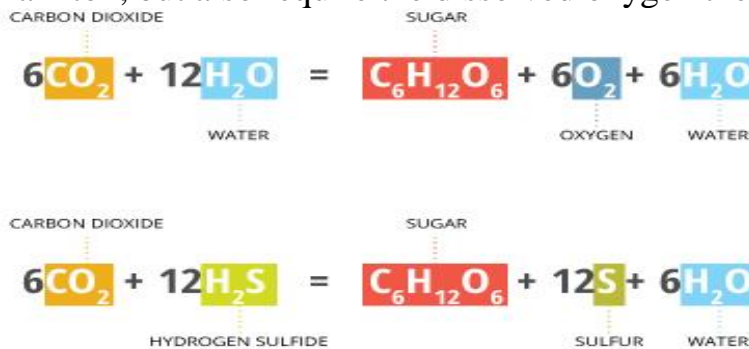
Phytoplankton make up the foundation of the oceanic food web. A food web is a complex net of organisms and food chains (who-eats-who). To survive, every living thing needs organic carbon. Organic carbon can be found in many different things including sugars (glucose = C₆H₁₂O₆), plants and animals. Phytoplankton produce their required sugar through photosynthesis. As they are able to produce their own energy with the help of light, they are considered autotrophic (self-feeding). Phytoplankton and other autotrophs are called primary producers, and make up the bottom of the food web. These organisms are called “primary” because all other organisms rely on them (directly or indirectly) as a food source.

Phytoplankton are generally consumed by zooplankton and small marine organisms like krill. These creatures are then consumed by larger marine organisms, such as fish. This chain continues up to apex predators, including sharks, polar bears and humans.

Oxygen Production

During the photosynthetic process, phytoplankton produce oxygen as a byproduct. Due to their vast and widespread populations, algae and

cyanobacteria are responsible for approximately half of all the oxygen found in the ocean and in our atmosphere. Thus oceanic lifeforms not only feed off the phytoplankton, but also require the dissolved oxygen they produce to live.



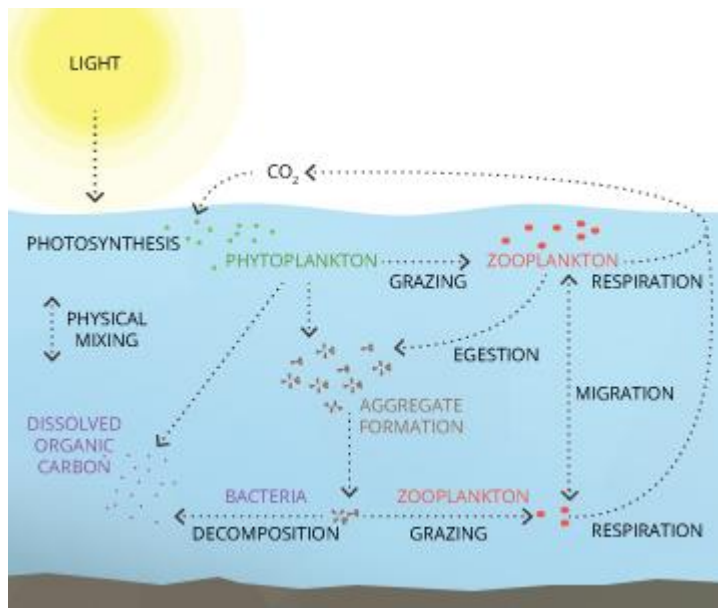
Plants, algae and cyanobacteria all engage in oxygenic photosynthesis (top equation), which means that they require water and release oxygen. Precambrian bacteria used hydrogen sulfide instead of water (bottom equation) and did not release oxygen as a byproduct.

Before plants, algae and phytoplankton used water for photosynthesis, bacteria used H_2S and other organic compounds to fix CO_2 . Early cyanobacteria were the first organism to use water to fix carbon. The use of H_2O introduced free oxygen (O_2) into the environment as a byproduct. The start of oxygenic photosynthesis was a turning point for Earth's history. This process slowly changed the inert Precambrian atmosphere into the oxygen-rich environment known today. Though microscopic, early cyanobacteria have made a permanent impact on the Earth's environment.

Carbon Fixation and the Climate

In addition to providing food and oxygen for nearly all life on Earth, phytoplankton help to regulate inorganic carbon (carbon dioxide) in the atmosphere. During photosynthesis, carbon dioxide and water molecules are used to make sugar for energy. The process of incorporating inorganic carbon into organic carbon (glucose and other biologically useful compounds) is called carbon fixation, and is part of the biological carbon pump.

As carbon fixation and oxygen production are part of the same process, the extent of phytoplankton's participation is on the same scale. Phytoplankton consume a similar amount of carbon dioxide as all land plants combined. While phytoplankton can pull carbon dioxide from the atmosphere or the ocean, it will have a similar effect. CO_2 that is taken from the water is replaced by CO_2 from the atmosphere, thanks to Henry's law (the dissolved gas content of water is proportional to the percentage of gas in the air above it. This consumption helps keep carbon dioxide levels in check, reducing its presence as a greenhouse gas.



Algae and cyanobacteria help to regulate the climate by fixing carbon dioxide from the atmosphere. This carbon is then consumed or decomposed by other organisms, making its way through the cycle until it is released as dissolved carbon dioxide in water or deposited in sediment.

When carbon dioxide is consumed, the carbon molecules become incorporated into the phytoplankton's structure, allowing the organism to function and grow. If the phytoplankton is not eaten by another organism (passing on the carbon up the food chain), then it will sink into the ocean when it dies. As with other detritus (non-living organic material), the phytoplankton will be decomposed by bacteria, and the carbon is either released back into the ocean as dissolved carbon dioxide or eventually deposited into the seafloor sediment. Thanks to phytoplankton, this biological carbon pump removes approximately 10 trillion kilograms (10 gigatonnes) of carbon from the atmosphere every year, transferring it to the ocean depths.

In climate terms, this process helps to maintain global surface temperatures. Without this cycle, atmospheric CO₂ would rise approximately 200 ppm (current levels are around 400 ppm). Even small changes in phytoplankton populations could have an effect on the atmosphere and world climate.

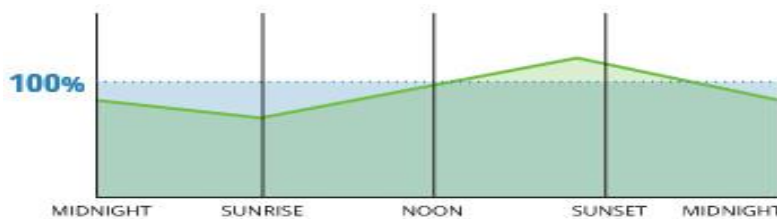
Typical Levels and Factors that Influence Productivity

Phytoplankton populations and their subsequent photosynthetic productivity will fluctuate due to a number of factors, most of which are part of seasonal changes. The largest influence on phytoplankton levels is nutrient scarcity. While sunlight levels affect productivity, nutrient levels affect phytoplankton growth and populations. While any one phytoplankton only lives for a few days, a population boom can last for weeks under the right conditions.

As phytoplankton populations grow and shrink seasonally, typical concentrations vary not only by location but from month to month. Expected levels should be based on local, seasonal data from previous years. While changes within the same calendar year are normal, populations should stay consistent with previous seasonal fluctuations from year to year. If phytoplankton concentrations are abnormally high or low for a season, it may indicate other water quality concerns that should be addressed.

Sunlight Influence

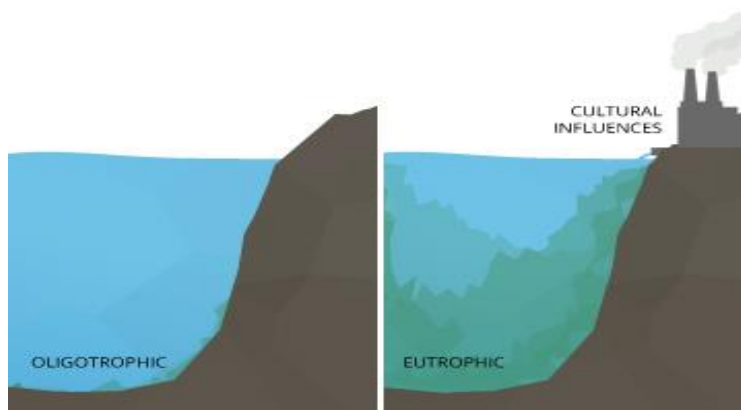
Phytoplankton require sunlight for photosynthesis. If sunlight is limited, phytoplankton productivity will decrease. This can be seen in a daily cycle as oxygen levels fluctuate with light levels throughout the day. However, if sunlight is unavailable or minimal for an extended period of time, aquatic life will consume dissolved oxygen quicker than phytoplankton can restore it, leading to a plummet in dissolved oxygen levels. Phytoplankton are responsible for much of the dissolved oxygen found in surface waters. As oxygen is required for fish and other aquatic organisms, a decrease in photosynthesis productivity is detrimental to aquatic populations. Without phytoplankton, the oxygen supply of the ocean would be cut in half. In both fresh and saltwater, a lengthy decrease in phytoplanktonic productivity can lead to a fish kill (massive fish die-off).



Dissolved oxygen concentrations will increase during the day due to photosynthesis production and decline at night after the sun sets and the phytoplankton engage in respiration instead.

Although phytoplankton require sunlight for photosynthesis and oxygen production, too much light can be harmful to photosynthetic production. Ultraviolet light from the sun can damage the phytoplanktons' DNA, inhibiting the photosynthetic pathway. On very bright days, UV-B radiation can diminish photosynthesis by 8.2%. This is why photosynthesis rates peak during the morning, and decrease at noon (when the radiation levels are highest).

Nutrient Influence



Eutrophication is caused by an increase in nutrient levels. This can lead to an algal bloom and can cause low levels of dissolved oxygen.

While phytoplankton rely on photosynthesis to produce sugar for energy, they still need other nutrients to grow and reproduce. These nutrients are typically phosphorus, nitrogen and iron, though some species also require silicon, calcium and other trace metals. The more nutrients (particularly phosphorus) that are present in a body of water, the more algae and phytoplankton that will grow. An increase in the nutrient concentration of a body of water is called eutrophication. Eutrophication is often an indicator of agricultural runoff, which can raise phosphorus and nitrogen concentrations to very high levels. If there are too many nutrients, the algae will form a bloom, which can be very detrimental to water quality and aquatic health.

The lack of iron in the open ocean limits phytoplankton growth. Nitrogen and phosphorus are also scarce away from coastlines, and can be limiting factors as well. However, ocean circulation can cause an upwelling, which moves deep, nutrient-rich water up into the photic (sunlight zone), replacing the nutrient-depleted surface water. Upwelling, seasonal ice melts and agricultural runoff can all increase nutrient levels, leading to an increase in phytoplankton populations.

Typical Freshwater Levels

In temperate fresh waters, growth is limited in winter because light and temperatures are low. A large increase in the spring normally occurs as light conditions improve and water begins to mix. In the summer, phytoplankton flourish until the nutrient supply begins to run low. In tropical lakes, the phytoplankton distribution is fairly constant throughout the year and seasonal population changes are often very small. In temperate and subpolar waters, the seasonal fluctuations are normally fairly large. Fluctuations in population also occur if agricultural runoff brings additional nutrients into a body of water.

Typical Saltwater Levels

Saltwater phytoplankton can be found all over the world, living in the photic (sunlit zone) of the ocean. Cyanobacteria prefer to live near the bottom of this zone, closest to the nutrient-rich deep water while still receiving enough sunlight for photosynthesis. However, in any marine environment, phytoplankton populations vary not only by season but by region.

Algae blooms can occur near the poles in the spring, when there is plenty of sunlight and the melting sea ice leaves behind nutrient-rich freshwater. This melting process also fuels the oceanic convection, or circulation. In coastal and open-ocean environments, oceanic circulation is responsible for phytoplankton concentrations.

This circulation can cause upwelling (bringing nutrient-rich water to the surface) and instigates phytoplankton transportation. Like sea ice melting, upwelling is a seasonal occurrence. The extent and location of upwells are based on wind patterns, which cause currents across the globe. Surface water is carried away from coastlines by currents, and is replaced by cold, nutrient-rich water from below.

In many coastal regions, southerly winds cause this coastal upwelling in late summer and autumn. As upwelling brings nutrient-rich water up to the surface, phytoplankton blooms often appear at this time. Oceanic circulation and upwelling ensures that the coastal environments have the highest rates of primary production in the ocean. Tides, flooding and currents all encourage higher nutrient levels in the photic zone.

Consequences of Unusual Levels

Phytoplankton are an important aspect of a healthy body of water. Algae and cyanobacteria help to provide oxygen and food for aquatic organisms. As a key component, an imbalance of phytoplankton levels can cause major problems. If too many nutrients are available, it can trigger an algal bloom. Algal blooms and overproduction of phytoplankton can cause toxic red tides and fish kills. On the other hand, phytoplanktonic productivity can be limited by a lack of required reactants such as sunlight. This decrease in productivity can also lead to fish kills.

Algal Blooms and Red Tides

An algal bloom is a sudden increase in the concentration of phytoplankton. During a bloom, clear water can become covered with phytoplankton within days. These algal blooms can grow large enough to be seen from a satellite, covering hundreds of square kilometers. Algal blooms come in many colors from green to red, brown, blue, white or purple.

Under the right conditions, algal blooms can last one week to an entire summer, despite the short, few-day life span of phytoplankton. A single bloom will only last one to two weeks, as the phytoplankton population will die without

the proper oxygen and nutrient levels. However, if the water conditions stay favorable, successive blooms can occur and appear to be one continuous population. Algal blooms are most common in late summer and early fall.

What Causes an Algal Bloom?

There are several causes that can contribute to an algal bloom. These blooms can occur seasonally, after an upwelling of nutrient-rich water, or due to pollution such as agricultural runoff. In both cases, the water becomes saturated with nutrients, creating an ideal environment for phytoplankton productivity. Even natural causes can trigger an algal bloom, such as a rainstorm followed by warm, sunny weather. Rain can contribute runoff, or encourage the mixing of nutrient-depleted and nutrient-rich layers of water. When nutrient levels rise, phytoplankton growth is no longer nutrient-limited and a bloom may occur.

Red Tides

If a phytoplankton concentration stays steady after the initial bloom, it may become a red tide. While some blooms are harmless, others may produce toxins that endanger aquatic life and humans. This harmful algal bloom is known as a red tide. While red tides specifically refer to harmful algal blooms (HABs), they are often simply associated with the discoloration due to a large concentration of phytoplankton. Although known as a red tide, the discoloration from a harmful algal bloom is not always red. The color of the tide depends on the pigments present in the phytoplankton. In some cases, the bloom cannot be seen by the human eye, though it is still releasing toxins.

Red tides and the toxins they release can have a direct or indirect impact on the health of humans and other organisms. Some species of phytoplankton can suffocate fish during a bloom by clogging or irritating the fishes' gills, preventing them from taking in oxygen. These harmful algal blooms can also cause shellfish poisoning in humans and other adverse effects. Even during non-toxic algal blooms, the aquatic environment can be compromised. Massive levels of phytoplankton respiration and decomposition can reduce dissolved oxygen to unsustainable levels, resulting in the deaths of other aquatic creatures.

Toxins

The phytoplankton that cause a red tide are usually comprised of dinoflagellates, diatoms or cyanobacteria. Certain species of these phytoplankton can contain harmful toxins that can affect humans and other animals. At normal levels, heterotrophic bacteria in the water break down the toxins in these organisms before they can become dangerous. When an algal bloom appears, the concentration of toxins increases faster than the bacteria can break it down.

Mussels, clams and other mollusks can accumulate toxins from phytoplankton.

Some of these toxins cause mild problems if consumed by humans, such as headaches and upset stomachs, while others can cause serious neurological and hepatic symptoms that can lead to death. These effects can be caused by direct or indirect contact with an algal bloom. Direct exposure can occur from swimming or drinking affected water. Indirect contact can occur from eating animals that have been exposed to the toxic bloom, particularly shellfish.

Shellfish are susceptible to toxins because they are filter feeders. Filter feeders ingest food by taking up the water surrounding them and then filtering out what they do not wish to ingest. This method accumulates toxins inside the shellfish system. Organisms that eat the shellfish (including humans) are consuming the concentrated toxins, which can reach deadly levels.

Filamentous Algal Bloom

Filamentous algae is a collection of microscopic algae that clumps together in strings and mats at the surface of the water. These accumulations can vary from a small, woolly patch near shore to a widespread, slimy green covering. Filamentous algae are often referred to as pond scum, and appear in eutrophic (nutrient-rich) bodies of water. More often than not, filamentous algae are more of a nuisance than a danger. They are somewhat more controllable in that the algae clumps can be physically removed from the water. While large filamentous algal blooms will stop sunlight from penetrating the water and reaching submerged plants, the biggest threat associated with them is oxygen depletion.

Oxygen Depletion and Fish Kills

If an algal bloom appears, a fish kill can occur shortly thereafter due to the environmental stresses caused by the bloom. A fish kill, also known as a fish die-off is when a large concentration of fish die. The most common cause of this event is lack of oxygen. If a phytoplankton population grows to an excessive amount, the amount of usable oxygen in the water can be depleted ⁴⁵. Oxygen depletion has two algal-bloom-related causes: respiration and decomposition. Algae and cyanobacteria consume oxygen at night (respiration) when there is not light for photosynthesis ⁴⁴. If there is a bloom, the phytoplankton and other aquatic organisms (like fish) can consume more oxygen than is produced. Likewise, if large portions of the algal bloom die off at once, bacteria will start to consume oxygen in order to decompose the dead algae. This can reduce oxygen concentrations to below sustainable levels. If oxygen levels get too low, fish and other aquatic creatures may die.

How do you Measure Phytoplankton?

While phytoplankton concentrations can be measured by sampling, this can be difficult and time-consuming. Plankton nets do not always catch the smallest of phytoplankton, and do not provide an accurate estimate of water

volume. Box or tube traps offer an exact volume, but require lab sedimentation or settling chambers to concentrate the algae population for counting. Furthermore, phytoplankton can be found at multiple depths in the water column, which requires multiple sampling efforts and risks missing layers of phytoplankton in between sample depths. The main advantage of sampling phytoplankton is the ability to analyze and identify the species present.

Measuring Chlorophyll

An easier and more efficient method is to use a chlorophyll sensor. As all phytoplankton have chlorophyll A, a chlorophyll sensor can be used to detect these organisms in-situ. In addition to providing immediate data, it can be used for continuous or long-term monitoring and recording. However, as a chlorophyll sensor assumes all algae and cyanobacteria have the same levels of chlorophyll A, it only provides a rough estimate of biomass. It also cannot be used to identify specific species.

Even with its limitations, in-situ chlorophyll measurements are recommended in Standard Methods for the Examination of Water and Wastewater to estimate algal populations. Chlorophyll sensors are also an in-situ method for determining the trophic state (nutrient-rich, stable, or nutrient-poor) of an aquatic system. A high chlorophyll measurement is an indicator of eutrophication.

Chlorophyll is measured in micrograms per liter ($\mu\text{g/l}$). Chlorophyll sensors rely on fluorescence to estimate phytoplankton levels based on chlorophyll concentrations in a sample of water. Fluorescence means that when the chlorophyll is exposed to a high-energy wavelength (approximately 470 nm), it emits a lower energy light (650-700 nm). This returned light can then be measured to determine how much chlorophyll is in the water, which in turn estimates the phytoplankton concentration. These estimates are then used to develop parameter limits for bodies of water. As an example, the New Hampshire Department of Environmental Services provides the following chlorophyll guidelines for river quality: a chlorophyll measurement below 7 $\mu\text{g/l}$ is within a desirable range. 7-15 $\mu\text{g/l}$ is less than desirable, while over 15 $\mu\text{g/l}$ is considered problematic.

Measuring Blue-Green Algae

Blue-green algae, or cyanobacteria, are the only phytoplankton that contain phycocyanin and phycoerythrin, making the pigments good indicators of the amount of cyanobacteria in a body of water. While chlorophyll measurements can be used to estimate entire phytoplankton populations en masse, the accessory pigments phycocyanin and phycoerythrin can be measured to estimate cyanobacteria concentrations specifically. Marine cyanobacteria have higher levels of phycoerythrin, while freshwater species have dominating amounts of phycocyanin.

Like chlorophyll sensors, blue-green algae sensors rely on fluorescence to detect the pigment concentration. Phycoerythrin sensors use a wavelength around 540 nm, while phycocyanin sensors emit a wavelength at 600 nm. Due to the differences in secondary pigment concentrations between species, it is recommended to use the phycocyanin BGA sensor in freshwater applications, and the phycoerythrin BGA sensor in saltwater.

Exercise 1. Make up 20 different types of questions for text A.

Exercise 2. Retell text A.

Exercise 3. Write a short summary of text A.

Text B (6 337)

Aquatic ecologists are concerned with blooms (very high cell densities) of algae in reservoirs, lakes, and streams because their occurrence can have ecological, aesthetic, and human health impacts. In waterbodies used for water supply, algal blooms can cause physical problems (e.g., clogging screens) or can cause taste and odor problems in waters used for drinking. Blooms involving toxin-producing species can pose serious threats to animals and humans.

Algae in Aquatic Ecosystems

The term "algae" is generally used to refer to a wide variety of different and dissimilar photosynthetic organisms, generally microscopic. Depending on the species, algae can inhabit fresh or salt water.

In modern taxonomic systems, algae are usually assigned to one of six divisions (equivalent to phyla; see box on page 22). The misnamed blue-green algae are often grouped with algae because of the chloroplasts contained within the cells. However, these organisms are actually photosynthetic bacteria assigned to the group cyanobacteria.

Fresh-water algae, also called phytoplankton, vary in shape and color, and are found in a large range of habitats, such as ponds, lakes, reservoirs, and streams. They are a natural and essential part of the ecosystem. In these habitats, the phytoplankton are the base of the aquatic food chain. Small fresh-water crustaceans and other small animals consume the phytoplankton and in turn are consumed by larger animals.

Bloom Occurrences and Impact

Under certain conditions, several species of true algae as well as the cyanobacteria are capable of causing various nuisance effects in fresh water, such as excessive accumulations of foams, scums, and discoloration of the

water. When the numbers of algae in a lake or a river increase explosively, an algal "bloom" is the result. Lakes, ponds, and slow-moving rivers are most susceptible to blooms.

Algal blooms are natural occurrences, and may occur with regularity (e.g., every summer), depending on weather and water conditions. The likelihood of a bloom depends on local conditions and characteristics of the particular body of water. Blooms generally occur where there are high levels of nutrients present, together with the occurrence of warm, sunny, calm conditions. However, human activity often can trigger or accelerate algal blooms. Natural sources of nutrients such as phosphorus or nitrogen compounds can be supplemented by a variety of human activities. For example, in rural areas, agricultural runoff from fields can wash fertilizers into the water. In urban areas, nutrient sources can include treated wastewaters from septic systems and sewage treatment plants, and urban stormwater runoff that carries nonpoint-source pollutants such as lawn fertilizers.

An algal bloom contributes to the natural "aging" process of a lake, and in some lakes can provide important benefits by boosting primary productivity. But in other cases, recurrent or severe blooms can cause dissolved oxygen depletion as the large numbers of dead algae decay. In highly eutrophic (enriched) lakes, algal blooms may lead to anoxia and fish kills during the summer. In terms of human values, the odors and unattractive appearance of algal blooms can detract from the recreational value of reservoirs, lakes, and streams. Repeated blooms may cause property values of lakeside or riverside tracts to decline.

Toxic Blooms

Some algae produce toxic chemicals that pose a threat to fish, other aquatic organisms, wild and domestic animals, and humans. The toxins are released into the water when the algae die and decay.

The most common and visible nuisance algae in fresh water, and the species that are often toxic, are the cyanobacteria. A cyanobacterial bloom will form on the surface and can accumulate downwind, forming a thick scum that sometimes resembles paint floating on the water. Because these mats are blown close to shore, humans and wild and domestic animals can come into contact with the unsightly material.

Blooms of toxic species of algae and cyanobacteria can flood the water environment with the biotoxin they produce. When toxic, blooms can cause human illnesses such as gastroenteritis (if the toxin is ingested) and lung irritations (if the toxin becomes aerosolized and hence airborne). Other cyanobacterial toxins are less drastic, and cause skin irritation to people who swim through an algal bloom. Toxicity can sometimes cause severe illness and death to animals that consume the biotoxin-containing water.

Cyanobacterial toxins are known to affect bean photosynthesis when they are present in irrigation water. The toxins also can modify zooplankton

communities, reduce growth of trout, and interfere with development of fish and amphibians. In some cases, toxins can be bioconcentrated by fresh-water clams.



Some algal blooms in fresh water may only be a nuisance, but others can deplete dissolved oxygen in the water or generate biotoxins that are harmful to birds, fish, and other animals. This Canada goose swims among a floating layer of heavy, but probably harmless, algal growth.

Microcystins comprise the most common group of about fifty cyanobacterial toxins. Among these toxins are ones that, if ingested in sufficient quantity, can harm the liver (hepatotoxins) or nervous system (neurotoxins). Microcystins can persist in water because they are stable in both hot and cold water. Even boiling the water, which makes the water safe from harmful bacteria, will not destroy microcystins. As a result of this threat, the Canadian government implemented a recommended water-quality guideline of 1.5 μg per liter of microcystin-LR (the most common hepatotoxin), and other countries will likely follow suit. In Canada as well as the United States, there are few reports of injury and no reports of human deaths resulting from microcystins in drinking water, in large part because surface-water sources of drinking water (e.g., reservoirs, lakes, and rivers) must undergo filtration and chlorination at water utilities prior to being distributed to customers. (Cyanobacterial toxins can be removed from water only by activated charcoal filters and chlorination.)

Control Considerations

Repeated episodes of algal blooms can be an indication that a river or lake is being contaminated, or that other aspects of a lake's ecology are out of balance. While cyanobacterial blooms receive the most public and scientific attention, the excessive growth of other algae and other aquatic plants also can cause significant degradation of a lake or pond, particularly in waters receiving

sewage or agricultural runoff. Aquatic biologists and other water-quality specialists often are called to identify the causes and recommend management steps to reduce or control the problem.

However, prevention of a problem is always better than trying to fix the problem after it happens. Controlling agricultural, urban, and stormwater runoff; properly maintaining septic systems; and properly managing residential applications of fertilizers are probably the most effective measures that can be taken to help prevent human-induced fresh-water algal blooms.

Exercise 1. Make up 10 different types of questions for text B.

Exercise 2. Retell text B.

Exercise 3. Write a short summary of text B.

Text C

Information on marine algae

This site is a source of general information on all aspects of seaweeds. Seaweeds are marine algae: saltwater-dwelling, simple organisms that fall into the somewhat outmoded, but still useful, category of "plants". Most of them are the green (about 1500 species), brown (about 1800 species) or red (about 6500 species) kinds, samples of which are each illustrated on this page, and most are attached by holdfasts, which generally just have an anchorage function, although a particularly efficient one.

Colourful Seaweed in Galway Rockpool

This short underwater movie is about a minute long and shows a seaweed-dominated rockpool in the lower intertidal of Galway Bay near Spiddal. The pool is lined with the fronds of *Corallina officinalis* (pink), with scattered stands of *Chondrus crispus* (Carrageen Moss, fan-shaped, purple-red) and *Cryptopleura ramosa* (delicate, crimson-red), occasional plants of *Ulva* (Sea Lettuce), young plants of Sea-thong (*Himanthalia elongata*, yellow brown) forming a tree-like canopy; there are occasional plants of Sea Oak (*Halidrys siliquosa* brownish-yellow). Oxygen bubbles can be seen escaping as the movie clip progresses.



Do you know any seaweeds?

Most people know two general categories of seaweeds: wracks (members of the brown algal order Fucales such as *Fucus*) and kelps (members of the brown algal order Laminariales such as *Laminaria*), and many have heard of Carrageen or Irish Moss (usually a red alga, *Chondrus crispus*) and Dulse or Dillisk (also a red alga, *Palmaria palmata*). Seaweeds make up the Sargasso Sea, a large ocean gyre in the western Atlantic where drift plants of several species of the genus *Sargassum* accumulate. Seaweeds are particularly important ecologically: they dominate the rocky intertidal in most oceans, and in temperate and polar regions cover rock surfaces in the shallow subtidal. Although only penetrating to 8-40 m in most oceans, some are found to depths of 250 m in particularly clear waters (Mediterranean, Caribbean, Brazil). The Giant Kelp (*Macrocystis*) is one of the largest plants in the world, which in western North America forms an important association with the newly revived Sea Otter.



Yummy Seaweed?

Seaweeds are found throughout the world's oceans and seas and none is known to be poisonous. Many are actually nice to eat and even considered a great delicacy in many Asian countries. Some recent, healthy recipes can be found here. Seaweeds are used in many maritime regions for industrial applications and as a fertiliser. The major direct use of these plants as food is in Japan, China and Korea, and in the Indian Ocean where seaweed cultivation has become a major coastal industry. The main food species grown by aquaculture in these countries are Nori or Zicai (*Porphyra*, a red alga), Kombu, Kunbu or

Haidai (*Laminaria* or *Saccharina*: brown algae) and Wakame (*Undaria*, also a brown alga). In Japan alone, the total annual production value of nori amounts to more than US\$2 billion, one of the most valuable crops produced by aquaculture in the world. In most western countries, seaweed consumption is relatively restricted and there has not been any great pressure to develop mass cultivation techniques. On this site, seaweed aquaculture, particularly nori, a Japanese red seaweed, is described in detail.



Uses of Seaweed

Industrial utilisation of seaweed is mostly centred on the extraction of phycocolloids (marine hydrocolloids), and, to a much lesser extent, certain fine biochemicals. Fermentation and pyrolysis and the use of seaweed as biofuels are not an option on an industrial scale at present, but are possible options for the future, particularly as conventional fossil fuels run out. Seaweeds are being used in cosmetics, and as organic fertilisers. They have the potential to be much more widely used as a source of long- and short-chained biochemicals with medicinal and industrial uses. Marine algae may also be used as energy-collectors and potentially useful substances may be extracted by fermentation and pyrolysis. Seaweed extracts appear in the oddest of places; you almost certainly have eaten some sort of seaweed extract in the last 24 hours as many processed foods such as chocolate milk, yoghurts, health drinks, and even the highest-quality German beers contain seaweed polysaccharides such as agars, carrageenans and alginates! Seaweed baths have been popular in Ireland and Britain since Edwardian times, and seaweed wraps and treatments have become more popular in the last few years. A recent innovation is the apparent incorporation of seaweed into a fibre, although some commentators have cast doubt on the presence of any seaweed in fabrics advertised as such.

Ocean ecosystems plagued by agricultural runoff



Kevin Arrigo (left), associate professor of geophysics; Pamela Matson, dean of the School of Earth Sciences; and Mike Beman, a doctoral student in the Geological and Environmental Sciences Department, used satellite imagery to demonstrate how agricultural runoff fuels large algal blooms in vulnerable areas of the ocean.

Researchers have long suspected that fertilizer runoff from big farms can trigger sudden explosions of marine algae capable of disrupting ocean ecosystems and even producing "dead zones" in the sea. Now a new study by Stanford University scientists presents the first direct evidence linking large-scale coastal farming to massive algal blooms in the sea.

Writing in the March 10 issue of the journal *Nature*, the authors conclude that some highly productive regions of the ocean are much more vulnerable to agricultural runoff than was previously assumed.

The study is based on satellite imagery of Mexico's Gulf of California, also known as the Sea of Cortez—a narrow, 700-mile-long stretch of the Pacific Ocean that separates the Mexican mainland from the Baja California Peninsula. The area is a hotspot of marine biodiversity and one of Mexico's most important commercial fishing centers.

"Biological productivity in most of the world's oceans is controlled by the supply of nutrients to the surface water," wrote the authors, who are all affiliated with Stanford's School of Earth Sciences. "The Gulf of California contains some of the highest nutrient concentrations in the oceans and sustains highly elevated rates of biological productivity."

In the gulf, wind-driven upwellings regularly bring nitrogen and other nutrients from the seafloor to the surface, stimulating the rapid reproduction and growth of microscopic algae called phytoplankton. These algal blooms are natural events that benefit life in the gulf by generating tons of phytoplankton—a major source of food for larger organisms.

But some phytoplankton species produce harmful blooms, known as red or brown tides, which release toxins in the water that can poison mollusks and fish. Excessively large blooms can also overwhelm a marine ecosystem by

depleting oxygen in the water. Scientists suspect that many harmful blooms are artificially fueled by fertilizer runoff from farms, which dump tons of excess nitrogen into rivers that eventually flow into the sea.

"There has been an international effort to try to understand the productivity of the oceans and their potential vulnerability to nitrogen," said Pamela A. Matson, the dean of the School of Earth Sciences and co-author of the *Nature* study. "A map has been developed showing special regions in the world where nitrogen is low relative to other nutrients that phytoplankton need to grow, and the Gulf of California is one of those regions. Our study is the first to show that the addition of human-caused nutrients in these special areas causes extra blooms of phytoplankton."

Yaqui Valley agriculture

To assess the impact of agricultural runoff on the gulf, the Stanford scientists turned their attention to one of Mexico's most productive coastal farming regions—the Yaqui River Valley, which drains into the gulf.

"The Yaqui Valley agricultural area is 556,000 acres [225,000 hectares] of irrigated wheat," Matson said. "The entire valley is irrigated and fertilized in very short windows of time during a six-month cycle. The excess water from irrigation runs off through streams and channels into the estuaries and then out to sea."

Matson and her colleagues wondered if each fertilization and irrigation event would trigger a noticeable phytoplankton bloom near the mouth of the Yaqui River, which is located on the mainland side of the gulf. To find out, the researchers analyzed a series of images from an orbiting NASA satellite called SeaWiFS, which is equipped with special light-sensitive instruments that can detect phytoplankton floating near the surface of the sea.

"These instruments measure the level of greenness in the water," explained Kevin Arrigo, associate professor of geophysics. "The greener the water, the more phytoplankton there are."

Dramatic results

Stanford doctoral candidate J. Michael Beman carefully analyzed dozens of SeaWiFS images taken over the gulf from 1998 through 2002. The results were dramatic.

"I looked at five years of satellite data," said Beman, lead author of the study. "There were roughly four irrigation events per year, and right after each one, you'd see a bloom appear within a matter of days."

Each bloom was enormous, he said, covering from 19 to 223 square miles (50 to 577 square kilometers) of the gulf and lasting several days. "Sometimes eddies actually pulled the plumes across the gulf, from the mainland side all the way to the Baja Peninsula," Beman added.

"Mike found that immediately following each one-week window in which much of the valley was irrigated, there was a response in the ocean off the coast of the Yaqui Valley," Matson explained.

"We were quite surprised," Arrigo added, noting that the *Nature* paper marks the first time that scientists have documented a "one-to-one correspondence between an irrigation event and a massive algal bloom."

Red tides and dead zones

According to the researchers, artificially induced algal blooms could have major impacts on recreational and commercial fishing, major industries in the gulf. Red tides, for example, can cause outbreaks of life-threatening diseases, such as paralytic shellfish poisoning, which can shut down mussel and clam harvesting for long periods of time.

Another concern is hypoxia, or oxygen depletion, caused by excessive algae growth. As the algal mass sinks, it is consumed by bacteria, which use up most of the oxygen in the water as they multiply. The result is an oxygen-depleted dead zone at the bottom of the sea where few creatures can survive. A massive dead zone appears every summer in the Gulf of Mexico off the coast of Louisiana and Texas. Scientists believe that agricultural runoff from the Mississippi River plays a pivotal role in creating this annual dead zone, which measured 8,500 square miles (22,000 square kilometers) in 2002—an area bigger than the state of Massachusetts.

"In the Gulf of Mexico, there's the possibility that hypoxia could occur at a local scale, which could be devastating to the shrimp and shellfish industries," Matson said. "Shrimp fisheries are very important economically, and they're already under a lot of stress from overfishing and aquaculture. It is possible that agricultural runoff could cause additional stress if it does lead to toxic blooms or hypoxia."

She and her colleagues plan to conduct follow-up studies to assess the ecological impact of runoff events in the Yaqui Valley. They also expressed concern about the impact of large farming operations in other vulnerable subtropical and tropical oceans, including Southeast Asia, West Africa, the Arabian Sea and the Bay of Bengal. "Now we can go back and predict which areas of the world will be vulnerable in the same way the Gulf of California is to nutrients coming off the land," Matson said.

"Inarguably, the effects of marine nitrogen pollution are becoming extremely widespread and severe as a consequence of the global expansion of industrialized agriculture and the intensification of certain practices," the authors wrote. "Nitrogen-based fertilizers are the primary source of nitrogen pollution, and their use is predicted to double or triple over the next 50 years."

The *Nature* study was funded by the David and Lucile Packard Foundation and the National Science Foundation Graduate Research Fellowship Program.

Exercise 1. Make up 15 different types of questions for text C.

Exercise 2. Retell text C.

Exercise 3. Write a short summary of text C.

Grammar

THE PERFECT CONTINUOUS FORMS

THE PRESENT PERFECT CONTINUOUS

AFFIRMATIVE			NEGATIVE			INTERROGATIVE		
I	have been reading		I	not been reading		Have	I	been reading?
He	has been reading		He	not been reading		Has	he	been reading?
She	has been reading		She	not been reading		Has	she	been reading?
It	has been reading		It	not been reading		Has	it	been reading?
We	have been reading		We	not been reading		Have	we	been reading?
You	have been reading		You	not been reading		Have	you	been reading?
They	have been reading		They	not been reading		Have	they	been reading?

I've been reading
She's been reading

She hasn't been reading
We haven't been reading

THE PRESENT PERFECT CONTINUOUS TENSE

<p><u>Inclusive</u> denotes an action which began in the past, has been going on up to the present and is still going on.</p>	<p><u>Exclusive</u> denotes an action which was recently in progress, but is no longer going on at the present moment</p>
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<p>It is usually used with: - <i>since, for.</i> - I have been learning</p>	<p>- There are puddles</p>
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English for 10 years. - I have been learning Spanish <i>since</i> we last met and have made some progress in it. It is rendered in Ukrainian by the present .	everywhere. It has been raining hard. It is rendered in Ukrainian by the past .
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NOTE: The verbs not used in the *Continuous form* cannot be used in the *Perfect Continuous form* either.

In this case we use the *Perfect form*:

- I **have known** him since last year.

EXERCISES:

Ex. 1. Образуйте форму *Present Perfect Continuous* от следующих глаголов:

to wait, to travel, to walk, to work, to study, to examine, to play, to listen, to talk, to discuss, to wear, to build, to sign, to do, to make, to sleep.

Ex. 2. Put the verb in brackets into the *Present Perfect Continuous*.

1. I (work) on this problem for two months. 2. She (sleep) all this time? 3. You (talk) this nonsense all day long. 4. "Any news about your latest project?" - "I just (tell) about it." 5. He says he (not/feel) well for the past week. 6. You are red all over. How long you (lie) in the sun today? 7. I (try) to get you all day, George! 8. I (not/sleep) well for months. 9. We (see) each other regularly since the party at Helen's. 10. "Jack isn't working now." - "He (not/work) for years."

Ex. 3. Make up sentences using the *Present Perfect Continuous*

Example: Suzy is in her riding boots, (she/ride) - She has been riding.

You are dirty all over. What (you/do) - What have you been doing?

1. Have a rest now. (you/work too hard/lately)
2. You are shivering, (you/stand/in this cold/long?)
3. Her hands are red and wet. (she/scrub/the floors/for three hours)
4. The children are quite voiceless. (they/sing at the top of their voices/since morning)

Ex.4. Make up the questions to the following sentences. Pay attention that the typical question for *Perfect Continuous* is *how long*?

1. This secretary has been working at our office for three years. 2. My friends have been travelling in the East for three weeks. 3. My sister has been looking for her gloves for two hours. 4. My colleagues have been discussing this matter for three days. 5. My brother has been wearing this suit for a long time. 6. My uncle has been writing his new book since 2003. 7. It has been raining since morning. 8. These people have been living in our house since June. 9. This play has been running at the theatre since Tuesday.

Ex. 5. Answer the questions using *Present Perfect Continuous*.

1. What have you been doing since Monday? 2. What have you been doing since morning? 3. What have you been doing since September? 4. What have you been doing since 2003? 5. How long have you been studying English? 6. How long have you been living in Moscow? 7. How long have you been dreaming of a new job? 8. How long have you been thinking of going abroad? 9. How long have you been smoking? 10. How long has it been raining?

Ex. 6. Translate into English.

1. Ти давно мене чекаєш? 2. Як давно у вас болить нога? 3. Він учиться вже три години. 4. Я вчу іспанську з вересня. 5. Анна шукає роботу шість місяців. 6. Мій брат палить десять років. 7. Вони працюють в Манчестері з 1 березня. 8. Який глибокий сніг! Скільки часу йшов сніг? 9. У тебе очі червоні. Ти плакала? 10. З якого віку ти граєш в шахи? 11. Як давно ви живете в цьому місті?

Ex. 7. Translate the following sentences using *Present Continuous* or *Present Perfect Continuous*.

1. Твій друг чекає на тебе в машині. - Він чекає мене вже півгодини. 2. Твої колеги все ще обговорюють це питання. - Вони обговорюють його вже тиждень. 3. Сьогодні знову йде дощ. - Дощ іде вже три дні. 4. Твій брат сьогодні не учиться, він грає в комп'ютерні ігри. Він грає в комп'ютерні ігри з ранку. 5. Ти знову палиш? - Я вже дві години не палив. 6. Чому твій старший брат сьогодні цілий день спить? - Він не спав дві ночі. 7. Чому дитина плаче? - Я не знаю. Вона плаче вже три години. 8. Чому твоя сестра веде машину так обережно? - Вона не водила машину з листопада. 9. Ти все ще перекладаєш ту ж саму статтю? - Так, я перекладаю її з четверга. 10. Чому твій друг весь час мовчить? - Не знаю, він мовчить вже дві години.

Ex. 8. Translate the following sentences using *Present Perfect* or *Present Perfect Continuous*.

1. Твій колега вже продав свою стару машину? - Він продає її вже два місяці, але ще не знайшов покупця. 2. Твоя сестра вже вимила посуд? - Вона мие його вже дві години, але ще не вимила. 3. Ти знайшла свою записну книжку? - Я шукаю її з ранку, але ще не знайшла її. 4. Твоя сестра прочитала книгу, яку я дав їй взимку? - Вона читає її півроку, але ще не прочитала. 5. Поліцейські перевірили твої документи? - Вони перевіряють їх п'ятнадцять хвилин, але ще не віддали їх мені. 6. Твій брат уже випрасував свої сорочки? - Він прасує їх з ранку, і випрасував все, крім однієї. 7. Твій друг вже відзначив свій день народження? - Він відзначає його вже три дні. 8. Як давно ваші друзі одружені? - Наші друзі одружені три роки. Але вони люблять один одного вже цілу вічність. 9. Як давно ти знаєш свого колегу? - Я знаю його з 1999 року. А працюємо ми разом з 2001 року. 10. Як давно ти не відпочивав? - Я не відпочивав уже два роки.

Ex. 9. Put the following statements into the indirect speech:

My colleague said;

1. «I have been waiting for your call since morning».
2. «I have been wearing these trousers for two years».
3. «It hasn't been raining for two weeks».
4. «I have been learning German for a long time, but I haven't learnt it yet».
5. «We haven't been watching TV since Wednesday».
6. «I haven't been playing golf since autumn».
7. «I haven't been smoking since morning».
8. «I haven't been talking to our business partners for two month».
9. «We haven't been discussing this matter since April».
10. «I haven't been walking in this park since April».

THE PRESENT CONTINUOUS AND PRESENT PERFECT CONTINUOUS

Compare:

The Present Continuous	The Present Perfect Continuous
when? - (now) What are you writing? I am writing a letter.	how long? I have been writing it for an hour

Ex. 10. Open the brackets.

1. There is nobody in that room. ____ you (read) detective stories again? 2. What ____ you (do) here? 3. He ____ (do) lessons since after lunch. 4. "Where's Fred?" - "He ____ (work) in the garden. He ____ (plant) rose bushes since dawn." 5. All things in the drawing-room are out of place. The children ____ (play) hide-and-seek! 6. I ____ (think) of your aunt's proposal since we last met. 7. Where you ____ (swim) at this early hour of the day? 8. We ____ (stay) at the Regent Hotel; won't you come and see us? 9. For a week now those mice ____ (steal) food from the pantry. 10. Down by the pine woods they ____ (lay) out a new road.

Ex. 11. Use Present Continuous or Present Perfect Continuous.

1. He had barely entered the room when his secretary said: "Somebody (ring) for you for the last five minutes." 2. I (read) Shakespeare in your absence and now I (try) to learn this beautiful sonnet. 3. "What the children (do)?" - "They (play) games all morning and now they (learn) to tell time by the position of the sun." 4. "Our friends (leave)." - "How long they (stay) with you?" 5. "What you (think) about?" - "I (not/think), I (count) the birds in the sky." 6. "Where's my daughter?" - "She (talk) to a policeman." - "What's happened?" - "She (drive) without a license." 7. What you (do) to yourself since I've been away? 8. "Florence, dear, I (look) for you everywhere." - "What's happened?" - "Mr Cusak (wait) for you in the house."

Ex. 12. Translate into English.

1. "Чоловік біля вікна дивиться на нас." - "Так, і що з цього?" - "Я його зустрічаю в бібліотеці останнім часом." 2. "Куди ти так поспішаєш?" - "Мама чекає мене у метро вже п'ять хвилин." 3. "Ви читаете цю газету?" 4. "Яка з дівчат Аня?" - "На ній червона сукня." 5. "Я ношу ці туфлі вже два роки. Вони дуже зручні." 6. "Кого ви чекаєте?" 7. "Давно ви його чекаєте?" 8. "Що ви слухаєте?" 9. "Вона викладає англійську з минулого року." 10. "Вона вчить мене англійської мови." 11. "Я проявляв фотографії весь день." 12. "Я проявляю наші літні фотографії." 13. "Кому ти махаєш (рукою)?"

THE PRESENT PERFECT AND PRESENT PERFECT CONTINUOUS

COMPARE :

<p>The Present Perfect - denotes a completed action, a result.</p> <p>The bottle is empty. Somebody has drunk the lemonade.</p> <p>I have typed your letter. (=I've done it.)</p>	<p>The Present Perfect Continuous - has an implication of incompleteness.</p> <p>Somebody has been drinking from this bottle. It's half empty.</p>
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Ex. 13. Put the verbs in brackets into the Present Perfect and the Present Perfect Continuous.

1. Many people believe that our climate (change) very markedly. 2. I (collect) the pictures with bridges since I graduated from the University. Now I (collect) enough to organize an interesting exhibition. 3. She (read) a fairytale to the children since breakfast. They (not/, finish) yet. 4. Those people (wait) for a tram for the last fifteen minutes. I'm afraid, they don't know that the electricity (go) out. 5. What (happen) to Mary? John (ring) her up the whole evening and nobody (answer). 6. "You (come) out at last," he said. "Well, I (stand) here long, and (listen) to the nightingale." 7. So, you (arrive). We just (speak) of you. 8. "How long you (know) about it?" - "I (know) it all the time." 9. "Why you (turn) off the music?" - "I (play) the records for hours; I'm tired now." 10. I definitely (decide) to give up.

Ex. 14. Decide on the correct form of the verb with each word combination.

Example: (She/clean/the flat/for two hours) - She has been cleaning the flat for two hours.

(She/do/two rooms/so far) - She has done two rooms so far.

1. (I/read/Pushkin's prose/in the garden)
2. (I/read/three of Belkin's stories)
3. (Mother/sew/in the morning room/since lunch)
4. (She/make/a ball dress/for me)
5. (My brother/ski/since childhood)
6. (He/take part/in many championships)
7. (Father/write/children's poems/since he retired)

8. (He/write/four books)

Ex. 15. Ask a question using the correct verb form.

Example: He trains young athletes.

How many young athletes has he trained?

1. She is travelling in the East. How long _____ ?
2. He translates books. How many books _____ ?
3. He translates from Japanese. How long _____ ?
4. They are visiting the hospital. How many times _____ ?

Ex. 16. Put the verb into the correct form: *Present Perfect* or *Present Perfect Continuous*.

Examples: I've run (run) out of petrol. Can you lend me some?

You are out of breath. Have you been running (you/run)?

1. The secretary _____ (type) the letters you gave her but she _____ (not/finish) them yet.
2. There's sufficient light, you _____ (waste) electricity for nearly an hour.
3. Look! The child _____ (fall) asleep!
4. Open the window. Somebody _____ (smoke) here.
5. She _____ (do) the accounts all evening. But she _____ (go) home already.
6. He is a famous playwright. He _____ (complete) his seventh play.

Ex. 17. Put the verbs in brackets into *the Present Perfect* or *the Present Perfect Continuous Tense*.

I.

1. We (meet) before? 2. I often (see) his name in the papers this year. 3. I (try) to catch the waiter's attention for about 15 minutes now. 4. She (study) English for a year and (learn) many words and expressions. 5. I (not/hear) about him since yesterday. 6. I (look) for him since I finished my lesson but I (not/find) him. I (be) to his office and to the laboratory but he isn't there. 7. "Hello, Sven. You (see) Alex yet?" - "No, I (not/be) to the shop floor today. I (talk) on the phone to our clients all morning." 8. I (be) up here since about six. I (wander) around for hours. 9. I (come) to you to invite you for a ride in the car. 10. I expect these young men (inform) you who I am. 11. I really don't know what you (do) there all this time. 12. I (love) you ever since I first saw you. 13. And that's where they (stay) ever since.

II.

1. "I know what you (think) of these last days," he said.. "You (make) up your mind?" 2. They (struggle) with this problem for about a month and they (solve) it at last. 3. They (discuss) the case for hours but (be) unable to come to any decision. 4. You (see) Harry again. He (put) this idea into your head. 5. You (listen to) gossip. The things you (hear) are quite impossible. 6. I (wait) here since 10 o'clock. Nobody (look) in here. 7. I (tell) you so for years but you never (pay) any attention. 8. She (talk) about it ever since I met her and nothing (come) out of it. 9. She (do) shaping since September and her figure (improve) remarkably. 10. You (ask) him this question for a week and still he (not/ answer) you.

Ex. 18. Translate into English.

1. Чому в тебе сині губи? - Я їла чорницю. 2. Ти з'їв весь кекс? 3. Що ви робите? - Ми збираємо яблука. - Скільки ви вже зібрали? - Ми зібрали 5 кошиків. 4. Я сьогодні робила покупки і нарешті знайшла тобі літні туфлі. 5. Який чудовий запах! Бабуся варить варення. 6. Я полірую цей стіл з самого сніданку. Я дуже втомилася. 7. Що ти робиш в гаражі так довго? - Я накачую шини (pump the tires). Я вже накачав три. Ти допоможеш мені з четвертою? 8. Ти знайома з Томом? - Я знаю його цілу вічність. 9. Чому ви так галасуйте (make a horrible noise)? - Я втратив ключ і намагаюся розбудити дружину, тому я кидаю каміння у вікно спальні. - Ви кидаєте каміння не в то вікно. Ви живете в другому будинку. 10. Він тільки що продав дві свої картини. - Йому пощастило. Мій чоловік малює вже п'ять років і ще не продав жодної картини. 11. Я весь ранок займаюся домашньою роботою і ще нічого не зробив. 12. Чому ви не принесли мені листи? Ви їх ще не надрукували? 13. Куди ти поділа мої черевики? Я ніде не можу їх знайти. - Майк щойно пішов в них. 14. Та людина стоїть на автобусній зупинці останні півгодини. Сказати йому, що останній автобус вже пішов? 15. Мій чоловік збирає картини сучасних художників з тих пір, як ми одружилися. Він уже зібрав так багато, що не знає, куди їх повісити.

Ex. 19. Put the verb in brackets into the *Present Continuous*, the *Present Perfect* and the *Present Perfect Continuous Tenses*.

1. A.: What you (look) for?
B.: We (look) for school things. We (not/buy) everything yet.
A.: I (buy) everything.
2. A.: What you (do), Jane?

B: I (read).

A.: But it (be) late. What you (read) all this time?

3. A.: Where (be) John?

B : He (work) in the garden.

A : He must be too tired. He (work) there all day.

4. A.: Who you (wait) for?

B : I (wait) for Jack. I (wait) for him since 11 o'clock.

5. A.: They (stand) there for the last 20 minutes.

B.: What they (talk) about all this time?

6. A.: What you (think) of?

B.: I (think) of our life together.

7. A.: The girls (sing) in the sitting-room.

B.: They (sing) since I (walk) in.

Ex. 20. Open the brackets. Use *the Past Continuous, the Past indefinite, the Present Perfect or the Present Perfect Continuous Tenses.*

1. Greg (return) at last. Mary (wait) for him so long. 2. Margaret, you (read) my letters. Don't deny it. 3. When I (come) home, Mother (make) breakfast and Father (have) his morning tea. 4. When you (discuss) it? I never (hear) the subject mentioned. 5. No, you can't go to the Smiths'. You (be) there twice this week. 6. Why, you (not/change) at all. I (recognise) you the moment I (see) you. 7. Terry (go) shopping already? 8. When you (go) to bed? 9. I (offer) to buy them out. 10. My dear girl, you (overeate) for years. You (lose) your looks, you (lose) your figure. You can't get back to normal overnight. Remember what doctor Lecter (tell) you on Monday. 11. I (see) her when I (drive) past their house on my way to work. 12. He (not/say) a single word to me yet and he (get) that letter on Sunday. 13. The children (talk) of nothing else for weeks. 14. And we (sing) together ever since that time. 15. Where he (be)? - He (sit) at his desk. He (not/move) since she (leave).

Ex. 21. Open the brackets. Use *the Present Indefinite, the Present Continuous, the Present Perfect or the Present Perfect Continuous Tenses.*

1. Andy, you (hear) me? I (talk) to you for a minute already. 2. I want to see how much the place (change) since I was there last. 3. We (not/see) them ever since. 4. I don't want to take a cure at all. I am perfectly happy. All my life I (be) perfectly happy. 5. Here's my key. I (leave). 6. I (go) to the shops, (not/begin) cutting the material until I (come) back. 7. Wait till you (see) Moose and (talk)

to him. 8. The children (live) with their aunt since their mother (be) ill. 9. I must not let my eyes get all red and swollen, or Henry'll know I (cry). 10. The train (not/arrive) yet but a lot of people (stand) on the platform. 11. I (know) him very well. We (know) each other since I came to live in this house. 12. He says he (listen) to the same tunes for fifteen years. 13. Earthquakes (rock) the surface in different parts of the world from time to time. 14. What are you going to say to the President, if he (ask). 15. "Dear little Hans," cried Rotten, "I'm in great trouble. My little boy (fall off) a ladder and (hurt) himself." 16. "You (hear) that Walter (ask) Mary to marry him?" - "Again? He (ask) her three times so far. And she obstinately (refuse) him all this time. She (accept) at last?" 17. "This other gentleman," cried Mr. Pickwick, "is, as you will see when you (read) the letter, a very near relative, or I should rather say a very particular friend of your son's." 18. He (be) here for six years. He (do) a lot to help things change. 19. My good man, Signora Lollobrigida (be) a head nurse in general to all of us. She (look) after sick people ever since she was in short frocks, and (do) it better than any sister of mercy I (know). I needn't leave any directions if she (come). 20. Things (not/be) the same since the British went. 21. Your attitude (puzzle) me for some time now. Why you (look) at me like that? I (speak) about your last article. What (make) you write all those awful accusations?

Ex. 22. Translate the sentences into English.

1. Боюся, ви наслухалися розмов когось старшого від вас. 2. "Як справи у вашого сина?" - "Дуже добре. Я тільки що йому телефонувала. "3." Ви давно тут працюєте? "- Близько трьох років. "4." Ось і ви, - сказав він. - Я давно вас чекаю. "5. Я з учорашнього дня думаю про те, що ви сказали. 6. Тед, я вас шукаю всюди. Що ви робили весь цей час? 7. Заходь, дорогий. Я цілий ранок намагаюся знайти тебе. 8. Хлопчики в саду. Вони вже з півгодини спостерігають за птахами. 9. Скажіть, коли прийде механік? Я чекаю його з 10-ї години. 10. Ось уже тридцять років, як я вивчаю своїх побратимів (humankind). 11. Дощ іде вже три дні. 12. Я не сплю вже другу ніч.

Ex. 23. Translate into English.

I.

1. Я його тільки що бачила. Він переходив вулицю. 2. Ти в житті своєму ніколи по-справжньому не працював. 3. Коли він приходив? 4. Директор ще не повернувся. 5. Що ви там так довго розглядали? 6. Останнім часом ви менше працюєте. 7. Спасибі, я вже пив каву. 8. Вона мені все розповіла. 9. Вчора, коли ми їхали додому, вона мені все розповіла. 10. Вони грають в шахи з самого обіду. 11. Я працюю над цією темою з весни. 12. Я про вас

так багато чула. 13. Коли він в останній раз написав вам? 14. Де я бачила це обличчя? 15. Вона все пояснила. Вона була тоді хвора і не могла подзвонити. 16. Ти написала мамі?

II.

1. Він тренує цю команду всього півроку, але вони зробили великі успіхи. 2. Хто взяв мій словник? Я його вчора тут на полиці залишила. 3. Він подивився на мене і нічого не сказав. Він чекав когось. 4. Вони сперечаються вже півгодини, і я втратила всякий інтерес. 5. Чому ти з нею так розмовляв? 6. Ви давно його знаєте? 7. Давно ви мене чекаєте? 8. Коли ви почали вивчати англійську мову? 9. У тебе руки червоні. Що ти робила? - Я чистила буряк. 10. Він поїхав на минулому тижні. 11. Він підійшов до вікна, відчирив його і помахав комусь рукою. 12. Ми чекаємо тут з другої години, і ніхто не сказав нам, що робити. 13. Боюся, що вона передумала. Вона мені нічого не сказала, коли я бачила її в останній раз.

THE PAST PERFECT CONTINUOUS

AFFIRMATIVE	NEGATIVE	INTEROGATIVE
I had been reading	I had not been reading	Had I been reading?
I'd been reading	I hadn't been reading	

THE PAST PERFECT CONTINUOUS TENSE

Inclusive

denotes an action which began before a definite moment in the past, continued up to that moment and was still going on at that moment.

It is used with:

- **since,**
- **for.**

We **had been climbing** for six hours when at last we reached the summit of the mountain.

Exclusive

denotes an action which was no longer going on at a definite moment in the past, but which had been in progress not long before.

Outside everything was in deep snow. It **had been snowing** hard all night (not at that moment).

EXERCISES

Ex. 24. Form *Past Perfect Continuous* from the following verbs:

to joke, to laugh, to celebrate, to drive, to run, to lie, to hang, to burn, to keep, to play, to look, to sing, to dance, to swim, to lie in the sun.

Ex. 25. Put the verb in brackets into the *Past Perfect Continuous*.

1. Clouds (gather) all day and now rain came down in sheets. 2. "I'm coming all right," said Mr Dilinger, who (shiver) for the last ten minutes. 3. I realized that he had come away with me in order to discuss once more what he already (discuss) for hours with his sister-in-law. 4. I slowly released a breath and only then realized that I (hold) it for some time.

Ex. 26. Put the questions to the following sentences.

1. By the end of the year this secretary had been working at our office for eleven months. 2. My colleagues had been discussing that matter for three hours by the time our chief arrived. 3. We had been lying in the sun for three hours when I felt like going home. 4. By the beginning of March this writer had been writing his novel for two years. 5. My sick brother had been sleeping for three hours by the time our doctor came to examine him. 6. We had been playing golf for two hours when our colleagues joined us. 7. We had been talking about a new script for an hour when my friend suggested to me going to the theatre in order to see the stage.

Ex. 27. Translate the following sentences:

1. Ми вже три години сиділи в кафе біля моря на той час, як почався дощ. 2. Наш колега вже десять років керував машиною, коли стався цей нещасний випадок. 3. Я вже дві години перекладала статтю, коли мені було дозволено користуватися словником. 4. Він вже три роки мріяв про цю жінку, коли вона нарешті сказала йому «так». 5. Вони вже дві години відзначали його день народження до того часу, коли йому вручили цю телеграму. 6. Вона вже дві години переодягалася на той час, коли ми вирішили перенести нашу зустріч. 7. Ми вже двадцять хвилин сміялися над нашою секретаркою, коли вона раптом зрозуміла, що ми мали на увазі. 8. Цей будинок горів дві години до того часу, коли сусіди помітили вогонь. 9. Ця картина тридцять років висіла в будинку його батьків до того часу,

коли він раптом вирішив продати її. 10. Ми дві години шукали мої водійські права біля будинку, коли прийшла сестра і сказала, що я залишив їх на кухні.

Ex. 28. Put the verb in brackets into *the Past Indefinite, the Past Perfect and the Past Perfect Continuous Tenses*.

1. When I (leave) home, the snow already (stop). 2. It (be) 6 p.m. and Jack (be) tired because he (work) hard all day. 3. He clearly (listen) to our conversation and I (wonder) how much he (hear). 4. She (say) she (teach) at this school for twenty years. 5. He (say) he just (finish) the book he (read) all this time. 6. The postman (come) after lunch and (bring) me a letter which I (expect) for a long time. 7. It (rain) since the morning, and the fields (be) quite muddy.

Ex. 29. Answer the questions.

Examples: Did you work at your English yesterday? Yes. I did.

How long had you been working at your English before you went for a walk?

(for an hour) I had been working at my English for an hour.

1. Did it rain yesterday? ____
How long had it been raining when you left home? (for 3 hours) ____
2. Did she work at the University before she retired? ____
How long had she been working there before she retired? (for 25 years) ____
3. Did you stay at the hotel when you were in London? ____
How long had you been living there when Jane arrived? (for a fortnight) ____
4. Did they study French before they went to France? ____
How long had they been studying it before they went there? (for 5 years) ____
5. Did they work on their book last year? ____
How long had they been working on it before they sent it to the publishing house? (for 2 years) ____
6. Did your brother play football yesterday? ____
How long had he been playing football before he took part in the world championship for the first time? (for 6 years) ____
7. Did he listen to that record yesterday? ____
How long had he been listening to it before he could understand all the words? (for an hour) ____
8. Did the children walk in the wood in the morning? ____
How long had they been walking before you called them back? (for 2 hours)

Ex. 30. Make up sentences according to the pattern.

Example: You came home. Your children were watching television.
(they/not/do/any work) - They hadn't been doing any work.

1. Brother and sister came home with angry faces. (they/quarrel/on the way home) _____
2. There was nobody in the flat. But a delicious smell of fresh bread was in the air. (Mother/bake/bread) _____
3. Mary closed her eyes. She felt very tired. (she/read/too long) _____
4. You came home from a party. You were nearly dropping on your feet, (you/dance/all night) _____
5. When I looked at my typewriter, I saw a sheet of paper in it. (somebody/use/my typewriter) _____

Ex. 31. Make up sentences according to the pattern.

Example: I started on my journey. After an hour a tyre went flat.
I had been driving for an hour when a tyre went flat.

1. The lecturer began to speak. After 15 minutes the dean came in.
The lecturer _____ for 15 minutes when _____ .
2. Larry had arranged to meet Amy at her hotel in London. He had lost the address but he thought it was the Savoy. So he went there. After half an hour waiting he realized that he had come to the wrong hotel.
Larry _____ when _____.
3. My father-in-law went to work in America in 1943. Two years later the war ended. My father-in-law _____ when _____.

THE PAST CONTINUOUS AND PAST PERFECT CONTINUOUS

COMPARE :

The Past Perfect Continuous Tense:

- denotes an action going on at a definite moment in the past,
- expresses the previous duration:

It **had been raining** for days

The Past Continuous Tense:

- no previous duration is expressed.

I looked out of the window. It **was raining**.

EXERCISES

Ex. 32. Put the verb into the correct form: the Past Perfect Continuous or the Past Continuous Tenses.

Examples: Their swimming suits were wet. They had been swimming. (swim)

She was in the swimming pool. She was swimming. (swim)

1. The boy was leaning against the tree, out of breath. He ____ (run) very fast.
2. He came into the kitchen. His parents stopped talking. They ____ (talk) about him.
3. She came into the room. Her husband was at his desk. He ____ (write).
4. When the newly weds arrived at the restaurant, their guests ____ (wait) for them. They felt rather hungry because they ____ (wait) for a long time.
5. Julia ____ (stand) at the bus stop for twenty minutes when Ivo drove up and got out of the car.

Ex. 33. Put the verb in brackets into the Past Indefinite, the Past Continuous and the Past Perfect Continuous Tenses.

1. When I (get) home that evening, my little son (eat) dinner himself for the first time.
2. My sister's wedding (be) the only thing everybody (talk) at home for the last two weeks.
3. They (go) back to the hotel and up to their suite, where they (expect) the inspector at six-thirty.
4. Presently he (turn) to look at the corner where she (stand).
5. Scarlett, who (fan) herself with a turkey-tall fan, (stop) abruptly.
6. He just (leave) for the airport when I (call).
7. "Who are you thinking of?" he (ask) after he (look) at me for a few seconds.
8. They (stand) in the open front doorway, waiting for her to come in out of the rain.
9. Their daughter (not/say) where she (sleep) and she (have) a curiously looking box in her hands.

Ex. 34. Put the verb in brackets into the Past Indefinite, the Past Continuous, the Past Perfect and the Past Perfect Continuous Tenses.

1. Nobody (know) where Smith (go). 2. A girl who (stand) under the beech tree (come) up to us. 3. Mary (speak) to Mr Boxwell when I (see) her in the corridor this morning. 4. John (park) the car in Fifth Avenue when a young man in black glasses (appear) from nowhere and (stand) before him. 5. He again (come) to the village where he (live) in his childhood. 6. While we (talk), there (come) a loud knock at the door. 7. He (look) into the drawing-room. The old man (sleep) peacefully in the armchair at the fire-place. 8. When their visitor (leave) John and his mother (stand) near the window. 9. When he (dress), he (go) downstairs, (write) a long letter to his parents and another to his sister. 10. She (welcome) her with a bright smile and (turn) back to the offensive dandelions she (fight) with. 11. While she (read) this notice, a middle-aged woman (appear) in the doorway. 12. When he (come) back to the conference room, he (see) that the situation (change). 13. She (sit) at the table only five minutes when a car (come). 14. Their father (be) still silent, even when they (have) coffee. 15. The three (sit) down to the meal that Susan (prepare). 16. He (sit) thinking of his wife whom he (leave) alone in Europe. 17. They (look) over the accounts together and (find) where she (make) her mistake. 18. I (be) surprised at John's failure because he (be) such a good student previously.

Ex. 35 Put the verb in brackets into the Past Indefinite, the Past Continuous, the Past Perfect and the Past Perfect Continuous.

1. How your chief ____ (find out) that you ____ (come) to work late? 2. I (leave) my house yesterday in a hurry, but I ____ (not/go) far before I (discover) that it ____ (be) ____ going to rain and I ____ (leave) my umbrella at home. 3. He told me that his aunt ____ (live) with them for three months. 4. The discovery of the art of writing ____ (enable) the Ancient Egyptians to remember what their ancestors ____ (do) before them. 5. The Romans ____ (destroy) Jerusalem with fire and ____ (kill) many of the inhabitants. 6. He scarcely ____ (get) outside the door when he ____ (hear) Wardle's voice talking loudly. 7. I knew right away that that was the place I ____ (look for) all my life. 8. At nine o'clock that evening a long black Packard roadster ____ (draw) up to her door, and Arnie ____ (step) out of the front seat where he ____ (sit) with the driver and a girl between them. 9. Mrs Monroe put down the telephone receiver. She ____ (ring) twice and each time the answer ____ (be) the same: Miss Marple was out. 10. I ____ (shout) to him to stop, but at that moment he ____ (run) too fast to hear. 11. He ____ (pick) up the book he ____ (read) before I ____ (come) into the

room, and ____ (turn) the corner of the page to mark the place where he (stop) reading. 12. He ____ (not /eat) since nine that morning and his stomach ____ (growl) with hunger. 13. No sooner they ____ (arrive) at this point than a most violent and startling knocking was heard at the door.

Ex. 36. Translate into English.

1. Вона смертельно посварилася з моїм чоловіком десять хвилин тому. 2. На старій дамі було оксамитове плаття, яке не бачило світла двадцять років. 3. Гості пішли. Тепер вони сиділи самі перед каміном у вітальні. 4. Люди, яких вона зустрічала по дорозі додому, посміхалися їй і питали, як вона провела відпустку. 5. Я думаю, він показав мені близько тридцяти картин. Це був результат шести років, протягом яких він малював. 6. Вона більше не отримувала від нього листів. Він перестав писати за три роки до цього. 7. Я переписав лист від Елізи, поклав його в конверт і пішов на пошту. Сніг припинився. Коли я повернувся, я випив чаю і сів до піаніно. 8. Вона вивчала мистецтво малювання три роки, перш ніж стала працювати у видавництві. Коли я попросив її зробити ілюстрації до моєї книги, вона закінчувала ілюструвати свою першу книгу. 9. Коли я вчора приймала ванну, як завжди, задзвонив телефон. 10. Перед від'їздом ми зайшли до місіс Чандлер. Ми не бачили її деякий час, і моя сестра помітила, що вона сильно змінилася. 11. Не встигли вони проїхати і п'яти миль, як їх зупинила поліція. 12. Він подорожував вже два дні, але виглядав свіжим і не відчував втоми. 13. Буря вщухла, небо прояснилося, і знову світило сонце. 14. Містер Метлок подивився на свого сина, його погляд пом'якшав. 15. Минулого літа я відвідала місця, де я провела дитинство. Деревця, які батько посадив, коли я була ще дитиною, стали тепер великими високими деревами.

THE FUTURE PERFECT CONTINUOUS

AFFIRMATIVE	NEGATIVE	INTERROGATIVE
I shall have been reading	I shall not have been reading	Shall I have been reading?
He will have been reading	He will not have been reading	Will he have been reading?
She will have been reading	She will not have been reading	Will she have been reading?
It will have been reading		
We shall have been reading		

reading You will have been reading They will have been reading I'll have been reading I won't have been reading (shan't)	It will not have been reading We shall not have been reading You will not have been reading They will not have been reading	Will it have been reading? Shall we have been reading? Will you have been reading? Will they have been reading?
---	--	--

THE FUTURE PERFECT CONTINUOUS TENSE

denotes an action which will begin before a definite moment in the future, will continue up to that moment and will be going on at that moment.

By the next August she **will have been teaching** English for 30 years.

EXERCISES

Ex. 37. Form the Future Perfect Continuous Tense from the following verbs:

to arrange, to investigate, to wait, to stay, to decorate, to **celebrate**, to pack, to lie in the sun, to practise, to discuss, to ask, to answer, to sign, to examine.

Ex. 38. Put the verb in brackets into the Future Perfect Continuous Tense.

1. By the end of this month we (learn) this language for ten years. 2. When my daughter goes to school we (live) here for over five years. 3. When the new century begins, they (reconstruct) this church for nearly 25 years. 4. If nobody stops him, he (grumble) for hours. 5. We can get there at 7 at the earliest. They will be painting the fence. If we arrive at 8.30, they (paint) it for 3 hours at least; and if we come at 9.30, they will have probably finished the work.

Ex. 39. Make up questions to the following sentences. Pay attention to using Future Perfect Continuous:

1. They will have been decorating their new flat for half a year by the end of

August. 2. They will have been arranging a wedding party for two months by the beginning of May. 3. These children will have been practising acrobatics for two years by spring. 4. These policemen will have been investigating this case for five months by the New Year. 5. It will have been snowing for two days by tomorrow morning.

Ex. 40. Translate into English.

1. До того часу, як він закінчить університет, його батьки пропрацюють в Південній Африці два роки. 2. Ми будемо рекламувати ці товари кілька місяців до того часу, як вони з'являться на ринку. 3. На майбутній рік до цього часу вона буде вивчати французьку вже два роки. 4. До того часу, коли вона приїде, я вже буду жити тут протягом двох років. 5. До того часу, як ти повернешся, я буду писати вже третій портрет. 6. Скільки часу вони будуть показувати цей фільм, поки ти не привезеш новий?

Ex. 41. Translate the following sentences. Pay attention to using *Future Perfect Continuous*:

1. Ви будете вже півдня грати в гольф до того часу, коли я закінчу свою роботу. 2. Вони стануть вже дві години повторювати свої ролі до того часу, коли ми повернемося. 3. До початку червня ми будемо перебувати в Лондоні два тижні. 4. Ми будемо уже дві години танцювати в клубі до того часу, коли ти до нас приєднаєшся. 5. Ми будемо півгодини упаковувати наші речі до того часу, коли прийде машина. 6. Я буду уже дві години засмагати до того часу, коли ви прийдете на пляж.

Ex. 42. Complete the following sentences using *Future Perfect Continuous*:

By the beginning of the year	for three months,
I ...	for two years,
By the end of June I ...	for two hours,
By afternoon we ...	for forty minutes. .
By five o'clock he ...	for half a year.
By the 1 of May she ...	for four years.

Ex. 43. Translate the following sentences using the *Indefinite, Continuous, Perfect and Perfect Continuous Tenses*. Comment your choice.

1. Цей режисер ставить п'єсу вже півроку, але ще не поставив її. 2. Яка причина того, що він ставить цю п'єсу, а не яку-небудь іншу? 3. Хто буде виконувати головну роль у цій виставі? 4. Я сподіваюся, що до початку лютого вони закінчать роботу над цим спектаклем. 5. Вони працюватимуть над цією п'єсою півроку, коли до них приєднаються англійські актори. 6. Наші колеги дві години переглядали журнали в бібліотеці до того часу, коли інші закінчили репетицію. 7. Чому ти не береш участі в спектаклях аматорського театру? - Кожен раз, коли я дивлюся на себе в дзеркало, я розумію, що повинен утриматися від появи на сцені. 8. Які ліки прописав тобі лікар? - Лікар прописав мені нові ліки і сказав, що вони мені допоможуть. Але я приймаю їх вже тиждень і ще не одужав. 9. Наш колега вже кілька днів виглядав хворим до того часу, коли ми змусили його піти до лікаря. 10. Ця людина вже три роки заробляє на життя таким чином! 11. Наш новий колега мовчить з початку обговорення цього питання. Ймовірно, у нього немає досвіду в таких питаннях. 12. Цікаво, чи здійсниться мрія цього талановитого актора зіграти роль Гамлета? - У будь-якому випадку він не кине сцену, поки не зробить все від нього залежне, щоб отримати цю роль. 14. Давно вже ти не був в такому гарному настрої, а сьогодні смієшся і жартуєш цілий день. У твоєму житті сталося щось хороше? - Так, моє життя змінилося на краще. Я отримав те, що хотів і чого так довго чекав.

THE REVISION ON TENSES

EXERCISES

Ex. 44. Put the verb in brackets into *the Present Continuous, the Present Indefinite, the Past Indefinite, the Present Perfect and the Present Perfect Continuous*.

1. He (not/phone) him since he (arrive).
2. What (happen) to you since she (leave)?
3. I (think) your daughter (become) a real beauty since I (see) her last.
4. What you (do) with the knife? The point is broken off.
5. For these last three years I (save) nearly every penny for my trip to that country.
6. Well, dear, what you (do) all day long? You (look) tired. Come and sit here by the fire.
7. "Hello," he (say) holding out his hand, "I (look) for you for a long time. I never (have) the chance to thank you for what you (do) for my brother."
8. You see, I (do) this kind of thing for the last thirty years.
9. I (think) of it ever since Molly (tell) me about your decision to go to sea.
10. You (live) here ever since you (leave) Canada?
11. Do come in and join us. We (have) coffee and (watch) TV.
12. A.: I hear your brother (come) back. He (be) in the East all this time?

- B.: No, he (be) in Europe for the last year.
 A.: I just (be) to the cinema. You (see) the last film by N. Mikhalkov?
 B.: Yes.
 A.: When you (see) it?
 B.: A week ago.
 A.: Who you (go) with?
 B.: With Tanya.
 A.: I (want) to go to Switzerland next winter.
 B.: You (discuss) it with your mother?
 A.: No, not yet, why?
 B.: You (ski) together for the last three years.
13. A.: I (be) sorry, I (give) so much trouble and now I (ask) you to excuse me.
 B.: It (be) true that you (put) me to some inconvenience, but in the circumstances I (be) ready to accept your apology.
14. A.: There (be) two gentlemen asking for you.
 B.: Tell them, I (not/be) in.
 A.: They (want) to know if you (see) the accident yesterday.
 B.: I (dread) these questions all morning, I (not/know) what to say. What you (think), they still (wait)?
15. A.: You (know), where George (be)?
 B.: He and Fanny (have) a friendly chat in the library.
 A.: They (be) old friends, (not/be) they?
 B.: Yes, they (be) friends since childhood.
16. A.: The children (return) yet?
 B.: Yes, Tom Burton (bring) them back in his car five minutes ago.
 A.: Well, then we can have dinner now.
 B.: No, we can't. I (not/cook) it yet.
 A.: What you (do) all this time?
 B.: Worrying.

Ex. 45. Put the verb in brackets into the Past Indefinite, the Past Continuous, the Past Perfect and the Past Perfect Continuous.

I.

1. Where you (go) when I (meet) you in the street yesterday? - I (go) to tell the watchmaker that he (forget) to send my watch. 2. This, however, (enable) him to add some ideas which he (omit) in the first copy. 3. They (decide) to rebuild the church when they (find) that the cement used (begin) to crumble. 4. He (be) so ill that he (find) himself unable to complete the work he (begin). 5. She (turn) the light back on, (lie) on the sofa and (take) up the book she (read). 6. His

secretary (take) the paper from the table where he (put) it, and (go) out. 7. It (be) near midnight when they (come) in from dinner, still laughing at something he (say) in the dining-room. 8. It (be) two o'clock. Eliza (be) suddenly thoroughly awake. She (sit) up in her bed and (circle) her knees with her arms. It (rain), the way it (rain) for days. 9. In his turn Jolyon (look) back at his son. He (want) to talk about many things that he (be) unable to talk about all these years. 10. She (be) at the station after all, standing just as he (imagine), apart from the others. 11. He (come) back on Saturday, as he (promise). They all (wait) for him in the sitting-room. When he (enter), everybody (rush) forward to him to embrace and hug him in greeting. 12. The state of his clothes indicated that he (play) football in the muddy field.

II.

1. The woman (busy) herself with cooking, while the man (slice) bacon and (fire) the stove. 2. He was up before the sun on the last day. A gale from the west (blow) all night, making him wakeful. 3. It (be) a cold, harsh, winter day. There (be) snow some hours before, and it (lie), not deep, but hard-frozen on the ground. 4. He (try) to catch what they (say), but they (be) too far from him and (speak) in very low voices. 5. As the wet twilight (deepen), I (stop) in a solitary bridle-path, which I (pursue) an hour or more. 6. He (not/be) so much surprised to see me as I (expect). 7. I (go) to bed and (fall) asleep, when my guardian (knock) at the door of my room and (beg) me to get up directly. 8. I (have) a wash and brush-up before starting out to go to the luncheon Elliot (invite) me to, when they (ring) up from the reception to say that he (be) below. 9. Mrs Bedwin, who (listen) at the parlour door, (hasten) into the corridor in a breathless state. 10. Sara (be right) in her prediction. Madam Sharon's face (be) a picture the next morning when she (find) out that Sara (go).

Ex. 46. Put the verbs in brackets into *the Past Indefinite, the Past Continuous and Past Perfect Tenses*.

Stifling a huge yawn, Petra (pull) herself up into a sitting position and (try) to free her mind from the clog of sleep. Slowly she (become) aware that Sara (pull) her suitcase from under the bed and (fill) it by the simple method of taking out drawers of clothes and turning them upside down so that the contents (fall) into the case.

(from S. Wentworth)

Ex. 47. Put the verbs in brackets into *the Past Indefinite and the Past Perfect*.

He (look) at his watch. In a quarter of an hour he (be) due at the General Meeting of the New Colliery Company - one of Uncle Jolyon's concerns; he

should see Uncle Jolyon there, and say something to him about Bosinney - (not/make) up his mind what, but something - in any case he should not answer this letter until he (see) Uncle Jolyon. He (get) up and methodically (put) away the draft of his defence. Going into a dark little cupboard, he (turn) up the light, (wash) his hands with a piece of brown Windsor soap, and (dry) them on a roller towel. Then he (brush) his hair, (turn) down the light, (take) his hat and ... (leave) the house.

(After J. Galsworthy)

Ex. 48. Put the verbs in brackets into *the Past Indefinite, the Past Continuous, the Past Perfect and the Future-in-the-Past*.

1. He (go) back into the kitchen and (open) the icebox. He (take) out a bottle of milk and a piece of chocolate cake and (put) them on the table. He (drink) the milk from the bottle and (eat) the cake with his fingers. It (not/be) until after he (finish) that he (remember) he (promise) himself he (not/touch) any sweets in hopes that his skin (clear) up.

2. He (sit) there in a kind of lethargy. He (hear) the bathroom door slam and footsteps leading back to Rina's room. Idly he (wonder) what she (do) at home at this time of the afternoon. Usually she (be) down at the beach already with her giggling girlfriends. Rina just (cross) the room and (stand) in front of the mirrors, her back to the door.

(After H. Robbins)

Ex. 49. Put the verbs in brackets into *the Present Indefinite, the Present Continuous, the Past Indefinite and the Past Continuous*.

Laying the telephone down on the desk, I (go) to the door and (call) Amos. I (go) back to the couch and (stretch) out as he (pick) up the phone. He (shoot) a peculiar look at me when he (hear) her voice. He (be) silent for a while, listening to her. When he (speak) again, he (smile). "That's wonderful! When you (leave)? Soon I also (fly) to New York when this job (be finished). We (have) a celebration then. Give my love to your daughter." He (put) down the telephone and (come) over to me. "That (be) Monica," he (say), looking down at me. "I (know)," I (say). "She (leave) for New York this afternoon. She (take) her daughter back with her. You (not/see) the kid for a long time now, ____ you?" "No, I ____". "You ought to see her. The kid is turning into a real beauty."

(After H. Robbins)

Ex. 50. Put the verbs in brackets into *the Past Indefinite, the Past Perfect and the Past Perfect Continuous*.

He (place) a picture on the easel and (let) me look at it for a minute or two; then he (take) it down and (put) another in its place. He (show) me about thirty canvases. It (be) the result of the six years during which he (paint). He (sell) a picture. The canvases (be) of different sizes. The smaller (be)-pictures of still-life and the largest (be) landscapes. There (be) about half a dozen portraits.

(After S. Maugham)

Ex. 51. Put the verbs in brackets into *the Past Indefinite* and *the Past Perfect*.

It (be) so exciting to be actually at the party again. She (be) pleased also with the warm reception she (receive). When she (enter) the house, everyone (rush) to her with cries of pleasure and welcome, (kiss) her, (shake) her hand, (tell) her they (miss) her dreadfully. Everyone (speak) gently with tears in their eyes and (ask) at length about her children. Everyone (ask) about Melanie and Ashley, demanding the reason why they, too, (not/come) back to Atlanta.

(After M. Mitchell)

Ex. 52. Put the verbs in brackets into *the Present Indefinite*, *the Past Indefinite*, *the Past Continuous* and *the Past Perfect*.

We just (finish) lunch. Mrs Leidner (go) to her room to rest as usual. I (settle) her on her bed with plenty of pillows and her book, and (leave) the room when she (call) me back.

"Don't go, nurse, there (be) something I (want) to say to you."

I (come) back into the room.

"Shut the door."

I (obey).

She (get) up from the bed and (begin) to walk up and down the room. I could see that she (make) up her mind to something and I (not/like) to interrupt her. She (be) clearly in indecision of mind.

(A. Christie)

Ex. 53. Put the verbs in brackets into *the Past Indefinite*, *the Past Continuous* and *the Past Perfect*.

He (not/cover) the first of those miles, however, when the luck (favour) him at last. He (meet) a cart turning in his direction out of a field and this time he (be) able to beg a lift, though it (take) several minutes to explain to the driver, a little old whiskered fellow nearly as deaf as one of his own sacks, exactly what he

(want). And by the time he (make) it plain to his companion that he (travel) about, that he (want) a wash and brush-up and some breakfast, Everwell itself (be) in sight. It (be) a little place that (look) somehow as if it had been dropped there.

(After J. Priestley)

Ex. 54. Put the verbs in brackets into the Past Indefinite, the Past Continuous and the Present Perfect.

Later that afternoon Miss MacDonald (tell) Tom that Hopkins would like to see him that evening at 7 o'clock. At two minutes after the hour, Tom (knock) at Hopkins door. Hopkins (open) it. He (be) alone, and, to Tom's surprise, he (look) tired. He (pace) restlessly up and down the room jingling the change in his pockets and gesticulating as he (talk). The first thing he (say) after greeting Tom (be): "I definitely (decide) to go ahead with this mental health committee."

(S. Wilson)

Ex. 55. Put the verbs in brackets into the Past Indefinite, the Past Continuous and the Past Perfect Tenses.

After Pitty (go), Scarlett (go) wearily into the downstairs hall and (light) a lamp. The house (feel) steamingly hot, as though it held in its walls all the heat of the noontide. Some of her dullness (pass) now and her stomach (clamour) for food. She (remember) she (have) nothing to eat since the night before except a spoonful of hominy and picking up the lamp she (go) into the kitchen. The fire in the oven (die) but the room (be) hot. She (find) half a pone of bread and (eat) quickly while she (look) about for other food. There (be) some hominy left in the pot and she (eat) it with a big cooking spoon, not waiting to put it on a plate. It (need) salt badly but she (be) too hungry to hunt for it. After four spoonfuls of it, the heat of the room (be) too much and, taking the lamp in one hand and a piece of bread in the other, she (go) out into the hall. It (be) so much cooler here, even the night was drowned in soft warmth. She (sit) down on the steps in the circle of faint light thrown by the lamp and (continue) eating the bread. When she (finish) it, a measure of strength (come) back to her.

(After M. Mitchell)

Ex. 56. Put the verbs in brackets into the Past Indefinite and the Past Perfect Tenses.

1. At half past four I (put) on the lights. The shop (look) shabbier in artificial light too, the shelves (be) dusty and the ceiling (be/not painted) since I (go) there. It (be) full of cracks. I (look) in the mirror to see how my hair (be). We

were going somewhere that night, my friend Baba and me. My face in the mirror (look) round and smooth. I (suck) my cheeks in, to make them thinner. I (long) to be thin like Baba.

2. He (tell) me that he (win) cups and medals for swimming when he (be) a boy. He (live) most of his life in Dublin, with his mother, and (go) to work at twelve or thirteen. His father (leave) them when he (be) a small boy, and as a child he (comb) the beaches looking for scrap.

(E. O'Brien)

Ex. 57. Put the verbs in brackets into the Past Indefinite, the Past Continuous and the Past Perfect Tenses.

I (not/be) in Tahiti long before I (meet) Captain Nichols. He (come) in one morning when I (have) breakfast on the terrace of the hotel and (introduce) himself. He (hear) that I (be) interested in Charles Strickland, and (announce) that he (come) to have a talk about him. I (ask) the stranger if he (have) breakfast. "Yes," he (answer). When he (smile) he (show) broken and discoloured teeth. He (be) a very lean man, with grey hair cut short and a grey moustache. He (not/shave) for a couple of days.

"I knew Strickland well," he (say), as he (lean) back in his chair and (light) the cigar I (offer) him. "Where you (meet) him?" I (ask).

"In Marseilles!"

"What you (do) there?"

He (smile) and (say): "Well, I guess I (be) on the beach."

(After S. Maugham)

Ex. 58. Put the verbs in brackets into the Present Indefinite, the Future Indefinite, the Past Indefinite, the Past Continuous, the Past Perfect and the Future-in-the-Past Tenses.

It (be) Ashley's birthday and Melanie (give) him a surprise reception that night. Everyone (know) about the reception, except Ashley. Even his children (know). Everyone in the town who (be) nice (be invited). General Gordon and his family graciously (accept) the invitation. Alexander Stephens (say) he (be) present if his ever-uncertain health (permit). Scarlett never (see) Melanie so excited or so happy.

"You see, dear, Ashley (not/have) a birthday party since we (come) here. And he (work) so hard and he (be) so tired. When he (get) home at night he (be) surprised when everybody (come) in!" Melanie's house (blaze) lights from every room. It (be packed) with guests. They (overflow) on verandas and many (sit) on the benches in the dim lantern-hung yard.

(After M. Mitchell)

Ex. 59. Use the required *Present* or *Past Tense* forms in the following texts:

I.

When Tom (wake), the farmhouse (burn), it (start) burning when the shell (hit). None of the other soldiers who (be) in the farmhouse (be) to be seen. They (be) lucky to escape. In the confusion they (miss) Tom who (sleep) on the kitchen floor. As his leg (be) broken, it (take) him hours to crawl across the room to the window. He (pass) out again and again. But he (be) sure he (not/want) to die and finally he (get) to the window and (pull) himself up so that he (can) look over the sill. Somebody (see) his head above the window and (get) him. Tom (not/remember) any of that. He never (find) out who (save) him.

II.

“But when you (meet) him?”

“Tonight. He (pick) me up in a bar in the Champs Elisees and (insist) on taking me to Maxim’s. I (have) a wonderful time, the best I (have) since we (come) to work in Paris.”

“I (think) you (go) out with Jean-Paul tonight?”

“Well, I did start out with him. But, honestly, Petra, he (get) to be really boring, so when I (see) Carlo giving me the high sign I (decide) to go with him instead.”

“Carlo? It (not/sound) very French.”

“It (not/be). He (be) Italian. And that (be) where I (go) - to stay in his Palazzo, no less... He (be) the kind of man I (look) for all my life... He just (sweep) me off my feet.”

“Most of the men you (meet) seem to sweep you off your feet.”

III.

At the end of the week, when there (be) still no telephone call or letter from Sara, Petra (wait) until Monsieur and Madam Charron (go) out one evening and the children (be) safely in bed, then she (sneak) into the study, (pick) up the phone and (ask) the operator to give her the number of the Palazzo Berini in Venice.

“Hello, (be) that Carlo Berini?”

“Yes, I (be) Count Berini.” The voice (be) authoritative.

“My name (be) Petra Thornton. We (not/meet), but I (be) a friend of Sara's.”

There (be) a few seconds of silence before Carlo Berini (say), “I (not/know) who you (talk) about.”

"But you do," Petra (protest). "You (take) Sara to Venice with you two weeks ago to stay at your Palazzo. You (meet) her in Paris. You must remember."

His voice (grow) annoyed. "Either you (get) the wrong number or this (be) some kind of joke. I (not/know) your friend and she certainly never (stay) in this house."

IV.

He (sit) at a large ornate desk, but (look) up as she (come) in and then (get) slowly to his feet.

"Good morning. You (wish) to see me, I (believe)?"

"Yes, my name (be) Petra Thornton, and I..."

"Ah, yes, the young lady, who (phone) yesterday. About a friend of yours, (not/be) it?" "Yes, it (be) about Sara."

"So?"

"So where (be) she?"

Carlo Berini (frown) and then (sit) down again.

"I (believe), I (tell) you at the time that I never (hear) of your friend. So why you (come) here?"

"Because I (not/believe) you."

He (lean) forward.

"You (accuse) me of lying?"

"You should know whether you (lie) or not. All I (know) is that Sara (say) she (go) to Venice with you and a few days later she (phone) to say that things (not/work) out and she (come) back to Paris. But she never (arrive). And that (be) a week ago. So I (come) here to find her, because this (be) the last place I (know) that she (stay)."

(after S. Wentworth)

Ex. 60. Translate the sentences into English.

1. Куди ви ходили? - Я ходила до бібліотеки. Я забула там свою книгу і ходила по неї. 2. Куди він пішов? - Я думаю, він пішов до бібліотеки. Він зазвичай ходить туди по п'ятницях. 3. "Ви давно живете в цьому місті?" - "Двадцять шість років." - "Де ви раніше жили?" - "У С.-Петербурзі." 4. Здорові були. Заходьте будь ласка. Я чекав вас. 5. Що ти робиш? - Я роблю домашнє завдання з англійської мови. - Хіба ти готуєш уроки вранці? - Так, я завжди роблю завдання з англійської мови після того, як поснідаю. 6. Ми йдемо вже шість годин і дуже втомилися. 7. Ви знайшли ключ, який втратили вчора? - Так, знайшла. - А де ви його знайшли? - Він весь час був в моїй кишені. 8. Ми з ним знайомі вже більше року. 9. Ми з ним разом

вчилися в школі і ми залишилися друзями на все життя. 10. "Ваші гості вже приїхали." - "Я знаю." 11. Він закінчив свою роботу в саду і сидів на балконі читаючи газету. Вечір був теплий, а сонце тільки що зайшло. 12. Я тут з ранку чекаю вас. 13. Коли я напишу листа, я зараз же піду і відправлю його, але я не знаю, коли вона * його отримає. 14. Що у тебе з руками? - Я чистила картоплю. 15. Я в цьому місті вже п'ятнадцять років. Наша сім'я переїхала сюди, коли мені було 10 років. 16. Вони пишуть вам? - Так, ми листуємося вже шість років. 17. Я дуже багато думаю про вас останнім часом. 18. Я їх не бачила з тих пір, як переїхала до цього міста. 19. Я пишу цю книгу півроку і дуже втомилася. 20. Ось і ви! Ми тільки що говорили про вас! 21. Про нього все місто говорить з тих самих пір, як він поїхав. 22. Ти знову грав з моєю друкарською машинкою!

Ex. 61. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. Я все думала про кількість років, які ми пропрацювали разом, і як мало я, фактично, знаю про тебе. 2. Коли вони підійшли до того місця, де він впустив каблучку в струмок, він зупинився. 3. Тобі подобається готувати? - Я люблю це. Це одне з моїх хобі вже багато років. 4. Папа завжди називав мене Кейті. 5. Давай обговоримо цю справу тут, в кафе. В офісі буде постійно дзвонити телефон. 6. Вони повертаються. - Я вважаю, вони зупиняться в готелі на цей раз. 7. Вона замкнулася і не зійде вниз, поки вони не підуть. 8. Я побачив, що момент, якого він чекав, настав. 9. Розкажи мені, що відбувалося під час моєї відсутності. 10. Я знаю імена всіх в селі. Я живу тут усе своє життя. 11. Я готувала обід, в той час як вона прибирала в кімнаті. 12. Не встигли вони увійти в будинок, як знялася буря. 13. Вона відвернулася, але не раніше, ніж він побачив сльози, які блиснули в її очах. 14. Я вирішила не йти на виставку. Я піду сьогодні до бібліотеки. Я вже три місяці не міняла книги. 15. Як давно ти так себе почуваєш? 16. Я майже ні разу не поїв як слід, з тих пір як я приїхав сюди. 17. Він не прийде. Я тільки що розмовляв з ним телефоном. 18. Філіп відніс свою валізу в вагон і палив на пероні. 19. Вони ніколи не танцювали разом раніше. 20. Дощ іде з самого ранку, і я думаю, він не припиниться до вечора. 21. До кінця тижня я закінчу цей переклад. 22. Хто відкрив Австралію? 23. Він розчинив вікно, порив вітру розкидав його папери по підлозі. 24. На наступному році в цей час ми будемо плисти назад в Америку. 25. Ти йдеш занадто швидко щодо мене. 26. Небо зблідло і тепер почало темніти; засвітилася жменька зірок. 27. Його дружина, яка тільки що поклала спати їх малу доньку, сиділа у вітальні з книгою. 28. Все в порядку, малятко, не плач. Тобі просто щось снилося. 29. Поїзд

відправляється за чверть до другої. Якщо ми не підемо на вокзал негайно ж, то ми встигнемо. 30. Ми прожили у Харрісонів два дні і повернулися до Лондона поїздом. 31. Коли я встав, я підійшов до вікна. Хоча дощу вже не було, але всюди були великі калюжі. 32. Я ніколи в житті не відчував себе так добре, як зараз. 33. Завтра я їду до міста на два тижні. 34. Не встиг я дійти до рогу, як почув чийсь кроки позаду. 35. Я розповім вам все, про що дізнаюся. 36. Погода в той день була похмура. Холодний вітер, що дув з ранку, припинився, але дощ все ще накрапав. 37. Ледве я встиг попрощатися з ними, як поїзд рушив. 38. Він відчинив вікно і палив, дивлячись на вечірню річку. 39. Я велю йому принести ключ, коли він огляне будинок. 40. Ми їхали близько години і потім зупинилися біля невеликого кафе.

Ex. 62. Translate the verbs in *bold* type into English.

A.

Нещасний випадок.

Це була дуже затишна і чиста кухня. Сонце **сяяло** крізь чисті стекла, підлога **блищала**, на плиті **кипів** чайник, і товстий чорний улюбленець місіс Браун солодко **спав** на підвіконні. Місіс Браун **сиділа** в кріслі і **читала**.

Раптом сильний вибух **потряс** маленький будиночок. Місіс Браун **глянула** у вікно. По вулиці **бігли** люди. Хтось **крикнув**: "Це на фабриці! Котел **вибухнув**!"

Місіс Браун **зблідла**, **закрила** обличчя руками і **опустилася** в крісло.

Її чоловік **працював** в котельні. "Я була йому поганою дружиною," - подумала вона. - "Тільки вчора я **вилаяла** його за те, що він **не витер** ноги, коли **увійшов** до кухні. А тепер я його ніколи не побачу. "Хряпнули дверцята, хтось **увійшов** до кімнати.

"Не плач, Мері!" - **почула** вона голос чоловіка. - "Нічого особливого **не сталося**. Ніхто не поранений. "

Місіс Браун підняла голову. "О, Стівен!" - **сказала** вона. - "Скільки разів я тобі **казала**: витирай ноги, коли **входиш** до будинку."

B.

Купуючи книги.

У минулому році я **посварився** з дружиною. Вона говорила, що я занадто багато грошей **витрачаю** на книги. Я **зрозумів**, що вона має **рацію**, і **пообіцяв**, що більше цього робити не буду.

Однак, коли я **йшов** на роботу, я **побачив** дуже цікаву книгу в кіоску.

"На цьому тижні я ще нічого **не купував**," - подумав я. - "Якщо я **напишу** на цій книзі:" За участь в аматорському спектаклі ", то дружина нічого **не скаже**."

"Так ти **брав участь** у виставі?" - здивувалася дружина. - "Чому я тебе **не бачила**?"

"Я **тримав** на плечах балкон для Ромео і Джульєтти," - **відповів** я.

На наступній книзі я **написав**: "З любов'ю та найкращими побажаннями, твій люблячий дядько Джордж."

"Що це за дядько?" - **запитала** дружина. - "Чому я з ним **не знайома**?"

"Бідний, милий дядько," - **відповів** я. - "Він **дарує** мені книги з тих пір, як я **навчився** читати. Він уже 20 років **живе** в Глазго і ні разу **не виїжджав** звідти через своє здоров'я."

Потім різні письменники **почали дарувати** мені свої книги з любові і поваги до мене. Одного разу я **прийшов** додому з книгою, яку **подарував** мені Золя. Дружина **стояла** перед дзеркалом. На ній **було** нове плаття.

"Ти **купила** сукню?" - запитав я.

"Ні," - **відповіла** вона. - " Мені **подарував** його твій друг. "

"Який друг?" - **закричав** я.

"Той, який **подарував** тобі стільки книг. Чарльз Діккенс."

Тепер мені зрозуміло, чому останнім часом у нас **були** такі погані обіди.

Ex. 63. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. Вона багато подорожує. Влітку вона їздила до Франції. Вона вже повернулася до Москви.
2. Ти читав поеми Байрона? - Так, ми читали їх в минулому році. - Тобі вони подобаються?
3. Ти граєш на піаніно? Послухай, Джон грає. Він завжди грає добре.
4. Коли ми були в Криму, ми годинами гуляли в горах.
5. Яку книгу ти зараз читаєш? - Я не читаю книжок, я люблю газети і журнали.
6. Я не бачив його останнім часом. - Ая тільки що зустрів його. Він йшов до бібліотеки.
7. Ти часто ходиш в кіно? - Ні, я не був в кіно з літа.
8. Я купила це плаття 3 роки тому. Воно було дуже дешеве. Ціни зараз ростуть.
9. Тобі купити квитки в театр? - Ні дякую. Мама вже купила. Ми йдемо в театр завтра.

10. Ти будеш вільна сьогодні ввечері? - Ні, я зустрічаюся зі своєю подругою о 7-ій.

Ex. 64. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. Ти зараз робиш цю роботу? - Так, але я тільки що її почав.
2. Останнім часом він не заходив до нашого магазину. Я знаю, що він купує продукти в цьому магазині. Він став дуже поважним.
3. Ти їздив за місто в ці вихідні? - Ні, ми були дуже зайняті. Ми прибирали в будинку.
4. Я ще не приготувала обід. - Тобі допомогти? - Так дякую. Гості приходять о 7-ій.
5. Де ти був учора? Ми шукали тебе весь вечір. - Я сидів вдома.
6. Ти подзвониш мені? - Звичайно, я ж завжди дзвоню тобі вечорами.
7. Ти знаєш цю людину? - Так, я зустрічала його до війни, але я не бачила його з тих пір.
8. Я думаю, тобі сподобається це плаття. - О, я мріяла про нього весь рік.
9. Я хочу запросити Джима на обід. - Я вже запросила його. Ти мені вчора сказала про це. Я часто зустрічаю цього человека. Ось і зараз він іде вулицею.

Ex. 65. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. Ви коли-небудь бували в Парижі? - Так, я був там минулого року. Я часто їжджу до Франції.
2. Коли поїхала Мері? - Вона поїхала до того, як ви подзвонили. Вона чекала вас цілу годину.
3. Ми вже зустрічалися. - Коли ми зустрічалися? - Я не пам'ятаю. Пом'ямо, ми зустрічалися 3 роки тому.
4. Ми обідали, коли Джон прийшов. Він не хотів обідати з нами. Він сказав, що вже пообідав. Він їв о 5-ій, а ми завжди обідаємо о 7-ій.
5. Чим він займається? - Він грає в теніс. Він грає дуже добре. Зараз він грає у Франції.
6. Вчора, коли я виходив з офісу, йшов дощ. У мене не було парасольки. Я не помітив, що почався дощ.
7. Він закінчив роботу до того, як ми прийшли.
8. Експеримент буде закінчено до кінця наступного тижня.

Ex. 66. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. Він пише книгу. - Він уже закінчив роботу? - Так, він закінчив її на минулому тижні.
2. Що ви тут робите? - Я чекаю на свого друга. Він працює в цьому інституті.
3. Дощ ще не припинився, коли ми вийшли з дому. Дощ йшов цілий день.
4. Він студент? - Так, він вчиться в нашому інституті. Він працював на нашому заводі до того, як вступив до нашого інституту. Зараз він не працює.
5. Ви часто ходите до театру? - Я люблю театр, але в минулому році я не ходив до театру. Я хворів. Ви бачили цю нову п'єсу?
6. Ви поїдете до Москви наступного тижня? - Я не знаю. Я чекаю дуже важливий лист з Москви.
7. Моя сестра ще не спала, коли я встав. - Ви встаєте рано? Коли починається ваш робочий день?
8. Не приходьте завтра о 2-ій: я буду прати. - Коли я можу прийти? - Ми зазвичай п'ємо чай о 5-ій. Ви хочете зайти о 5-ій?

Ex. 67. Translate the following sentences into English concentrating on the use of tense-aspect forms.

1. В Англії часто йде дощ? - Так, коли ми приїхали, йшов дощ. - А ми приїхали до того, як почалися дощі. - А ви коли-небудь бували в Лондоні? - Так, я відвідав Лондон в минулому році.
2. Ви поїдете до Криму? - Ні, зараз я багато працюю. Ми завжди їздимо до Криму восени.
- А я ніколи не був там. Ми поїдемо туди в наступному році.
3. Бабуся дзвонила вчора, чи не так? - Так, вона говорила цілу годину. - Що вона сказала?
- Вона запитала, чи прийдеш ти до неї завтра.
4. Ти був вчора на стадіоні? - Так, там було багато народу. - Ти любиш футбол?
5. Він пішов, коли я працював, і сказав, що прийде о 6-ій. Я вже виконав всю роботу, коли він прийшов.
6. Ми вже чекали кілька годин, коли поїзд нарешті прибув.
7. Завтра в цей же час ми вже будемо плисти на пароплаві (sail).

Ex. 68. Translate the following sentences into English concentrating on the use of tense-aspect forms.

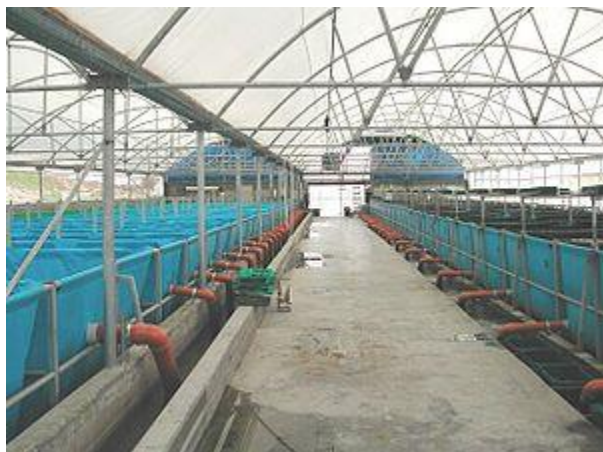
1. У вас є собака? - Так, друзі подарували мені собаку на минулий день народження. - Який це собака?
2. Я повечеряв і почав читати книгу. Мій друг дав мені цю книгу тиждень тому. - Вам подобається ця книга? Я її ще не читав.
3. Де він працює? - Він зараз не працює. Він студент. Він працював на заводі до того, як вступив до інституту.
4. Він зазвичай грає в теніс дуже добре, але сьогодні він грає погано. А ви граєте в теніс? - Я грав, коли був студентом.
5. Ти зустрів її вчора? - Я запізнився. Коли я прийшов, поїзд уже пішов.
6. Ви вже бачили цей фільм? - Так, я бачила його минулого тижня. - Ви підете зі мною в кіно завтра?
7. Коли я прийшов додому, вони дивилися телевізор. Вони завжди дивляться телевізор ввечері. А я не люблю дивитися телевізор.
8. Де ви були вчора? Що ви робили о п'ятій годині? - Я працював.

LESSON II

Text A

Fish farming

Part A



Koi farming indoors in Israel



Salmon farming in the sea (mariculture) at Loch Ainort, Isle of Skye

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 juvenile fish into the wild for recreational fishing or to supplement a species' natural numbers is generally referred to as a fish hatchery. Worldwide, the most important fish species used in fish farming are carp, salmon, tilapia and catfish.

There is an increasing demand for fish and fish protein, which has resulted in widespread overfishing in wild fisheries. Fish farming offers fish marketers another source. However, farming carnivorous fish, such as salmon, does not always reduce pressure on wild fisheries, since carnivorous farmed fish are usually fed fishmeal and fish oil extracted from wild forage fish. The global returns for fish farming recorded by the FAO in 2008 totalled 33.8 million tonnes worth about \$US 60 billion.

Major species

Major categories of fish aquaculture

There are two kinds of aquaculture: extensive aquaculture based on local photosynthetic production and intensive aquaculture, in which the fish are fed with external food supply.

Extensive aquaculture



Aqua-Boy, a Norwegian live fish carrier used to service the Marine Harvest fish farms on the West coast of Scotland

Limiting for growth here is the available food supply 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.

Another issue 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.

An alternate option is to use a wetland system such as that of Veta La Palma.

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.

Despite these limitations significant fish farming industries use these methods. In the Czech Republic thousands of natural and semi-natural ponds are harvested each year for trout and carp. The large ponds around Trebon were built from around 1650 and are still in use.

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, see below. 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.



Expressing eggs from a female rainbow trout

The cost of inputs per unit of fish weight is higher than in extensive farming, especially because of the high cost of fish feed, which must contain a much higher level of protein (up to 60%) than cattle food and a balanced amino acid composition as well. However, these higher protein level requirements are a consequence of the higher food conversion efficiency (FCR—kg of feed per kg of animal produced) of aquatic animals. Fish like salmon have FCR's in the range of 1.1 kg of feed per kg of salmon^[citation needed] whereas chickens are in the 2.5 kg of feed per kg of chicken range. Fish don't have to stand up or keep warm and this eliminates a lot of carbohydrates and fats in the diet, required to provide this energy. This frequently is offset by the lower land costs and the higher productions which can be obtained due to the high level of input control.

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. Catfish, *Clarias* spp. can breathe atmospheric air and can tolerate much higher levels of pollutants than trout or salmon, which makes aeration and water purification less necessary and makes *Clarias* species especially suited for intensive fish production. In some *Clarias* farms about 10% of the water volume can consist of fish biomass.

The risk of infections by parasites like fish lice, fungi (*Saprolegnia* spp.), intestinal worms (such as nematodes or trematodes), bacteria (e.g., *Yersinia* spp., *Pseudomonas* spp.), and protozoa (such as Dinoflagellates) 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.



Controlling roes manually

Very high intensity recycle aquaculture systems (RAS), where there is control over all the production parameters, are being used for high value species. By recycling the water, very little water is used per unit of production. However, the process does have high capital and operating costs. The higher cost structures mean that RAS is only economical for high value products like broodstock for egg production, fingerlings for net pen aquaculture operations, sturgeon production, research animals and some special niche markets like live fish.

Raising ornamental cold water fish (goldfish or koi), although theoretically much more profitable due to the higher income per weight of fish produced, has never been successfully carried out until very recently. The increased incidences of dangerous viral diseases of koi Carp, together with the high value of the fish has led to initiatives in closed system koi breeding and growing in a number of countries. Today there are a few commercially successful intensive koi growing facilities in the UK, Germany and Israel.

Some producers have adapted their intensive systems in an effort to provide consumers with fish that do not carry dormant forms of viruses and diseases.

Specific types of fish farms

Within intensive and extensive aquaculture methods, there are numerous specific types of fish farms; each has benefits and applications unique to its design.

Cage system



Giant gourami is often raised in cages in central Thailand

Fish cages are placed in lakes, bayous, ponds, rivers or oceans to contain and protect fish until they can be harvested. The method is also called "off-shore cultivation" when the cages are placed in the sea. 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 dam or 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.

Main article: Copper alloys in aquaculture

Recently, copper alloys have become important netting materials in aquaculture. Copper alloys are antimicrobial, that is, they destroy bacteria, viruses, fungi, algae, and other microbes. In the marine environment, the antimicrobial/algaecidal properties of copper alloys prevent biofouling, which can briefly be described as the undesirable accumulation, adhesion, and growth of microorganisms, plants, algae, tube worms, barnacles, mollusks, and other organisms.

The resistance of organism growth on copper alloy nets also provides a cleaner and healthier environment for farmed fish to grow and thrive. In addition to its antifouling benefits, copper netting has strong structural and corrosion-resistant properties in marine environments.

Copper-zinc brass alloys are currently (2011) being deployed in commercial-scale aquaculture operations in Asia, South America and the USA (Hawaii). Extensive research, including demonstrations and trials, are currently being implemented on two other copper alloys: copper-nickel and copper-silicon. Each of these alloy types has an inherent ability to reduce biofouling, cage waste, disease, and the need for antibiotics while simultaneously maintaining water circulation and oxygen requirements. Other types of copper alloys are also being considered for research and development in aquaculture operations.

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

The Composite fish culture system is a technology developed in India by the Indian Council of Agricultural Research in the 1970s. 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.

Part B

Integrated recycling systems

Main article: Aquaponics

One of the largest problems with freshwater pisciculture is that it can use a million gallons of water per acre (about 1 m³ of water per m²) each year. Extended water purification systems allow for the reuse (recycling) of local water.

The largest-scale pure fish farms use a system derived (admittedly much refined) from the New Alchemy Institute in the 1970s. Basically, large plastic fish tanks are placed in a greenhouse. A hydroponic bed is placed near, above or between them. When tilapia are raised in the tanks, they are able to eat algae, which naturally grows in the tanks when the tanks are properly fertilized.

The tank water is slowly circulated to the hydroponic beds where the tilapia waste feeds commercial plant crops. Carefully cultured microorganisms in the hydroponic bed convert ammonia to nitrates, and the plants are fertilized by the nitrates and phosphates. Other wastes are strained out by the hydroponic media, which doubles as an aerated pebble-bed filter.

This system, properly tuned, produces more edible protein per unit area than any other. A wide variety of plants can grow well in the hydroponic beds. Most growers concentrate on herbs (e.g. parsley and basil), which command premium prices in small quantities all year long. The most common customers are restaurant wholesalers.

Since the system lives in a greenhouse, it adapts to almost all temperate climates, and may also adapt to tropical climates. The main environmental impact is discharge of water that must be salted to maintain the fishes' electrolyte balance. Current growers use a variety of proprietary tricks to keep fish healthy, reducing their expenses for salt and waste water discharge permits. Some veterinary authorities speculate that ultraviolet ozone disinfectant systems (widely used for ornamental fish) may play a prominent part in keeping the Tilapia healthy with recirculated water.

A number of large, well-capitalized ventures in this area have failed. Managing both the biology and markets is complicated. One future development is the combination of Integrated Recycling systems with Urban Farming as tried in Sweden by the Greenfish initiative.

Classic fry farming

This is also called a "Flow through system" 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. European eel (*Anguilla anguilla*) aquaculturalists procure a limited supply of glass eels, juvenile stages of the European eel which swim north from the Sargasso Sea breeding grounds, for their farms. The European eel is threatened with extinction because of the excessive catch of glass eels by Spanish fishermen and overfishing of adult eels in, e.g., the Dutch IJsselmeer, Netherlands. As per 2005, no one has managed to breed the European eel in captivity.

Issues

The issue of feeds in fish farming has been a controversial one. Many cultured fishes (tilapia, carp, catfish, many others) require no meat or fish products in their diets. Top-level carnivores (most salmon species) depend on fish feed of which a portion is usually derived from wild caught (anchovies, menhaden, etc.). Vegetable-derived proteins have successfully replaced fish

meal in feeds for carnivorous fishes, but vegetable-derived oils have not successfully been incorporated into the diets of carnivores.

Secondly, farmed fish are kept in concentrations never seen in the wild (e.g. 50,000 fish in a 2-acre (8,100 m²) area.) with each fish occupying less room than the average bathtub. This can cause several forms of pollution. Packed tightly, fish rub against each other and the sides of their cages, damaging their fins and tails and becoming sickened with various diseases and infections. This also causes stress.

However, fish tend also to be animals that aggregate into large schools at high density. Most successful aquaculture species are schooling species, which do not have social problems at high density. Aquaculturists tend to feel that operating a rearing system above its design capacity or above the social density limit of the fish will result in decreased growth rate and increased FCR (food conversion ratio - kg dry feed/kg of fish produced), which will result in increased cost and risk of health problems along with a decrease in profits. Stressing the animals is not desirable, but the concept of and measurement of stress must be viewed from the perspective of the animal using the scientific method.

Sea lice, particularly *Lepeophtheirus salmonis* and various *Caligus* species, including *Caligus clemensi* and *Caligus rogercresseyi*, can cause deadly infestations of both farm-grown and wild salmon. Sea lice are ectoparasites which feed on mucus, blood, and skin, and migrate and latch onto the skin of wild salmon during free-swimming, planktonic *nauplii* and *copepodid* larval stages, which can persist for several days. Large numbers of highly populated, open-net salmon farms can create exceptionally large concentrations of sea lice; when exposed in river estuaries containing large numbers of open-net farms, many young wild salmon are infected, and do not survive as a result. Adult salmon may survive otherwise critical numbers of sea lice, but small, thin-skinned juvenile salmon migrating to sea are highly vulnerable. On the Pacific coast of Canada, the louse-induced mortality of pink salmon in some regions is commonly over 80%.

A 2008 meta-analysis of available data shows that salmon farming reduces the survival of associated wild salmon populations. This relationship has been shown to hold for Atlantic, steelhead, pink, chum, and coho salmon. The decrease in survival or abundance often exceeds 50 percent.

Diseases and parasites are the most commonly cited reasons for such decreases. Some species of sea lice have been noted to target farmed coho and Atlantic salmon. Such parasites have been shown to have an effect on nearby wild fish. One place that has garnered international media attention is British Columbia's Broughton Archipelago. There, juvenile wild salmon must "run a gauntlet" of large fish farms located off-shore near river outlets before making their way to sea. It is alleged that the farms cause such severe sea lice infestations that one study predicted in 2007 a 99% collapse in the wild salmon

population by 2011. This claim, however, has been criticized by numerous scientists who question the correlation between increased fish farming and increases in sea lice infestation among wild salmon.

Because of parasite problems, some aquaculture operators frequently use strong antibiotic drugs to keep the fish alive (but many fish still die prematurely at rates of up to 30 percent). In some cases, these drugs have entered the environment. Additionally, the residual presence of these drugs in human food products has become controversial. Use of antibiotics in food production is thought to increase the prevalence of antibiotic resistance in human diseases. At some facilities, the use of antibiotic drugs in aquaculture has decreased considerably due to vaccinations and other techniques. However, most fish farming operations still use antibiotics, many of which escape into the surrounding environment.

The lice and pathogen problems of the 1990s facilitated the development of current treatment methods for sea lice and pathogens. These developments reduced the stress from parasite/pathogen problems. However, being in an ocean environment, the transfer of disease organisms from the wild fish to the aquaculture fish is an ever-present risk.

The very large number of fish kept long-term in a single location contributes to habitat destruction of the nearby areas. The high concentrations of fish produce a significant amount of condensed faeces, often contaminated with drugs, which again affect local waterways. However, these effects are local to the fish farm site and are minimal if the farm is sited in strong currents.

Concern remains that resultant bacterial growth strips the water of oxygen, reducing or killing off the local marine life. Once an area has been so contaminated, the fish farms are moved to new, uncontaminated areas. This practice has angered nearby fishermen.

Other potential problems faced by aquaculturists are the obtaining of various permits and water-use rights, profitability, concerns about invasive species and genetic engineering depending on what species are involved, and interaction with the United Nations Convention on the Law of the Sea.

In regards to genetically modified farmed salmon, concern has been raised over their proven reproductive advantage and how it could potentially decimate local fish populations, if released into the wild. Biologist Rick Howard did a controlled laboratory study where wild fish and GMO fish were allowed to breed. The GMO fish crowded out the wild fish in spawning beds, but the offspring were less likely to survive. The colorant used to make pen-raised salmon appear rosy like their wild cousins has been linked with retinal problems in humans.

Labeling

In 2005, Alaska passed legislation requiring that any genetically altered fish sold in the state be labeled. In 2006, a Consumer Reports investigation revealed that farm-raised salmon is frequently sold as wild.

In 2008, the US National Organic Standards Board allowed farmed fish to be labeled as organic provided less than 25% of their feed came from wild fish. This decision was criticized by the advocacy group Food & Water Watch as "bending the rules" about organic labeling. In the European Union, fish labeling as to species, method of production and origin, has been required since 2002.

Concerns continue over the labeling of salmon as farmed or wild caught, as well as about the humane treatment of farmed fish. The Marine Stewardship Council has established an Eco label to distinguish between farmed and wild caught salmon, while the RSPCA has established the Freedom Food label to indicate humane treatment of farmed salmon as well as other food products.

Indoor fish farming

An alternative to outdoor open ocean cage aquaculture, 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 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 (Timmons et al., 2002; Piedrahita, 2003).

One of the drawbacks to recirculation aquaculture systems is water exchange. However, the rate of water exchange can be reduced through aquaponics, such as the incorporation of hydroponically grown plants (Corpron and Armstrong, 1983) and denitrification. Both methods reduce the amount of nitrate in the water, and can potentially eliminate the need for water exchanges, closing the aquaculture system from the environment. The amount of interaction between the aquaculture system and the environment can be measured through the cumulative feed burden (CFB kg/M3), which measures the amount of feed that goes into the RAS relative to the amount of water and waste discharged.

From 2011, a team from the University of Waterloo led by Tahbit Chowdhury and Gordon Graff examined vertical RAS aquaculture designs aimed at producing protein-rich fish species. However, because of its high capital and operating costs, RAS has generally been restricted to practices such as broodstock maturation, larval rearing, fingerling production, research animal production, SPF (specific pathogen free) animal production, and caviar and ornamental fish production. As such, research and design work by Chowdhury

and Graff remains difficult to implement. Although the use of RAS for other species is considered by many aquaculturalists to be currently impractical, there has been some limited successful implementation of this with high value product such as barramundi, sturgeon and live tilapia in the US eels and catfish in the Netherlands, trout in Denmark and salmon is planned in Scotland^[48] and Canada.

Slaughter methods

Main article: Fish welfare at slaughter

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.

Inhumane methods

According to T. Håstein of the National Veterinary Institute, "Different methods for slaughter of fish are in place and it is no doubt that many of them may be considered as appalling from an animal welfare point of view." A 2004 report by the EFSA Scientific Panel on Animal Health and Welfare explained: "Many existing commercial killing methods expose fish to substantial suffering over a prolonged period of time. For some species, existing methods, whilst capable of killing fish humanely, are not doing so because operators don't have the knowledge to evaluate them." Following are some of the less humane ways of killing fish.

- *Air Asphyxiation.* This amounts to suffocation in the open air. The process can take upwards of 15 minutes to induce death, although unconsciousness typically sets in sooner.
- *Ice baths / chilling.* Farmed fish are sometimes chilled on ice or submerged in near-freezing water. The purpose is to dampen muscle movements by the fish and to delay the onset of post-death decay. However, it does not necessarily reduce sensibility to pain; indeed, the chilling process has been shown to elevate cortisol. In addition, reduced body temperature extends the time before fish lose consciousness.
- *CO₂ narcosis.*
- *Exsanguination without stunning.* This is a process in which fish are taken up from water, held still, and cut so as to cause bleeding. According to references in Yue, this can leave fish writhing for an average of four minutes, and some catfish still responded to noxious stimuli after more than 15 minutes.

- *Immersion in salt followed by gutting or other processing such as smoking.* This process is applied to eel.

More humane methods

Proper stunning renders the fish unconscious immediately and for a sufficient period of time such that the fish is killed in the slaughter process (e.g. through exsanguination) without regaining consciousness.

- *Percussive stunning.* This involves rendering the fish unconscious with a blow on the head.

- *Electric stunning.* This can be humane when a proper current is made to flow through the fish brain for a sufficient period of time. Electric stunning can be applied after the fish has been taken out of the water (dry stunning) or while the fish is still in the water. The latter generally requires a much higher current and may lead to operator safety issues. An advantage could be that in-water stunning allows fish to be rendered unconscious without stressful handling or displacement. However, improper stunning may not induce insensibility long enough to prevent the fish from enduring exsanguination while conscious. It's unknown whether the optimal stunning parameters that researchers have determined in studies are used by the industry in practice.

Photo gallery



Houseboat rafts with cages under for rearing fish. Near My Tho, Mekong delta, Vietnam.



Transport boats moored at fish processing plant. My Tho, Mekong delta, Vietnam.



Workers removing fish from hold of transport boat. My Tho, Mekong delta, Vietnam.



Fish reared in cages. My Tho, Mekong delta, Vietnam.

Exercise 1. Make up 25 different types of questions for text A.

Exercise 2. Retell text A.

Exercise 3. Write a short summary of text A.

Text B

Catfish Farming Step 1: Preparing Your Pond

By Bamidele Onibalusi
In business ideas

GET PRACTICAL INFORMATION ABOUT CATFISH FARMING: Due to a VERY BUSY schedule, I haven't been able to update the series on catfish farming or respond to comments, but I have something better for you; you can learn directly from my teacher, who has recorded up to 120% profit in 6 months.

This article is part of the series on how to start a catfish farming business. We're finally getting into the practical aspect of this series, and today's article will be showing you how to prepare your pond.

How to Prepare Your Pond Before Stocking Your Catfishes

1. Dig Your Pond

If you already have a pond, or plan to rent a pond, skip to point 2.

If you'll be using a tank or a concrete pond, you can skip steps 1 through 5 altogether and just jump to step 6.

If you're yet to dig your pond, an ideal pond for stocking 1,500 fishes from Juvenile till 6 months maturity should be *about 15m x 15m, or approximately 50ft by 50ft.*

This will take the shape of a square and should be *at least 3ft deep, and could be up to 5ft deep if possible.*

Just give this information to your contractor; tell him the shape of the pond, the width/length as well as the depth.

Exactly how much this will cost will differ depending on what part of the world you are in. Over here in Nigeria, depending on your area, you could have manual laborers dig a 15m x 15m pond that is 4ft deep for around N120,000 – N150,000; that's around \$500 – \$700 at the time of writing this.

Costs should be higher, possibly significantly, depending on what part of the world you are in.

You can also use excavators to dig your ponds; when I just got started, I dug my first 2 ponds with an excavator. I had to stop since the area was waterlogged and swampy and the *excavator shoes* couldn't comfortably move in swampy areas.

That said, an excavator can easily dig two 15m by 15m ponds in a day, depending on the capacity of the machine and the skillfulness of the operator.

If you were to use manual labor, however, with an average of 4 – 5 people working for you daily, it will probably take at least 5 days to complete one 15m x 15m pond that is 4ft deep.

2. De-mud Your Pond

Assuming you already have a pond that you plan to use, that isn't newly dug, or you plan to rent a pond, the next step is to "de-mud" your pond; this is basically removing the mud from your pond to make it more suitable for your fishes.

When a fish pond is being used, due to rain falling and washing sand from the dike of the pond back into the pond, mud will gradually start to accumulate in the pond; catfishes are also very strong and rugged, so sometimes their activity against the wall of the pond will lead to sand falling from all sides of the pond into the pond.

In other to make things much easier for you when it is time to harvest, you'll need to de-mud the pond.

When de-mudding your pond, you can go about it in two ways:

- Ask your contractor to just remove the mud in your pond; this is the easiest way out.
- Ask your contractor to remove the mud in your pond and add to its depth; instead of asking for a de-mud, you can ask your contractor to make your pond 1ft deeper; this is the best option, since a deeper pond is always better for catfishes.

If it is a pond that has been used before, you can easily find big fishes (I'm talking 1 – 2kg big) hiding inside the mud in the pond; these are potential predators to your juvenile fishes if you just stock without de-mudding your pond.

3. Ensure Your Dike/Embankment is Very High

Catfish farmers often have to deal with a lot of problems, and a common problem during the rainy season is flood that can carry away your fishes.

Since I'm recommending having your pond in an area close to a stream/river, I can't overemphasize the importance of having really big dikes/embankments for your pond; you want something at least 2 to 3ft higher than the highest water level of your pond; it is better if your dike is a bit taller.

Here's a picture of one of my ponds with a "good enough" dike:



By ensuring the dike/embankment of your pond is big/tall enough, you can ensure that it will be very difficult for your pond to become so filled that water starts to carry your fishes away, especially during the rainy season.

If you're wondering how you can make your dikes taller; this can be done automatically while de-mudding your pond or while digging to make it deeper. Sand removed from the pond can be thrown at the various sides to make your dikes taller.

Better still, you can use sandbags to make your dikes taller.

Here's a picture of a pond I did some serious "sandbag work" on; you'll easily see the arrangement of the sandbags at one side of the pond:



4. Ensure There's an Inlet and Outlet

The next step is to make sure there is an inlet and outlet for your pond; this often comes in form of a pipe through which water can enter and go out of your pond.

Here's a picture of an inlet for one of my ponds; the inlet links directly to a small gutter I dug, that connects to a very small stream close by. If I want water to enter into my ponds, it is as easy as blocking off the gutter so water gathers around my inlet and starts flowing in.



Here's a picture of an outlet; this links to another gutter outside, and water flows out automatically once it reaches the level of the outlet.



The inlet can be placed slightly higher than the outlet to ensure maximum water inflow and outflow; if you're sure of the *water pressure* from where water will be entering into your inlet (assuming water is coming from a stream, from a gutter that is having water flow into it 24/7, or from another pond that is constantly supplied with water), then it is okay to have your inlet at the same level as your outlet or even slightly lower than your outlet. The water pressure will take care of things and ensure water is still being pushed into your pond. However, water could be returning to the inlet, if the outlet is higher, should water stop coming in through the inlet or should water pressure go down drastically.

That said, it is usually better for your outlet to be slightly lower than your inlet, so water keeps flowing in and going out irrespective of the abundance, or absence, of external pressure.

There are several advantages to ensuring there's a functioning inlet and outlet for your pond:

- It takes care of your pond in case of heavy rain or slight flood; the last thing you want is for water to just be entering your ponds during periods of heavy rain without a way to go out. A good inlet and outlet ensures water is escaping your pond just as it is entering it, thus preventing overflow of your pond.
- It ensures the quality of your water; bad/polluted water can reduce the response of your catfishes to feeding by up to 70%, which in turn affects their growth. A lot of things can pollute stagnant pond water; this includes fish activity and excrement, particles of the feed you're giving to your fishes and a sudden increase in the number of fishes that die if they aren't quickly taken care of.

That said, a pond with good inflow and outflow of water will always yield bigger fishes.

5. Treat Your Pond

Once your pond is prepared and ready, the next step is to treat it.

This applies only to earthen ponds, whether you just dug them or whether you are de-mudding them.

When I dug *all* my ponds, I currently have 7, we found various predators to juvenile catfishes inside the ponds; this includes big snakes, tortoises, monitor lizards and other catfishes. The last thing you want is for them to start feasting on your baby catfishes as soon as they are introduced into the pond.

That said, the very first thing you want to do after preparing your pond – whether it is new or you just de-mudded it – is to treat it with chemical that can kill all the organisms in it.

Available chemicals might differ depending on your location, and this is something you probably want to look into, but over here I use Phostoxin (a variation of which is Justoxin) to treat my ponds.

I've also heard that lime can be effective for killing off organisms in a pond before stocking.

Before treating your pond, you want to block water from going in or coming out for at least two weeks, the duration of which you will be unable to use your pond.

Assuming you are using a pond that is 15m by 15m wide and 4ft deep, you can use 3 tubes of Forcetoxin to treat it; a tube usually contains 30 tablets, making it a total of 90 tablets you'll be putting into the pond.

Pour all the tablets into the pond, ensuring you cover all angles, and make sure you wear protective gloves before applying the tablet and wash your hands

carefully after; you also don't want to ingest it in any way, as Phostoxin can be very poisonous.

Once your pond has been treated, don't use it for up to 2 weeks; I have heard that it takes around 5 days for the effect of most chemicals used to treat ponds to wear off, but you don't want to take any risk since we're talking about thousands of fishes here.

To be safer, even after waiting, you can pump out water from the pond and introduce new water into it to ensure the effects of the chemical used has completely wore off. If for some reason you want to stock earlier, you can do this as well; just make sure to pump water out of the pond at least twice.

Once your pond is treated, you'll often start to see most of the predators in it dead and floating on the water surface within a day or two of treatment.

6. Net Your Pond

The final step in the preparation stage is to net your pond.

I can't get too technical about this since my knowledge on the different types of net is limited; I've heard they have "double fingers", "four fingers" or "single finger", etc. This is just speculation, so I'm not sure.

What I do, if I have to get the net myself, is that I go to the store where they sell equipments and tools for fish farmers, and I ask them to give me the kind of net used to net fish ponds; most of the times, though, I have the contractors digging/de-mudding my ponds handle the netting part of the process as well.

Conclusion

Following the 6 steps in this article, hopefully, you now have your pond ready to be stocked with fishes.

The next step is to get your catfishes and put them into your ponds; this process is called "stocking", and I'll be talking about this in my next article in this series. Stay tuned!

Terms Used:

De-mud; this means to remove mud from a pond to make it more suitable for your fishes.

Dike; a mound of earth/soil that is built round your pond to prevent water from overflowing; it is also called an embankment.

Water pressure; this is the force that pushes water through your pipes. If a lot of water is coming from an external source, maybe a stream or river, then the water pressure is usually high due to the continuous flow of water pushing it forward. This means your pipe can be easily submerged by water in your pond,

yet water will keep flowing into your pond, instead of going back out, due to the external pressure pushing the water in.

Stocking; this basically means introducing juvenile catfishes into your pond.

Exercise 1. Make up 20 different types of questions for text B.

Exercise 2. Retell text B.

Exercise 3. Write a short summary of text B.

Text C

pH in Fish Farming

Introduction

Importance of Water Quality in Aquaculture

Fish perform all their bodily functions in water. Because fish are totally dependent upon water to breathe, feed and grow, excrete wastes, maintain a salt balance, and reproduce, understanding the physical and chemical qualities of water is critical to successful aquaculture. To a great extent water determines the success or failure of an aquaculture operation.

Very high (greater than 9.5) or very low (less than 4.5) pH values are unsuitable for most aquatic organisms. Young fish and immature stages of aquatic insects are extremely sensitive to pH levels below 5 and may die at these low pH values.

High pH levels (9-14) can harm fish by denaturing cellular membranes. Changes in pH can also affect aquatic life indirectly by altering other aspects of water chemistry. Low pH levels accelerate the release of metals from rocks or sediments in the stream. These metals can affect a fish's metabolism and the fish's ability to take water in.

High pH Levels Effect

At high pH (>9) most ammonium in water is converted to toxic ammonia (NH₃) which can kill fish. Moreover, cyanobacterial toxins can also significantly influence fish populations.

NOTE: One critical parameter is pH: Not only for the health of the fish, but for the bacteria have that cleaned up the water as well as nitrifiers that remove excess nutrients.

pH is important in aquaculture as a measure of the acidity of the water or soil. Fish cannot survive in waters below pH 4 and above pH 11 for long periods. The optimum pH for fish is between 6.5 and 9. Fish will grow poorly and reproduction will be affected at consistently higher or lower pH levels

The Effects of pH on Warm-Water Pond Fish

pH	Effects on fish
4	Acid death point
4 to 5	No reproduction
4 to 6.5	Slow growth
6.5 to 9	Desireable ranges for fish reproduction
9 to 10	Slow growth
≥11	Alkaline death point

Ammonia

Fish excrete ammonia and lesser amounts of urea into the water as wastes. Two forms of ammonia occur in aquaculture systems, ionized and un-ionized. The un- ionized form of ammonia (NH₃) is extremely toxic while the ionized form (NH₄⁺) is not. Both forms are grouped together as "total ammonia." Through biological processes, toxic ammonia can be degraded to harmless nitrates.

In natural waters, such as lakes, ammonia may never reach dangerous high levels because of the low densities of fish, But the fish farmer must maintain high densities of fish and, therefore, runs the risk of ammonia toxicity. Un- ionized ammonia levels rise as temperature and pH increase (Table 1).

Table 1 - Percentage of total ammonia that is unionized at various temperatures and pH.

pH	12.2 degC	16.7 degC	20 degC	23.9 degC	27.8 degC	32.2 degC
7.0	0.2	0.3	0.4	0.5	0.7	1.0
7.4	0.5	0.7	1.0	1.3	1.7	2.4
7.8	1.4	1.8	2.5	3.2	4.2	5.7

8.2	3.3	4.5	5.9	7.7	11.0	13.2
8.6	7.9	10.6	13.7	17.3	21.8	27.7
9.0	17.8	22.9	28.5	34.4	41.2	49.0
9.2	35.2	42.7	50.0	56.9	63.8	70.8
9.6	57.7	65.2	71.5	76.8	81.6	85.9
10.0	68.4	74.8	79.9	84.0	87.5	90.6

To determine un-ionized ammonia concentration, multiply total ammonia concentration by the percentage which is closest to the observed temperature and pH of the water sample. For example, a total ammonia concentration of 5 ppm at pH 9 and 20 deg C would be: 5 ppm total ammonia X 28.5% = 1.43 ppm.

Toxicity levels for un-ionized ammonia depend on the individual species; however, levels below 0.02 ppm are considered safe. Dangerously high ammonia concentrations are usually limited to water recirculation system or hauling tanks where water is continually recycled and in pond culture after phytoplankton die-offs. However, the intermediate form of ammonia--nitrite--has been known to occur at toxic levels (brown-blood disease) in fish ponds.

Buffering Systems

A buffering system to avoid wide swings in pH is essential in aquaculture. Without some means of storing carbon dioxide released from plant and animal respiration, pH levels may fluctuate in ponds from approximately 4-5 to over 10 during the day. In recirculating systems constant fish respiration can raise carbon dioxide levels high enough to interfere with oxygen intake by fish, in addition to lowering the pH of the water.

pH

The quantity of hydrogen ions (H⁺) in water will determine if it is acidic or basic. The scale for measuring the degree of acidity is called the pH scale, which ranges from 1 to 14. A value of 7 is considered neutral, neither acidic or basic; values below 7 are considered acidic; above 7, basic. The acceptable range for fish culture is normally between pH 6.5- 9.0.

Alkalinity

Alkalinity is the capacity of water to neutralize acids without an increase in pH. This parameter is a measure of the bases, bicarbonates (HCO₃⁻), carbonates (CO₃⁻⁻) and, in rare instances, hydroxide (OH⁻). Total alkalinity is the sum of the carbonate and bicarbonate alkalinities. Some waters may contain

only bicarbonate alkalinity and no carbonate alkalinity. The carbonate buffering system is important to the fish farmer regardless of the production method used. In pond production, where photosynthesis is the primary natural source of oxygen, carbonates and bicarbonates are storage area for surplus carbon dioxide. By storing carbon dioxide in the buffering system, it is never a limiting factor that could reduce photosynthesis, and in turn, reduce oxygen production.



Also, by storing carbon dioxide, the buffering system prevents wide daily pH fluctuations. Without a buffering system, free carbon dioxide will form large amounts of a weak acid (carbonic acid) that may potentially decrease the night-time pH level to 4.5. During peak periods of photosynthesis, most of the free carbon dioxide will be consumed by the phytoplankton and, as a result, drive the pH levels above 10. As discussed, fish grow within a narrow range of pH values and either of the above extremes will be lethal to them.

In recirculating systems where photosynthesis is practically non-existent, a good buffering capacity can prevent excessive buildups of carbon dioxide and lethal decreases in pH. It is recommended that the fish farmer maintain total alkalinity values of at least 20 ppm for catfish production. Higher alkalinities of at least 80-100 ppm are suggested for hybrid striped bass. For water supplies that have naturally low alkalinities, agriculture lime can be added to increase the buffering capacity of the water.

Why Lime?

Several factors contribute to lowering the pH in ponds. Rain is acidic, usually with a pH of 5.2 to 5.6, and industrial pollution can lower it to 2.5. In areas with coniferous forests, rain percolates through the pine needles, making it even more acidic. Over time, this leaches all the minerals out of the soil. Also, the clay bottom necessary to keep a pond from leaking is acidic, and decaying plants can release additional acids.



Agricultural lime being distributed evenly over a pond from a pontoon barge.

Agricultural lime is crushed limestone (calcium carbonate), which will neutralize these acids and act as a buffer to keep the pH from changing rapidly. Fish can live in water with a wide range of pH, from about 4 to 10. However, rapid changes in pH can kill fish, even within this range. While fish can adjust their body OBJ chemistry to different environmental pH values, this takes energy which could otherwise be used for growth and reproduction. Maintaining a constant internal pH in an extreme environment causes fish stress, making them susceptible to disease and parasites. In a limed pond, the fertilizer element phosphorus is in the soluble, orthophosphate form that is available to plankton; otherwise, it will be mostly tied up in bottom sediments. Finally, liming can increase the amount of carbon dioxide in water, which is used in photosynthesis. For these reasons, liming ponds has been shown to double bluegill production in ponds, without adding any fertilizer.

Summary

Measurement points: In tank

Typical problems: Installation of pH sensor at right measuring point

Remedies: Using immersion fitting with 2" pipe mounting accessories support This crucial levels of pH can be measured by using Yokogawa's 4-wire/2-wire pH Analyser with suitable immersion fitting and sensor. For cleaning one has to take out pH sensor and then put back the cleaned sensor. The pH sensor will be a combination electrode having double junction electrodes, which provide long time stability and a prolonged lifetime.

Related Products & Solutions



2-Wire 24VDC Transmitter / Analyzer DO202

This loop-powered analyzer is designed for both ppm and ppb dissolved oxygen measurements, suitable for both Pharmaceutical and Power Generation applications. HART, Foundation Fieldbus, and Profibus versions are available.



4-Wire pH/ORP Analyzer PH450

The new EXAxt 450 series builds on the superior functionality of the industry leading Yokogawa EXA series by enhancing the EXA's proven operation and application flexibility. The Model 450 series feature a uniquely simple touch screen menu structure that offers a choice of five different languages (English, French, German, Italian or Spanish).



All-in-One Digital Smart pH/ORP Sensor FU20F

All-In-One pH and ORP digital smart sensor that keeps the motto "Simple is best" while combining the sensor with built-in intelligence and direct digital communication.



All-in-One pH/ORP Sensor Series FU20/FU24/PH20

The PH20, FU20 and FU24, all-in-one pH and ORP, sensors show how Yokogawa applies the motto "Simple is best" to sensor technology.



Immersion Holder FD20

The immersion fittings are designed for either pH or ORP (Redox) measurements in tanks, open vessels and drains. They have a "hoisting cable" for easy maintenance.



pH and ORP Analyzers

pH and ORP meters, analyzers and transmitters are used for continuous process monitoring of pH and ORP to ensure water/product quality, monitor effluent discharge, batch neutralization, pulp stock, scrubbers, cooling towers, chemical, water/wastewater treatment and many other applications.

Exercise 1. Make up 20 different types of questions for text C.

Exercise 2. Retell text C.

Exercise 3. Write a short summary of text C.

GRAMMAR

THE SEQUENCE OF TENSES

General rules:

The rule states: if the verb in the principal clause is in one of the past tenses, a past tense (or future-in-the-past) must be used in the subordinate clause. The action expressed in the subordinate clause can be simultaneous with the action expressed in the principal clause, prior or posterior to that of the principal clause. Study how the Rule of the Sequence of Tenses is observed in such clauses.

	<i>Simultaneous Action</i>	<i>Prior Action</i>	<i>Future Action</i>
I knew (that) - He said	- he lived in Kiev он <i>живет</i> в Киеве - they were waiting for US они <i>ждут</i> нас - he had been living in Kiev since 1946 он <i>живет</i> в Киеве с 1946 года - he had known her for two years он <i>знает</i> ее 2 года	- he had already left Moscow он <i>уже уехал</i> из Москвы - it had been raining as it was wet outside <i>шел дождь</i> , так как на улице мокро - she had been ill for two weeks она <i>болела</i> две недели	- they would arrived on Sunday они <i>приедут</i> в воскресенье - they would be working at 6 в 6 они <i>будут</i> <i>работать</i> - he would have translated the article by Monday он <i>уже переведет</i> эту статью к понедельнику

So a useful general rule is: we move the reported clauses “**one tense back**”

present becomes past, past becomes past perfect, will becomes would.

Study how the tenses are changed according to the rule of the Sequence of Tenses.

Present Indefinite I do...	Past Indefinite I did...
Present Continuous He is doing...	Past Continuous He was doing...
Present Perfect I've done...	Past Perfect I had done...
Past Indefinite I did...	Past Perfect (or stays the same) I did / had done...
Past Continuous	Past Perfect Continuous
I was doing...	I had been doing...
Past Perfect I had done...	does not change
will (future)	would
can	could
may	might
must	must or had to
could	have done do not change
might	havedone have
should	done do not change
needn't	have done do not change

Time and place changes:

here	there
this	that
these	those
now	then at that day
yesterday	the day before
	the previous day
a year ago	a year before
last night	the previous night
tonight	that night

Adverb changes depend on the context. It is not always necessary to make these changes, especially in spoken Indirect Speech.

“I’ll see you tonight”, he said. - He said he would see me tonight.

NOTES:

1. The main sphere where the Sequence of Tenses is applied is the object clause:

Harris **said** he **knew** what kind of place I **meant**.

2. If there are several subordinate clauses in a sentence the rule is observed in all of them.

I **knew** that he **had told** her that he **received** the letters every week.

Я *знав*, що він *сказав* їй, що одержує ці листи щотижня.

I **thought** he **would tell** her that he **intended** to go to the Crimea.

Я *вважав*, що він *скаже* їй, що він *наміряється* відвідати Крим.

He **said** that Jack **had told** her that he **was writing** a play.

Він *сказав*, що Джек *говорив* їй, що він *пише* п'єсу.

3. The Sequence of Tenses is not observed if the object clause expresses a general truth or something is represented as habitual, customary or characteristic.

The teacher **told** the children that water **boils** at 100°C.

Galileo **proved** that the Earth **moves** round the Sun.

He **asked** what time the train usually **starts**.

We **knew** that he **plays** tennis well.

The speaker **said** that the peoples **want** peace.

4. In *when/if* clauses we use *Past Indefinite/Past Continuous/Past Perfect* depending on the situation.

I **thought** that we **would discuss** the problem when the manager **returned** from Moscow.

He **said** he **would be reading** while she **was writing** the letter.

He **said** that he **would go** home after he **had translated** the article.

5. In **attributive clauses, adverbial** clauses of **cause** and **comparison** we also use *Present* or *Future*.

My brother **told** me about the book you **are writing**.

He **was not able** to translate the article because he **doesn't know** English well enough.

He **refused** to go to the theatre because he **will have** an exam in a few days.

It **was** not so cold yesterday as it **is** now.

He **was** once stronger than he **is** now.

6. When we say how long something has been happening the sentence can have double meaning. It depends on the context or situation.

I knew that she **had been ill for two months**.

1. Я знав, що вона хворіє вже два місяці.

2. Я знав, що вона хворіла два місяці.

But: I **knew** that she **had been ill**. - Я *знав*, що вона *хворіла*.

He **said** that it **had been raining**. - Він *сказав*, що *йде дощ*.

7. Past Indefinite can stay the same if we use:

in 1945

2 years ago

yesterday

last week

when he came

He said that he left Kiev 5 years ago

He knew that Peter was at home yesterday

She said she was working when I rang her up

But: He said that he had left Moscow the day before.

two years before.

the previous night.

8. The Past Indefinite after “*since*” generally remains unchanged.

She **said**, “I **have been writing** since I **came**.”

She **said** she **had been writing** since she **came**.

Grammar exercises

- Ex. 1. Say whether the action of the object clause precedes, follows or is simultaneous with the action of the principal clause in the following sentences:**

1. He asked me what work I was doing and whether I intended to go to a university. 2. She claimed that she had met Monty on her way home. Monty had told her that I would probably come to his place later. 3. Then I thought about Mother. She would certainly ask me where I had been all day. 4. She said she would be staying in town next day to do some shopping. 5. I will say that we have agreed to provide for a child. 6. I don't think that I shall ever work for your

father. 7. Out of the corner of my eye I saw the youths had stopped talking and were watching us. 8. I hope you know what you're doing. 9. In the hotel the waiter told me that an American had been staying there for three months. 10. It was also rumoured that Dan had got married.

Ex. 2. Explain how the rules of the Sequence of Tenses work in these clauses. Translate the sentences.

1. She called my mother to say that they had just got a telegram from Boston announcing that Henry's brother had been married in Germany. 2. I knew she was itching to tell me what had happened. 3. He knew that his mother would think he was seriously ill and would probably speak to the teacher. 4. He wanted to return to the house to see how Billy was doing and tell him that he would be going out to California in two or three days. 5. Rudy decided that he would have to tell Bogart that it was impossible for him to appear before the board the next day, but that he would offer to do so any other day.

Ex. 3. Give your reasons as to why the rules of the Sequence of Tenses are not observed in the following sentences.

1. He says he is free tomorrow. 2. He spoke with the satisfaction of a competent workman who knows his job from A to Z. 3. He sought pleasure in the simple and natural things that life offers to everyone. 4. Monty told me that he had no permit for the gun, and that in England it is illegal to own a gun without a permit. 5. I knew I should go; but we sat there because it is difficult to go without any particular reason for leaving. 6. Billy folded his arms and leaned back. "I told you I don't like milk."

Ex. 4. Make the action of the following object clauses simultaneous with those of the principal clauses.

1. I thought you (to have) better sense. 2. She could not imagine what he (to do) there. 3. I forgot what he (to look) like. 4. I did not know whether the doctor (to mean) what he (to say) or whether he (to have) a joke at my expense. 5. What surprised me was that Pat (to be) so much at home here. 6. He asked me what work I (to do) and whether I (to intend) to go to a university. 7. I was surprised you (to know) my name. 8. He told his father that now he (to make) ten dollars a week less. 9. The last two weeks she had been saying to everyone who phoned her that she (to be) unwell and (not to leave) home. 10. When I knew him better he admitted that he (to feel) lonely in London. 11. She wanted Wilfred to forbid my walking in the park alone. She said it (to be) dangerous.

Ex. 5. Make the actions in the following object clauses precede those of the principal clauses.

1. At ten o'clock he telephoned again, saying that he (to change) his mind. 2. I knew that for the past twenty-five years he (to buy) the same paper each morning. 3. Indeed it was whispered that the headmaster (to receive) a telegram from the boy's father. 4. She seemed to have forgotten what (to happen) a few minutes before. 5. But he was uneasy. His wife would easily find out that he (to go) to Saigon. 6. It was not known where he (to spend) his early childhood. 7. The question was why he (to do) it at all. 8. Then he admitted that he (to live) since the summer in his father's house. 9. What she could not understand was why he (to tell) them such a pack of lies. 10 She wrote that they (to let) their house for a year. 11. Her mother had once confided to her that she (to want) to be an actress. 12. It was probably true that he (to be) quite fond of his late brother. 13. One day she told me why she never (to get married). 14. I wondered what she (to do) there so late at night.

Ex. 6. Use the required tense-aspect forms in the following sentences, observing the rules of the Sequence of Tenses, where necessary.

1. When I went into the office next morning I already (to formulate) my plan. 2. Well, I don't think I ever (to see) you before. 3. She ended by saying that she (to think) she (to make) a mistake. 4. She knew what (to go) on in their minds. 5. So I went into the living room, where my aunt already (to wait) for me. 6. She telephoned her husband to the office to say that her brother (to return) from abroad. 7. An old friend rang up to ask how Elizabeth (to feel), and whether she (can) go with his wife to the concert on Sunday morning. 8. Most of the trees already (to put) out their leaves and there were buds everywhere. 9. He remembered that he (not to see) Lily for three weeks. 10. She hadn't yet figured out what she (to be) going to do and she (to hope) to be able to wait a little. 11. It was possible that Jack (to hang) around. 12. Everybody thought they (to live) in happiness for nearly thirty years. 13. She didn't know why she (to invent) suddenly the story.

Ex. 7. Translate the sentences from Ukrainian into English.

1. Він казав мені, що цікавиться історією. 2. Він знав, про що вона думає. 3. Він казав, що повернеться дуже скоро. 4. Я знав, що він живе в Лондоні. 5. Я знав, що вона жила в Сан-Франциско. 6. Вона мені не казала, що балакала з ними. 7. Я думав, що він одержує листи від неї. 8. Я був радий, що він отримав листа від неї. 9. Я думав, що вони запросять нас. 10. Я був впевнений, що він працює на цьому заводі. 11. Я був впевнений, що він працює, і тому не увійшов до кімнати. 12. Він казав мені, що бачив їх напередодні. 13. Я був впевнений, що він сидить у саду. 14. Вона казала, що книга їй подобається. 15. Я був впевнений, що він живе тут вже багато

років. 16. Я вчора чув, що вони у Единбурзі. 17. Ми чули, що вони були у Ліверпулі. 18. Я чув, що вони працюють вже декілька місяців. 19. Ми не знали, що він хворий. 20. Ми не знали, що він так давно хворіє. 21. Він не знав, що ми знаємо один одного з дитинства. 22. Мені казали, що вони учора повернулися до Полтави.

Ex. 8. Translate the following into English, observing the rules of the Sequence of Tenses.

1. Я був впевнений, що він шкодує, що посварився з нею. 2. Я подумав, що він втомився та запитав його, що він робив весь цей час. 3. Я мав враження, що він знаходиться там вже деякий час. 4. Я кивнув і сказав “так”, відчувуючи, що то саме те, чого їй хочеться. 5. Вона сказала, що не може зрозуміти, чому вони змінили рішення. 6. У мене була підозра, що вона забула згадати, що я чекаю її. 7. Я не маю поняття, чи знає вона, що Філ буде тут. 8. До речі, Тед знає, що моя сестра приїжджає завтра? 9. Він ще не знав, що буде робити у Нью-Йорку. 10. Він казав, що вони обговорять це питання, як тільки директор повернеться з Києва. 11. Я думав, що ви зателефонуєте мені, коли отримаєте телеграму. 12. Я сказав, що прочитаю цю книгу тільки після того, як складу іспити. 13. Він сказав, що не рушить додому, поки не закінчить цю роботу. 14. Я боявся, що він буде сердитися, якщо я не прийду вчасно. 15. Він пообіцяв мені, що поговорить з професором, якщо побаче його в університеті.

Ex. 9. Use the required tense-aspect forms in the following sentences.

1. She scarcely realized what (to happen). 2. Oh, Jane! I didn't think you (to be) so unkind. 3. Mary (to return) to the room. All (to sit) beside the gas fire and (to take off) his shoes. 4. Her eyes (to be) puffed, and she obviously (to cry) that afternoon. 5. She realized that he (to try) to tell her how lonely he (to be). 6. His cheek (to be) cut. When she (to see) it she (to say), “Oh, you (to fight) again.” 7. I thought I (to sleep) well, being tired. 8. She (to make) me promise to say nothing about it till she (to have) a chance of breaking the news to her father gradually. 9. She asked if Mr Clennam (to tell) her where he (to live). 10. As we (to drive), her eyes (to stare) rigidly out of the car window. 11. Sir Wilfred knew, from the frequency with which she used her handkerchief, that tears (to run) down her cheeks. 12. Delany (to sit) up in bed and (to eat) his dinner when Jack (to come) into the room. His complexion (to be) ruddy. Obviously he (to be) shaved. He (to have) a glass of red wine with his meal. He (to wave) his fork as he (to see) Jack. 13. He (to remain) in his seat, as though studying his programme, till the three (to pass) out into the foyer. 14. Darkness (to fall) when he finally (to return) to the hotel. He (to say) nothing to Pat except that he (to

turn) down the job. He (cannot) give her any explanation until he completely (to understand) the meaning of what (to happen). 15. I (to sit) there for about ten minutes, pretending to read, when someone (to sit) down at my table. 16. She (to look) up at him from where she (to sit). Her make up things (to lie) in front of her. She (to do) her face. 17. While his wife (to read) the letter, he (to cross) to the window. 18. As Hugh and I (to come) down the steps we nearly (to run) into my father.

Ex. 10. Translate into English.

I.

1. Я думав, що ты зайнятий. 2. Мені сказали, що хотіли піти в оперу. 3. Ми сподівались, що ви вмієте плавати. 4. Вона заявила (announce), що хоче піти з нами. 5. Том запитав, скільки раз на тиждень ми займаємося англійським. 6. Лікар сказав, що я повинен залишитись вдома. 7. Мені було жаль, що йому довелось залишитися вдома. 8. Вона сказала, що любить історичні романи. 9. Я не знав, що він живе на цій вулиці. 10. Петро сказав, що музей сьогодні зачинено. 11. Я думав, що моя сестра добре їх знає. 12. Він вирішив, що його товарищі все ще грають у шахи. 13. Вона сказала, що вони зазвичай встають і 8-ій годині. 14. Я не знала, що ви теж любите музику.

II.

1. Ти знав, що він поїхав за місто? 2. Вона мені не сказала, що балакала з вами. 3. Мати сказала, що вони вже пообідали. 4. Генри спитав у мене, де я дістав цю книгу. 5. Він подзвонив на вокзал і дізнався, що поїзд вже пішов. 6. Сказала вам Ольга, що вона прийняла вашу пропозицію? 7. Вона заперечила, що говорила з Ніною. 8. Невже він не знав, що діти пішли до лісу? 9. Вона думала, що він вже закінчив інститут. 10. Том сказав, що бачив цей фільм.

III.

1. Вона сказала, що візьме участь в роботі. 2. Мати сподівалась, що син повернеться через тиждень. 3. Ми сказали, що повернемося за годину. 4. Він вважав, що вони будуть працювати разом. 5. Ми сподівалися, що ввечері зможемо піти у кіно. 6. Я не знав, що твої друзі поїдуть відпочивати без тебе. 7. Батько сказав нам, що ми будемо робити у суботу. 8. Вони сказали, що лекція розпочнеться о 5.00. 9. Ми їм сказали, що не будемо чекати їх. 10. Я думав, що у кожного з нас буде місяць відпустки літом.

Ex. 11. Translate the sentences from Ukrainian into English.

1. Вона сказала, що була дуже зайнята і давно не була в театрі. 2. Я був впевнений, що він сказав вам, що отримав листа від неї. 3. Я був здивований, що ви не сказали їм, що збираєтесь їхати в Дувр. 4. Я думав, що ви прочитаєте в газеті, що делегація вже прибула до Херсону. 5. Він обіцяв, що скаже вам, що я вже повернувся і хочу побачити вас. 6. Вона боялась, що ви скажете, що не можете допомогти їй. 7. Я знав, що він відчуває, що я незадоволений результатами його дослідів. 8. Я був впевнений, що він вже чув, що ми повернулися з півдня. 9. Він сказав, що пошле телеграму, якщо не отримає звісток від брата. 10. Роберт сказав, що його жінка все ще в лікарні і він збирається провідати її ввечері. 11. Наш гід сказав, що автобус тільки що прийшов і відправиться в Глазго через годину. 12. Ваш товариш сказав мені, у чому справа, і я думаю, що зможу допомогти вам. 13. Вона сказала, що дуже зайнята і ще не була в театрі після канікул. 14. Вчителька сказала, що ми повинні повторити всі правила, якщо хочемо скласти іспити добре. 15. Мій друг обіцяв дістати декілька книг з цього питання, як тільки я почну працювати над статтею. 16. Вона думала, що завтра буде гарна погода. 16. Ми чули, що ви вільні, і вирішили, що ви зможете допомогти нам.

Ex. 12. Translate the sentences from Ukrainian into English.

I.

1. Я помітив, що вона дивиться на мене.
2. Я знав, що вона не повернеться.
3. На платформі було мало людей, всі вже зайняли свої місця в вагоні.
3. Вона знала, що вона має рацію і була права з самого початку.
4. Я сподівався, що хтось знайшов мої ключі і передасть їх мені.
5. Було зрозуміло, що трапилося щось жахливе.
6. Він обіцяв, що все буде зроблено.
7. Вона скаже, що запізнилася на потяг.

II.

1. Я знаю, що вам нема чого боятися.
2. Я знав, що він пошкодує про це.
3. Я дам вам відповідь, коли я поговорю з батьком.
4. Я хотів знати, як багато вже зроблено.
5. Вона поцікавилася, куди вони збираються їхати.
6. Мати запитала, що ми робили весь цей час.
7. Всі помітили, що він погано грав у другому сеті.
8. В кімнаті було темно, хтось вимкнув світло.

GRAMMAR:

DIRECT AND INDIRECT SPEECH

INDIRECT STATEMENTS

Study the following pairs of sentences in Direct and Indirect Speech. Notice carefully the changes in personal and possessive pronouns. Indirect Speech is formed according to the Rule of the Sequence of Tenses. The verbs most commonly used to introduce the reported speech are: ***to tell, to say, to add, to notice, to remark, to explain, to inform, to remind, etc.***

Note: to say **smth** (to **smb**)
to tell **smb** smth

DIRECT SPEECH

Jimmy said, "My brother is learning to drive."

(The Present Continuous Tense)

Nick said, "Sometimes I go home by tram."

(The Present Indefinite Tense)

The teacher told John, "You didn't write exercise two."

Frank said, "Ron fell down, but he didn't hurt himself."

(The Past Indefinite Tense)

Bob said, "My uncle has just arrived from Paris."

(The Present Perfect Tense)

INDIRECT SPEECH

Jimmy said that his brother was learning to drive.

(The Past Continuous Tense)

Nick said that sometimes he went home by tram.

(The Past Indefinite Tense)

The teacher told John that he hadn't written exercise two.

Frank said that Ron had fallen down, but he hadn't hurt himself.

(The Past Perfect Tense)

Bob said that his uncle had just arrived from Paris.

(The Past Perfect Tense)

If the reporting verb is in the present, the tenses that follow are usually the same as those used in the original statement.

“I’ve eaten.” *He says he **has** eaten.*
“I enjoyed it.” *He says he **enjoyed** it.*

The reporting verb is often in the present when:

- we are passing on messages: *“What does Mother say?” - She **says** you **must** come in now.*
- reading aloud, reporting: *The instructions **say** that you **connect** this plug to the set.*
- reporting what someone often says: *She **is** always **telling** me how rich she **is**.*

EXERCISES

Ex. 1. Change the following sentences into Indirect Speech.

1. Jack told his father, "I hope to pass the examination." 2. Henry said to me, "The teacher is listening to us." 3. Bob said to Tom, "I made no mistakes in the last dictation." 4. I told the policeman, "I saw the thief in the garden." 5. He said, "I haven't read many English books." 6. Jack's father said to him, "You haven't cleaned your shoes." 7. Mary said, "I don't want to wear my old dress." 8. My mother said to me, "I feel very tired, and I have a headache." 9. My friend told me, "We have plenty of time to do our work." 10. I said to my sister, "I haven't seen my uncle for a long time."

Ex. 2. Change the following sentences into Direct Speech.

1. My sister said that she hadn't got a watch. 2. The teacher told his students that he was pleased with their work. 3. Itold him that I hadn't seen his brother for a long time. 4. I told my mother that Henry was studying medicine at the University. 5. She told the grocer that she didn't want any sugar. 6. We told the teacher that we didn't understand his question. 7. I told the taxi-driver that he was driving too fast. 8. She said that her children were playing in the garden.

Ex. 3. Choose the correct word from those in brackets.

1. My grandmother always _____ me about her childhood, (says/tells)
2. "Don't do that!" she _____ them. (said/told)

3. Did she _____ you where she had put my books? (say/tell)
4. When I was introduced to the actor he _____ a few words to me. (said/told)
5. That little boy is very bad. He _____ a lot of lies, (says/tells)
6. She _____ to me she didn't know what to do. (said/told)
7. He often _____ things like that, (says/tells)

Ex. 4. Put in the appropriate forms of "ask", "say" and "tell".

Who Has the Last Say?

Some people always ... that they don't build cars as they used to. What nonsense! I walked round the beautiful new Ferrari again, admiring the lines, when my thoughts were rudely interrupted. "Will you be long?" a voice ... sharply. "I haven't made up my mind yet," I ... looking up at a sour-faced traffic warden. "Well, you can't stop here," he ... me. "Who ... so?" I ... him cheekily. "I ... so," he ... to me. "It ... here," he added, "in case you can't read, "No waiting." "You read very well. Go to the top of the class," I ... him, "but I'll make my own decisions." "Oh, will you?" the traffic warden ... "Then so will I and I've decided to give you a ticket," he ... to me with relish as he began filling out the form. "Go ahead," I ... him. "This car doesn't belong to me anyway. I wish it did."

(From Alexander L. G. Longman English Grammar for intermediate students")

INDIRECT COMMAND AND REQUEST

An order or request in Indirect Speech is expressed by the Infinitive.

The verbs most commonly used to introduce indirect orders are: **to tell, to order, to command**. Requests are usually introduced by the verb **to ask**. More emotional forms are: **to beg, to implore** (умолять), **to urge** (настаивать, уговаривать).

STUDY THE FOLLOWING CHART

DIRECT SPEECH	INDIRECT SPEECH
The mother said to the lazy son, " Wake up! "	The mother <i>told</i> the lazy son to wake up.
Father said to me, " Remember to post these letters."	Father <i>reminded</i> me to post letters.
I said to Nick, " Shut the door, please."	I <i>asked</i> Nick to shut the door.
Mother said to the children, "Don't	Mother <i>warned</i> the children

ever enter this room.”	enter the room.
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EXERCISE

Ex. 5. Change the following sentences into Indirect Speech. Decide whether to use “told” or “asked”, or whether either of these two verbs is suitable.

1. Mary said to her brother, “Take the letter to the Post Office, please.” 2. The teacher said to Tom, “Collect the exercise-books and put them on my table.” 3. The old man said to the little girl, “Don’t run across the street.” 4. The teacher said to the pupils, “Learn the poem by heart.” 5. I said to my friend, “Meet me outside the cinema at six o’clock.” 6. Mary’s mother said to her, “Don’t go out without your coat.” 7. The teacher said to the students, “Open your books at page 60.” 8. The doctor said to the sick man, “Don’t go back to work for a fortnight.” 9. Jack said to the policeman, “Tell me the time, please.”

Ex. 6. Translate the sentences from Russian to English.

1. Я попросив Джека дати мені його словник. 2. Кондуктор застеріг пасажирів щоб вони не вискакували (get off) з автобуса на ходу, (while / go) 3. Учитель попросив студента стерти з дошки. 4. Мама попросила мене зачинити вікно. 5. Він нагадав мені відправити лист. 6. Батько заборонив дітям входити до його кабінету. 7. Інспектор попередив (warn) нас, що тут стоянка заборонена, (to park) 8. Гід порадив нам зазирнути і в цей невеликий музей.

INDIRECT QUESTIONS

Indirect general questions

1. The inversion in the direct question changes to statement word order.
2. If necessary, the tense is changed at the same time.
3. We use *if/whether* (ну) *after ask, want to know, wonder, not know, didn’t say/ tell me*.

Note: *to ask smb*
 to ask a question

DIRECT SPEECH	INDIRECT SPEECH
Ann's mother asked her, "Are you tired ?"	Ann's mother asked her if she was tired .
He asked his friend, "Do you like the wine?"	He asked his friend if he liked the wine.
I asked Frank, "Did you buy a new car?"	I asked Frank if he had bought a new car.
Ann's father asked her, "Have you finished the work?"	Ann's father asked her whether she had finished the work.
I asked my sister, "Will you go to Italy in summer?"	I asked my sister whether she would go to Italy in summer.

EXERCISE

Ex. 7. Change the following sentences into Indirect Speech.

1. The teacher asked Tom, "Do you come to school by bus or on foot?" 2. A man stopped me in the street and asked, "Have you got a match?" 3. The teacher asked us, "Do you understand the question?" 4. Henry's father asked his son, "Do you want to be an engineer or a doctor?" 5. I asked Peter, "Are you going to play football on Friday?" 6. He asked his secretary, "Has the postman been yet?"

Ex. 8. Translate the sentences.

1. Гід запитав туристів, чи не втомилися вони. 2. Я запитала своїх гостей, чи добре вони спали. 3. Він поцікавився, чи часто ми ходимо в театр. 4. Він хотів дізнатися, чи довго працює у нас містер Долбі. 5. Вона запитала мене, чи буде на вечірці Еліс. 6. Вона запитала мене, чи бачив я Джона останнім часом. 7. Господар готелю поцікавився, чи сподобався мені мій номер. 8. Вона запитала, чи працюємо ми зараз.

Indirect Special Questions

An indirect special question is introduced by the same adverb or pronoun that introduces the direct question.

DIRECT SPEECH	INDIRECT SPEECH
Peter asked, "Who has taken my book?"	Peter asked who had taken his book.
I asked the gardener, "What are you planting here this year?"	I asked the gardener what he was planting there that year.
Nina's sister asked her, "Who did you meet at the theatre?"	Nina's sister asked her who she had met at the theatre.
I asked my mother, "What did the teacher say ?"	I asked my mother what the teacher had said .
He asked Roger, "When will he come back ?"	He asked Roger when he would come back.
Ted asked Ron, "Where do your parents live ?"	Ted asked Ron where his parents lived .
The professor asked his student, "Why haven't you done the home assignment?"	The professor asked his student why he hadn't done his home assignment.

A direct subject-question has the same word order as the statement:
John paid the waiter. Who paid the waiter?

We keep the same word order when we report a subject-question, though if it is necessary, we change the tense.

The policeman asked, "Who left this car here?"

The policeman asked who (had) left that car there.

The teacher asked, "What made you change your mind?"

The teacher asked what had made me change my mind?"

Grammar exercises:

Ex. 9. Change the following sentences into Indirect Speech.

1. Mother asked Jane, "What are you doing here?" 2. Margaret asked Richard, "Where are you going for your holidays?" 3. Ann asked Mary, "What do you usually have for breakfast?" 4. The inspector asked, "Who caused the accident?" 5. The teacher asked Bob, "When did you learn to swim?" 6. Mary's mother asked her, "Where have you put your shoes?" 7. The teacher asked, "Which number can be divided by three?" 8. Peter asked me, "When are you going to have dinner?" 9. The policeman asked me, "Where did you lose your wallet?" 10. The teacher came into the classroom and asked the pupils, "What are you doing?" 11. I asked Bob, "Why didn't you answer my letter?" 12. There was a crowd in the street. I asked a man in the crowd, "What is the matter?" 13. Father asked, "When will lunch be ready?" 14. The little boy asked his father, "Why does the policeman wear a uniform?" 15. I asked him, "Who are you looking at?" 16. The nurse asked, "Who is the next, please?" 17. The man asked his friend, "When did you buy your car?"

Ex. 10. Translate into English.

1. Вони запитали мене, коли починається мій робочий день. 2. Він запитав, яку музику люблять мої друзі. 3. Ми запитали його, хто з його друзів знає дві іноземні мови. 4. Журналісти запитали письменника, над якою книгою він працює. 5. Вона запитала мене, де я був вчора. 6. Вони запитали мого друга, як він провів літні канікули. 7. Я запитала у неї, де їй шили пальто. 8. Я запитала у нього, які ще французькі книги він прочитав за останній час. 9. Друзі запитали його, куди він їздив минулої неділі. 10. Батьки запитали нас, що ми збираємося робити влітку. 11. Жінка запитала, чому він не купив хліба. 12. Ми запитали викладача, як ми склали іспит. 13. Вона запитала його, коли він бачив Олену в останній раз. 14. Вони запитали мене, коли я зателефоную своїм батькам. 15. Я запитав його, коли він збирається закінчити цю роботу.

REVISION

Ex. 11. Put the following into Indirect Speech.

I.

1. I asked my friend, "How do you feel after your holiday?" 2. "Ernie's an educated man," remarks Florrie. 3. "John never seems low or depressed," says Jane. 4. Jack's father asked him, "Who are you writing a letter to?" 5. "Jack is on the terrace. He is playing chess with his brother," says Nelly. 6. I saw a cloud of smoke and asked, "What is burning?" 7. "I can't understand what he is talking about," replies Bessie. 8. I asked her, "Who gave you that watch?" 9. "I'll tell you when I'll be back," Nora says to Jack. 10. Mr Nyman asked his

wife, "How much do you spend on food every week?" 11. "You have known me long," Barbara says to Martha. 12. "You're the best assistant I've ever had, Sheppey," he says. 13. Henry asked Tom, "Who did you visit in the hospital?" 14. "He was born in Moscow," she says. 15. "We didn't have dinner there," the boy says. 16. "I was so thrilled and excited by the opera," Stella says to Maurice. 17. "When I came Jane was playing the piano," says Kitty. 17. "When the doorbell rang I was writing a letter to John," says George.

II.

1. "He always has dinner there," she said. 2. "He has a nice voice," she said. 3. "I'm quite prepared to stay up until Mrs Maurice comes in," said Stella. 4. "I'm sorry to disturb you," Tom said to Eliza. 5. "I'm her guest at the moment," he said. 6. "You are the very person we want, Thornton," said Pearl. 7. "John always comes home to luncheon," said Martha. 8. "I don't think anyone can accuse me of not being frank," said Martha. 9. "I'm learning French," said Florrie. 10. "The taxi is waiting," Bently said to Constance. 11. "Florrie, you'll be all right in a minute," said Bessie. 12. "I'll go in and see him before I go to bed," said Stella. 13. "You won't be able to see me on Tuesday," she said to Jack. 14. "We shall not do that," he said. "I shall wait for Sheppey," said Bolton. 16. "Whatever the future may have in store I shall never forget your courage, your self-sacrifice, and your patience," Mrs Tabret said to Stella. 17. "I'm deeply grateful for all you've done for Maurice," Mrs Tabret said to Stella.

Ex. 12. Put the verbs in brackets into the required past tense, pay attention to the Sequence of Tenses.

1. She (hear) the band playing and she (know) that in a few moments the curtain (go) up. 2. Myra (think) he (prefer) to be by himself. 3. I (hear) from your mother that you (be) late and so I (order) coffee and sandwiches. 4. Mrs Streep (ask) him if he (have) dinner there. 5. The old man (ask) me if I (have) parents. 6. He (be) very sorry for Jennie, and he (tell) his wife that he (have) to go out and see her. 7. And the other day I (have) a letter from him saying he (be) in Moscow soon. 8. I (say) I (be) back by nine o'clock. 9. You (promise) you (try) to persuade him to stay on for a bit. 10. In a few words I (tell) him what (happen). 11. She (ask) me if I (live) long in that town. 12. When I (ring) her that evening she (say) she (not like) to discuss those problems on the phone. 13. That evening she (tell) me (be) at the hotel number, and about half past eight I (dial) that number, but there (be) no answer. 14. I (put) the papers back where they (belong), (tell) the manager I (do) no clipping or tearing, (return) to the hotel, (treat) myself to a glass of milk in the coffee shop, and (go) to bed. 15. He (write) that he (come) to lunch the following day.

Ex. 13. Translate the stories from Russian into English, paying special attention to the italicized words.

Порада лікаря.

Медсестра *запитала* мене, чи *очікую* я лікаря Грея, та *запросила* мене до нього в кабінет (surgery).

Лікар Грей посміхнувся мені та *запитав*, що мене турбує. Я *сказав*, що страшенно *втомлений* (be run down). Він *запитав* мене, чи пізно я *лягаю* спати (stay up late), і я *сказав*, що ні. Він *поцікавився*, чому я не *дотримуюся* нормального режиму (keep regular hours), і я *пояснив*, що майже щовечора я *зустрічаюся* з друзями. Лікар *захотів дізнатися*, як я *проводжу* час, і я *сказав*, що в основному (mostly) я *ходжу* на вечірки. Лікар *запитав* мене, чи *вдається* (have the chance) мені *відпочити* (to recover) у вихідні дні, але я змушений був *визнати* (admit), що у вихідні дні наші вечірки *тривають* всю ніч.

Він *запитав* у мене чи *палю* я і коли я *сказав*, що *палю*, лікар *запитав* мене, скільки сигарет за день я *випалюю*. Він був вражений, коли почув мою відповідь. Тоді лікар *запитав* у мене, чи *займаюся* (take) я гімнастикою для підтримки свого здоров'я (to keep fit).

Я *відповів*, що для цього у мене *немає часу*.

“Ви підпалюєте свічку (burn the candle) з обох кінців,”- сказав лікар Грей і додав: “але я заздрю вам, що ви так весело проводите час.”

Подарунок з Чикаго.

Цієї зими в Чикаго було багато снігу. Залізничні робітники не знали, що з ним *робити*. Начальник станції *наказав очистити* платформи. Він *звелів не залишати* сніг на платформах, тому що це небезпечно для пасажирів. Він *порадив згрібати* (shovel) сніг в великі купи, але це було нейздійсненне завдання.

Раптом одному з робочих прийшла в голову чудова ідея. “Я знаю, як *позбутися* (get rid of) снігу,” – сказав він. “*Давайте навантажимо* цей сніг на вантажні платформи (freight train). Ми можемо послати сніг до Міссісіпі та Нового Орлеану. По дорозі він розтане (melt away).” Наступного дня п'ять тон снігу прибуло до Мемфіса, Теннессі. “Це чудовий подарунок,” - сказав робочий. “Ми знаємо, що *робити* з цим снігом тут. Ми пошлемо його на дитячі майданчики (playgrounds). Деякі діти ніколи не бачили снігу.”

Ex. 14. Translate the story. Turn Direct Speech into Indirect Speech with tense changes.

“Я переглянула результати ваших аналізів,” - сказала лікар Лестер.

“Ви дуже поправилися,” - сказала вона мені.

“Ви набрали (gain) п’ять з половиною кілограмів за шість місяців,” - додала вона. “Якщо ви будете продовжувати в тому ж дусі, ви станете дуже товстим (get fat),” - сказала вона мені.

“Я змушена посадити вас на сувору дієту (put on a strict diet); ви повинні їсти дуже мало,” - додала вона.

“Добре, я повинен буду жити на воді та горіхах”, - сказав я, розсердившись.

“Так, ви можете жити на воді та горіхах, але без горіхів,” - погодилась лікар Лестер.

Ex. 15. Give a free translation of the text.

Пікнік на ковдрі.

Один професор Бостонського університету сказав, що сучасні батьки дуже мало знають про те, як організувати “дозвілля в колі сім’ї” (family leisure time). В якості одного з варіантів він запропонував влаштувати пікнік у дворі за будинком (back-yard): розстелити (spread) ковдру, розпалити багаття (make/lay a fire), спекти (bake) картоплю, як ніби ви на пляжі.

Прочитавши це, я зібрав родину і сказав, що ввечері ми влаштуємо пікнік у дворі за будинком. Мій син Джордж сказав, що сусіди подумують, що ми збожеволіли. А дружина поцікавилася, що я тримаю під пахвою. Виявилося, що це наша нова ковдра, яку, звичайно, не можна використовувати з цією метою.

Діти поцікавилися, що ми будемо робити весь вечір на задньому дворі. Я пояснив, що ми будемо сидіти і їсти печену картоплю. Це повинно тісніше зблизити нашу родину (make up closer). Мій син висловив побажання, щоб це не зв’язало нас в тугий вузол (tight knot), тому що він домовився ввечері грати в теніс. Моя дочка Ненсі погодилася їсти печену картоплю у дворі, але зауважила, що потім вона повинна буде піти, тому що вона йде до басейну зі своєю подругою.

Ми розстелили ковдру на чудовому місці за будинком навпроти гаража та розпалили велике багаття. Помітивши, що визирають з вікон сусіди, я попросив дружину і дітей не звертати на них уваги. Моя дружина бурчала (grumble), що ми сидимо на камінні і що вона не може їсти сиру (raw) картоплю.

Намагаючись здаватися веселим, я запитав, чи відчують вони себе

ніби сидять на пляжі. На що донька відповіла, що їй би хотілося скупатися в океані, і сховалась (disappear) за гаражем. Запитавши з якого боку океан, Джордж пообіцяв повернути її, навіть якщо на це піде весь вечір, і теж зник за гаражем. Дружина штовхнула мене ліктем (nudge) і сказала, що до нас прийшли. Я підняв очі і побачив двох поліцейських. “Нам повідомили, що у дворі хтось сидить на ковдрі,” - сказав один з них.

(по Джонсу Бэйли)

LESSON III

Text A



Tilapia tastes great and is one of the easiest fish to raise in a backyard fish farm.

HEMGROWN Life: The Farmer and the Fisherman

HEMGROWN Life blogger Dyan Redick considers how inextricably the lives of farmers and fishermen are...

Using inexpensive and readily available materials such as an aboveground swimming pool you can get fresh fish from your back yard. “By raising your own fish, you can achieve a higher level of self-sufficiency and provide a

healthier diet for your family,” says Steven Van Gorder, author of *Small-Scale Aquaculture*. “Backyard fish farming is as practical as gardening for producing food for the family.”

Van Gorder's book explains backyard aquaculture in detail, with plans and step-by-step instructions that can help you successfully raise fish even if your only source of water is a garden hose.

Puanani Burgess, executive director of the Waianae Coast Community Alternative Development Corp. in Waianae, Hawaii, says the methods “look so simple that everyone thinks, ‘Hey, I can do it.’” Fourteen years ago, Burgess’ group formed a micro-aquaculture cooperative, which hundreds of islanders have participated in over the years.

“It is really ideal for small, rural communities like ours,” Burgess says.

Historically, aquaculture has something of a bad reputation because it has been limited to large commercial facilities that require significant amounts of water and energy, and thus can be major sources of pollution. In contrast, Van Gorder's systems blend 4,000-year-old cultural practices with refined modern techniques — using minimal energy and water — and put you in control of the purity and healthfulness of this food source. (*For healthy and sustainable choices when you do buy seafood, see [The Health Benefits of Eating Fish](#). — MOTHER EARTH NEWS*)

There are several similarities between gardening and fish farming: Both plants and fish need food and warmth; just as certain plants favor different seasons, there are cold-hardy fish and heat-loving fish; and both sorts of “gardens” require regular maintenance — you can’t just scatter a handful of seeds or sprinkle a few fingerlings in a pond, then expect to harvest anything edible in a few months.

Van Gorder advises beginning fish farmers to start small — no more than 100 fish the first few seasons. Once you master a few basics, “you will be able to raise several species of fish in tanks, indoors or out, throughout the year,” he says.

In the Waianae cooperative, for example, a few aboveground tanks can produce more than 300 pounds of golden tilapia every six months.

Types of Aquaculture Systems

Here are the four aquaculture systems Van Gorder describes:

Cage Culture. This aquaculture method “provides the simplest means of growing fish if you have access to a pond,” Van Gorder says. He estimates a cage system could be built for about \$100. “The only cost is for cage materials, fish and feed.”

In this system, a cage or pen made of plastic pipe and rigid netting is moored in any suitable body of water — a pond, lake, stream or millrace — and stocked with fingerlings that are fed until they reach a harvestable size.

“If you have a farm pond, building a floating cage will provide enough fish to feed your family year-round,” Van Gorder says. Channel catfish is the most common fish grown in cages; tilapia, trout, salmon and hybrid striped bass are other options.

Flow-through. This method diverts a continuous source of cold water, such as a stream, spring or river, into “raceways” that hold fish. Even a small volume of water can create a more productive system than a closed setup. “With just a few gallons of spring water, you can grow trout year-round,” Van Gorder says.

Like cage culture, flow-through systems are simple and relatively inexpensive, unless you don’t have access to a natural source of flowing water. It’s also important to note that flow-through systems are subject to regulations regarding the diversion and use of natural water sources. Be sure to talk with local fish and soil conservation authorities before making use of nearby streams.

Greenhouse Aquaponics. Within some form of greenhouse, this method uses a variety of plants — instead of filters to improve the water quality for fish. In addition to tilapia, trout, catfish or hybrid striped bass, you can grow different vegetables — including tomatoes, lettuce and cucumbers — as you would in conventional hydroponics. However, because fish are living in the water, the nutrient sources for greenhouse aquaponics must be totally organic; no herbicides, insecticides or fungicides can be used.

Greenhouse aquaponics is the most complicated aquaculture method, requiring a high level of management and components such as a water pump and aerator. Backyard fish farmers often combine aquaponics with a home recirculating setup (discussed later in this article). Altogether, such a system could cost up to \$1,000, but using recycled materials can bring that price down significantly.

Home Recirculating. This is the answer for would-be fish farmers whose only water source is a garden hose. The best way to create this miniature fish farm is to use an aboveground vinyl-lined swimming pool in a back yard, garage or basement. The cost of such pools varies based on size, ranging from \$300 to more than \$2,000. They are durable, with only the vinyl liner needing replacement every few years.

For the ideal home recirculating system, Van Gorder recommends a pool 12 feet in diameter and 3 feet high. This size will hold about 2,000 gallons of water when filled to within 8 inches of the top. Unfiltered, that amount of water can produce only 10 to 15 pounds of fish, even with added aeration. But by

controlling temperature, removing ammonia and waste, and oxygenating the water, that same amount of water can produce more than 100 pounds of fish in one growing season. Species best-suited to this system include tilapia, catfish, bass

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Because the fish spend all their lives in the same water, maintaining its quality is essential. Water must be clean, kept at the correct temperature and contain enough oxygen. Smaller pools have less margin for error and require even more management. Components of the home recirculating system include:

Solar dome. This is an inexpensive plastic cover that looks like a giant shower cap. Most of the fish recommended for backyard fish farming are warm-water species, which grow best at water temperatures above 80 degrees. In temperate climates, aboveground pools will reach about 70 degrees for only the warmest 12 weeks. But a solar dome will increase the average water temperature to about 80 degrees for at least 20 weeks.

Drum clarifier. This provides a simple way to collect and remove almost all of the organic material that accumulates in the water. Using siphons and a water or air pump, water flows between the pool and two 55-gallon drums that are filled with plastic mesh (orchard netting), which traps the solids.

Biofilter. This simple water wheel removes toxic ammonia from the water. It can be made with PVC pipe, corrugated fiberglass roofing and a few other materials available from your local home improvement store.

Aerator. An air pump or aerator adds oxygen to the water, which is necessary to raise healthy fish.

Emergency power. To keep aeration and pump devices running during blackouts, it's a good idea to connect the system to a generator; or connect a simple 12-volt agitator to a car battery. Water quality won't suffer if filtration and clarification are cut off for a few hours, but oxygen levels will rapidly fall if there are many fish in the pool.

Stocking Your Water Garden

Once you decide which system makes the most sense for your circumstances, the next big decision is which fish to raise.

“With an eye toward ‘sustainable aquaculture,’ whenever possible the small-scale fish farmer should utilize those species whose nutritional requirements are more easily met because they feed low on the food chain,” Van Gorder says. Feed pellets for catfish, for example, rely on soybean meal. More than 1 pound of fish can be raised from 1 pound of dry pellets. Carnivorous fish — trout, salmon and striped bass — occupy a higher place on the food chain. It takes 3 to 5 pounds of wild-caught fish to make enough fish meal for pellets that will produce 1 pound of cultured, carnivorous fish.

Here are descriptions of your best options among warm-water species — tilapia, catfish, carp and bass and — cool-water species trout, salmon and perch.

Tilapia. Tastes great and is one of the easiest fish to raise. Tilapia tolerate a wide variety of water conditions, including low oxygen levels and high concentrations of ammonia, and are resistant to diseases and parasites. Tilapia grow quickly under proper conditions — water temperatures of 64 to 90 degrees, with 84 degrees being optimal. Water temperatures less than 50 degrees are fatal. Java, blue and Nile tilapia are the best species for backyard fishing.

Catfish. Exceptional taste and hardy resistance to disease and parasites make catfish another good choice for beginning fish farmers. Catfish grow quickly — a large fingerling can reach 1 pound within five months. Channel catfish is your best bet; brown, black or yellow bullhead catfish are other options.

Carp. Traditionally unpopular for eating, carp from backyard aquaculture might surprise you. When cultured in clean water and prepared properly, it can taste excellent, Van Gorder says. Carp are hardy, resistant to disease and adjust to varying water conditions. Carp tolerate water temperatures from 70 to 90 degrees, but grow best between 80 and 85 degrees. Common, grass, bighead or silver carp can coexist in one aquaculture system.

Bass. The best species is hybrid striped bass, which has an excellent mild taste, even more so than wild bass. Bass is well-suited to cages and recirculating systems, but is more difficult to culture than tilapia, carp or catfish. Fingerlings require attentive care — they do not react well to poor nutrition, rough handling or bright lighting. Large and small individuals must be kept separately. Optimal water temperature is 80 degrees, but bass will tolerate 65 to 85 degrees.

Trout and Salmon. Two of the more flavorful fish, trout and salmon require much more precise conditions than warm-water species; control of water temperature is the primary factor. They require water temperatures between 55 and 60 degrees; rainbow trout can tolerate up to 70 degrees with careful management of oxygen levels. These fish can be stocked together and grow quickly, providing harvestable fish in one season. Best species are rainbow or brook trout and coho or Atlantic salmon.

Perch. The yellow perch is popular for its taste, especially in Canada and the northern United States. It grows best in water temperatures between 68 and 74 degrees. Yellow perch eat trout feed and can grow to a harvestable size — a third of a pound — in one season.

Exercise 1. Make up 20 different types of questions for text A.

Exercise 2. Retell text A.

Exercise 3. Write a short summary of text A.

Text B

The Symbiotic Relationship Between Gobies And Pistol Shrimp

Observe the hidden life of gobies and their pistol shrimp associates in their burrows.



This *Cryptocentrus cinctus* is accompanied by a male and female *Alpheus bellulus*. *Photo by Johannes Duerbaum, M.Sc.*

The symbiosis between gobies and pistol shrimp is one of the many that can occur in our marine aquariums. In the goby and pistol shrimp symbiosis, both animals benefit. This relationship is not parasitic and not commensal – it is mutual. The shrimp builds and maintains a burrow that both animals live in, and the fish offers the shrimp protection from predators. When they are outside of the burrow, the fish keeps an eye out for predators and warns the goby with a flick of the tail if there is a predator nearby. The nearly blind shrimp can then retreat into the burrow to be spared from predation. These animals participate with each other on a highly elaborate and evolved level – and it becomes more impressive when you think about how they are in no way related.

This is an amazing partnership, but what goes on inside of the burrow that they both inhabit? Until recently, we have only been able to observe their behavior outside of their elaborate burrows. I have been able to make some new observations with an interesting tank setup. First I will tell you the history of studying this particular symbiosis, then I will let you know how you can set up a tank specifically for viewing this symbiosis, and then I will relate my new findings.

A Scientific History

Luther, when he was a junior scientist, managed to catch a goby and pistol shrimp pair and put them in a small aquarium after they had been discovered during a 1957 expedition of the Red Sea. There he found out that the association was definitely there and it hadn't been just a random observation in the field. When put in the little tank, the animals still kept contact with each other and soon started to build a new home in the tank's sand. Although this interesting relationship had been discovered, the colorful wonderland of coral reefs to be discovered might have been the reason why the study of their symbiosis was put on hold and not studied again until the 1970s.

Indeed it took a lot of time until these peculiar couples were back in scientific focus. It was again in the Red Sea, and the same species of fish and shrimp that came to the awareness of biologist Ilan Karplus in the 1970s and 1980s. He and his associates studied how these animals communicate, their territorial behavior, the dynamics of building the burrows and the distribution of the different species. Observing them in nature by diving was difficult at best; scientists could lay down in front of the burrow entrances until their air ran out. It took a long time to observe them because any disturbance caused them to stay inside the burrow for hours. Everyone who has tried to take pictures of them in nature is aware of this.

Today we know that the symbiosis between gobies and pistol shrimp is an evolutionary model of success. About 130 species of gobies are associated with about 20 species of pistol shrimp. The majority of these are found in the Indo-Pacific and adjacent regions. There are goby generalists that live together with different shrimp, but there are also specialists living with just one species (Karplus et al., 1981). Species differ concerning the distribution of their partners, their age and sort of substrate (different gobies prefer finer or more coarse sediment). Yanagisawa (1984) studied activity patterns throughout the day. Shrimp leave the burrows only during daylight in company with the gobies. Shrimp or gobies never lived alone in a burrow, and the minimum count was a single shrimp and a single goby. More often, a couple of gobies and a couple of shrimp were found in one burrow.

To observe the association in aquaria was another approach to find out more. Karplus et al. (1972a) experimented with the gobies and pistol shrimp. The partners had to find each other in a Y-shaped testing channel, either by optical or olfactory abilities. The shrimp did not show any optical orientation at all, but the gobies did. Gobies could differentiate potential partner shrimp by sight (Karplus et al., 1981). If unsuitable partners were presented in experiments, the gobies stayed away. In reverse, the shrimp found their partners by smell.

There was interest from the beginning about what the burrow looked like, but all that was visible from outside was the entrance. Karplus et al. (1972b) built an artificial burrow by taking halved plastic tubing and gluing it to the front glass of an aquarium. The tubes were filled with sand before the experiment

started. After the shrimp excavated the tubes, the partnership could be viewed. This setup, however, appeared too artificial to me. Yanagisawa (1984) even poured resin into burrow openings in the wild. After the resin hardened, the cast that was dug out showed the burrow's dimensions. The burrows went down as far as 1.5 feet into the ground. The burrow often divided, and the tunnels extended into chamberlike structures. Larger coral rubble pieces or skeleton parts of sand dollars were integrated into the burrow.

My Observations

These trials to find out more about the burrow system just fueled my interest to find out what was really going on inside. Among marine aquarists, it was not even known that couples of shrimp and couples of gobies naturally live together. Most aquarists were happy to have one shrimp and one goby in their tank combined. Where and how would they reproduce? Existing observation did not have an answer for this question. But how could I look inside the burrow?

I noticed that the shrimp tended to build their burrows along the bottom glass of the tanks. Steady beating of the abdominal appendages (pleopods) kept the bottom glass free of sediment. So I set up a 34-gallon tank on a high rack, enabling me to sit below and to observe them through the bottom glass of the tank. The tank's bottom needed to be thick enough to be unsupported from below. The frame of the rack just held the tank around its circumference. To reduce any potential negative impact from light below, I covered my observation chamber with a black curtain. I took videos or pictures with just a little light that I could switch on.

I chose the often-imported *Cryptocentrus cinctus* and *Alpheus bellulus* to put in the observation tank. Both species were caught and imported in larger numbers together from Sri Lanka. Amalgamating the couples of fish and shrimp was not an easy task. If same sexes are in a small tank, it often ends in severe trouble – the shrimp are able to kill each other in an aquarium. Therefore I kept them as far apart as possible in separate tanks until I could identify the sexes of the shrimp (female shrimp have a more broad abdomen and more broad pleopods). I also kept the young gobies separated. By changing the partners in one tank, I could easily find out if two specimens would go together, which is the indication for different sexes.

In the next step, I brought both couples together in the observation tank. I kept the interior of the tank simple: just a 2- to 2.4-inch-deep layer of mixed coral sand and gravel, and two pieces of flat live rock. The shrimp started building the burrow immediately after I introduced them in a little cup and directed them into a gap I made under a piece of live rock. Then the fish were added. It did not take longer than an hour, and the double couple was together.

During the next days, the burrow grew. The shrimp transported all excavated material and pushed it outside the burrow. They used their claws to

push the sand like a little bulldozer. They do construction work to increase the burrow's entrance stability, or they use their legs to throw sediment backward. This astonishing skill can only be performed if the goby is out to guard their safety. At any slight disturbance, the goby signals to the shrimp's antenna in a highly ritualized way. The goby's dorsal or tail fin moves up and down or left to right in different frequencies, allowing the shrimp to withdraw, should danger approach.

When the tunnel system grew, the partner behaved differently under subterranean conditions. The shrimp's antennae are kept along its body, and the shrimp moves freely without a goby's protection. The narrow space in the burrow causes them to squeeze their partners against the burrow wall. The fish tend to wiggle through the burrows with force and no hesitation toward their crustacean partners. Due to the action, parts of the burrow system would often collapse. A fish buried under sand stays there without panic (the shrimp can smell it) and waits until the shrimp digs it out and begins to repair the burrow.

The main way into the burrow can be up to 2 feet long during the first days of excavation. Soon after, side ways are constructed, which can be as short as 2 inches. They can be driven forward and later form an exit to the surface, or they are extended to form a subterranean chamber. Repeatedly, I could observe the shrimp molting in these chambers. This happens during the night every two to four weeks. The next morning, I would find exuviae close to them, and the female was carrying eggs on her abdominal legs (if the shrimp are in good condition, molting and egg-laying coincide). The shrimp cut the exuviae into pieces and transported them out of the burrow as soon as their new test hardened.

The eggs on the shrimp's pleopods hatch after approximately 10 days. Hatching of the zoea larvae seems to happen overnight, which makes sense to avoid predators as long as possible. The currents caused by the beating of the pleopods must pump the eggs out of the burrows, where they become a part of the plankton.

Feeding Symbiosis

The gobies are easily fed with carnivorous fish food and readily accept frozen foods (*Artemia salina*, shrimp). The shrimp are omnivorous and collect large pieces of frozen fish positioned close to the entrance of the burrow. They collect the food and transport it immediately into the burrow, where they feed on it. However, outside they can also be observed eating algae growing on rocks. The shrimp directly gnaw with their mouth pieces on rock where algae is growing. Even more fascinating was that I found parts of the algae *Caulerpa racemosa* inside the burrow system, though it grew more in another edge of the tank. It took some time until I could observe that the shrimp cut these algae with their claws if they get access to it. However, that can only happen when fish and

shrimp are on a coexcursion outside the burrow. In one instance, after cutting, the shrimp lost the algae due to the currents in the tank. But the unexpected happened: The goby immediately took action and grabbed the *Caulerpa* with its mouth. That moment, the shrimp lost antenna contact with the fish and quickly rushed backward to the entrance. The goby transported the lost food to the entrance and spit it out into the entrance of the burrow where the shrimp was waiting. The fish was actively feeding the shrimp! I tested this observation and pulled algae off the rocks. When the fish was in the entrance of the burrow, I threw a 1.5-inch piece of *C. racemosa* into the water. The goby directly approached it while it was still floating in the water column, collected it and brought it to the burrow. That collecting behavior could be induced up to five times repeatedly. The shrimp handled the algae inside the burrow in the meantime. I could never observe that the shrimp were keeping algae in certain parts of the burrow. There was not a special storage chamber for algae pieces. Instead the algae pieces were pushed around, and the shrimp fed on them here and there. After some days, the algae disappeared completely.

Breeding in the Burrow

While the reproduction of the shrimp is not spectacular, that of the gobies bears some peculiar aspects. Close to mating, the male and female gobies start a wild circular dance in an extended side corridor of the burrow. They stimulate each other head to tail, which causes sand and gravel to fall from the ceiling. The shrimp's excavating action is always needed in order to continue, as the gobies don't transport any sand. The preparation of the breeding chamber can only go along with the shrimp's assistance, resulting in a longer period of mating. The gobies can successfully mate only when the shrimp are healthy and have hard tests.

I never observed the moment that the gobies mated, but in the morning I would find the eggs attached to egg strings mounted on the chamber's top by an adhesive substance. The female does not go back to the breeding chamber – the male fish is the only one to care for the eggs. Usually, he moves the approximately 2,000 eggs (which can easily be done, as the eggs are attached to each other and form a bundle) by moving his pectoral fins backward and forward. He swims around the eggs once in a while, which supplies oxygen to the eggs. Oxygen is low in chambers deep in the sand; only intensive care will keep them oxygenated.

The male goby protects the eggs against a potential predator in the burrow: the shrimp. In fact, the shrimp couple never gets access to the fish eggs. The male goby is busy guarding the eggs during this period and rarely leaves the burrow. If he does leave, he closes the breeding chamber with sand. He pushes

sand into the entrance of it with his head or tail. When he comes back, he just wiggles through the pile of sand to come back to the eggs. After seven to 10 days (depending on temperature or perhaps oxygen supply) the larvae are ready to hatch. Hatching always happened at night with my fish, and by morning the larvae had all left the burrow, probably guided by the light.

Giving and taking is incredibly developed in this symbiosis and likely evolved under the influences of the harsh environment with limited access to shelter and food. Reproductive success depends on the activity of the partners. The line is drawn when it comes to sacrificing offspring for the partner's nutrition. To protect their offspring, the gobies keep the shrimp away. Both species have planktonic larvae that are released in the night or early morning, so neither partner will feed on the other's offspring.

Keep in mind that different species of goby associated with another shrimp species will exhibit some different behaviors than those that I observed. The capacities of both partners depend, for example, on body size. A tiny shrimp such as the reddish-white banded *Alpheus randalli* (which can be found together with smaller gobies such as *Stonogobiops* species) simply cannot handle the excavation work necessary for a larger fish, such as *Cryptocentrus* species. The burrows of those tiny species are smaller and take longer to build. Maybe these species are mostly successful in a less harsh environment. In other areas you can find tiny *Stonogobiops* species with the more massive *Alpheus bellulus* shrimp. That just shows that the gobies can change partners during their life history. Even apart from body size, the gobies will exhibit different behaviors, so choose species from the perspective of the shrimp and not just what you think will look good in your tank.

Exercise 1. Make up 20 different types of questions for text B.

Exercise 2. Retell text B.

Exercise 3. Write a short summary of text B.

Text C

Fish Farming and the Boundary of Sustainability: How Aquaculture Tests Nature's Resources

The advent of aquaculture has extended the industry of factory farming to earth's marine and freshwater systems. It has greatly benefited the seafood business and has allowed consumers to have traditionally seasonal fish at any time of the year; however as the aquaculture industry rapidly grows from small scale to large scale, many question its sustainability. While the industry insists

that fish farming takes the burden off wild fish stocks, other experts have suggested that the farms actually do more harm than help by increasing the spread of diseases, parasites such as sea lice, and astronomically increasing the level of pollution and waste in the wild ecosystems. In particular, the large scale production of carnivorous fish such as salmon has concerned many environmental groups because it requires much larger amounts of resources than producing other types of fish. Escaped salmon from farms can also adversely affect the genetic variability of wild populations, reducing their ecological resilience. The debate over the sustainability of aquaculture represents the conflict between America's need to conserve and America's need to control nature's resources. Rising evidence suggests that fish farming may end up taxing the environment beyond its capacity if it does not become more ecologically mindful. The ultimate question of the debate remains how far society can push the boundary of sustainability and how far technology can extend the capacity of nature's resources.

Technology optimists believe new innovations can resolve any possible hurdles that may come about with the development of aquaculture. Since 1970, seafood production in the aquaculture industry has increased at an annual rate of 8.8% (Morris et al. 2). As the world population approaches 8 billion, seafood producers have harnessed aquaculture in an effort to fill the gap between population growth and natural seafood production (Molyneaux 28–29). Farmed salmon production amounted to 817,000 tons in 2006 and increased 171 fold since 1980 (Morris et al. 2). While shrimp and oyster farms mainly grew out of developing countries, salmon farming grew out of countries with access to more sophisticated technology including the U.S., Canada, and Europe (Molyneaux 45). Initial assessments of fish farming concluded that all economies had an interest in developing aquaculture. For example, on June 2, 1976 in Kyoto, Japan, an FAO Technical Conference on Aquaculture examined and discussed types of aquaculture, the possible problems such as the risk of disease, and ultimately recommended the expansion of aquaculture, leading to huge investment in the rising industry (Molyneaux 30–31). To technology optimists, the potential rewards of aquaculture seemed infinite, but few stopped to consider possible repercussions to the ecosystem.

Some environmental concerns about aquaculture did surface as it began to develop, but any initial fears of ecological impacts did little to inhibit growth of the industry. In 1967 the United States Congress established the Commission on Marine Science, and in 1969 the commission released a report that called for more research on aquaculture. Despite the lack of research, the promise of jobs and food security outweighed any concerns about its effects on the environment, and development continued unabated (Molyneaux 45). In addition, the passage of the U.S. Aquaculture Act in 1980 also helped nurture the development of the aquaculture industry (Molyneaux 46). Fish farming has obvious benefits such as

food security and jobs, but these obvious benefits obscure many of the potential problems that could arise in the future.

An industry such as aquaculture that does not make efforts to promote sustainability will inevitably run into problems, despite any short term benefits it may give to investors. Salmon farms especially merit concern because to produce predatory fish, companies need to “reduce fish” to produce fish, which essentially turns fish lower on the food chain, such as sardines or anchovies, into feed for farmed salmon (Halweil 5). This process requires a huge amount of resources compared to herbivorous fish, making the salmon industry more vulnerable if supplies become scarce and much more energy intensive. In addition, though the aquaculture business claims that its farms provide necessary food production for society’s growing populations, many estimates show that modern fish farming consumes more fish than it produces (Halweil 18). The question of whether aquaculture provides a sufficient food source for future generations means many companies will lead themselves to failure if they do not manage their resources responsibly.

Does aquaculture pose a risk to wild salmon? Supporters of the industry would argue that aquaculture takes excess burden off the wild stocks that might otherwise become dangerously depleted. Many agree that commercial fishing practices have severely reduced the populations of wild fish in North America’s oceans and freshwater habitats. Wild salmon have particularly felt the impact of commercial fishing in the Atlantic and Pacific waters. Aquaculture came about as a possible solution to the problem and would give wild salmon an opportunity to rebound from endangerment due to overfishing. It has been proven successful with other types of seafood such as catfish and tilapia; however, some have contested that serious problems associated with fish farming have put potentially much greater pressures on the wild populations of salmon (Claiborne 1).

According to a report which observed the recurrence of escaped farmed salmon in rivers in eastern North America, “A critical first step to assessing the risk that escaped farmed salmon might pose to wild salmon populations is to quantify the frequency with which farmed salmon enter wild salmon rivers and the frequency with which such escapes recur” (Morris et al. 2). This report provided a preliminary look into the effects of farmed salmon on wild salmon and demonstrated that farmed salmon have a significant prevalence in wild habitats. For example, their observations of rivers in the eastern United States and Canada showed that, “escaped salmon were reported in 54 rivers and bays in the region” (Morris et al. 14). Such escape events call for greater monitoring of farmed salmon production. Some areas have made more efforts to do this than others. For instance, “In Maine growers have implemented a Hazard Critical Control Point process to address the issue for sea cage sites and freshwater hatcheries” (Morris et al. 15). Keeping track of escape events and how many salmon find their way into wild habitats helps identify the risks posed by aquaculture and to what extent they affect the ecosystem.

As production in aquaculture exploded, disease became the defining issue that could impede or even kill its expansion. Infectious salmon anemia (ISA), which began to affect farmed salmon in Maine, became a serious problem and resulted in the destruction of 1.5 million fish (Jenkins 857). The aquaculture industry has not yet come up with a standard method to approach the problem of disease. “The apparent solution is to destroy all infected or potentially infected fish and let the pen sites lie fallow for a season or more, so that the virus, denied its host, will be flushed out by normal tides and dissipate” (Jenkins 857). The epidemic of ISA cost the aquaculture industry as much as \$25 million in lost fish and left the fish growers struggling for control (Molyneaux 102). ISA spread through many pathways such as sea lice, gulls, and sloppy disposal practices (Molyneaux 104). Industry supporters spoke of the ISA outbreak as a natural disaster, but temporary workers hired to dispose of the infected fish placed blame on management practices, as one worker stated, “They knew this was coming but they still overstocked their pens” (Molyneaux 103). The negligence of the aquaculture industry to use more caution in managing its supplies could have led to its abrupt failure and should serve as a warning to fish growers that ignorance of proper resource management has high ecological and economical consequences.

Outbreaks of viruses such as ISA led to the rapid establishment of programs to eradicate them. As one technology optimist stated, “We’re looking at improving the immune systems of the fish. And labs are working on vaccines” (Molyneaux 107). Vaccines did help the industry gain control over many diseases that had hindered its development in the 1980s; however, vaccines can create other undesirable consequences (Molyneaux 104, 108). As one expert stated, “One thing people don’t talk about is how much protection the vaccine gives the transfer of disease” (Molyneaux 108). In the case of salmon farming, vaccines prevent the fish from showing symptoms but do not protect them from infection, which effectively hides the problem instead of curing it (Molyneaux 108). As stated in Paul Molyneaux’s book, “You could have salmon swimming and shedding the virus” (Molyneaux 108). This makes it extremely difficult to monitor how extensively disease impacts the populations of wild salmon and could slow down efforts to make aquaculture more sustainable.

Parasites known as sea lice have risen as another problem, but one that has had a greater impact on the wild salmon than the farmed salmon. Normally, the presence of sea lice does not present much of a threat to wild salmon, but each industrial salmon farm produces large numbers of sea lice which usually end up right in the middle of the migration routes of wild juveniles (“Salmon”). Each female lays hundreds of eggs, meaning billions of lice invade wild salmon habitat and infect the fish, making them vulnerable to disease. In addition, the lice that become attached to the fish can ultimately cause the host to starve to death because they become so large and take up too much nutrition from the host fish (“Salmon”). Aquaculture farms have managed this problem by using a

drug known as SLICE, which acts as a nerve poison that kills the sea lice (“Salmon”). This effectively rids the farmed fish of the lice problem, but its benefits to the farmed salmon have not translated to the wild salmon (“Salmon”). Drugs such as SLICE represent the struggle of farmers to control nature’s variability and demonstrate the belief that we can use technology to control nature’s ecological processes.

Disease not only hurts the salmon but could also develop into a human health issue because many companies will send them to market as long as they do not show excessive symptoms (Molyneaux 108). Some studies have also found that farmed salmon contain ten times the levels of cancer causing PCBs than wild salmon, another major human health issue derived from aquaculture (“Salmon”). Preventing and controlling diseases will continue to cost salmon growers thousands of dollars a year, making disease a controlling factor of how rapidly aquaculture develops or how quickly it crashes. The attempt to control the threat of disease represents an assumption that we can utilize technology to control nature and overcome any obstacle. This stems from the anthropocentric belief that humans dominate nature and gives a license to society to exploit its resources without considering the harmful effects their activities might have. By not taking more careful consideration into their practices, the aquaculture industry also assumes that nature has the capacity to adapt to whatever negative effects they produce, whereas in reality they may fail to see that nature simply displaces those effects, as in the case of sea lice afflicting wild salmon. The industry will not openly acknowledge these implications that their practices have on larger ecosystems because such an admission would harm the industry economically. Ultimately, the complacency of society towards the environmental costs of its activities presents the biggest challenge facing conservation efforts because it prevents change from occurring.

Some other problems that wild salmon have inherited from farmed salmon include threats to biodiversity, degraded water quality, and habitat conversion. According to the aforementioned report on farmed salmon escapes, aquaculture can have a negative impact on the ecological fitness of wild salmon. “Results suggest that farmed salmon can exhibit lower genetic variability than wild salmon and that the introgression of farmed salmon genes into a wild population can be comparatively rapid” (Morris et al. 16). The escape of farmed salmon can threaten biodiversity because lower genetic variability makes a species less able to adapt to changing environmental circumstances. Furthermore, negative impacts on water could also threaten wild salmon. Industries like aquaculture demand a high amount of resources for a relatively small space, creating a situation in which the environment may degrade because of overexploitation. As one article on aquaculture stated, “Clearly, high densities of cages and high numbers of fish in cages could produce situations in which the assimilative capacity of water is exceeded by the demands of aquaculture” (Diana 6). All of these problems mean that resources have limits, and though the prospects of

aquaculture seem boundless, the oceans only have so much to give. American society constantly tests these limits with the use of technological advances, signifying that control of our resources takes priority over conserving them.

Practices such as aquaculture and agriculture create a perceived certainty of food security and control of resources, but unchecked growth in industrial food production can lead to unforeseen consequences in the future that could potentially undermine that certainty. This uncertainty in the stability of nature's resources stresses the need for a line between control and total ambiguity. An approach that aims to preserve the integrity of the ecosystem through more responsible treatment of the environment would justify our use of resources because such a policy would ensure a respectful relationship with nature. In the case of aquaculture, this means adopting more sustainable methods. For example, closed containment aquaculture has a much smaller impact on the environment because waste and effluents do not go into the ocean, and no escape events can occur, eliminating many problems associated with large scale marine aquaculture ("Salmon"). Also, an organic label has recently risen as a niche market in aquaculture and offers another option for sustainability that would reduce or eliminate the use of vaccines (Taylor 4). Polyculture, otherwise known as Integrated Multi-Trophic Aquaculture (IMTA), offers yet another example of a more sustainable seafood industry. This method effectively promotes sustainability because "nutrient losses from one species are nutritional inputs for another" (Reid 2). IMTA more closely resembles how a natural ecosystem operates; it makes environmental and economical sense because resources do not get wasted but get recycled in an endless loop.

America's need to invest in an industry that promises to protect our food security sends a message about America's attitude toward nature. It suggests a belief that we have a right to use technology to control nature and the power to control its resources at our discretion. Aquaculture shares many similarities as agriculture in this regard because both represent attempts to control nature's resources for our needs. Agriculture attempts to control nature's resources by taking charge of what type of crops grow in a certain place. The mass production of crops such as corn and wheat in the Midwest take advantage of nature's resources for high profits, because of a high demand for items that include these products. These monocultures have a keen susceptibility to disease and pests because a lack of variety in genetics makes them ecologically vulnerable. Farmers fight for control with chemicals, pesticides, and genetically modified crops. Aquaculture will experience similar dilemmas as fish growers fight for control of the oceans with new vaccines and genetic engineering. Technology will play an important role in maintaining food security; however, if society emphasizes conservation over reliance on technology, this would eliminate a lot of the uncertainty that technology only seems to complicate. Practices such as IMTA stress conservation over technology because they rely on natural processes rather than new inventions or technological advances. The

move to more sustainable practices in aquaculture means that our belief of control over nature will shift to a dynamic partnership with nature, a relationship that will ensure the survival and the success of both.

Exercise 1. Make up 20 different types of questions for text C.

Exercise 2. Retell text C.

Exercise 3. Write a short summary of text C.

GRAMMAR

CONDITIONAL SENTENCES

Conditional sentences may express real and unreal condition. They are introduced by the conjunctions: *if, in case, provided, unless, suppose*.

Conditions	Subordinate Clause	Principal Clause	Translation
Real	If it looks like rain, If I have more time, If he is working on Friday	we'll stay at home. I'll come over. he won't be able to go with us.	би (не треба)
	<i>Present Ind./Cont.</i>	<i>will + Inf.</i>	
Unreal	Present/Future	I would go there myself. I would come over you wouldn't think so. I could go out.	би
		<i>would</i> <i>could + Inf.</i> <i>Might</i>	
	Past	If you had gone there, If it hadn't been so hot last summer.	you would have seen him. we could have gone to the South.
		<i>would</i> <i>could + have + Participle II</i> <i>might</i>	
	<i>Past Perfect</i>		

NOTES:

1. "If" is the most common. "In case" and "provided" are chiefly used in sentences of real condition:

In case I *don't find* her at home, I'll leave her a note.

У разі, якщо я не застану її вдома, я залишу їй записку.

We'll *finish* the work on time **provided** you send all the necessary materials.

Ми закончимо роботу вчасно, *за умови* якщо ви надішлете всі необхідні матеріали.

Unless has a negative meaning:

I'll come in time **unless** I *am detained* at the Institute.

Я прийду вчасно, якщо мене не затримують в інституті.

Suppose is more common in sentences of unreal condition:

Suppose he *wrote* to you, *would* you *answer*?

Припустимо, він написав би вам, ви б відповіли?

2. In the subordinate clause auxiliary "should" can be used. Such sentences are translated by means of "*Якщо б сталося так...*" "*Якби...*"

If he **should** come, ask him to wait.

В разі, якщо він прийде, попросіть його зачекати.

There are two mixed types of sentences of unreal condition:

- a) the condition refers to the past and the consequence refers to the present:

If you **had taken** your medicine yesterday, you **would be** well today.

Якби ви *вчора* прийняли ці ліки, *тепер* ви були б здорові.

- b) the condition refers to no particular time and the consequence to the past:

If he **were not** so absent-minded, he **would not have missed** the train yesterday.

Якби він не був таким неуважним, він би не спізнився *вчора на поїзд*.

Unreal conditions may also be expressed in the following ways:

a) **But for + noun/pronoun**

But for the rain, we would go down to the country.

Якби не дощ, ми б поїхали за місто.

b) **If it were not for + noun/pronoun
had not been for**

If it were not for your help, I wouldn't be able to finish my work in time.

Якби не ваша допомога ...

If it **hadn't been** for me, they **would have never found** the place.

Якби не я ...

In sentences of unreal condition the modal verbs “*might*” and “*could*” are often used instead of “*would*”; they fully retain their modal meaning:

If I **had** a big garden I **would**
could **grow** a lot of flowers,
might

Indirect Speech:

“If I **had** a big garden I **would grow** a lot of flowers”.

He **said** that if he **had** a big garden **he would** (*could/might*) **grow** a lot of flowers.

Grammar exercises

Ex. 1. Choose the correct form of the verb.

1. If I *don't feel/won't feel* well tomorrow, I *stay/I'll stay* at home.
2. If the weather *is/will be* nice tomorrow, we can go to the beach.
3. It will be hard to find a hotel if we *arrive/will arrive* late.
4. The alarm will ring if there *is/will be* a fire.
5. I *am/will be* surprised if they *get/will get* married.
6. *Do/will* you go to the party if they *invite/will invite* you?
7. If I *am/will be* late this evening, don't wait for me.
8. What shall we do, if it *rains/will be raining*?

9. I'll be able to understand you, if you *spea*k/*will spea*k slowly.

Ex. 2. Practise the following according to the model.

Model: He runs round the park every morning, so he keeps very fit.
If I **ran** round the park every morning **I would keep** fit too.

1. He lives in the South, so he can grow a lot of flowers.
2. They use electric typewriters, so they finish their work soon.
3. He lives near his work, so he is never late.
4. He goes to bed early, so he always wakes up in time.
5. His French is good, so he reads French books in the original.
6. They have a maid, so they can enjoy themselves.

Ex. 3. Put the verbs in brackets into the correct form.

I.

1. If I had this tool, I (give) it to you.
2. If he worked more slowly, he (not make) so many mistakes.
3. I could give you his address if I (know) it.
4. He might get fat if he (stop) smoking.
5. If he knew you were away, he (not come).
6. I (keep) a gardener if I could afford it.
7. What would you do if the lift (get) stuck between two floors?
8. He (not go) there if his family were not invited.
9. The car wouldn't break so often if you (have) it serviced regularly.

II.

1. If I (know) her better, I (introduce) you.
2. The journey takes about 3 hours by bus. You (get) there much sooner if you (go) by train.
3. If I (have) money with me then, I (can lend) you some.
4. He couldn't find a job when he came to Germany. If he (like) children, he (work) at school.
5. The teacher told Peter that he (not pass) the exam if he (not work) harder.

Ex. 4.

I. Use "might" instead of "would" to give the meaning of "perhaps".

1. She's getting fat. If she (not eat) much sweet, she (lose) weight.
2. I didn't watch the film yesterday. If I (have) some free time yesterday, I (watch) it.

3. She feels very tired in the morning. If she (go) to bed earlier, she (not feel) so tired.
4. He's not a strong man. If he (go) to the fitting center, he (be) stronger.

II. Use "could" instead of "would" to give the meaning of "possible".

1. We (understand) the English teacher better if she (speak) more slowly.
2. I like reading but we don't have books in our country house. If I (have) books there, I (read) a lot in summer.
3. I don't know where he's living now. If I (know) his address, I (write) to him.
4. Roberta is very pretty but rather short. If she (be) taller, she (be) a model.

Ex. 5. Answer the questions in complete sentences.

I.

1. To which town/city would you go if you didn't need a visa?
2. Who would you ask to dance if you had the choice?
3. Could you come to the Institute on Sunday if the teacher asked you?
4. How would you feel if you won a thousand dollars?
5. Could you wake up at 5 a.m. if none woke you up?
6. Could you cook your own dinner if your mother asked you?

II.

1. If you had been born in 1950, what would you be now?
2. If you had been late for this lesson, would you have apologized to the teacher?
3. What would you have done if you had been the Rector of the University?
4. Could you have answered these questions correctly if you had been absent at the last lesson?

Ex. 6. Replace the infinitives in brackets by the right form of the verb.

Model: If I were you, I (to read) the book in the original.

If I were you, I *would read* the book in the original.

If I had known how dull the film was, I (not to go) to the cinema.

If I had known how dull the film was, I *would not have gone* to the cinema.

1. They (to go) to the beach if it were warmer.
2. If the poem were not so long, I (to learn) it by heart.
3. Even if it were not so late I don't think I (to go) to the cinema.
4. Even if he knew how difficult the situation was, he (not to stop) the preparations.
5. Even if I had a dictionary, I don't believe I (to be able) to write the test.
6. Even if you had given her your car, she (cannot arrive) in so short a

time. 7. Even if I wanted to, I (can do) nothing now. 8. If you really wanted to buy the house, you (can do) it even now.

Ex. 7. Replace the infinitives in brackets by the right form of the verb.

Model: If I (to know) about it, I (to help) you.

If I *had known* about it, I *would have helped* you.

1. The place was very dull. Even if it (not to be raining) the whole week, we (not enjoy) our holiday. 2. If you (not to interfere), they (to forget) all about it in an hour. 3. If you (to trust) me, I (can lead) you safely through. 4. The dinner (not to be spoiled) if you (not forget) the dish in the oven. 5. She (to know) how to behave if she (to be) a born lady. 6. He (not to take) this case even if he (to be asked). 7. The accident (not to happen) if you (to be) more attentive. 8. She (to go) there even if she (to have) to walk all the way. 9. None (to mind) if he (be dismissed). 10. Someone (may notice) if she (open) the letter.

Ex. 8. Compose conditional sentences on the basis of the following statements.

Model: It's raining hard. We can't go out. If it *were* not raining so hard, we *could go out*.

I have no dictionary. I shan't finish the translation today.

If I *had* a dictionary, I *would finish* the translation today.

The goal-keeper was hurt early in the game. The team lost. If the goal-keeper *had not been hurt* early in the game, the team *would not have lost*.

1. She thought of her future and refused to marry the young man.
2. He was deep in his thoughts and did not notice the "no parking" sign.
3. I have a lot of work to do, I can't go to the pictures.
4. There is no one to sit with the baby, I have to stay at home.
5. The rain has stopped at last, and we began to enjoy ourselves.
6. She did not think of the consequences and agreed to forge (подделать) the document.
7. There were so many people there that nobody noticed his absence.
8. We don't like cheese. We don't buy it.
9. He lost his temper and said things he did not really mean.
10. I don't know your cousin, I can't meet her at the station.

Ex. 9. Compose sentences according to the model. Use *but for* + noun/pronoun

Model: I don't want to tell you this, but I promised to.

But for my promise, I wouldn't tell you this.

He didn't die. The operation saved him.

But for the operation he would have died.

1. He wants to go swimming but the water is cold. 2. He couldn't see us off as he was busy at the office. 3. She wasn't alone in the house, her husband was asleep in his room. 4. I want to go but I have an examination tomorrow. 5. In the end he went to see the doctor. His wife made him do it. 6. It began to rain and we didn't go for a walk. 7. We couldn't have a picnic. The weather was too bad. 8. Of course I want to help you but I have a conference today. 9. He had a good guide so he could see all the sights. 10. You can't prepare the contract because the computer is out of order.

Ex. 10. Translate the words in brackets.

1. But for her spelling she (отримала б) an excellent mark for her composition.
2. But for my sister's help I (не змогла б перекласти) the article so fast.
3. But for the neighbour's chickens I (не тримала б) the dog chained.
4. But for your explanation I (не навчилася б) to do it so well.
5. But for the final scene the picture (була б) quite good.
6. But for his sore throat he (виступив би) at the meeting.
7. But for the grandmother's operation they (поїхали б) to the Crimea.
8. But for her voice she (була б) a good actress.
9. But for the heat I (подобалося б) working in this country.
10. But for the accident he (поставив би/set) a record.

Ex. 11. Translate the verbs in brackets.

I.

1. If I had known that you were in hospital (я бы навестил тебя).
2. If (я бы знал) that you were coming I'd have baked a cake.
3. If (ты бы пришел) ten minutes earlier you would have got a seat.
4. You would have seen my garden at its best if (ты был бы здесь) last week.
5. I wouldn't have believed it if (я бы не видел) it with my own eyes.
6. (Я бы предложил) to help him if I had realized that he was ill.
7. If (я бы понял) what a bad driver you were I wouldn't have come with you.
8. If I had realized that the traffic lights were red (я бы остановился).
9. (Куры не вошли бы/get) into the house if you had shut the door.
10. If he had known that the river was dangerous (он бы не пытался) to swim across it.
11. If (Вы бы говорили) more slowly he might have understood you.
12. If he had known the whole story (он бы не разозлился).
13. If (я бы попытался) again I think that I would have succeeded.
14. (Вы бы не попали/get) into trouble if you had obeyed my instructions.
15. If (я была бы готова) when he called he would have taken me with him.
16. If she had

listened to my directions (она бы не повернула) down the wrong street. 17. (Я бы взял такси) if I had realized that it was such a long way. 18. If (ты бы не чихнула/sneeze) he wouldn't have known that we were there.

II.

1. If (я встретил тебя) you yesterday, of course (я бы предупредил) you. 2. I'm sorry I threw the newspaper away. (Я бы не выбросил ее) if (я бы знал) you had wanted it. 3. Why didn't you ask me to help you? Of course (я бы помог тебе) if (ты бы попросил меня) to. 4. I'm sorry I couldn't come to the cinema with you last Friday. (Я бы пошел) if (я бы не был) so busy. 5. (Я бы не ушел из) the office early yesterday if (я бы не закончил) my work.

Ex. 12. Put the verbs in brackets into the correct tenses. Don't forget that there exist mixed types of conditional sentences.

1. I had a sandwich for lunch. If I (have) a proper lunch, I (not feel) so hungry now. 2. He told his friend, "I'm not feeling very well. I (not be) here today if I (not promise) to come." 3. I can hardly keep my eyes open. If I (go) to bed earlier last night, I (not be) so tired now. 4. He looked at his watch while he was driving and thought, "If I (not stop) to get petrol, I (be) home now." (use 'might') 5. If Jack (not hurt) his ankle yesterday, he (play) football this afternoon, (use 'could') 6. He wasn't a very happy man, and he often said, "If I (follow) my father's advice, I (be) much happier now." (use 'might')

Ex. 13. Supply the necessary forms for the verbs given in brackets in the following sentences of unreal condition.

1. "Are you still thinking of going on that cruise?" - "It (may be) enjoyable," he said, "if one (to have) just the right person to go with." 2. It (to be) fun if Roberta (to write) a book. 3. I never tried to understand my brother. If I (to try) I (may stop) him from going away. 4. If I (to be) you, Meg, I (not to let) myself believe this hateful gossip. 5. I (to hate) myself if I (to deceive) him. 6. He said he had no pain, and if it (not to be) for the doctor, he (to get up) and (to go) home. 7. She (can go) to Cambridge if she (to want). She had been offered a scholarship. 8. You (to be) horrified if I (to tell) you what I have had to go through. 9. I'm glad I wasn't at home. He (not to get) much help if he (to ask) me. 10. The house looked awful. If I (to be) given to crying I (may cry). 11. "No, I won't tell you," she said. "It (not to be) fair to them if it just (to turn) out to be gossip." 12. It (may be) fatal if she (to learn) the truth. 13. "May I read this?" - "I (not to bother) if I (to be) you." 14. If I (to keep) to my original plan I (to miss) the whole affair. 15. Alice thought it (may be) nice if you (can join) us.

16. It (to look) silly if I (to tell) them the truth. 17. If I (to be) you, I (to try) to rise above it. 18. If I (to be) there, of course, I (to do) something. 19. If it (not to be) for the children I (to leave) you tomorrow. 20. If I (to be) a hainter, I (to choose) an entirely different scenery.

(From “An English Grammar Practice Book” by I.P.Krylova)

Ex. 14. Translate the sentences into English, using *but for* +noun/pronoun.

I.

1. Якби не застуда, я б теж поїхав. 2. Якби не погана дорога, ми б уже давно приїхали. 3. Якби не вона, вони ніколи б не сварилися. 4. Якби не цей юнак, дитина потонула б. 5. Якби не ваша допомога, вона б не наздогнала групу. 6. Якби не його діагноз, її не оперувати б вчасно. 7. Якби не погода, ми б чудово провели літо. 8. Це була б непогана робота, якби не орфографічні помилки.

II.

1. Якби не шрам на щоці, я б його не впізнав. 2. Якби не цей дзвінок, це був би прекрасний вечір. 3. Ми б дісталися туди вчасно, якби не нещасний випадок. 4. Якби не тісні (tight) туфлі, я б отримав величезне задоволення від прогулянки. 5. Якби не її втомлені очі, ви б ніколи не дали їй більше ніж 30. Якби не я, ти б забув про це. 7. Якби не ти, я б благополучно сиділа зараз вдома. 8. Якби не діти, я б теж поїхала з вами. 9. Якби не його нога, він теж взяв би участь у цій грі.

Ex. 15. Translate into English.

1. Навіть якби ви подзвонили мені вчора, я б не зміг прийти. 2. В залі було так багато народу, що я не зміг би його знайти. 3. Навіть якщо б ви попередили мене, я б не встиг його побачити. 4. Я не міг би поговорити з ним, навіть якщо б я його бачив вчора. 5. Навіть якби він дуже змінився, я б впізнав його. 6. Якби вам поставили це запитання, зуміли б ви на нього відповісти? 7. Якби станція не була так далеко, ми б донесли речі самі. 8. Він ні за що не залишив би товаришів в біді, навіть якщо б йому довелося ризикувати життям. 9. Якщо не застанеш нікого з нас вдома, залиш записку. 10. Навіть якщо б йому нічого не сказали, він би все одно здогадався в чому справа. 11. Якби не цейтнот (timetrouble), він міг би виграти партію. 12. Якщо він стане відмовлятися, я постараюся переконати його.

Ex. 16. Translate into English.

1. Якщо ми не знайдемо таксі, ми встигнемо на поїзд. 2. Якби ти слухав уважно, ти б все зрозумів. 3. Якби не було вітру, ми б пішли кататися на лижах. 4. Якби я був лікарем, я б допоміг вам. 5. Якщо магазини будуть відкриті, купи що-небудь на сніданок. 6. Якби ти запросив її на вечірку, вона б прийшла із задоволенням. 7. Якби ти читав газети, ти б знав останні новини. 8. Якби Бетсі була зайнята сьогодні, ми б пішли на концерт. 9. Я не закінчу цю роботу до вечора, навіть якщо ви мені допоможете. 10. Будь я на вашому місці, я б пішов раніше.

Ex. 17. Translate into English.

1. Якби дорога була краща, ми б доїхали значно швидше. 2. У разі, якщо він не прийде, я зачитаю його доповідь. 3. Як би ви вирішили цю проблему, якщо б вам довелося зайнятися нею? 4. Якби він вступив до інституту чотири роки тому, він би зараз вже закінчив його. 5. Якби не випадок, він ніколи не дізнався б про це. 6. Якби вона вчора дістала квиток, то завтра б поїхала. 7. Якби не наш учитель, я б не пізнала так багато цікавого. 8. Якби він не прогледів (overlook) цієї помилки, він би тепер не переробляв весь проект спочатку. 9. Якби мені довелося писати статтю на цю тему, я б не став раиводити (cite) стільки цитат. 10. Якби я добре ходив на лижах, я б обов'язково взяв участь в змаганнях.

REVISION

Ex. 18. Supply the necessary forms for the verbs given in brackets.

1. If I (to realise) it was to be like this, I (not to come). 2. If he (not to tell) us that himself I never (to believe) that. 3. He (to agree) never with you, even if he (be) wrong. 4. I (to be) grateful if you (to keep) the news to yourself. 5. If anyone (to ask) me what his specific gift was, I (not to know) howto answer. 6. She said she (to be) pleased if my mother (to allow) me to spend a month with them. 7. Mary is staying with them. I think it (to be) a good thing if you (to come) and (to see) her. 8. If we ever (to happen) to meet again I (to act) as if this letter never (to write).

Ex. 19. Replace the infinitives in brackets by the correct form of the verb.

1. If it (to be) all the same to me, I (not to come) and (to talk) with you. 2. If there (to be) some more of us, it (to take) only a few days to get through with it. 3. If anyone (to call), I shall give him the telephone number so that he (to get in

touch) with you. 4. Leave a message for me if you (not to find) me in. 5. He (not to understand) it even if he (to be given) a broad hint which none other would miss. 6. If you (to come across) an expression that you do not know, write it out, please. 7. You (not to find) the house even if you (to ask) for directions: it has been pulled down recently.

Ex. 20. Supply the necessary forms for the verbs given in brackets in the following conditional sentences referring to the future.

1. If Ed (to learn) about it, he probably never (to speak) to me again. 2. I (to be) in the drawing-room in case there (to be) a telephone call for me. 3. He wondered how he (to feel) if his former wife (to come) into the room. 4. Philip says they (to miss) me if I (to leave) before their wedding. 5. In case any crisis (to arise), let me know. 6. You (to do) it differently, if you (have to do) it over again? 7. If this (to be) our last meeting for some time, I (not to like) you to remember this talk. 8. It (to be) awkward if she (to refuse) to co-operate. 9. What his mother and father (to think) if they (to hear) of what he has done? 10. If the situation (not to change) by Saturday I (to be) in trouble. 11. I (not to be) surprised if he (to offer) an important post under the next government.

Ex. 21. Translate into English.

I.

1. Якби не ваша допомога, я не зміг би закінчити роботу вчора. 2. Якби він прийшов вчасно, цього могло б не статися. 3. Якби пішов дощ, я б промокла до кісток, тому що на мені було дуже легке плаття. 4. Якби ви дійсно любили читати, ви завжди б знайшли час для читання. 5. Куди б ти пішов, якби не йшов дощ? 6. У разі, якщо піде дощ, я залишуся вдома. 7. Якби я сказав що-небудь подібне твоїй тітці, вона вважала б мене божевільним. 8. Я буду у себе вдома на випадок, якщо ти передумаєш. 9. Можливо, що він відчував би і поводився б інакше, якби обставини були іншими. 10. Якби ти не був так зайнятий, ми могли б піти куди-небудь пообідати. 11. Якби у нас не було багажу, ми могли б дійти до станції пішки. 12. Ви б відчували себе краще, якби не лягали спати так пізно (to keep late hours). 13. Ми б не запізнилися на потяг, якби взяли таксі. 14. Ми могли б піти на каток, якби не було так холодно. 15. П'єса сподобалася б мені більше, якби вона не була такою тривалою. 16. Ви б себе добре сьогодні відчували, якби вчора прийняли ліки. 17. Якби я був на вашому місці, я б більше проводив часу на відкритому повітрі. 18. Ви б краще знали мову, якби читали книги в оригіналі. 19. Якби не моя хвороба, я б уже закінчив університет. 20. Ви б не розбили вазу, якби були обережні. 21. Ми, можливо, не заблукали б, якби ніч не була такою темною. 22. Я повернуся о шостій, якщо мене не затримують в університеті. 23. Якби не

дощ, ми могли б поїхати за місто. 24. Ви були б вже здорові зараз, якби вчасно звернулися до лікаря. 25. Якби не його хвороба, сім'я переїхала б до міста.

II.

1. Якби місіс Копперфільд не мала наміру вийти заміж, вона б не послала Девіда до містера Пеготі. 2. Девід часто думав про те, що, якби не містер Пеготі, Емілі була б нещасною бездомною дитиною. 3. Девід сказав Пеготі: "Я думаю, що ваш брат дуже добрий; він би не удочерив (to adopt) маленьку Емілі, якби не був такою доброю людиною." 4. Маленька Емілі часто говорила Девіду, що якби сталося так, що вона б стала багатого дамою, вона б подарувала містеру Пеготі золотий годинник, срібну трубку і цілий ящик грошей. 5. Девід не знав, що його мати вийшла заміж за містера Мердстона. Якби він знав, він не повертався б додому в такому гарному настрої. 6. Якби містер Мердстон сказав Девіду хоч одне ласкаве слово (kind), хлопчик, можливо, полюбив би його. 7. "Як би ми були зараз щасливі, якби матінка не вийшла заміж за містера Мердстона," - часто думав Девід. 8. Девід був здібний хлопчик і міг би добре вчитися, якби на уроках не були присутні Мердстони.

(From "English Grammar Exercises" by Kaushanskaya V.L. a. o.)

MAKING A WISH

You can express wishes about the present, past and future. We use "wish" to say that we regret something, that something is not as we would like it to be (It is possible only if the subject of the principal clause (I wish) is not the same as the subject of the object clause (he, you, it would do it)).

I wish/wished ...

<ul style="list-style-type: none"> - I were/was beautiful. - Як би мені хотілося бути красивою. - we knew Sue's address. - Як шкода, що ми не знаємо адреси Сью. - it weren't /wasn't raining - Шкода, що йде дощ. - you didn't work so much. - Я б не хотіла, щоб ви так багато працювали. 	PRESENT
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<ul style="list-style-type: none"> - I had brought my camera. - <i>Шкода, що я не взяв з собою фотоапарат.</i> - the hotel had been better. - <i>Шкода тільки, що готель був такий поганий.</i> 	PAST
<ul style="list-style-type: none"> - they could come to see us tomorrow. - <i>Шкода, що вони не ЗМОЖУТЬ зайти до нас завтра.</i> 	FUTURE
<ul style="list-style-type: none"> - someone would answer that telephone! - <i>Та зніміть вже хто-небудь трубку!</i> - the music would stop! - <i>Коли ж припиниться ця музика!</i> - you would give her my message. - Не могли б ви передати їй моє прохання. 	complaints annoyance request

Here are some more examples, underneath each there is a sentence expressing the same wish in the past.

- a) **I wish I knew** how to drive a car.
I wish I had known how to drive a car in 1975.
- b) **I wish** today **was** a holiday.
I wish yesterday **had been** a holiday.
- c) **I wish I could travel** round the world.
I wish I could have travelled round the world when I **was** a young man. *(The speaker is not young, so he is speaking about the past.)*

It is rendered into Ukrainian as follows:

I wish he were here.

Шкода, що його немає з нами.

Мені хотілося б, щоб він був з нами.

Було б добре, якби він був тут.

EXERCISES

Ex. 1

I. Read these sentences, the words in brackets make the meaning fuller.

- a) I wish I knew how to drive a car. (At the time of speaking, the speaker doesn't know how to drive a car.)
Or: *I don't know how to drive a car. I wish I did.*
- b) I wish today was a holiday. (But today is not a holiday.)
- c) I wish I had more time to read. (At the time of speaking the speaker hasn't got much time to read.)
- d) I wish I could travel round the world. (At the time of speaking, the speaker can't travel round the world. Perhaps he hasn't got enough money, or time.)
- e) The father told his children, "I wish you wouldn't make so much noise. I've got a headache." (when the father says this, his children are making a lot of noise.)

II. Add to each of the following examples 2 sentences, both beginning: "*I wish*"

Example 1: I don't understand this question.

Answer: I wish I did. I wish I understood this question.

Example 2: It's still raining.

Answer: I wish it wasn't. I wish it wasn't still raining.

Example 3: My father can't give me more pocket money.

Answer: I wish he could. I wish he could give me more pocket money.

1. My brother doesn't have a very long holiday. 2. I can't play the piano. 3. My tooth is aching. 4. I sometimes make careless mistakes. 5. He's not coming to see me today. 6. I can't swim well. 7. I don't know how to answer this question. 8. He always drives too fast. 9. I don't speak English fluently. 10. I can't go to the cinema this evening. 11. The teacher gives us a lot of homework. 12. My father doesn't come home from work early. 13. I live a long way from the Institute. 14. Our television set is broken. 15. I can't sell my old bicycle.

Ex. 2. Practise the following according to the models.

Model 1: A. I know five languages.

B. I wish I knew five languages, (stress on the second "I")

Or: B. If only I knew five languages! (this form is much more dramatic and less generally useful than the "I wish" form)

1. I have a flat here.
2. I live near my work.
3. I have plenty of time for reading.
4. I understand it.
5. My son writes every week.
6. My house looks out on a park.
7. I can take a day off any time.

Model 2: A. I asked Bill.

B. I wish you'd asked Tom too.

Or: B. If only you'd asked Tom too. ("had" is normally contracted here)

1. I invited Paul.
2. I stopped Mary.
3. I rang Ann.
4. I wrote to Alex.
5. I spoke to John.
6. I warned Philip.
7. I voted for Peter.

Model 3: Take more care. - / wish you would take more care.

Don't shout at me. - / wish you wouldn't shout at me.

1. Don't throw rubbish on the floor.
2. Listen to me.
3. Don't waste so much time.
4. Try to answer my questions.
5. Get up earlier.
6. Don't be so impatient.
7. Look where you are going.
8. Speak more clearly.
9. Don't open the windows.
10. Don't walk so fast.
11. Write more carefully.
12. Don't come into the room without knocking.
13. Help me to move this cupboard.
14. Keep quiet.

Ex. 3. Add to each of the following a sentence, beginning: “I wish...”. The words in brackets will help you to form your sentences.

1. We lost the game yesterday. (win) 2. I sat at the back of the hall, and couldn't hear his speech very well. (every word) 3. The sea is rough, we can't sail to the island. (calm) 4. There were no taxis, so I had to walk from the station, (find) 5. I went to bed very late last night, and I'm half asleep this morning. (so late) 6. I could only answer three of the questions at the last examination. (all of them) 7. The box was heavy, I couldn't carry it. (help me) My father gave me some good advice, but I didn't take it. (his advice) 9. One of my friends went to London for a holiday last summer, but I couldn't go. (with him) 10. Why didn't you watch the cat? It ate all the fish. I'm so angry with you. (more attentive) 11. There was so much noise in the streets last night that I couldn't sleep well. (better) 12. There was a very good film on last week, but I didn't see it. (read the program) 13. We went for a picnic yesterday, but it rained all the time. (so hard) 14. I was lazy and wasted my time when I was at school. (harder) 15. I didn't understand what he said yesterday. (louder) 16. This house is very nice and comfortable. I'd like to buy it, but it is very expensive. (less expensive)

Ex. 4. Rewrite the following, using a “wish” construction (phrases in brackets should be omitted).

1. I'm sorry I don't live near my work. *I wish I lived near my work.*
2. I'm sorry I don't know Finnish.
3. I'm sorry I didn't book a seat.
4. I'm sorry I can't drive.
4. I'd like you to keep quiet. (You are making so much noise that I can't think.)
5. It's a pity he didn't work harder during the term.
6. I'm sorry you didn't see it.
7. It's a pity you are going tonight.
8. I'd like you to wait for me (even though you are ready to start now).
10. I'm sorry I didn't bring a map.
11. I'm sorry I didn't know you were coming.
12. I'm sorry I can't swim.
13. I'm sorry you aren't coming with us.

Ex. 5. Translate into English.

1. Шкода, що сьогодні йде дощ. Якби погода була сонячною, ми б змогли провести день в лісі. 2. Я не знаю, де він зараз живе. Якби я знав його адресу, я б обов'язково йому написав. 3. Шкода, що я вже повернув вчора в бібліотеку підручник. Якби я знав, що він тобі потрібен, я б приніс тобі його. 4. Шкода, що я не живу поблизу від інституту. 5. Чому ви не попросили тоді мене вам допомогти? Я б обов'язково вам допоміг, якби ви попросили мене про це. 6. Шкода, що ви не подивилися цей фільм. Він досить довго демонструвався в кінотеатрах Москви. 7. Я люблю читати, але у мене мало вільного часу. Якби у мене було більше часу, я б зміг більше читати. 8. Шкода, що я не зміг піти в театр з вами минулої суботи. Якби я не був зайнятий, я б обов'язково пішов.

REVISION

Ex. 6. Translate into English.

1. Шкода, що ви прийшли так пізно. 2. Прикро, що ми пішли до його приходу. 3. На жаль, вони ще нічого не знають. 4. На жаль, вони вже знають про це. 5. Шкода, що він такий легковажний. 6. Шкода, що він не дуже серйозний. 7. Я тепер шкодую, що не послухав його поради. 8. Мені б хотілося подивитися цей фільм ще раз. 9. Я б хотів, щоб ви все-таки прочитали цю книгу. 10. Шкода, що ви не прийшли раніше. 11. Мені б хотілося, щоб ви ще раз обдумали мою пропозицію. Прикро, що ми не дочекалися його приходу. 13. Шкода, що ми так і не зустрілися перед від'їздом. 14. Я тепер шкодую, що пішов ради нього. 15. Краще б ти не був такий упертий і послухав нас. 16. Він пошкодував, що прийшов і привів із собою друга. 17. На твоєму місці я б не став робити цього. 18. Якби він прийшов вчасно, цього могло і не статися. 19. Якби не ти, я не знаю, що б я тоді зробив. 20. Якби ти не був так зайнятий, ми могли б піти куди-небудь пообідати.

Ex. 7. Translate into English.

1. Якби не його лукава посмішка, я б щиро повірив йому.
2. Якби я був художником, я б намалював портрет цієї людини.
3. Ви б пішли кудись сьогодні ввечері, якби я запросив вас?
4. Якби ми знали, що вам потрібна ця книга, ми б захопили її з собою.
5. Якщо він стане відмовлятися, я постараюся переконати його.
6. Шкода, що я не можу прочитати цю книгу в оригіналі.
7. Ви шкодували, що не скористалися такою можливістю?

8. Шкода, що у нас мало часу.
9. Шкода, що ви не звертаєте уваги на свою вимову.
10. Хоч би він перестав палити в кімнатах!

Ex. 8. Translate into English.

1. Вони б помітили цю помилку, якби були більш уважні.
2. Будь я на вашому місці, я б пішов раніше, щоб застати його.
3. Що б ви сказали, якби я запитав вашої поради?
4. Якби не важливість цієї справи, я б залишився вдома.
5. Якщо не застанеш нас вдома, залиш записку.
6. Я шкодую, що не зможу піти завтра на вашу лекцію.
7. Мій брат шкодував, що не був присутній при проведенні цього дослідю.
8. Шкода, що ти не сказав мені цього відразу.
9. Шкода, що він не говорить англійською.
10. Яке гарне плаття. Шкода, що у мене немає такого.

Ex. 9. Translate into English.

1. Якби я жив в Москві, я б часто ходив в музеї.
2. Що ми будемо робити, якщо вони запізняться?
3. Якби він не був таким неуважним, він був би відмінним студентом.
4. Якби ви подзвонили вчора, я б сьогодні приніс вам цю книгу.
5. Якби не моя робота, я б із задоволенням сам був вашим гідом.
6. Як би я хотіла піти на цю вечірку! Вона має бути дуже веселою.
7. Шкода, що ви не звернули уваги на його попередження.
8. Ми пошкодували, що не пішли за його порадою.
9. Як би я хотіла, щоб вони повернулися до Різдва.
10. Хоч би хто-небудь взяв із собою карту!

LESSON IV

Text A

MUSSEL CULTURE

by Simeona M. Aypa

1.0 INTRODUCTION

Mussels are among the many invertebrates under the Phylum Mollusca. Their wide distribution in the coastal areas of the Indo-Pacific region makes

them the most easily gathered seafood organisms, contributing a significant percentage to the world marine bivalve production. In the Philippines, approximately 12,000 MT of mussels were produced in 1987. This amount consisted only of farmed green mussel, Perna viridis, and not the brown mussels which are exclusively gathered from natural beds.

In the wild, mussels are mostly found in the littoral zone, attached in clusters on various substrates. Being a filter-feeder of phytoplankton and detritus, it is considered the most efficient converter of nutrients and organic matter, produced by marine organisms in the aquatic environment, into palatable and nutritious animal protein. Its very short food chain (one link only), sturdy nature, fast growth rate and rare occurrence of catastrophic mass mortalities caused by parasitic micro-organisms, makes it possible to produce large quantities at a very reasonable price (Korringa, 1976). Likewise, its ability to attach to substrates with the byssus, makes it an ideal aquaculture species using different culture systems. According to Bardach et al. (1972), mussel culture is the most productive form of saltwater aquaculture and its proliferation is virtually a certainty.

France can probably be credited to have the longest history of mussel culture which dates as far back as 1235 (Bardach et al., 1972), while Spain has been reported to be the top world producer of farmed mussels.

In the Philippines, mussel culture started only in 1962 at the Binakayan Demonstration Oyster Farm, in Binakayan, Cavite by the biologists of the then Philippine Fisheries Commission, now Bureau of Fisheries and Aquatic Resources (BFAR). Mussels were initially considered as a fouling organism by oyster growers. The impetus for mussel culture in Manila Bay came about when oyster growers, attempting to collect oyster spats in less silty offshore waters, obtained instead exceptional heavy and almost pure mussel seedlings.

Mussel farming does not require highly sophisticated techniques compared to other aquaculture technologies. Even un-skilled laborers, men, women, and minors can be employed in the preparation of spat collectors as well as harvesting. Locally available materials can be used, hence minimum capital investment is required. The mussel harvest can be marketed locally and with good prospects for export.

Success in mussel farming, however, depends in providing some basic requirements to the bivalve such as: reasonable amount of sheltering of the culture areas, good seawater quality, and sufficient food in the form of planktonic organisms. These pre-requisites are found in some coastal waters, hence locating ideal sites for mussel cultivation is essential.

2.0 BIOLOGY OF THE MUSSEL

The green mussel, Perna viridis has separate sexes, although hermaphroditism usually occurs. Externally, it would be difficult to determine the sex, however, internally, the gonad tissue of a sexually matured male appears creamy-white in color, while that of the female is reddish-apricot. Sometimes young sexually immature females can not be distinguishable by color from male specimens.

This bivalve species reaches sexual maturity within the first year and spawns with the rising of seawater temperature. In the Philippines, mussels spawns year-round, however the peak period of spawning and setting is in April and May and again in September to October. Eggs and sperms are shed separately and fertilization occurs in the water (Jenkins, 1976).

Mussels have two relatively distinct phases in their life-cycle. A free swimming planktonic or larval stage and a sessile adult stage. The free swimming larvae remains planktonic for 7–15 days depending upon the water temperature, food supply and availability of settling materials. At about 2–5 weeks old, the larvae (0.25–0.3 mm) seek a suitable substrate to settle on and final metamorphosis takes place, changing its internal organ structure to the adult form. The young spat then grow rapidly and within 4–8 weeks, after settlement, they measure 3–4 mm in shell length.

Subsequent growth of the bivalve can be distinguished into shell and body growth. The shell length does not necessarily reflect the meat content. During spawning or food shortage, internal energy reserves are consumed while the shell may continue to grow. Overall growth of the mussel, as far as shell measurement is concerned is influenced by factors like temperature, salinity, food availability, disturbances and competition for space. On the other hand, body growth is affected by the season which primarily relate to sexual cycle and over-crowding to a certain extent.

3.0 CULTURE ASPECTS

The cultivation of mussels has taken various forms in different countries of the world. However, as in all farming procedures, it requires careful consideration of environmental, ecological and seasonal factors, in order to ensure proper growth and survival of the stock through harvest.

3.1 Criteria for site selection

3.1.1 Site location

In prospecting sites for mussel cultivation, well-protected or sheltered coves and bays are preferred than open un-protected areas. Sites affected by strong wind and big waves could damage the stock and culture materials and, therefore, must be avoided. Another important consideration is the presence of natural mussel spatfall.

Areas serving as catchment basins for excessive flood waters, during heavy rains, should not be selected. Flood waters would instantly change the temperature and salinity of the seawater, which is detrimental to the mussel. Sites accessible by land or water transportation are preferred so that culture materials and harvests can be transported easily.

3.1.2. Water quality

Areas rich in plankton, usually greenish in color, should be selected. Water should be clean and free from pollution. Sites near densely populated areas should not be selected in order to avoid domestic pollution. In addition, the culture areas should be far from dumping activities of industrial wastes and agricultural pesticides and herbicides.

Waters too rich in nutrients, which may cause dinoflagellate blooms and render the mussels temporarily dangerous for human consumption, causing either gastro-intestinal troubles or sometimes paralytic poisoning, should be avoided.

Water physio-chemical parameters are also important factors to be considered. The area selected should have a water temperature ranging from 27–30 °C, which is the optimum range required for mussel growth. Water salinity of 27–35 ppt is ideal. A water current of 17–25 cm per second during flood tide and 25–35 cm per second at ebb-tide should be observed. Favourable water depth for culture is 2 m and above, both for spat collection and cultivation.

3.3.3. Bottom type

Bottom consisting of a mixture of sand and mud has been observed to give better yields of mussel than firm ones. It also provides less effort in driving the stakes into the bottom. Shifting bottoms must be avoided.

3.2 Cultured mussel species

Among the mussels proliferating in the coastal areas of the tropical zone, the green mussel, *Perna viridis* (= *Mytilus smaragdinus*), called tahong in the Philippines, is the only species farmed commercially. In the temperate zone, it is the blue mussel, *Mytilus edulis*, as this species can grow at low seawater temperatures.

The brown mussel, *Modiolus metcalfei* and *M. philippinarum* which form dense mats on muddy bottoms in shallow bays (Yap, 1978) are simply gathered.

3.3 Culture methods

Mussel culture, as practiced in many countries, is carried out by using a variety of culture methods based on the prevailing hydrographical, social and economic conditions.

3.3.1. Bottom culture

Bottom culture as the name implies is growing mussels directly on the bottom (Fig. 1). In this culture system a firm bottom is required with adequate tidal flow to prevent silt deposition, removal of excreta, and to provide sufficient oxygen for the cultured animals. Mussel bottom culture is extensively practiced in The Netherlands, where the production of seeds is completely left to nature. If the natural spatfall grounds are unsatisfactory for growing, the seedlings are transferred by the farmer to safer and richer ground or to his private growing plots, until the marketable size is attained. Natural conditions control the quality and quantity of food in the water flowing over the farming plots. Marketable mussels are fished from the plots and undergo cleansing before being sold. This method requires a minimum investment. Disadvantages, however, of this type of culture is the heavy predation by oyster drills, starfish, crabs, etc. Also, siltation, poor growth and relatively low yields per unit culture area.

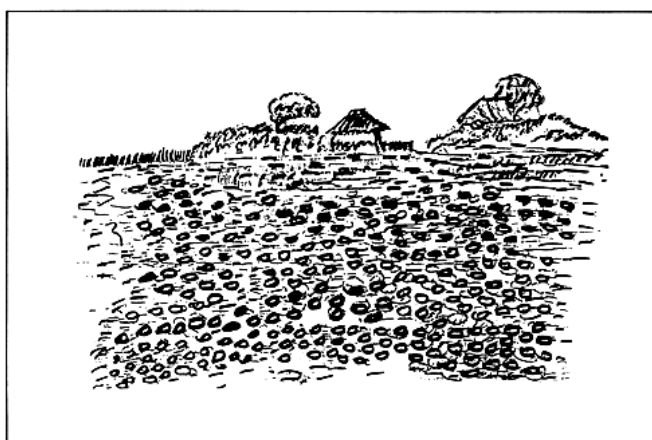


Figure 1. Mussel bottom culture.

3.3.2. Intertidal and shallow water culture

The culture methods that fall under this category are usually practiced in the intertidal zone. The culture facilities are set in such a way that the mussels are submerged at all times. Culture methods are:

Rack culture.

This is an off-bottom type of mussel culture. Rack culture is predominantly practiced in the Philippines and Italy where sea bottom is usually soft and muddy, and tidal range is narrow. The process involves setting of artificial collectors on poles or horizontal structures built over or near natural spawning grounds of the shellfish. In the Philippines, this is called the hanging method of mussel farming. The different variations used are as follows:

Hanging method. The process starts with the preparation of the spat collectors or cultches. Nylon ropes or strings, No. 4, are threaded with coco fibre supported by bamboo pegs or empty oyster shells at 10 cm intervals. These collectors are hung on horizontal bamboo poles at 0.5 m apart (Fig. 2). A piece of steel or stone is attached at the end of the rope to prevent the collector to float to the surface. Setting of collectors is timed with the spawning season of the mussels. Spats collected are allowed to grow on the collectors until marketable size.

Other materials utilized as collectors are rubber sheets and strips from old tires. Mussels are harvested by taking out from the water the ropes or strings and bringing them to the shore on a banca. The same collectors can be re-used after being cleaned of fouling organisms. Harvested mussels are cleansed of the dirt and mud by dipping the collectors several times in the water. The process maybe laborious, but the ease in harvesting and availability of local materials for culture purposes makes it very adaptable under local conditions.

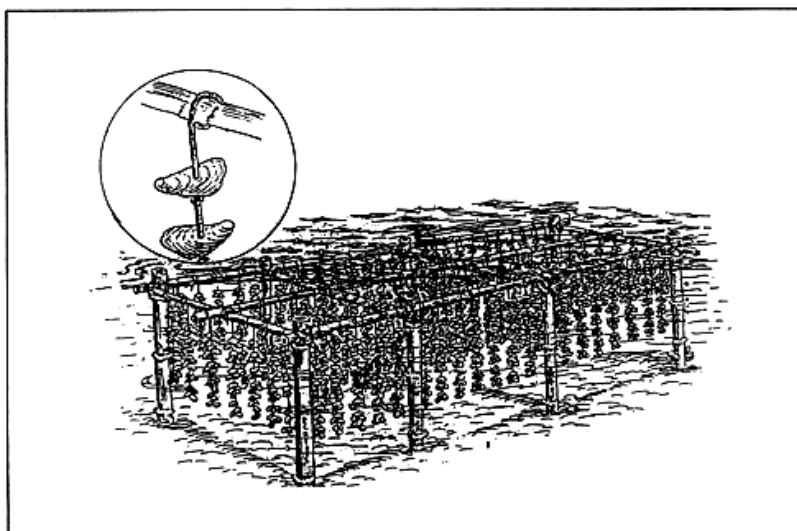


Figure 2. Mussel hanging (bitin) culture method on bamboo plots as practiced in the Philippines.

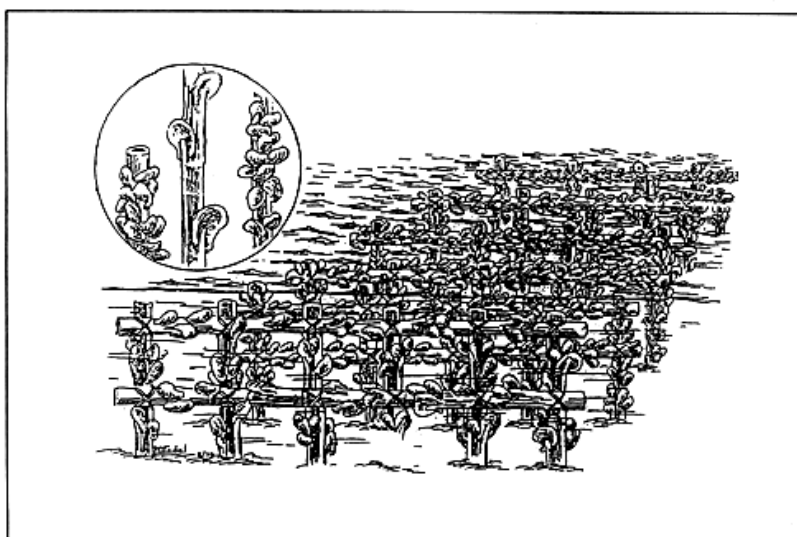


Figure 3. Mussel stick (tulus) culture method as practiced in the Philippines.

Stake (tulos) method. The stake method is midway between the rack and bottom methods. Bamboo poles, 4–6 m in length are staked firmly at the bottom in rows, 0.5–1 m apart during low tide in areas about 3.0 m deep and above (Fig. 3). In areas where water current is strong, bamboo poles are kept in place by nailing long horizontal bamboo supports between rows. Since mussels need to be submerged at all times, it is not necessary that the tip of the poles protrude above the low water level after staking. However, boundary poles should extend above the high water level. In staking, enough space between plots is allowed for the passage of the farmer's banca during maintenance.

Collected spats are allowed to grow in-situ until marketable size, 5–10 cm after 6–10 months. It has been observed, that about 2,000–3,000 seeds attach on 1 metre of stake, 1–2 m below low water level.

The mussels are harvested by pulling out the poles and bringing them ashore on a banca. Some poles may still be sturdy and can be re-used during the next season.

Tray culture. Tray culture of mussels is limited to detached clusters of mussels. Bamboo or metal trays, 1.5 m × 1 m × 15 cm sidings are used (Fig. 4). The tray is either hang between poles of the hanging or stake methods or suspended on four bamboo posts.

Wig-wam culture. The wig-wam method requires a central bamboo pole serving as the pivot from which 8 full-length bamboo poles are made to radiate by firmly staking the butt ends into the bottom and nailing the ends to the central pole, in a wigwam fashion. The stakes are driven 1.5 m apart and 2 m away from the pivot. To further support the structure, horizontal bamboo braces are nailed to the outside frame above the low tide mark (Fig. 5). Spats settle on the bamboos and are allowed to grow to the marketable size in 8–10 months.

Mussels are harvested by taking the poles out of water, or in cases that there are plenty of undersized bivalves, marketable mussels are detached by divers.

Rope-web culture.

The rope-web method of mussel culture was first tried in Sapijan Bay, Capiz, in 1975 by a private company. It is an expensive type of culture utilizing synthetic nylon ropes, 12 mm in diameter. The ropes are made into webs tied vertically to bamboo poles. A web consists of two parallel ropes with a length of 5 m each and positioned 2 m apart. They are connected to each other by a 40 m long rope tied or fastened in a zigzag fashion at an interval of 40 cm between knots along each of the parallel ropes (Fig. 6). Bamboo pegs, 20 cm in length and 1 cm width are inserted into the rope at 40 cm interval to prevent sliding of the crop as it grows bigger.

In harvesting, the rope webs are untied and the clusters of mussels are detached.

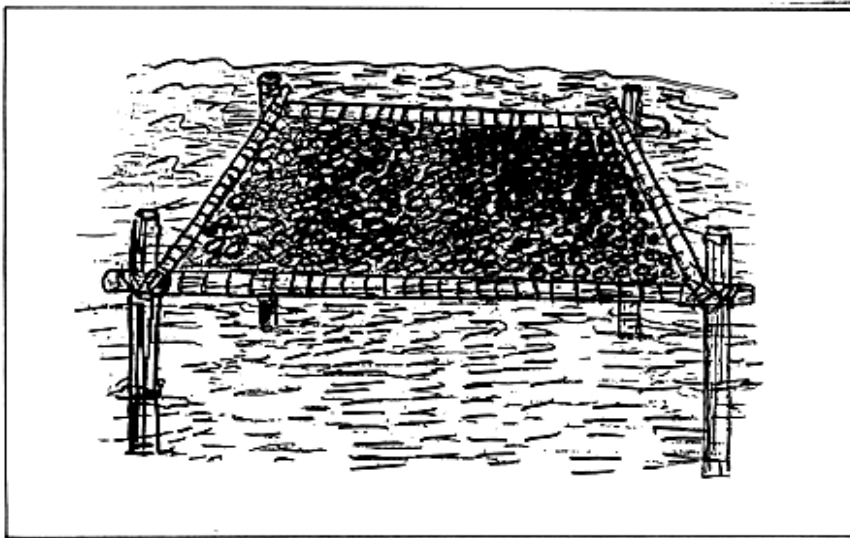


Figure 4. Mussel tray culture method as practiced in the Philippines.

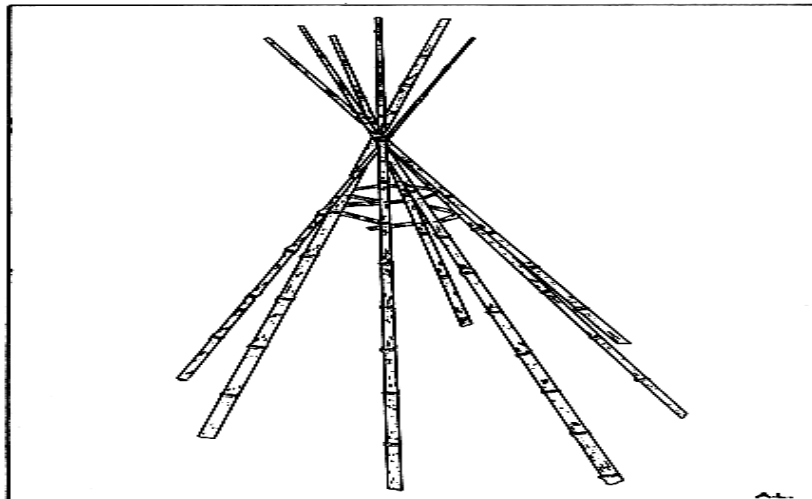


Figure 5. Mussel wig-wam culture as practiced in the Philippines (Source: A. Lovatelli).

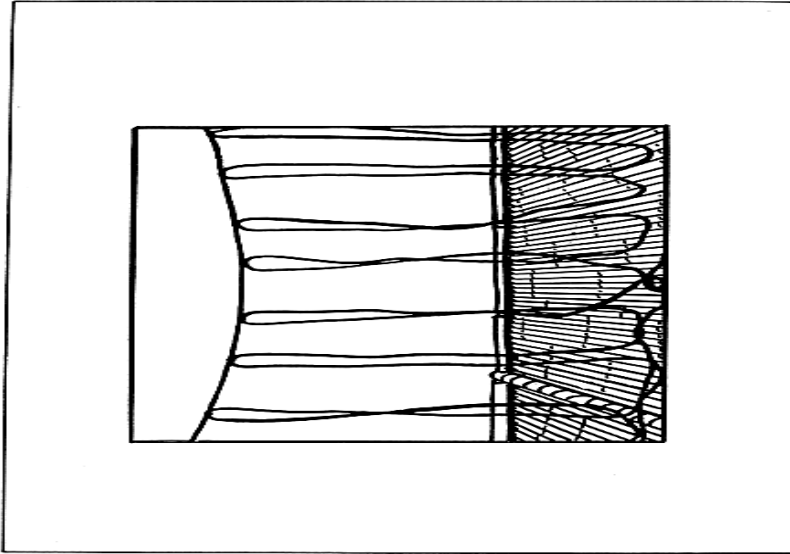


Figure 6. Mussel rope-web culture method as practiced in the Philippines.

The method is laborious and expensive, but the durability of the ropes which could last for several years might render it economical on the long run. However, the effect of the culture method on the culture ground is detrimental as gradual shallowing of the culture area has been observed up to the point that the areas become no longer suitable for mussel farming.

“Bouchot” culture

“Bouchot” culture is mainly undertaken in France. This is also called the “pole culture” or stake culture. The poles, used are big branches or trunks of oak tree, 4–6 m in length, which are staked in rows, 0.7 m apart on soft and muddy bottoms of the intertidal zone during low tide. Mussel seeds are collected on coco-fibre ropes which are stretched out horizontally on poles. Young adults, 3–5 mm in size are placed in long netlon tubes (10 m in length) and attached around the oak poles in a spiral fashion, until marketable size. Korringa (1976) reported that for an estimated length of about 600 km “bouchot” netlon, an approximate production of 7000 tons of marketable mussels yearly or an average production of 25 kg/pole/year can be harvested.

3.3.3. Deep water culture

Raft culture

Mussel raft culture has been practiced in Spain for a long time. Mussel seeds that settle freely on rocks or on rope collectors are suspended from a raft. When the weight of the bivalves on a given rope exceeds a certain limit, the rope

is taken out and again distributed over a greater length until marketable size. It is a continuous thinning of the mussel stock to provide ample space to grow. Marketable shellfish are detached from the rope, purified in basins before marketing. The raft may be an old wooden boat with a system of outrigger built around it. Other kinds of rafts could be a catamaran-type boat carrying some 1000 rope hangings, or just an ordinary plain wooden raft with floats and anchors (Fig. 7). Floats can be made of plastic, wood, oil drums, etc. The raft are transferred from one place to another using a motor boat. Production of mussels from this type of culture is high. From a catamaran-type raft with 1,000 rope, 6–9 m in length, about 4,666–5,333 MT of marketable mussel can be produced (Korringa, 1976).

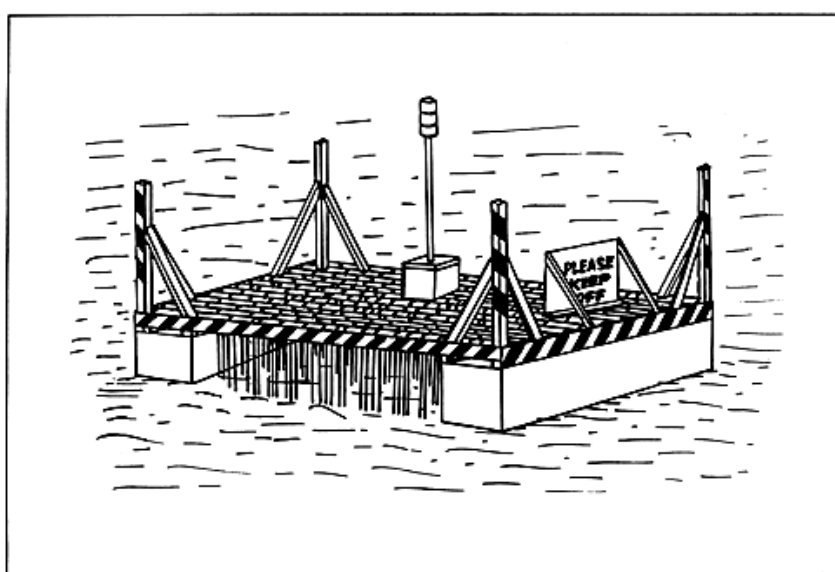


Figure 7. Mussel raft culture method.

Advantages of this type of culture are: reduce predation, utilization of planktonic food at all levels of water, and minimum siltation.

Long-line culture

Long-line culture is an alternative to raft culture in areas less protected from wave action. A long-line supported by a series of small floats joined by a cable or chain and anchored at the bottom on both end is employed. Collected mussel spats on ropes or strings are suspended on the line. The structure is fairly flexible.

4.0 Mussel transplantation to new site

Transplantation of young mussels from natural spawning grounds to sites with favourable conditions for growth is practiced in numerous countries as mentioned earlier. In the Philippines, however, mussel transplantation to new sites is being encouraged to develop new areas for mussel culture, due to various reasons. Major reasons are: rampant pollution of some existing mussel areas, urbanization growth near mussel farms and competitive use of lands.

Mussels to be transplanted could be breeders or young adults. Important points to be considered are: Conditions from natural spawning areas must be almost similar to the new area, mussels on original collectors showed better survival than those detached, and in transporting the mussel avoid being exposed to heat and freshwater.

5.0 Harvesting procedure

Harvesters should be aware of the stress caused during the harvesting process. In harvesting mussels special care is needed. Pulling them or using a dull scraper may tear the byssal thread. This will result in loss of moisture after harvest or cause physical damage causing early death of the bivalve. The right procedure is to cut the byssal thread and leave it intact to the body. Exposure to sun, bagging and transport also increases the stress of the mussels.

6.0 Depuration of mussels

To date, depuration of mussels in the Philippines is not yet undertaken due to its prohibitive cost. Mussel farmers cleansed their harvest by relaying them in clean water. This procedure, however, is unlikely to reduce heavy contamination by toxic wastes, accumulated during growing period.

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Exercise 1. Make up 20 different types of questions for text A.

Exercise 2. Retell text A.

Exercise 3. Write a short summery of text A.

Text B

How to Grow Mussels

Posted by Crystal Cun on February 26, 2013
General Post



Photo: Canadian Cove

Why do mussels get fatter in winter months? How come some mussels are light orange and some dark? Can mussels move or do they stay put after settling on a piling? We learned the answers to these questions and more, when Michael Mussig and Michael Ferguson from Canadian Cove stopped by the office. Canadian Cove is the premier Prince Edward Island mussel grower, and the Mikes dropped in to chat about mussels, the farming process, and to cook up some samples for us to try.

As it turns out, you can start your own adventure in mussel farming with nothing more than a frayed rope. In late spring, mussels naturally begin spawning as water temperatures rise. To catch the mussel larvae, farmers put long collector lines in the water. This can be as simple as an old rope held afloat by buoys. The mussels float in the water until they settle down on the rope's surface.

By fall, the mussels have grown to about half the length of your thumb, and are ready to be collected for socking. No, this has nothing to do with punching the mussels! It actually refers to the long mesh tubes that the mussels will be placed inside, somewhat akin to a sock. The mussels are roughly sorted into similar sizes before being placed in the socks. This helps maintain uniform shell sizes because the smaller mussels aren't competing against their larger brothers. Then the mussels are stuffed into the sock, the same way you would fill a sausage casing. Though the mussels are on the inside of the sock now, over the next few months, they will gradually move to the outside of the sock in their continuing quest for food and nutrients. That's right, mussels can move through their "beards" or byssal threads, which are sticky filaments secreted to help the

mussel cling to objects. By attaching a thread to an anchor, then shortening the thread, a mussel can slowly move toward an object.

As the mussels move outwards, the sock will collapse into a thin rope in the center of the mussel column. Canadian Cove spaces their mussel lines out further than usual so that the mussels grow quickly and uniformly. Since the mussels are cultivated on ropes rather than on the ocean bottom, they have clean, unmuddied flavors and a firm texture that is free of grit. The waters surrounding Prince Edward Island are some of the cleanest in the world, and you can certainly taste it in these robust mussel meats.



Photo: Canadian Cove

After about two years in the water, the mussels are harvested. Around this time of the year, mussels are at their peak, becoming sweeter and plumper as they prepare for winter. But what happens if there's ice on the water? Knowing that some oyster farmers close up shop when the water freezes over, we asked how Canadian Cove kept up with the year-round demand for mussels. It turns out that they have a number of open water leases that are deep enough that they don't freeze in winter, and in some areas they have divers who can ice harvest.

Once the mussels have been harvested, they are gently washed, graded and debearded. You may have heard that debearding shortens the shelf life of mussels. This is generally true if you yank the mussel's beard out, but modern processing equipment pinches off the beards rather than pulling them out forcefully, so the mussel remains healthy and untraumatized. The mussels are stored for a short period in saltwater storage tanks with air bubbled through them, which gives them a chance to recuperate from being harvested. Then these ambassadors for PEI are packed into bags and eventually make their way to a steaming pot near you.

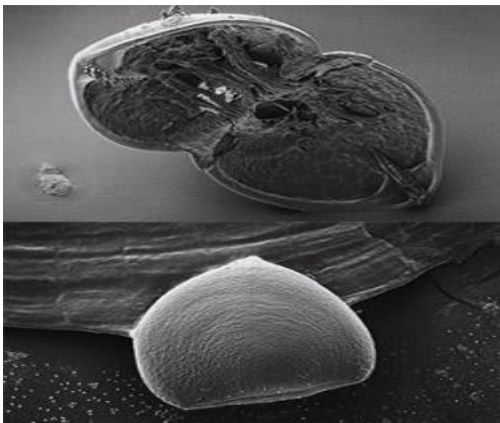
When you purchase mussels, the shells should look moist and they should not smell strongly fishy or unpleasant. After you bring them home, they should be stored in the coldest part of your refrigerator, covered by a damp towel. Canadian Cove's mussels are pot ready, so all you need to do prior to cooking is to give them a quick rinse. If there are any open mussels, give them a tap on the shell and throw out any mussels that do not close.

If you've ever inspected a pot of mussels before, you may have noticed that some are a creamy shade of light orange, while others are a more vibrant dark orange. The color difference is how you can tell female from male mussels: the females are more colorful, "like women with make-up," quipped Mussig.

We enjoyed the mussels steamed with a splash of white wine, a knob of butter, some Thai sweet chili sauce, and a sprinkle of cilantro and red onion. However, they would have been delicious with many other accoutrements, or even just steamed alone without any additional ingredients. For inspiration, you can check out our recipe for creamy mussels with blue cheese, or simply look around your kitchen tonight and see what catches your eye.

Freshwater Mussel Ecology and Conservation

Scientists in the Department of Zoology here at the University of Cambridge are investigating the life-cycles, ecology and conservation of freshwater mussels.



SEM images of glochidial larvae, open (top) and clasped to a fish scale (bottom).

Freshwater mussel lifecycle

Freshwater mussels belonging to the order Unionoida (also called naiads) are large bivalves which live in the sediment of lakes and rivers around the world. The lifecycle of freshwater mussels is unique among bivalves: larvae (called glochidia) are released into the water where they attach to the gills and fins of fish. The glochidia remain attached to the fish for between one week and several months, developing into juvenile mussels before detaching from the fish host and dropping off into the sediment to grow. In this way the mussels can be transported upstream by the host fish.

Some mussels in North America have evolved elaborate modifications of the mantle tissue that protrude from the shell and act as a lure to attract host fish and increase the likelihood of successful mussel attachment.



Acornshell, *Epioblasma haysiana* , presumed extinct.

Freshwater Mussel conservation

Freshwater mussels are some of the most threatened animals in the world. Over half of the 300 mussel species in North America are classified as threatened with extinction and a further 37 species are already presumed extinct, including the Coosa elktoe (*Alasmidonta mccordi*), Sugarspoon (*Epioblasma arcaeformis*), Acornshell (*Epioblasma haysiana*).



Threatened British freshwater mussels. Left: Depressed River Mussel (*Pseudanodonta complanata*). Right: Freshwater Pearl Mussel (*Margaritifera margaritifera*).

The UK is home to 6 species of freshwater mussel of which two, the depressed river mussel (*Pseudanodonta complanata*) and the pearl mussel (*Margaritifera margaritifera*), have experienced significant declines during the 20th century. Both are now included on a list of the most threatened UK species drawn up as part of the Government's Biodiversity Action Plan.

Pearl mussels have been exploited for centuries for their natural ability to produce pearls. This, plus their sensitivity to water pollution, dam construction, dredging of river beds and declines in host fish (salmon and trout), threatens their survival. Globally there are thought to be only 150 rivers containing breeding populations of freshwater pearl mussels, and approximately half of those rivers are in Scotland. These globally important strongholds for freshwater pearl mussels are protected by law under the Wildlife and Countryside Act.

Filter feeding bivalves

Bivalves take up particles, such as algae and bacteria, from the water and help maintain clean water in aquatic habitats around the world. It has been calculated that one adult mussel can filter as much as 40L of water per day. In addition, the shells of bivalves help stabilise sediment at the bottom of lakes and rivers and provide shelter for small animals living in these habitats. Researchers in the Zoology Department are looking at ways of using this natural filtration by bivalves to help clean water in Chinese lakes and UK reservoirs, and are working to highlight the importance of bivalves by calculating a value for the services they provide to humans.

Invasive bivalves

Invasive species are animals and plants which are living outside their natural habitat and causing problems for native wildlife.



Zebra mussels, *Dreissena polymorpha*

Zebra mussels (*Dreissena polymorpha*) are freshwater bivalves that were introduced to the UK in about 1824. Unlike native freshwater mussels, which live partly buried into the sediment at the bottom of rivers and lakes, zebra mussels attach to hard surfaces using their byssus. The shells of native freshwater mussels make an ideal surface for zebra mussels to attach themselves to, and in doing so they can restrict the extent to which the native bivalves are able to filter feed.

Zebra mussels can also cause problems for humans by attaching to the inside of pipes at water treatment works and inside the cooling systems of power stations. In the United States, where they have also been introduced, the lost revenue from zebra mussel infestations has been estimated to cost as much as \$2-3 billion per year.

The traditional strategy for controlling zebra mussels has been to add chlorine to the water where they are living. However, the mussels are able to detect chlorine in the water and close their shells, so the dosing must be continued for up to 3 weeks when they will be forced to open their shells and resume filter feeding. Regular addition of large amounts of chlorine to the water is undesirable as it can harm other animals living there.

Researchers at Cambridge University have developed a method to help overcome this problem: by coating a zebra mussel toxin (potassium chloride) in a fatty, nutritious layer to form microscopic “BioBullets”. The zebra mussels are tricked by the harmless coating to take the BioBullets up from the water as they filter feed. As this layer dissolves inside the mussel they are killed by the toxin contained inside the BioBullet. By encapsulating the toxin in this way, much lower dosages are needed to remove zebra mussels and the amount of chlorine entering the water can be reduced.

Exercise 1. Make up 20 different types of questions for text B.

Exercise 2. Retell text B.

Exercise 3. Write a short summary of text B.

Text C

Research Article

Ecological Consequences of Oysters Culture

Aquaculture and Fisheries Management, University of Ibadan, Nigeria
International Studies in Aquatic Tropical Ecology, University of Bremen,
Germany

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Abstract

The oyster cultivation is a profitable and operationally diverse industry that has prevailed in many countries of the world. Different culture techniques have been employed from farm to farm, with growers using either, the rack and rail method, longlines, or a combination of two or more methods to grow oysters. They are grown in either intertidal or subtidal marine zones, with post-harvest activities taking place predominantly at land-based facilities. There are a number of environmental issues that are relevant to the cultivation of oysters in the coastal waters. These are typically associated with the operation of the farm or the land-based service facility. If the farm is designed or managed inappropriately, there is potential for ecological harm. Therefore, this paper reviewed some of the ecological damage associated with oyster cultivation and proffers solutions to the problems.

Keywords

Oyster; Cultivation; Techniques; Ecological damage; [Solutions](#)

Introduction

Oyster cultivation is one of the most significant bivalve aquaculture industries world-wide (FAO, 2006). While the global industry is based on a range of species, *Crassostrea gigas*, *Ostrea edulis*, *Crassostrea virginica*, for instance, are by far the most dominant, having been spread either deliberately or inadvertently (e.g. via shipping) to many countries. Over the last 30 years, aquaculture in marine waters such as oysters farming has greatly increased partly driven by the need for greater self-sufficiency in marine food production. One of the great barriers to the development of shellfish or mollusc **aquaculture** is the perception that industry expansion could have negative environmental effects on our coastal waters. Although, there have been very few studies on the effects of oyster cultures on intertidal habitats. However, it is now stated that aquaculture activities cause environmental disturbances. Oysters farming usually results in a net removal of nutrients from the water column and may also compete with other organisms for survival (e.g. seagrass) and this is generally considered to cause environmental damage. In the Pertuis Charentais (SW France), oysters have traditionally been cultivated directly on the sediment, hereafter called on-bottom culture, but currently the most common technique is on tray culture (Figure 1), hereafter called off-bottom culture. This involves placing the oysters in plastic mesh bags tied to metal trestles. The presence of trestles arranged in parallel rows in the intertidal area significantly reduces the strength of tidal currents. This limits the dispersal of pseudo-faeces and faeces in the water column and thus increases the natural sedimentation process by several orders of magnitude. The adverse effects of aquaculture-derived organic matter loads on subtidal benthic assemblages are known, so in view of the features of on-bottom and off-bottom culture methods, it is plausible that off-bottom cultures cause more disturbance than on-bottom cultures to intertidal benthic environments. Other potential negative impacts associated with oyster farming include; physical impacts associated with farming structures and farm operations, reductions in native stocks caused by the collection of result wild seed and impacts associated with the introduction of exotic or invasive species, etc as seen in Figure 2. As stated earlier, there is little information on the impacts cultured oysters on the environment except for a few studies on mussels and the northern quah.



Figure 1: Tray culture of Oysters.

Figure 1: Tray culture of Oysters.

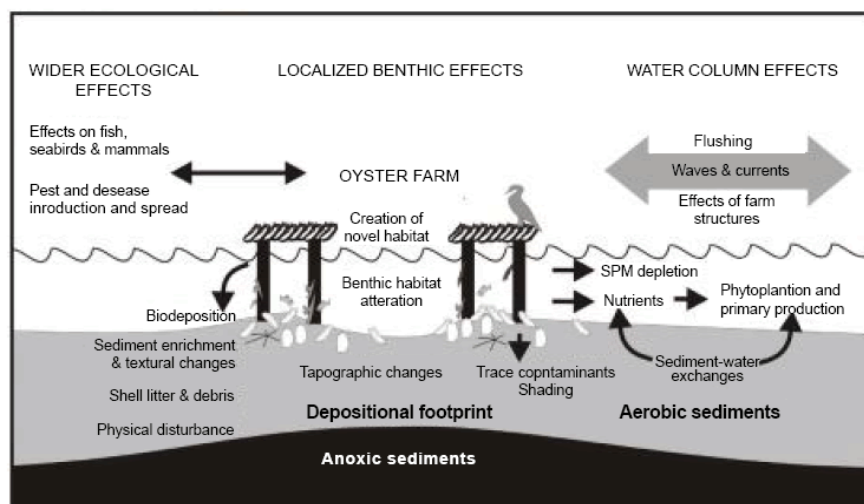


Figure 2: Schematic of actual and potential ecological effects from elevated intertidal oyster cultivation (Forrest et al. [58]).

Figure 2: Schematic of actual and potential ecological effects from elevated intertidal oyster cultivation (Forrest et al.).

The purpose of this article is to review some of the negative impacts of oyster farming on the coastal habitats and provide remediation strategies that could be employed to curb the problems.

Impacts of Oysters Farming

Competition for phytoplankton through filter-feeding

One of the greatest potential impacts of filter feeder cultivation such as oysters is the net loss of energy, in the form of phytoplankton, from the

ecosystem. Many research conducted have shown that bivalve species such as oysters can filter, on average, 15-55 litres/day (4-14.5 gallons/day) of seawater. Filtration has been shown to control phytoplankton growth by removing them from the water this process is referred to as “top-down” population control. They also consume detritus and can thus have an impact on their abundance and composition in the water. Competition for phytoplankton and detritus can affect wild species as the cultured species, being the most predominant, manage to filter out the most of the phytoplankton and so the wild species which also depend on the same resources may suffer. Haure and Baud showed that in the bay of Bourgneuf as the stock of oysters (*C. gigas*) increased from 37,821 to 46,343 tonnes from 1986-88. The wild population of mussels dropped from 40,068 to 6,700 tonnes in the same period. They postulated that this reduction is due to trophic competition with oysters as they feed on approximately the same phytoplankton.

Bio-deposition and changes in seabed topography and sedimentation

Bio-deposition is the term given to the accumulation of faeces and pseudo-faeces under the oysters' beds. These biodeposits are rich in nitrogen and phosphorus and may represent a significant proportion of the energy potentially available to consumer invertebrates as a food resource. Therefore, Oysters may stimulate primary productivity through bio-deposition. They do this by exerting control over the amount of available mineral nitrogen and phosphorus to phytoplankton by sequestering them as protein in their meat and shell tissues. Not only that, they deposit organic nitrogen-rich bio-deposits to the bottom sediments that bacteria decompose, thus forming ammonium; ammonium is converted by nitrifying bacteria in oxygen-rich sediments to nitrate, which denitrifying bacteria in deeper sediment layers then convert to nitrogen gas. Due to bio-deposition by oysters, organic enrichment has been recorded at some sites. According to Nugues et al. noted an increase in organic and silt composition sediment beneath the oysters' trestles. Martin et al. have shown that trestle cultivation of oysters is responsible for increased sedimentation (Figure 3) of both organic matter and contaminants. According to Sornin et al. went as far as to say that the accumulation of bio-deposits by oysters brings about noticeable geological modifications of the underlying sediment. He recorded an increase in the organic, silt and phaeo-pigment content beneath the trestles which was again probably related to the recorded decrease in current velocity at both sites.

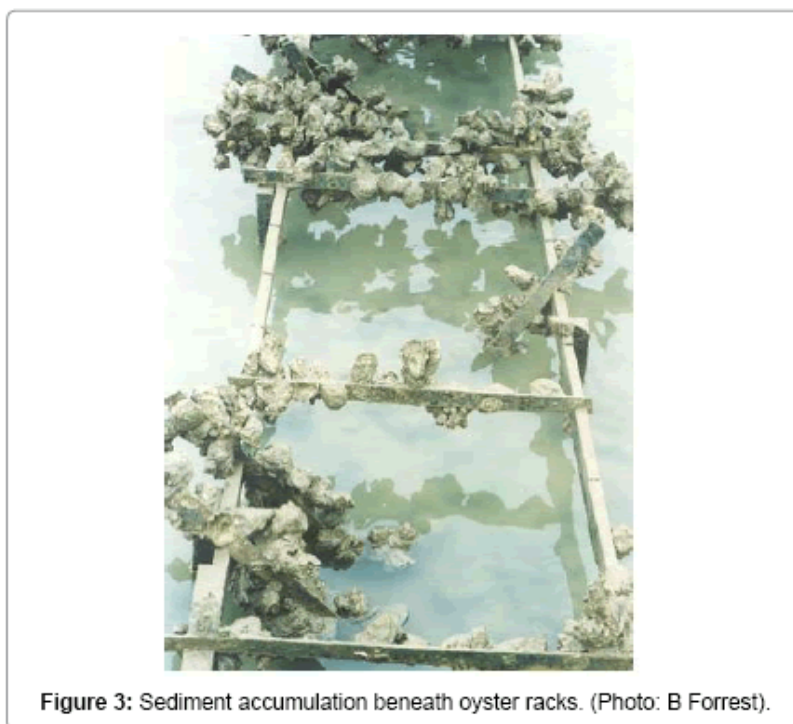


Figure 3: Sediment accumulation beneath oyster racks. (Photo: B Forrest).

Introduction of invasive species, pests and diseases

There are great concerns that the widespread movement of cultured species (broodstock, seed, or planting stock) will facilitate the movement of disease-causing organisms and exotic species, which may pose potential dangers for both cultured and wild stocks. For instance, American whelk tingle (*Urosalpinx cinera*) was introduced into England along with American oyster (*Crassostrea virginica*). This gastropod became established in some areas of Essex and Kent and caused a great deal of damage to the juvenile stages of the European flat oyster (*Ostrea edulis*). Pacific oysters may be invasive primarily in rocky habitats and artificial structures, and there is also evidence that they can invade soft-sediment estuarine habitats and their distributional range. *Mytilicola orientalis* was not known in Irish waters until prior to the transfer of Pacific oysters from France in 1993. Introductions of Pacific oysters with *Mytilicola orientalis* must have consequences for other marine populations. *Mytilicola orientalis* is a potentially serious pest, not least because it is capable of transferring to the native oyster (*Ostrea edulis*). According to Minchin et al. made the point that the **discovery of *Ostrea edulis* and *Mytilus edulis* in Pacific oyster** consignments is horrible as they are both vectors of *Martelia refringens* and in the case of the protozoan *Bonamia ostreae*, *Ostrea edulis* is a vector. Invasive or transported species may breed with other distinct populations of the same species, possibly resulting in a genetic shift in the local population and a loss of genetic diversity. Likewise, hybridisation may result when the endemic

species and translocated species are genetically compatible. Several diseases and parasites associated with introduced oysters have been reported, most of which are also globally ubiquitous and pose some commercial threat to oyster production. These include various species of flatworm and mud-worm and herpes virus, which infects oyster larvae and spat.

Impact on the benthos

Decreases in macro-faunal abundance have been detected in areas of extensive intertidal oyster cultivation. Shading by the Oysters, farm infrastructure and farm activities such as boat and vehicular traffic may have a detrimental impact on benthos such as the seagrass beds. For instance, Thorne reported a reduction in seagrass cover (presumably *Heterozostera tasmanica*) under stocked oyster racks in Tasmania. He also showed that the seagrass appeared to recover in areas left un-stocked for a long period of time. According to Castel et al. investigated the influence of oyster (*Crassostrea gigas*) parks on the abundance and biomass patterns of meio- and macrobenthos in tidal flats. He found out that when compared to the adjacent sandbanks, oysters clearly enhanced the meiofaunal abundance (from 1130 to 4170 individuals 10cm⁻²) but depressed macrofaunal densities (from 640 to 370 individuals 10cm⁻²). According to Moore looked at the impact of an intertidal oyster farm on the benthos in Dungarvan Harbour. He reported that fauna in the lanes between trestles was more diverse than the control. According to Bulmer et al. also reported a slight decline of sea grass cover (Figure 4) in their assessment of the effects of hanging basket Oysters farming on the seagrass distribution in the southern arm of the Kaipara Harbour, New Zealand.

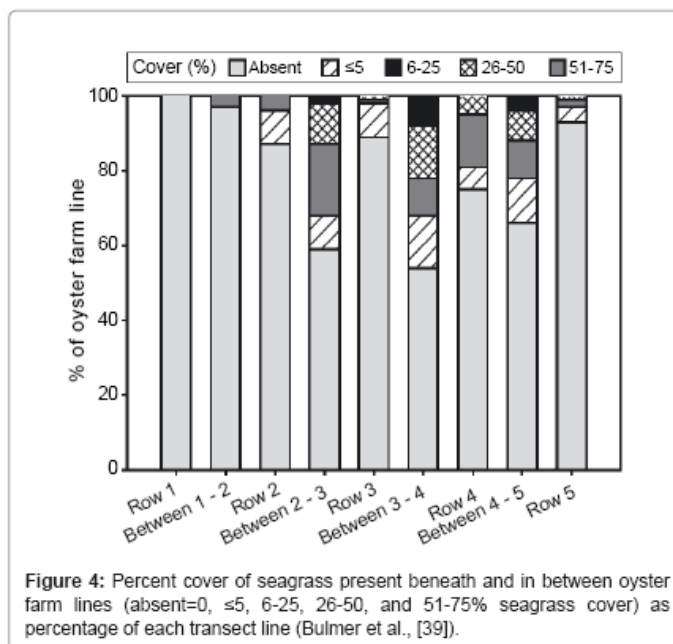


Figure 4: Percent cover of seagrass present beneath and in between oyster farm lines (absent=0, ≤ 5 , 6-25, 26-50, and 51-75% seagrass cover) as percentage of each transect line (Bulmer et al.,).

Habitat exclusion and modification and effects on sea-birds

Areas which would normally be available for birds and other animals may be occupied by shellfish culture. Oyster farming can occupy a large amount of space on the intertidal flats and there is no reason to suppose that a similar reduction in a species dependant on the lower tidal zone could not occur. Loss of habitat can arise from the presence of structures used for growing oysters on intertidal feeding ground. These structures include frames used for holding small spat, bags held on trestles, areas under netting, tractors, trailers, sorters, trestles and boxes may be scattered over a wide area of the shoreline. These may interfere with roosting at different stages of the tide. It is well recognised and documented that loss of habitat causes reduction in the species dependant on it. Some birds are more likely to be affected by habitat loss than others. The species most likely to be affected by loss of habitat are birds whose feeding and breeding habitats are suitable for oysters farming and which feed or breed on the low shore to mid shore. This may increase their energy requirements, and hence adversely affect survival. Nearly all the wader species fit into this category. All species feeding on the lower shore area are likely to be affected by habitat loss to oyster farming. According to Zydelsis et al. suggested that shellfish culture racks or stacked bags/nets could block large intertidal regions from wading shorebirds such as oystercatchers, plovers, stilts and potentially dotterels. Disturbance from intertidal shellfish culture affects few breeding birds. It principally impinges on wintering birds. This is because intertidal flats (mud and sand), although a minor summer habitat for breeding birds, are of major importance as a habitat for many winter visitors. According to Watson-Capps & Mann reported significant habitat exclusion of Indian Ocean bottlenose dolphins (*Tursiops aduncus*) by pearl oyster farms in Western Australia, in a bay where racks were suspended or fixed to the seabed in relatively shallow water (~2-4 m).

Accumulation of shell litter, debris and associated organisms and physical disturbance

Live oysters, shell litter, farm debris (e.g. oyster growing sticks) and fouling or epi-benthic organisms tend to accumulate beneath growing racks (seabed) and are best visible in oyster farms during low tide. Therefore, such accumulated materials may potentially provide novel habitats for fouling organisms and associated mobile biota and persist for many years even after the

cessation of farming thereby resulting in long-term shifts in benthic community composition.

Physical disturbance, particularly from vessel movements (e.g. propeller wash) and farm personnel walking between cultivation structures, has a strong influence on benthic changes beneath oyster farm sites. According to Forrest & Creese described an association between benthic macrofaunal composition and decreased sediment shear strength (increased ability for sediments to erode or resuspend) beneath Pacific oyster cultures in Mahurangi Harbour, which they suggested could reflect physical disturbance beneath racks (Figure 5).



Figure 5: Oyster farm operations are a source of physical disturbance beneath oyster racks (Photo: B Forrest).

Suggested Solutions

Proper site selection

The choice of site is absolutely critical as this determines to a large extent the impact of the farm. The nature and magnitude of effects largely depend on site-specific conditions relating to the intensity of farming, flushing characteristics of the environment, and the proximity of the farm to valued habitats (e.g. rocky reefs) and species (e.g. nesting shorebirds). Effects to the seabed may be reduced by siting oyster farms away from the breeding and foraging areas of birds and in high current environments or open coastal

situations at sufficient depths such that increased currents and wave action enhances dispersion of farm-generated wastes over a wider area.

Effective farm management

Effective environmental code of practice (ECOP) for managing inputs of debris associated with the development and maintenance of farm structures should be put in place and adopted by the oyster farmers. Once a farm is in place there will be various impacts associated with its mere presence. However, the impact that an individual farm will have on an area will depend to a large degree on the farmers' attitude. Some farmers leave equipment and abandoned trestles scattered on the shore and drive all over the shore. Other farmers have good sensitive and sensible farm-keeping practices and respect all the other shore users. Seabed effects and water column reduction of phytoplanktons from individual farms can be managed through the development of environmental criteria and maintaining an appropriate stocking density, which can be integrated into adaptive management plans (AMPs). Education of, and interaction with, farmers should be a key management goal.

Integrated culture

Integrated culture involves the cultivation of two or more species, usually of different trophic levels, in close proximity to one another. It is a rapidly advancing area of research and has considerable scope for mitigation of environmental effects in the future. The potential combinations of species are many and varied. Combinations with particular scope for mitigation of environmental effects include: growing sea cucumbers beneath Oysters farm to process deposited organic material and culturing oysters around finfish farms to intercept organic particulates and dissolved nutrients. Uptake by industry is presently constrained by environmental necessity and/or proven economic incentives.

Managing pests and diseases

The adverse effects of pest and disease introduction and spread, can have profound non-local and irreversible consequences, are arguably more significant than the commonly cited seabed effects. They have the potential to impact on wild conspecifics and conceivably associated fisheries. Good biosecurity practices and surveillance are probably the best ways of managing the threat.

Managing genetic diversity

These risks are manageable through identifying the genetic structuring within the wild population and regulating transfer between regions accordingly, and through careful management of selectively bred stock to ensure adequate genetic diversity. For example, steps can also be taken at the grow-out stage to manage and maintain diversity of farmed stock within farms/bays/regions by setting standards for combinations of families within a bay (or other relevant area based on progeny dispersal range). In some instances, farmers may also adopt triploidy, which theoretically negates genetic contamination issues. Triploids are safe way to test e.g with *Crassostrea gigas* with little or no risk of reproduction and use of F1 generation or greater progeny reduces the risk of disease.

Conclusion and Recommendations

Some oyster farming practices, if managed inappropriately, may result in longer term aquatic ecological impacts. Over-stocking of oysters can seriously affect phytoplankton availability for other aquatic animals and plants. In a small, localised area this is considered to be exceeding ‘carrying capacity’ and can affect the economic return of a particular farm. The larger flow-on effect is the potential to exceed the carrying capacity of a whole bay, whereby total productivity of a bay is reduced to the point where its ecological balance is disrupted. Physical shading of seagrass by oyster infrastructure can lead to seagrass loss by reducing light below necessary levels. A report by Madigan et al. indicates that the traditional ‘rack and rail’ system of intertidal oyster culture can adversely affect seagrass health and survival. Nonetheless, it is important for growers to understand the high sensitivity of seagrass to human interference. The impact of vehicle wheels and boat propellers on sensitive ecological areas, particularly on seagrass, is an observable environmental impact of oyster culture. The presence of inappropriately positioned sea-based oyster infrastructure can potentially disrupt local hydrodynamics such as wave and current speed. This may lead to non-removal, deposition and acquisition or piling of excessive sediment and mud and consequently has adverse impacts on the benthic community.

Clear environmental planning and enactment of code of practice act for the oyster farming industry should be put in place by the government to overcome conflict between oyster farming and other potential water users. Licensing is a key regulatory mechanism and should be given to those that will adhere strictly to the act with prosecution and penalties for the violators. Oyster farmers need to be adequately educated, informed and empowered by the government and Non-Governmental Organizations (NGOs) to cultivate in an eco-friendly, sustainable manner. It is envisaged that management agreements

should be reached with these farmers as part of the design and implementation of the plans. This will enhance cooperation, compliance and ensure success of the management plan is realised.

Future research needs to be conducted in finding cost-effective, ecofriendly methods of oyster cultivation with minimum environmental impact.

Acknowledgement

A special thanks to German Academic Exchange Service, Germany for their financial support.

Exercise 1. Make up 20 different types of questions for text C.

Exercise 2. Retell text C.

Exercise 3. Write a short summary of text C.

GRAMMAR:

THE VERBALS

(the Non-finite Forms of the Verb)

The verb has finite and non-finite forms, the latter being also called the Verbals. The Verbals don't express person, number or mood, that is why they can't be used as the predicate of a sentence.

There are three verbals in English: **the Gerund, the Infinitive and the Participle.**

In Ukrainian we also have three non-finite forms, but they do not fully coincide with those in the English language (прислівник, дієприслівник, іфінітив).

THE INFINITIVE

In modern English the Infinitive has the following forms:

	Active	Passive
Indefinite	to write	to be written
Continuous	to be writing	-
Perfect	to have written	to have been written
Perfect Continuous	to have been writing	-

Negative form: **not + Infinitive**

She asked me not to forget to post the letter.

Like the tense distinctions of all verbals those of the infinitive are also relative. It means that the Indefinite and Continuous Infinitive express an action simultaneous with the action expressed by the finite verb. The Continuous Infinitive shows an action in progress:

I am glad to meet you.	Я радий <i>познайомитися</i> з вами.
I was glad to see Mr Paul.	Я був радий <i>бачити</i> містера Пола.
Mr Forsyte will be glad to see you.	Містер Форсайт був радий <i>бачити</i> вас.
He pretended to be sleeping.	Він прикинувся, що спить.
I'm glad to have met him.	Я радий, що зустрів його.

The Perfect Infinitive denotes an action prior to that of the finite verb. It is often used after some expressions (*to be + adjective*): *to be glad, to be happy, to be sorry, to be surprised, it is clever/kind/silly of you*, etc.

I was sorry to have said it.	Я жалкував, що сказав це (раніше).
He must have forgotten about it.	Він, можливо, забув про це.

NB! Only two forms of the Infinitive (the Indefinite Active and Passive **to ask/to be asked**) have corresponding forms in Ukrainian. There are no corresponding forms for the Continuous, Perfect and Perfect Continuous Infinitive, hence they can be translated only in a sentence.

The Infinitive of transitive verbs has special forms for the Active and Passive Voice.

It is wonderful to love and to be loved.	Прекрасно любити і бути коханим.
--	----------------------------------

THE USE OF THE INFINITIVE WITHOUT THE PARTICLE "TO" (The Bare Infinitive)

In modern English the Infinitive is chiefly used with the particle *to* - the formal sign of the Infinitive. Still there are cases when the bare infinitive is used.

1. After auxiliary verbs:
 I **don't** *know* her.
 We **shall** *go* there at once.
2. After modal verbs:
 You **can't** *do* it.
 You **must** *consult* the doctor.
3. After the verbs of sense perception (*to see, to hear, to feel, to watch, to notice, etc.*) in the Infinitive Constructions:
 I've never *seen* you **look** so well.
 She *heard* him **enter** the room.
 I *felt* my heart **jump**.

NB! After these verbs in the Passive the to-infinitive is used:

 He was *heard* **to mention** your name.
 The child *was made* **to obey**.
 She *was seen* **to leave** the house early in the morning.

4. After the verb *to let*:
 Let's **be** friends.
 If he calls, *let* me **know**.
5. After the verbs *to make* (= to force - змушувати), *need* (потрібно) and *dare* (сміти, наважиться) (in the modal meaning):
 Need I **do** the washing up?
 How *dare* you **call** me a liar?
 What *makes* you **think** so?
6. After the expressions *had better* (... краще б), *would rather/sooner* (... мабуть би), *cannot but* (не можу не ...), etc.:
 He said he *would rather* **stay** at home.
 You *had better* **go** there at once.
 I *can't but* **think** about it.
7. In the sentences beginning with *why (not)* (чому б вам ...).
 Why not come and **talk** to her yourself?
 Why **pay** more at other shops?
8. After formal words *than, rather than, but, except*:
 I'll do anything *but* **work** with children.
 Rather than **walk** for half an hour, I'll take a taxi.

THE FUNCTIONS OF THE INFINITIVE IN THE SENTENCE

The Infinitive can be used in different syntactic functions. We'll discuss here only the most difficult ones for the Ukrainian speakers.

1. The Infinitive as a subject. In Ukrainian it can be rendered by an infinitive, a noun, a clause.

To walk in the garden was very pleasant.
Гуляти в саду було дуже приємно.
Even to think of it gave him torture.
Навіть думка про це заподіяла йому страждання.
To be recognized gave her great joy.
Коли її впізнавали, вона відчувала велику радість.

Far more often such sentences open with an introductory subject it (not translated in Ukrainian).

It is useless to discuss this question.
Марно обговорювати це питання.

2. The Infinitive as an adverbial modifier of purpose (щоб...). In this function the Infinitive can be introduced by *in order* or *so as* (formal).

To understand the rule better I read it several times.
Щоб краще зрозуміти правило, я прочитав його кілька разів.
I stayed there to see what would happen.
Я залишився там, щоб подивитися, що станеться.
I invited him in order to tell him the news.
I'll write down your telephone number so as not to forget it.

COMPARE:

A subject

An adverbial modifier of purpose

The Infinitive + Predicate

The Infinitive + Subject + Predicate

To read a lot is to know much.
Багато читати – багато знати.

To read the book I went to the library.
Щоб прочитати цю книгу я пішов до бібліотеки.

3. An adverbial modifier of result with too (занадто) and enough (досить)

He was **too busy to see** anyone.

She was **clever enough to admit** it.

4. The Infinitive as an attribute

I had no *time* **to visit** the museum yet.

У мене ще не було часу *оглянути* цей музей.

In this function it is far more extensive in English than in Ukrainian: in Ukrainian it modifies only abstract nouns, whereas in English it modifies abstract and class nouns, pronouns, ordinal numbers and the adjective *last*. It is rendered in Ukrainian by an infinitive (after abstract nouns), by a subordinate clause, by a finite verb (after ordinal numbers and *last*).

She was not a woman **to suffer** in silence.

Вона була не такою жінкою, яка стала б страждати мовчки.

He was the first/last **to come**.

Він прийшов першим (останнім).

I have nobody **to say** a kind word to me.

В мене немає нікого, хто сказав би мені добре слово.

The Infinitive used as an attribute often has a modal meaning or implies a future action.

I've got a wife and a child **to look after**.

В мене є жінка та дитина, про яких я повинен дбати.

The question will be discussed at the conference shortly **to open** in Kiev.

Питання буде обговорюватися на конференції, яка незабаром відкриється у Києві.

Remember the model: **a noun + infinitive**

He gave her a knife **to cut** the bread **with**.

Він дав їй ніж, щоб нарізати хліб.

Give me some water **to drink**.

Дайте мені попити води.

He brought us a book **to read**.

Він приніс нам почитати книгу.

5. The infinitive as parenthesis: *to cut a long story short*; *to put it mildly*; *to say the least*; *to tell the truth*; etc.

He was rude, **to say the least** of it.

Він був грубий, щоб не сказати більше.

To put it mildly, he was not very clever.

М'яко кажучи, він не був дуже розумний.

NOTES:

1. The passive infinitive is seldom used in the attributive function. That is why we say “it is a book **to read**” and **not** “to be read”.

Exceptions: There is *nothing to be done* and *nothing to do*; there is *something to be seen, to be said* and *something to see, to say*.

2. The attributive infinitive besides naming an action may express a meaning corresponding to the Ukrainian *треба, можна, слід*:

It's the only thing **to do**.

Це єдине, що можна і потрібно зробити.

He is not the man **to do** it.

Він не той, хто міг би це зробити.

It's a book **to read** and **remember**.

Таку книгу треба прочитати і запам'ятати.

3. The attributive passive infinitive may have a future meaning:

The houses **to be built** here will be of the same type.

Будинки, які мають бути/будуть побудовані тут, матимуть таку ж конструкцію.

MEMORIZE THE FOLLOWING EXPRESSIONS:

Йому важко догодити.

He is hard to please.

У неї приваблива зовнішність.

She is pleasant to look at.

Мені треба вам децю сказати.

I have something to tell you.

Цим нічого не досягнешь.

There is nothing to be gained by it.

Нічого не поробиш.

There is nothing to be done.

Треба багато зробити.

There is much to be done.

Будинок здається в найом.

The house is to let.

Хто винен?

Who is to blame?

Неодмінно приходьте.

Be sure to come.

Єдине, що залишається – це чекати. There is nothing left to do but wait.

Grammar exercises

Ex. 1. State the form and function of the Infinitive. Translate the sentences into Ukrainian.

1. To go on with this discussion is to waste time. 2. Oh, I'm sorry to have taken so much of your time. 3. It all sounds too good to be true. 4. We assembled to discuss and arrange our plans. 5. Now, the first thing to settle is what to take with us. 6. He was the first to raise the question. 7. A celebration such as this was a chance not to be missed. 8. Look back to make sure you haven't left anything behind. 9. She was the last to realize how dangerous it was. 10. You're a bachelor with no family to take care of. 11. I didn't come here to be shouted at. 12. He came here to speak to me, not to you. 13. To meet the demands for goods, new shops have been opened in the town. 14. The plan will be discussed at the meeting to be held on May 25.

Ex. 2. Translate the sentences into Ukrainian and state the functions of the Infinitive.

1. Surely it is not at all necessary to go into details. 2. I rose to receive my guests. 3. Passing by a radio-shop he suddenly remembered to buy some tape for his recorder. 4. At the sight of the man I felt an impulse to laugh. 5. Her first action was to visit the establishment of a famous dressmaker. 6. He was too astonished to speak. 7. The best thing Lanny could do was to get out of here. 8. He was careful not to allude to the subject. 9. It's an awkward thing to say. 10. The horse was quiet to ride. 11. He must have been very tired to come and fall asleep like that. 12. And suddenly he hated Crum. Who the devil was Crum, to say that?

Ex. 3. Translate, giving the Ukrainian equivalents of the Infinitive as an attribute.

1. The desire to write was stirring in Martin once more. 2. He had a good deal to say about India. 3. The relief from that long waiting, the feeling of nothing to worry about, was so delicious. 4. The first person to enter was Mrs Evans, her face white, her dark frightened eyes avoiding his. 5. He looked at the shelves of books to be read. 6. He received a note to say that he was expected at the family dinner. 7. Andrew was the third to go in for the interview. 8. You have health and much to live for.

Ex. 4. Replace the group of words in bold type by an infinitive.

Model: She was the first lady who left.

She was the first (lady) *to leave*.

1. The manager was the last who left the shop. 2. I was astonished when I heard that he had left his native town. 3. There was no place where he could sit. 4. I can't go to the party; I have nothing that I can wear. 5. He was the first man who swam the Channel. 6. He was the only one who realized the danger.

Ex. 5. Combine each of the following parts of sentences into one sentence using an infinitive.

Model: They sent me to University, they wanted me to study law.

They sent me to University *to study law*.

1. I am buying bread. I want to feed the bird. 2. He opened the door. He intended to go out. 3. He rushed into the burning house. He wanted to save the child. 4. He rang the bell. He wanted to tell us that the dinner was ready. 5. The farmer shot the rifle. He wanted to frighten the birds. 6. He sent his children to his sister's house. He wanted them to watch the television programme. 7. I am saving up. I want to buy a car. 8. I keep my hens in a field surrounded by wire netting. I want to protect them against the-foxes.

Ex. 6. Combine each of the following pairs of sentences into one sentence using "enough" with the Infinitive.

Model: He is clever. He can answer the question.

He is clever *enough to answer the question*.

1. He wasn't strong. He couldn't support the man. 2. It isn't very hot. We can't lie in the sun. 3. The coffee isn't strong. It won't keep us awake. 4. I am quite old. I could be your father. 5. You aren't very old. You can't understand these things. 6. He was very curious. He opened the letter. 7. You are quite thin. You can wear this dress.

Ex. 7. Combine each of the following pairs of sentences into one sentence using "too" with the Infinitive.

Model: He is very ill. He can't work today.

He is *too ill to work* today.

1. It is very hot. We can't run. 2. I am rather old. I can't wear this dress. 3. He was nervous. He couldn't speak. 4. I was terrified. I couldn't move. 5. It is very cold. We can't have a swim. 6. He was very snobbish. He wouldn't talk to any of us. 7. It was very dark. We couldn't go out into the garden. 8. It was rather cloudy. We couldn't see the eclipse properly.

Ex. 8. Combine each of the following pairs of sentences into one sentence using “so as/in order” with the Infinitive.

Model: He took off his boots. He didn't want to make any noise.

He took off his boots so as/in order not to make any noise.

1. He was playing very softly. He didn't want to disturb anyone. 2. I sent him out of the room. I wanted to discuss his progress with his headmaster. 3. I am learning Greek. I wish to read Homer. 4. He sent his children to their aunt's house. He wanted to have some peace. 5. He read only for short periods each day. He didn't want to strain his eyes. 6. They got up very early. They wanted to get to the top of the hill before sunrise. 7. We must keep our gloves on. We don't want to get frostbitten.

Ex. 9. Use the correct form of the Infinitive in brackets.

1. I hope (to see) you soon. 2. We expect (to be) back in two days. 3. He expected (to help) by his friends. 4. I am glad (to do) all the homework yesterday. 5. I am sorry (to break) my pen. 6. I hate (to bother) you, but the students are still waiting (to give) books for their work. 7. He seized every opportunity (to appear) in public: he was so anxious (to talk) about... 8. Is there anything else (to tell) her? I believe she deserves (to know) the state of her sick brother. 9. He began writing books not because he wanted (to earn) a living. 10. The woman pretended (to read) and (not to hear) the bell. 11. Perhaps it would upset her (to tell) the truth of the matter. 12. The only sound (to hear) was the snoring of grandfather in the bedroom.

Ex. 10. Use the appropriate form of the Infinitive.

I.

1. He made me (to do) it all over again. 2. He made her (to repeat) the message. 3. Would you like me (to go) now? 4. They won't let us (to leave) the Customs till our luggage has been examined. 5. He wouldn't let my baby (to play) with his gold watch. 6. Please let me (to know) your decision as soon as possible. 7. He made us (to wait) for hours. 8. I let him (to go) early as he wanted to meet his wife. 9. I'd like him (to go) to a university but I can't make him (to go). 10. He tried to make me (to believe) that he was my stepbrother. 11. Before he let us (to go) he made us (to promise) not to tell anybody what we had seen. 12. I advised him (to ask) the bus-conductor to tell him where to get off. 13. That is too heavy for one person (to carry); let me (to help) you. 14. The teacher advised us (to use) dictionaries. 15. Her father doesn't allow her (to go) to the cinema alone. 16. Who told the nurse (to give) the sick man this medicine? 17. The old man doesn't like his grandchildren (to make) a lot of noise when they are

playing. 18. The gardener won't let the children (to pick) the flowers.

II.

1. I hate (to bother) you, but the man is still waiting (to give) a definite answer. 2. He hated (to bother) with trifling matters when he had many more important questions (to decide). 3. She would never miss a chance (to show) her efficiency, she was so anxious (to like) and (to praise). 4. The idea was too complicated (to express) in just one paragraph. 5. Is there anything else (to tell) him? I believe he deserves (to know) how the matter stands and (to tell) all about it. 6. He took to writing not (to earn) a living but a name. All he wanted was (to read) and not (to forget). 7. How fortunate he is (to travel) all over the world and (to see) so much of it. 8. The girl pretended (to read) a book and not (to notice) me. 9. It seems (to rain) ever since we came here. 10. It is so thoughtful of you (to book) the tickets well in advance. 11. Perhaps it would bother him (to speak) about the quarrel. 12. The only sound (to hear) was the ticking of the grandfather clock downstairs. 13. The third key remained (to test). 14. She was probably angry (to reprimand) in front of me. 15. She sat there trying to pretend she did not want (to dance) and was quite pleased (to sit) there and (to watch) the fun. 16. She was sorry (to be) out when I called and promised (to wait) for me downstairs after the office hours. 17. She said she would love (to come) and was simply delighted (to ask) for a date. 18. I offered (to carry) her case but she was afraid (to let) it out of her hand. 19. Let's go and see the place. You will be sorry later (to miss) it.

Ex. 11. Insert the Infinitive in the appropriate form and translate the sentences into Ukrainian.

1. Mr Abbot was the first... the silence, (to break). 2. The next patient... was a nice girl in her early 'teens, (to examine). 3. Honesty is the first principle ... when working with us. (to observe). 4. He complained that he was always the last.... (to inform). 5. I am the last man ... a question of the kind, (to ask). 6. They were among the last.... (to arrive). 7. He found that he was the only one ...the discrepancy, (to notice). 8. If there is to be a vacancy I would like to be the one ... the job. (to offer). 9. These houses were among the few ... after a great fire, (to survive). 10. Who was the youngest chess player ... the title of All-Union Champion? (to win). 11. The Shakespeare Memorial Theatre players were the second British company... the Soviet Union, (to visit). 12. The Nuremberg trial was the biggest international trial... ever... . (to hold).

Ex. 12. Insert *to* where necessary.

I.

1. I like ... play the piano. 2. My brother can ... write poems. 3. We had ... put on our overcoats because it was cold. 4. They wanted ... cross the river. 5. It is high time for you ... goto bed. 6. May I... use your telephone? 7. They heard the girl... cry out with joy. 8. I would rather... stay at home today. 9. He did not want... play in the yard anymore. 10. Would you like... goto England? 11. You look tired. You had better... go home. 12. I wanted... speak to Nick, but could not... find his telephone number. 13. It is time ... get up. 14. Let me ... help you with your homework. 15. I was planning ... do a lot of things yesterday. 16. I'd like... speak to you. 17. I think I shall be able ... solve this problem. 18. What makes you ... think you are right? 19. I shall... do all I can ... help you. 20. I like ... dance. 21. I'd like ... dance. 22. She made me ... repeat my words several times. 23. She did not let her mother... go away. 24. Do you like ... listen to good music? 25. That funny scene made me ... laugh.

II.

1. The boy helped us ... find the way to the railway station. 2. He would sooner... die than ... betray his friends. 3. Why not... start out now? We cannot wait for the rain ... stop. 4. You'll be better tomorrow. You may ... come and ... dine with us. 5. Don't let us ... get worried. There are a hundred things ... be done. 6. We had better... make haste. 7. You ought not... speak to the Dean like that. 8. What made you ... think so? 9. "Thanks," Andrew answered, "I'd rather... seethe cases myself." 10. He was made... obey the rules. 11. I thought I would rather... get to the gallery alone, but I was obliged ... accept his company. 12.... have gone through what you have gone through is the lot of very few. 13. Get them ... come as early as possible. 14. There is hardly anything ... do but... work out an alternative plan.

Ex. 13. Translate the sentences into Ukrainian. Pay special attention to the use of the Infinitive.

1. To crown it all, there was a story full ten years old now of his treatment of his wife. 2. To meet the increased demand for industrial goods, a factory has been opened in the town this year. 3. It was awfully cold, to be sure. 4. She had broken a precious china and, to make the things still worse, she never told anyone about it. 5. To make a long story short, the company broke up and returned home in bad temper. 6. To put it crudely, whatever is man's manner of life, such is his manner of thought. 7. She had become one of those London girls to whom rest, not to say pleasure, is unknown. 8. To claim damages was not a

pleasant thing to do.

Ex. 14. Translate the sentences from Ukrainian into English.

1. М'яко кажучи, вона була неvwічлива. 2. Сказати по правді, я не люблю бокс. 3. Почнемо з того, що я зайнятий. 4. Коротше кажучи, він не склав іспит. 5. Ми всі були раді, неговорячи вже про маму: вона сказала, що це найщасливіший день у її житті. 6. Це дуже дивно, щонайменше. 7. Для початку вона відчинила всі вікна. 8. По правді кажучи, я дуже втомився. 9. М'яко кажучи, ви мене здивували. 10. Коротше кажучи, вони одружилися. 11. Найвідоміша книга Джерома - "Троє в човні, не рахуючи собаки." 12. Щонайменше, ми були здивовані.

Ex. 15. Translate the sentences into English using the models.

Model 1. to do smth is (was, will be) necessary (a mistake)

To tell her the truth now is not at all necessary.

(would be a mistake means to ruin her chances)

1. Знати граматику - значить писати без помилок. 2. Подумати так було просто смішно. 3. Сказати "так" було неможливо, сказати "ні" було б неvwічливо. 4. Пояснити йому, що це таке, було справою важкою. 5. Допомогати їй - значить робити все самій. 6. Розсердитися було б нерозумно.

Model 2. It is important to do/be done/be doing smth

It is necessary to explain everything to her.

It was strange to meet him here of all places.

1. Важко перекладати цей текст без словника. 2. Дуже було приємно поговорити з вами. 3. Дуже важливо, щоб нас не помітили. 4. Важко буде пояснити вам це. 5. Приємно бути знову в Києві. 6. Так дивно, коли з тобою так розмовляють. 7. Було дуже важко робити вигляд, що ти все розумієш. 8. Правда, добре сидіти тут і пити каву? 9. Помилятися легко, набагато важче зрозуміти свою помилку. 10. Зовсім не потрібно все це вчити напам'ять.

Ex. 16. Complete the following sentences by adding the Infinitive to each sentence.

Model: 1. Her dream was - *to become an actress.*

2. What I wanted was - *not to be misunderstood.*

1. The general idea was - . 2. His hobby is - . 3. The first thing you must do is

- . 4. The last thing I meant was - . 5. The main thing is - . 6. The only thing to do was - . 7. Your only chance is - . 8. Your job will be - . 9. My only wish is - . 10. What I want is - .

Ex. 17. Translate the sentences into English.

1. Головне - це закінчити експеримент вчасно. 2. Вашою роботою буде догляд за хворими. 3. Моїм єдиним бажанням було дістатися до будинку. 4. Його хобі - колекціонування марок. 5. Єдиний шанс не спізнитися на потяг - це взяти таксі. 6. Єдиний вихід зі становища - це зараз же все розповісти.

Ex. 18. Translate the sentences using the models.

Model 1: The first (last) to do smth

She was *the first* to see the danger.

He was *the second* to cross the finish line.

Model 2: smth/smb (nobody) to do smth

Have you *anything* else to say?

There was *nobody* there to show him the way out.

Model 3: the man (time) to do smth

He is just *the man* to do it.

It is not *the right time* to discuss this subject.

1. Не такий це був чоловік, щоб зрадити друга. 2. Йому більше нічого було сказати. 3. Думати було ніколи. 4. Хто останнім виходив з дому? 5. Я тепер не пам'ятаю, хто перший це сказав. 6. Дайте мені час подумати. 7. Це светр, який можна носити з брюками або широкою (full) спідницею. 8. У мене немає часу гратися з тобою. 9. У дитини немає нікого, хто міг би про неї подбати. 10. Ви третя людина, яка мені це сьогодні говорить.

Ex. 19. Translate the sentences using the model.

Model: do smth (in order/so as) to get smth

I have come here to speak to you.

She pretended to be quite well *not* to be taken to the doctor.

1. Він біг всю дорогу, щоб встигнути (catch) на поїзд. 2. Він приніс в клас карту, щоб показати нам маршрут експедиції. 3. Вони всю ніч палили багаття, щоб їх помітили пароплави, які проходили мимо (pass by). 4. Хлопчики стояли у дворі і не йшли, щоб їх теж взяли з собою. 5. Я ще раз перечитав листа, щоб краще його зрозуміти. 5. Я все це говорю, щоб мене

правильно зрозуміли. 7. Вона нічого не розповіла, щоб її не покарали (punish).

Ex. 20. Complete the following sentences using the model. Give several variants where possible.

Model: (too) young (enough) to do smth

You are too young to wear black.

She's old enough to be taken for his mother.

1. Who of us is brave enough - ? 2. The weather is much too fine - . 3. You are old enough - . 4. She's too young and pretty - . 5. The story is much too long - . 6. The problem is too complicated - . 7. The trouble is too deep-rooted - . 8. She's just not clever enough - . 9. She was by far too clever - . 10. Do you know him well enough - ? 11. I was going too fast -. 12. She spoke English well enough - .

Ex. 21. Translate the sentences from Ukrainian into English.

I.

1. Я не настільки добре себе почуваю, щоб встати з ліжка. 2. Вона досить добре говорить англійською, щоб не потребувати перекладача. 3. Рано читати тобі такі книги. (Ти занадто молодий). 4. Я був улаштований дуже далеко, щоб чути, що вона говорить. 5. Дуже вона молода, щоб приймати її всерйоз. 6. Питання занадто складне, щоб на нього відразу відповісти. 7. Занадто він ледачий. Не читав він книги в оригіналі. 8. Завдання дуже складне, щоб його вже вирішили. 9. Ти тепер занадто велика, щоб грати в ляльки.

II.

Model: She is nice **to work** with.

His story *was hard to prove*.

1. З ним важко розмовляти. 2. З ним приємно мати справу (deal with). 3. Його розповіді важко повірити. 4. Птицю було дуже важко зловити. 5. З вами сьогодні легко розмовляти. 6. Цю книгу неможливо дістати. 7. З ним небезпечно сваритися. 8. Результати неможливо перевірити. 9. Цьому легко повірити. 10. Її нелегко було зупинити. 11. На неї приємно було дивитися.

Ex. 22. Translate into English. Mind the syntactical functions of the Infinitive.

I.

1. Цьому важко повірити. 2. Він досить добре знає граматику щоб не робити таких помилок. 3. Питання занадто складне, щоб його відразу

вирішити. 4. Я приніс книгу, щоб показати вам цю фотографію. 5. Занадто жарко, щоб йти гуляти. 6. Він говорить про нову будівлю школи, яка буде побудована в їх селі. 7. У мене немає часу читати такі книги. 8. Ну, я радий, що склав цей іспит. 9. Правило легко зрозуміти. 10. Необхідно піти туди сьогодні. 11. Кішку нелегко було піймати.

II.

1. Він вимагав, щоб йому надали можливість довести це. 2. Вона попросила, щоб їй дозволили оглянути новий цех (workshop). 3. Я прошу, щоб мене вислухали. 4. Він сказав, щоб нічого нікому не давали без його дозволу. 5. Ми зажадали, щоб нам дали вислухати всіх очевидців (witnesses). 6. Вони попросили розповісти їм про те, що трапилося. 7. Я попросив дозволу зупинитися у них на кілька днів (stay with). 8. Чому ви не зажадали, щоб вам дали копію документа? 9. Він попросив, щоб йому дали прочитати цей лист.

REVISION

Ex. 23. Complete the following using the Infinitive.

1. It gives me pleasure 2. It will take you ten minutes 3. It is wise of him 4. It does people a lot of good 5. It won't do you any harm 6. It was natural 7. It has become his habit 8. It surprised me 9. It would never do 10. It must be very nice 11. It made me feel awkward

Ex. 24. Complete the following, using the Infinitive, take the Infinitive phrases from the list below:

to forget the past, to be humming a tune, to say such a thing to a child, to have gone out on that rainy day, to know the map well

1.... means to be able to show any country or town on it. 2. ... would have been the death of me. 3.... is a usual thing for her. 4.... would be ridiculous. 5.... was impossible.

Ex. 25. Complete the following sentences.

I.

1. Our plan was 2. To act like this meant... . 3. The first thing he did was 4. The main problem is... . 5. Our next step must be... . 6. What I want is... . 7. Our only chance to see him is 8. To ask him a straight question means 9.

The children were anxious 10. We were not afraid 11. I pretended not... . 12. They have not decided whether ... or not. 13. The boys agreed never 14. Do you care ... ? 15. I was very careful not 16. I wish we had not forgotten 17. They thought... . 18. He proposed... . 19. When did you learn ... ? 20. I'll try to remember... . 21. The tourists were lucky... . 22. The father promised 23. They offer... . 24. He attempted 25. We are sorry 26. The boy asked

II.

Use the Infinitive as an attribute; take the Infinitive phrases from the following list: *to remember, not to be contradicted, to be desired, to speak (to/about), to do, to be done, to follow, to worry about, to be erected, to read, to laugh at, to be answered, to answer.*

1. This is just the man 2. Packing was the first thing 3. Here are some instructions 4. The monument... on this square will add beauty to the place. 5. The book leaves much 6. There was nothing 7. These are the letters 8. His was the tone 9. Have you got anything ... ? 10. She will always find something

Ex. 26. Use the appropriate form of the Infinitive in brackets.

1. I am glad (to introduce) to you. 2. The box was (to handle) with care. You should (to ask) someone (to help) you. This might not (to happen). 3. Her mood seems (to change) for the worse. We had better not (to speak) to her now. 4. I am sorry (to disappoint) you but I did not mean anything of the kind. 5. He is happy (to award) the first Landscape Prize for his picture. 6. He was anxious (to take) the first place in the figure-skating competition. 7. The poem can easily (to memorize). 8. This poem is easy (to memorize). 9. I did not expect (to ask) this question. 10. There were so many things (to do), so many experiments (to try). 11. The teacher expected him (to give) a better answer at the examination. 12. They are supposed (to experiment) in this field for about a year and are believed (to achieve) good results. 13. He must (to read) something funny; he is smiling all the time.

Ex. 27. Translate into English, using the appropriate form of the Infinitive.

I.

1. Я радий, що дав вам цю книгу. 2. Я радий, что мені дали цю книгу. 3. Ми хочемо проінформувати вас про це. 4. Ми хочемо, щоб нас проінформували про це. 5. Ми раді, що зустріли його на станції. 6. Ми раді, що нас зустріли на станції. 7. Вони дуже задоволені, що їх запросили на конференцію. 8. Вони дуже задоволені, що вас запросили на конференцію.

9. Я не думав (mean) переривати її. 10. Я не припускав, що мене перервуть. 11. Мені ніяково, що я заподіяв вам стільки занепокоєння. 12. Він буде щасливий побачитися з вами.

II.

1. Він був щасливий, що побачився з вами. 2. Він здавалося підшукував слова, щоб точніше передати думку. 3. Як йому пощастило, що він побував в такій цікавій поїздці. 4. Він терпіти не може, коли над ним жартують. 5. Діти люблять, коли їм розповідають казки. 6. Ми удали, що не помітили його помилки. 7. Я радий, що розповів вам цю історію. 8. Я радий, що мені розповіли цю історію. 9. Я хочу познайомити вас з цією артисткою. 10. Я хочу, щоб мене познайомили з цією артисткою. 11. Він буде щасливий відвідати цю знамениту картинну галерею. 12. Він був щасливий, що відвідав цю знамениту картинну галерею. 13. Я рада, що дала вам потрібні відомості.

Ex. 28. Translate the sentences from Russian into English using:

I. the Infinitive as a subject.

1. Пити з цього джерела в спекотний день одне задоволення. 2. Сказати йому правду означало позбавити його останньої надії. 3. Не попередити його про це було б нечесно. 4. Нам знадобилося чимало часу на те, щоб переконати його, що він неправий. 5. Побувати в Криму і не бачити моря було дуже прикро. 6. Подрімати в своєму кріслі після обіду було його давньою звичкою. 7. Непогано б поїхати за місто завтра.

II. the Infinitive as a predicative.

1. Наш план полягав в тому, щоб закінчити роботи до початку травня. 2. Все, що їй вдалося зробити, - це дізнатися номер їх телефону. 3. Користуватися телефоном - значить економити час. 4. Єдине, що йому хотілося, - це скоріше дістатися додому. 5. Перше що необхідно зробити – це порадитися з лікарем.

III. the Infinitive as an object.

1. Вони вирішили більше ніколи про це не згадувати. 2. Мені було прикро, що я забув подякувати йому. 3. Де ви навчилися так добре говорити англійською? 4. Я постараюсь не забути надіслати їм телеграму. 5. Клайд був радий познайомитися з друзями Сандри. 6. Клайд був щасливий, що йому дали нову роботу. 7. Клайд дуже не любив, коли йому нагадували

про бідність його батьків. 8. Ми не боялися потрапити під дощ: у нас були плащі. 9. Я прикинувся ніби не помітив його збентеження і продовжував говорити.

IV. *the Infinitive as an attribute.*

1. Вона завжди знайде над чим посміятися. 2. Нема про що було турбуватися. Хворий відчував чебе краще. 3. П'єса залишає бажати кращого. 4. Ось стаття, яку треба прочитати. 5. П'ятиповерховий будинок, який мав бути побудований на розі вулиці, призначений для робітників нашого заводу. 6. План нашої роботи буде обговорюватися на засіданні, яке відбудеться завтра. 7. Йому нічого було сказати. 8. Він тяжка людина; з ним важко мати справу. 9. Хто другим прийшов до фінішу? 10. Чи є в будинку хтось, хто міг би доглянути хворого? 11. Ось людина, з якою можна поговорити на цю тему.

V. *the Infinitive as an adverbial modifier of purpose.*

1. Я встав о 6.00, щоб не запізнитися на ранковий потяг. 2. Я написав йому листа, щоб нагадати йому про його обіцянку. 3. Дитина вибігла назустріч матері. 4. Ви приїхали для участі в конференції? 5. Все було зроблено для того, щоб врятувати його. 6. Він викликав машину, щоб відвезти нас до станції.

Ex. 29. Translate the sentences from Russian into English.

1. Він спокійний і стриманий чоловік. З ним легко мати справу. 2. Лікар залишився ще на одну годину, щоб переконатися, що життя дитини поза небезпекою. 3. Я намагався багато працювати, щоб не думати про те, що трапилося. 4. Діти були дуже збуджені, щоб поводити себе спокійно. 5. Їй нелегко догодити. 6. Він першим відкрив це чудове місто для відпочинку. 7. Перше, що треба було зробити після приїзду, це забронювати кімнату в готелі. 8. Я вам сказав всю правду. Мені нема чого приховувати від вас. 9. У мене достатньо часу, щоб зайти до друзів. 10. Пізно сперечатися про це. Вже нічого не можна змінити. 11. Нам пощастило, що ми застали його вдома. 12. Їй є чим пишатися. 13. Вони поїхали останніми. 14. Цікаво, хто перший звернув нашу увагу на цю помилку. Вона сказала, що їй ні до кого звернутися за допомогою. 16. Єдине, що треба зробити, це зателефонувати йому.

THE INFINITIVE CONSTRUCTIONS

The Infinitive may have a subject of its own within the sentences. In this case it forms with it a construction called a complex.

THE COMPLEX OBJECT

The Complex Object (the Objective-with-the-Infinitive Construction) consists of a noun in the common case or a pronoun in the objective case and the Infinitive. It is mostly translated into Russian by an object clause.

Subject + Predicate + Noun (Pronoun) + Infinitive
--

I want Mother (her) to help me.

Я хочу, щоб мати (вона) допомогла мені.

They expect the steamer to leave tonight.

Вони чекають, що пароплав відійде сьогодні ввечорі.

The Complex Object is used after the verbs:

1. **of mental activity:** to know, to think, to consider, to believe, to find (вважати, думати), to expect, to suppose (припускати), to imagine, to feel, to trust, to mean, etc.

I knew them to be right.

Я знав, що вони мають рацію.

We expect them to arrive soon.

Ми чекаємо, що вони скоро прийдуть.

After these verbs the verb to be is generally used. (It can be omitted after the verbs to consider, to find, to declare). The use of this construction after most verbs of mental activity is more characteristic of literary style.

I find him (to be) a very clever man.

Я вважаю, що він дуже розумна людина.

I don't consider him (to be) an honest man.

Я не вважаю, що він чесна людина.

2. **of declaring:**

to pronounce, to declare, to report, to teach.

The doctor pronounced the wound to be a slight one.

Лікар сказав, що рана легка.

3. denoting **wish and intention:** to want, to wish, to desire, to mean, to intend/to choose (= want).

He *intended* me to go with him to India.
Він бажав, щоб я поїхала з ним в Індію.
I *want* you to stop worrying.
Я бажаю, щоб ти припинив турбуватися.

4. denoting **feeling and emotion**: *to like, to dislike, to hate*

Tell me what you *would like* me to do.
Скажи, що б ти хотіла, щоб я зробив.

5. denoting **order and permission**: *to order, to allow, to suffer* (неохоче дозволяти, дозволити скріпивши серце), *to ask (for), to command, to encourage, to forbid*, etc.

In most cases after these verbs the Passive Infinitive is used.

The captain *ordered* the cases to be loaded.
Капітан наказав занурити ящики.
He *asked for* the letter to be sent off at once.
Він просив, щоб листа було відправлено негайно.
She *asked* to be shown the photo.
Вона попросила показати їй фотографію.
Mr Domby *suffered* his daughter to play with Paul.
Містер Домбі неохоче дозволив своїй доньці грати з Полем.

6. denoting **sense perception**: *to hear, to see, to watch, to feel, to observe*, etc.
After such verbs the bare infinitive (without “to”) is used.

I *saw* Brown enter the room.
Я бачив, як Браун увійшов до кімнати.
I *felt* the blood rush into my cheeks.
Я відчув, як кров прилила до моїх щок.

After these verbs only the Indefinite Infinitive Active is used. If the meaning is passive we use Participle II.

If the process is expressed Participle I Indefinite Active is used.

I *saw* the fire slowly conquered.
Я бачив, як пожежу поступово загасили.
He *saw* Fleur coming.
Він бачив, як Флер підходила до нас.

COMPARE:

Verb + Infinitive

I *saw* him enter the shop.
(I saw the whole action - he opened the door, went in and disappeared.)

Verb + Participle I

I *saw* him entering the shop.
(This action was in progress when I saw him).

NOTES:

1. The verbs *to see* and *to hear* are followed by a clause (not by the Infinitive Construction) when they are not really verbs of sense perception, i.e. when the verb *to see* means “to understand” and the verb *to hear* - “to learn, to be told”:

I saw that she didn't realize the danger.

Я бачив (розумів), що вона не усвідомлює небезпеки.

I *heard* that he had left for the south.

Я чув (мені сказали), що він поїхав на південь.

2. After the verbs *to see* and *to notice* the Complex Object is not used with the verb *to be*, a clause is used in that case:

I *saw* that he was pale.

Я бачив, що він зблід.

Grammar exercises:

Ex. 1. Translate the sentences, paying special attention to the use of the Complex Object.

1. Seeing her enter the room he rose to greet her. 2. Did you feel the bridge shake? 3. I don't like you to say such things. 4. Put on a thicker coat, I don't want you to catch cold. 5. We knew him to be very brave. 6. Nobody said anything, we just watched him put it away in his case. 7. You could have heard a pin drop. 8. She wouldn't explain, just urged me to use my own eyes. 9. Well, tell him to see us tomorrow morning, will you? 10. After lunch he begged me to accompany him home. 11. By the way, did she ask you to sign any papers yesterday? 12. Her visit agitated the patient so much that the doctor advised her not to come again. 13. There is no harm, I think, in letting you know. 14. I understood you to say that you had received no letter from your brother since he left England.

Ex. 2. Fill in the blanks with the particle “to” where necessary.

1. This is the place from which I saw John ... arrive to the house. 2. I tried to induce him... see a doctor. 3. The family suspected it and wanted to get him ... see a lawyer. 4. He asked her... destroy his letters. 5. I told her... bring in the tea. 6. Women always want you ... write them letters. 7. I'd love you ... see my little daughter. 8. You can't make me... say what you want me ... say. 9. She begged me to let her... know when Mother would be back. 10. I had expected him ... be disappointed. 11. Don't let it... trouble you. 12. She watched me ... open the safe.

Ex. 3. Replace the following complex sentences or groups of sentences by simple sentences with the Infinitive Construction.

Model: I looked out of the window. He crossed the street.

I saw him cross the street.

1. I shall stay at home and do my lessons. Mother said so. 2. I never smoke indoors. My wife doesn't like it. 3. He's an honest boy. I know it. 4. We don't eat ice-cream before dinner because Mother has forbidden it. 5. You got off the train at Saltmarsh city. The porter saw you. 6. He ordered that tea should be brought at once. 7. No one had expected that she would marry the man. 8. I could hear it perfectly well. They were discussing me. 9. Don't shout so! The whole house will know what has happened. Do you want it?

Ex. 4. Practise the following according to the model.

Model: A. Do you want to make a speech?

B. No, I want you to make a speech.

Do you want to

1. speak first? 2. introduce the speakers? 3. attend the conference? 4. give a talk? 5. make the arrangements? 6. fix a date? 7. organize the reception? 8. buy souvenirs? 9. take photographs?

Ex. 5. Fill in the blanks with suitable verbs. Give several variants where possible.

1. Why don't you ... her to wear high heels? 2. The way she looks at me ... me blush. 3. Do you ... me to show you the place on the map? 4. No one had ... her to return so early. 5. I have never... her look so sweet. 6. Who ... you to miss lectures? 7. She ... the children to be well behaved. 8. You can't... him come if he doesn't want to.

Ex. 6. Replace the words in *italics* by an object + infinitive construction.

Model: Members of the Government itself acknowledge *that many of their predictions were over-optimistic.*

Members of the Government itself acknowledge *many of their predictions to have been over-optimistic.*

1. The Court declared *that the book was* obscene (непристойний).
2. Teachers have found *that the overhead projector* is invaluable as a teaching aid.
3. The majority of critics thought *that the film was* highly original.
4. Many of the audience considered *that the speaker had overstated* his case.
5. Evidence showed *that the man's alibi was* a complete fabrication.
6. The architect's clients had assumed *that the construction of such a building was* impracticable, whereas the architect himself *believed that it was* perfectly feasible (здійснений).
7. At a very early age, Paderewski revealed *that he was* a master of the keyboard.
8. Everyone knew *that he was* a man of integrity.
9. Detectives investigating the robbery discovered *that 20,000 worth of precious stones were* missing.
10. Although most people once thought *that it was* impossible, several climbers have now scaled the north face of the Eiger in winter.

Ex. 7. Rewrite the sentences in reported speech, using a noun + infinitive construction with the verbs suggested in brackets.

Model: "Make your way to Waterloo Station, and wait under the main clock," the letter said, (direct)

The letter directed me *to make my way* to Waterloo Station and *wait* under the main clock.

1. "You are to appear before the magistrate at 1*0 a.m. on Thursday," the letter said, (summon)
2. "Do not bathe when the red flag is flying," the notice said, (warn)
3. His wife left him a note saying "Don't forget to lock the door." (remind)
4. "Passengers should check in at the airport thirty minutes before take-off, " stated a notice at the air terminal, (instruct)
5. "I do hope you'll have another drink before you go," said my old friend, (press)
6. "Pay attention to what you're doing," said the teacher, (tell)
7. "Please don't tell my husband," she said to her friend, (implore)
8. "State your views openly - if you dare," the speaker said to his opponent,

(challenge)

9. "Would you like to join me for dinner?" I said to the new member, (invite)
10. "I would take a more optimistic view of the matter, if I were you," my friend told me. (encourage)

Ex. 8. Translate the sentences using the phrases:

let smb do smth - дозволити; нехай (вони)....; дайте (мені)....;

make smb do smth - змусити;

have smb do smth - розпорядитися, щоб ...

I.

1. Мама не дозволяє мені грати у футбол. 2. Не примушуйте мене брехати. 3. Розпорядіться, щоб хто-небудь приніс крейду. 4. Не дозволяй їм так кричати. 5. Змусь його випити ліки. 6. Нехай вони напишуть диктант ще раз. 7. Я не можу змусити його кинути палити. 8. Він відступив, щоб дати їй пройти. 9. Не смішіть мене. 10. Дозвольте мені допомогти вам. 11. Дайте мені подумати. 12. Розпорядіться, щоб діти наділи плащі. 13. Дайте мені знати, коли вона прийде. 14. Я веліла йому пояснити, що це означає. 15. Не дозволяйте йому їсти стільки цукерок.

II

1. Дай мені знати, коли все з'ясується. 2. Сподіваюся, я не змусив вас довго чекати. 4. Нехай він палить тут. 4. Що змусило його зробити цей крок? 5. Відпустіть його. 6. Ми змусили його додержати обіцянки. 7. Не давай їй носити важкі речі. 8. Ми не могли зрозуміти, що змусило його збрехати нам. 9. Дозвольте мені зайти до вас сьогодні увечері. 10. Ми змусили його припинити цю безглузду суперечку. 11. Він змусив нас зробити роботу знову. 12. Не дозволяйте дітям грати на вулиці (на відкритому повітрі). Сьогодні дуже холодно і вітряно. 13. Він сказав, що ніщо не змусить його змінити своє рішення. 14. Не дозволяй їй читати лежачи (у ліжку).

Ex. 9. Translate the sentences from Ukrainian into English using the models whenever possible.

Model 1: see (hear) smb do smth

I heard somebody call me.

Model 2: want (expect) smb to do smth

I want you to repeat the sentence.

I.

1. Ми чули, як вони сперечалися. 2. Вона бачила, як хлопчик піднімався по сходах. 4. Ніхто не помітив, як я відчинив двері і вийшов. 4. Я бачив, як

якась людина показувала їй дорогу на станцію. 5. Я ніколи не чула, щоб він говорив неправду. 6. Після заходу сонця ми відчули, як температура повітря почала швидко падати. 7. Коли я сідав до потягу, я раптом відчув, як хтось торкнувся мого плеча. 8. Ми спостерігали, як ремонтували дорогу. 9. Я чув, як хтось окликнув мене. 10. Він помітив, як вона зблідла.

II.

1. Я бачив, що йому не хочеться йти додому. 2. Вона чула, що професор хворіє вже тиждень. 3. Вона чула, як хтось згадав моє ім'я в розмові. 4. Ми відчували, що він нам не вірить. 5. Ви чули, що він кинув зайняття музикою? 6. Я побачив, що усі дивляться вгору. 7. Ми відчували, що він не помітив нас. 9. Вона бачила, що він її не розуміє.

III.

1. Я вважаю, що це був сміливий крок (move). 2. Я хочу, щоб ви ближче пізнали один одного. 3. Ми не чекали, що він прийме таке рішення. 4. Мені б хотілося, щоб він поїхав з нами на озеро. 5. Вона не чекала, що її син вивчатиме архітектуру. 6. Пані попросила носильника віднести її речі до таксі. 7. Він хоче, щоб його секретар домовився про зустріч. 8. Ми не припускали, що він приїде так рано. 9. Мені б хотілося, щоб ви повідомили нас про своє рішення. 10. Ми вважаємо його великим фахівцем в цій області. 11. Ми не чекали, що обговорення буде таким цікавим.

Ex. 10. Translate the sentences from Russian into English.

I.

1. Вони хочуть, щоб ми надіслали їм телеграму. 2. Я хотів би, щоб ви почекали мене тут. 3. Він хоче, щоб його дочка стала архітектором. 4. Вона хоче, щоб її запросили на вечір. 5. Чи хочете ви, щоб я подзвонив вам? 6. Я хочу, щоб його стаття була опублікована. 7. Ми не хочемо, щоб нас переривали. 8. Доктор не хоче, щоб я приймав ці ліки. 9. Він хоче, щоб його послали в Петербург на конференцію. 10. Ми хочемо, щоб ви пояснили нам свою поведінку. 11. Де ви хочете, щоб я почекав вас? 12. Хотіли б ви, щоб ми запросили Джона сюди? 13. Я б хотів, щоб ви дізналися про час відправлення потягу. 14. Я хочу, щоб ви пішли сьогодні в театр. 15. Чи хоче він, щоб ми були тут о шостій годині? 16. Я не хочу, щоб мене посилали туди. 17. Ніхто не хоче, щоб збори відкладали. 18. Я хочу, щоб ви написали цю статтю. 19. Я хочу, щоб мені показали ці журнали. 20. Вона любить, щоб обід був вчасно. 21. Вона не любить, щоб

діти гуляли самі. 22. Він не любить, коли йому ставлять багато запитань. 23. Вона любить, коли діти приходять до неї. 24. Він любить, щоб йому робили компліменти.

II.

1. Я знаю, що він дуже досвідчений лікар. 2. Ми чекаємо, що договір буде підписаний в найближчому майбутньому. 3. Я чекаю, що мене запросять туди. 4. Я вважаю, що я правий. 5. Я вважаю, що він правий. 6. Вони не чекали, що їх запросять туди. 7. Я знав, що він в Москві. 8. Я вважаю, що він дуже чесна людина. 9. Коли ви очікуєте, що ці товари прибудуть? 10. Я вважаю, що він скромна людина. 11. Ніхто не чекав, що це станеться.

REVISION

Ex. 11. Translate the sentences from Ukrainian into English using the Complex Object wherever possible.

1. Я ніколи не чув, як він співає. 2. Він не чув, як я відчинив двері. 3. Я чув, що він склав усі іспити. 4. Я чула, що він вже поїхав на північ. 5. Я чув, як вона сказала це. 6. Я ніколи не бачив, як він танцює, але я чув, що він танцює дуже добре. 7. Я бачив, що вона не розуміє мене. 8. Вона бачила, що він увійшов до саду, і вийшла щоб зустріти його. 9. Я побачила, що він схвилюваний, і запитала його, в чому справа. 10. Я побачив, що текст дуже важкий, і побоювався, що не зможу перекласти його. 11. Я бачив, що таксі зупинилося біля дверей. 12. Я бачив, як вона вийшла з будинку. 13. Я відчув, що хтось доторкнувся до моєї руки. 14. Я побачив, що в коробці нічого не було. 15. Я побачив, що скло розбите. 16. Ви чули, як він запитав мене про це? 17. Я б хотів подивитися (побачити), як вона танцює. 18. Ніхто не чув, як він сказав це. 19. Я чув, як професор згадав про ці факти у своїй лекції.

Ex. 12. Translate the following sentences.

1. Я хотів би, щоб ви пояснили мені це завдання. 2. Що ви хочете, щоб я зробив для вас? 3. Ви чули коли-небудь, як він говорить французькою? 4. Я чув, що він переїхав до Москви. 5. Вони не бачили, як я узяв каблучку. 6. Ніхто не чекав, що вони поїдуть так скоро. 7. Я знаю, що він чесна людина. 8. Я побачив, що лист не був підписаний. 9. Чи хоче він, щоб ми допомогли йому? 10. Ви чули, як він виступав (говорив) учора на зборах? 11. Я бачила, як вона підійшла до вікна і відчинила його. 12. Я вважаю, що

він кращий інженер на нашому заводі. 13. Він не хоче, щоб його дочка їхала до Костроми. 14. Я не хотів, щоб його запросили на вечір. 15. Я думаю, що сьогодні увечері ви почуєте, як вона співає. 16. Вона відчувала, як тремтить її голос. 17. Я не чекав, що мене пошлють до Лондона. 18. Я не люблю, коли мені нагадують кілька разів про одне і те ж. 19. Мій син просив повести його в зоопарк. 20. Я чув, як його ім'я було згадано директором.

THE COMPLEX SUBJECT

(the Nominative-with-the-Infinitive)

The Complex Subject consists of a noun/pronoun (in the nominative case) and the Infinitive. It is considered to be the subject of the sentence, its Russian equivalent is in most cases a subordinate clause.

Laser is known to be used in medicine.

Відомо, що лазер широко використовується в медицині.

The Complex Subject is used with:

1. the following groups of verbs in the Passive:

- denoting sense perception: *to see, to hear, to notice*, etc.
- denoting mental activity: *to think, to consider, to believe, to expect, to suppose, to know*, etc.

The car was seen to disappear in the distance.

Бачили, як машина зникла вдалині.

She was heard to laugh heartily.

Чутно було, як вона весело сміялася.

He was thought to be honest and kind.

Його вважали чесною і доброю людиною. (Вважали, що він...)

He is considered to have been one of the most popular writers of his time.

Вважається, що він був одним з найпопулярніших письменників свого часу.

- the verbs: *to say, to report (повідомляти), to order, to ask, to allow, to state (заявляти), to announce (оголошувати)*.

She is said to be working at the factory.

Говорять, що вона зараз працює на заводі.

The delegation is reported to have left Moscow.

Повідомляється, що делегація вже покинула Москву.

2. word groups: *to be likely* (ймовірно), *to be unlikely* (маловірогідно, навряд чи), *to be certain/to be sure* (поза сумнівом, обов'язково, безперечно, неодмінно).

He is unlikely to know her address.

Маловірогідно (навряд чи), що він знає її адресу.

He is sure to be asked about it.

Його напевно про це запитають.

3. pairs of synonyms: *to seem/to appear* (здаватися, мабуть), *to prove/to turn out* (виявлятися), *to happen/to chance* (траплятися).

They seem to have quite forgotten us already.

Вони, здається, абсолютно нас забули.

The first experiment proved to be a success.

Перший досвід виявився вдалим.

Only yesterday we happened to meet the man.

Тільки учора ми випадково зустріли цю людину.

Negative forms: don't seem
doesn't prove + infinitive
didn't happen

He doesn't seem to know this subject.

Він, здається, не знає цього предмета.

He didn't prove to be a very experienced engineer.

Він виявився не дуже досвідченим інженером.

He didn't happen to be there at that time.

Сталося так, що його не було там в цей час.

is/are **not** likely + infinitive

He is not likely to come today.

Він, ймовірно, не прийде сьогодні.

NOTES:

1. The Infinitive in the Complex Subject is used in all its forms and expresses:

a) a simultaneous action

He *is said* to live in London.

Кажуть, що він *живе* в Лондоні.

- b) an action in progress

The water *seems* to be boiling.

Здається, вода *кипить*.

- c) an action prior to the action expressed by the finite verb

They *are reported* to have finished the construction.

Повідомляють, що вони вже *закінчили* будівництво.

2. The Infinitive in sentences with the Complex Subject cannot refer to the future except with the verbs and word-groups: *to expect, to be sure/certain, to be likely*.

We are sure to come to the heart of the matter.

Ми обов'язково *доберемося* до суті справи.

3. If the verbs to prove, to seem/to appear (виглядати, справляти враження) are followed by adjectives or nouns, the verb to be after them can be omitted.

She proved (to be) very clever.

Вона здавалася дуже розумною.

He seems ill.

Він виглядає хворим.

He appears an experienced teacher.

Він справляє враження досвідченого викладача.

COMPARE:

He seems ill.

Він виглядає хворим.

He seems to be ill.

Він, здається, хворий.

4. After the verbs in the Passive Voice the Complex Subject is more characteristic of a literary than a colloquial style, except with the verbs *to suppose, to expect, to make*

EXERCISES

Ex. 1. Translate the sentences from English into Ukrainian.

1. The river is supposed to flow in this direction. 2. His childhood is said to have been very difficult. 3. You are expected to know these things. 4. He didn't seem

to know you. 5. The situation seems to have become difficult. 6. He is said to have owned a very good library. 7. He was told to have organized the whole business. 8. The man doesn't seem to recognize you. 9. She seems to have done it especially for you. 10. You're not supposed to mark other people's books. 11. The actress is said to be very beautiful. 12. She was said to have a wonderful collection of china. 13. This doesn't seem to be the right decision. 14. The man seems to be a stranger here. 15. She seems to be used to the thought that they'll have to move to another flat. 16. It seems to be an interesting comparison.

Ex. 2. Open the brackets, using the correct form of the Infinitive.

I.

1. He seems (to read) since morning. 2. She seems (to work) at his problem since she came here. 3. He appears (to know) French well. He is said (to spend) his youth in Paris. 4. The enemy was reported (to overthrow) the defence and (to advance) towards the city. 5. You seem (to look) for trouble. 6. They seemed (to quarrel). I could hear their angry voices. 7. They are supposed (to work) at the problem for the last two months. 8. Her ring was believed (to lose) until she happened (to find) it while cleaning the house. 9. They seemed (to wait) for ages.

II.

1. She smiled broadly and waved her hand. She seemed (to recognize) me. 2. Even if he is out, you needn't worry. He is sure (to leave) the key under the door-mat. 3. At that time I happened (to work) at my first novel. 4. You won't be likely (to miss) the train if you start right away. 5. Don't cry! Everything is bound (to get) right between you. 6. She lost her head and seemed (to forget) the little English she knew. 7. A young woman is supposed (to write) this book. 8. You needn't mention it again. He is not likely (to forget) it. 9. He is believed (to teach) by his father. 10. You needn't tell me this. I happened (to give) all the details by Mother. 11. She is expected (to operate) on today. 12. Just look at his hands. He is sure (to work) in the garage.

III.

1. He seems (to be satisfied) with the results. 2. It seemed it would take not less than a page (to put) it into words. 3. The book is likely (to publish) and (to appear) on sale pretty soon. It is sure (to sell) well and (to sell) out in no time. 4. The man appears (to know) practically all European languages; he is said (to learn) them while travelling. 5. The river was reported (to overflow) the banks and (to advance) towards the suburbs of the city. 6. You seem (to look) for

trouble. 7. The committee is said (to revise) the programme and (to work out) a plan of its realization. 8. The man seemed (to study) me and I felt uneasy in his presence. 9. The book was believed (to lose) until the librarian happened (to find) it during the inventory. 10. The strength of the metal proved (to over-estimate) by the designer. The engineer claimed (to warn) against its use for the purpose as it was likely (to deform) under great load. 11. We seem (to fly) over the sea for quite a time and there is yet no land (to see). 12. We don't seem (to acquaint), at least I can't remember having ever met him.

Ex. 3. Practise the following according to the models.

Model 1: A. He doesn't usually play chess.

B. Well, he *seems* to be playing chess today.

He doesn't usually...

1. do the shopping. 2. wait for his wife. 3. bring his wife flowers. 4. collect the children from school. 5. help his wife. 6. talk to his mother-in-law. 7. quarrel with his neighbours. 8. play with the children. 9. walk to work. 10. carry his wife's parcels.

Model 2: (A group of tourists visits an old palace, they ask their guide questions about its owner. The guide doesn't seem to be sure about the details.)

A. Did he live here? (most of his life)

B. Yes, he seems to have lived here most of his life.

Yes, he is said to have lived here most of his life.

Yes, he is supposed to have lived here most of his life.

1. Did he build any other houses? (several) 2. Did he employ a large staff? (huge) 3. Did he hunt? (when he was a young man) 4. Did he keep race-horses? (all his life) 5. Did they win races? (quite a lot of) 6. Did he sell his other houses? (two of them) 7. Did he quarrel with neighbours? (some of them) 8. Did he leave the country? (after the second duel) 9. Did he die abroad? (in Paris)

Ex. 4. Paraphrase the following sentences using the Complex Subject.

Model 1: It seemed that he knew the subject well.

He seemed to know the subject well.

1. It happened that they met that very day. 2. It proved that there were some broken cups in the case. 3. It seems that the play has made a deep impression on him. 4. It proved that he was a very experienced worker. 5. It appears that the house was built in the 18th century. 6. It happened that there was a doctor there

at that time. 7. It appears that there are different opinions on this subject. 8. It happened that he was at home at that time. 9. It seems that there is a great difference between these two samples.

Model 2: It is reported that the delegation has left London.
The delegation is reported to have left London.

1. It is known that he has a large collection of pictures. 2. It may be said that the new theatre is the most beautiful building in the town. 3. It was reported that the ship had arrived in Odessa. 4. It can't be considered that the results of the experiment are bad. 5. It is expected that many people will attend the meeting. 6. It is believed that there is hope of reaching an agreement. 7. It is said that the expedition has reached Vladivostok. 8. It is considered that this mine is the best in the district. 9. It can be expected that the weather will improve soon. 10. It can't be expected that the Petersburg football team will win. 11. It is said that there are many difficulties in solving this problem.

Ex. 5. Translate the words in brackets.

1. He is thought (був) a very good singer. 2. They are expected (пошлють) a reply today. 3. They are said (переїхали) to a new flat. 4. Who is supposed (підпише) the letter? 5. The doctor is supposed (прописав) you something. 6. The results of the experiment are believed (були) very good. 7. The new instrument is expected (допоможе) scientists solve many important problems. 8. The members of the committee are understood (прийшли) to an agreement. 9. He is said (запропонував) them his services. 10. In the 19th century the dark areas on the Mars were thought (були) seas. 11. We were supposed (проведемо) the day on board the ship. 12. The seamen were not supposed (зійдуть) ashore that day. 13. The expedition is said (зробила) a very important discovery. 14. They were expected (пройдуть) 300 miles that day. 15. She is known (цікавилась) in the subject. 16. They were heard (погодились) to do it. 17. The ship is expected (прибуває) here on Tuesday. 18. They are supposed (переслідували) him. 19. They were believed (знали) the secret all the time.

Ex. 6. Translate the following sentences into English.

1. Бачили, як вона писала лист. 2. Думали, що це вона пише ці листи. 3. Припускали, що вона написала цей лист. 4. Напевно вона і зараз пише лист. 5. Звичайно, вона написала цей лист. 6. Навряд чи вона пише ці листи. 7. Навряд чи вона написала лист. 8. Звичайно, лист вже написаний. 9. Звичайно, вона його вже написала. 10. Виявилось, що вона написала

вірш. 11. Випадково вона написала хороший вірш.

Ex. 7. Translate the following sentences.

I.

1. Він, здається, гнівається на мене. 2. Він, здається, хворий. 3. Він, здається, хворів. 4. Вони, мабуть, користувалися цим словником. 5. Він, здається, знає її добре. 6. Вони, мабуть, дуже добре зрозуміли це правило. 7. Здається, усі студенти читали цю статтю. 8. Вона, здається, знає три іноземні мови. 9. Здається, ця стаття була опублікована в "Правді" минулого тижня. 10. Він, мабуть, задоволений результатом своєї роботи. 11. Він, здається, поїхав на південь.

II.

1. Кажуть, що він у Херсоні. 2. Чекають, що договір буде підписаний цього тижня. 3. Повідомляють, що експедиція виїхала 15 травня. 4. Відомо, що він дотримується іншої думки з цього питання. 5. Вважають, що він один з кращих льотчиків нашої країни. 6. Говорять, що цей будинок був побудований близько двохсот років тому. 7. Він, здається, знає цей предмет дуже добре. 8. Він, мабуть, дуже багато читав з цього питання. 9. Ця книга, мабуть, дуже цікава.

III.

1. Ця книга, мабуть, була перекладена дуже досвідченим перекладачем. 2. Коробка, здається, порожня. 3. Це питання, мабуть, становить для них великий інтерес. 4. Здавалося, що він задоволений нашою роботою. 5. Усі, здавалося, були здивовані, коли почули це. 6. Дмитро, здається, сидить в читальному залі. 7. Він, здається, чекає вас вниз. 8. Він виявився дуже хорошим спортсменом. 9. Вони виявилися дуже досвідченими викладачами. 10. Це завдання виявилось дуже важким. 11. Я випадково зустрів його в Сочі. 12. Я випадково чув, як він запитав її про це.

Ex. 8. Translate the sentences from English into Ukrainian.

1. The play is likely to have been written by Shaw. 2. He is certain to get the letter tomorrow. 3. They are most likely to have begun this work. 4. He is sure to enjoy himself at the party. 6. The agreement is certain to have been signed. 6. They are certain to return soon. 7. They are very likely to take part in this work. 8. There are unlikely to be any objections to our proposal. 9. This house is likely to have been built at the beginning of the 19th century. 10. He is sure to be

appointed manager of the factory. 11. He is sure to like his new work. 12. They are sure to have returned to Moscow.

Ex. 9. Paraphrase the sentences using the model.

Model: It is not likely that they will return soon.

They are not likely to return soon.

1. It appears unlikely that the experiment will give good results. 2. It is likely that he has accepted their offer. 3. It is certain that they will come to Moscow. 4. It appears likely that he will recover soon. 5. It is likely that there will be a heated discussion on this question. 6. It is unlikely that the meeting will be postponed. 7. It is very likely that his article will be published in the newspaper. 8. It is certain that they will be here on Monday. 9. It is likely that there will be a good wheat crop in the Ukraine this year. 10. It was not likely that the telegram would reach them in time. 11. It seemed unlikely that the price of these raw materials would rise. 12. It is likely that the conference will be held in Moscow. 13. It is likely that the goods were shipped on Monday. 14. It seems likely that an agreement will be reached in the near future. 15. It seems likely that there will be a storm on the sea.

Ex. 10. Translate the sentences from Ukrainian into English.

I.

1. Дуже ймовірно, що делегація вже поїхала з Москви. 2. Літак, ймовірно, вже прибув до Праги. 3. Він, напевно, прийде увечері. 4. Вони, напевно, погодяться взяти участь в цій роботі. 5. Вони, напевно, погодяться на ваші умови. 6. Ви неодмінно отримаєте відповідь від нього на цими днями. 7. Він неодмінно отримає приз за свою картину. 8. Його книга буде неодмінно надрукована в Росії. 9. Вони, ймовірно, не приїдуть в травні. 10. Вони, ймовірно, не отримали зарплату сьогодні. 11. Театр, ймовірно, не поїде в Лондон цього сезону. 12. Це питання, ймовірно, не обговорюватиметься сьогодні.

II.

1. Правила, ймовірно, зміняться. 2. Дуже ймовірно, що ця проблема буде обговорена на засіданні уряду. 3. Навряд чи він прийде сюди. 4. Дуже ймовірно, що збори закінчатся за годину. 5. Він, ймовірно, буде вдома о шостій годині. 6. Ці заходи будуть, ймовірно, вжиті. 7. Вони навряд чи скоро повернуться. 8. Дуже ймовірно, що він знає, де працює Андрій Іванов. 9. Товари, ймовірно, будуть доставлені без запізнення. 10. Дуже ймовірно, що завтра буде гарна погода. 11. Маловірогідно, що вони

закінчать свою роботу до кінця травня. 12. Цей дослід, ймовірно, буде успішним.

REVISION

Ex. 11. Translate the sentences from Ukrainian into English.

1. Як відомо, Макаренко був прекрасним педагогом. 2. Кажуть, що експедиція збрала дуже цікавий матеріал. 3. Повідомлялося, що до Сибіру була послана велика група дослідників. 4. Передбачається, що в нашому місті буде побудований новий завод. 5. Вважають, що вона вже доїхала до межі. 6. Ніяк не чекали, що зима настане так рано. 7. Як повідомляють, середня (average) температура цього року була значно нижча, ніж у минулому. 8. Відомо, що ця речовина поглинає світлові промені. 9. Навряд чи його можна змусити скоїти злочин (to commit a crime). 10. Вважають, що цей винахід допоможе нам в нашій роботі.

Ex. 12. Translate the sentences from Ukrainian into English.

I.

1. Здається, хтось стукає. 2. Відомо, що він один з кращих лікарів в лікарні. 3. Він, напевно, отримає задоволення від цієї поїздки. 4. Виявилось, що він правий. 5. Це питання навряд чи обговорюватиметься на зборах. 6. Вони, напевно, допоможуть нам. 7. Вважають, що Іванов - кращий робітник в нашому цеху (shop). 8. Лекція, напевно, буде цікавою. 9. Виявилось, що він великий фахівець з цього питання. 10. Він, здається, не зрозумів цього правила. 11. Вона, мабуть, не любить музику. 11. Він, здається, нічого не знає про це. 13. Товари, мабуть, не були ретельно упаковані. 14. Він, здавалося, не був здивований цим повідомленням. 15. Він, здається, не розуміє значення цього винаходу. 16. Ніхто, мабуть, не звернув уваги на його слова.

II.

1. Відомо, що Лобачевский був найбільшим математиком свого часу. 2. Чекають, що делегація прибуде завтра. 3. Вони, ймовірно, повернуться восени. 4. Навряд чи він візьме участь в цьому спектаклі. 5. Він, здається, дуже добра людина. 6. Вона, мабуть, забула про свою обіцянку. 7. Говорять, що він написав дуже хорошу книгу. 8. Він, мабуть, забув номер вашого телефону. 9. Цей договір, ймовірно, буде укладений в найближчому майбутньому. 10. Я випадково був в конторі, коли він

прийшов. 11. Повідомляють, що експедиція вже повернулася до табору. 12. Він виявився одним з найздібніших дослідників нашої лабораторії. 13. Він, мабуть, втомився. 14. Говорять, що переговори вже закінчені. 15. Я випадково знаю про це. 16. Я випадково був удома, коли він зайшов.

THE FOR-TO-INFINITIVE CONSTRUCTION

In this construction a noun or a pronoun is preceded by the preposition for. In translating this construction into Russian a subordinate clause or an infinitive is used.

SENTENCE PATTERNS WITH THE FOR-PHRASE

The for-phrases have different syntactical functions in the sentence:

1. The Subject

	is	good	
It	was	easy	for smb to do smth
	will be	impossible	

It's easier for me to go out and buy a new pair of gloves.

Мені легше піти і купити нову пару рукавичок.

It's easy for you to answer this question.

Тобі легко відповісти на це запитання.

It is not for me to say so.

Не мені це говорити.

2. The Object

a) to wait/ to arrange/ to be anxious **for smb to do smb**

b) to make /to think / it difficult/ easy **for smb to do smth**

I'm waiting for you to come.

Я чекаю вашого приходу.

I have arranged for you to have a private room.

Я домовився, що у тебе буде окрема кімната.

Your attitude made it difficult for him to tell you the truth.

Йому було важко сказати тобі правду через твоє ставлення.

He thinks it best for you to stay here.

На його думку, тобі краще залишатися тут.

3. The Attribute

a) somebody /There is nothing **for smb to do smth**

There is no one for the children to play with.

Дітям ні з ким грати.

There is nothing else for me to say

Мені більше нічого сказати.

b) It is only thing/The right time **for smb to do smth**

It is not the right time for us to speak about it.

Зараз не час нам про це говорити.

It was the only thing for me to do.

Це було єдине, що я міг зробити.

4. The Adverbial Modifier of Purpose do smth **for smb to do smth**

He stood aside for us to pass by.

Він відступив убік, щоб ми могли пройти.

5. The Adverbial Modifier of Result

(too) cold/wide (enough) **for smb to do smth**

The day was much too cold and rainy for anyone to have a good time.

День був занадто холодний і дощовитий, щоб хто- небудь міг добре провести час.

The lane was wide enough for him to turn the car.

Провулок був досить широкий, щоб розвернути машину.

Exception:

		nice	
	is	kind	
it	was	sensible	of smb to do smth
	will be	silly	
		stupid	
		tactless	

It was **silly of you** to ask that question.

З твого боку було безглуздо поставити це запитання.

It's **nice (kind) of you** to say so.

Дуже мило з вашого боку так говорити (що ви так говорите).

It will be very **sensible of you** to go there at once.

Дуже буде розумно, якщо ти підеш туди зараз же.

Ex. 1. Replace the following groups of sentences by a sentence with a for-phrase subject.

Model: He won't catch the six fifteen. It's impossible.

It is impossible *for him to catch the six fifteen.*

1. She explained everything. It was not difficult. 2. She managed to do it in time. But it was quite an effort. 3. Don't make mistakes. It's important. 4. Her mother made the decision. It's the usual thing in this family. 5. We ought to take a vacation now. It won't be difficult. 6. You'll speak English with her. It'll do you good. 7. She is very late. It's rather unusual. 8. You really ought to see a doctor. It will be best. 9. We'll spend a couple of weeks in Petersburg next June. It will be rather pleasant.

Ex. 2. Complete the following sentences by adding for-phrases to them.

Model: It would be better (you; to stay in bed).

It would be better *for you to stay in bed.*

1. It's very important (children; to play outdoors). 2. It'll be best (she; to talk to the manager). 3. It might be just possible (you; to make him see the doctor). 4. It would be easy (I; to pretend). 5. It's very bad (boys; to smoke). 6. It's not (you; to carry that heavy bag).

Ex. 3. Translate the sentences from Russian into English. Use Pattern I.

1. Вам корисно їсти фрукти. 2. Мені легше зробити це сьогодні. 3. Їм буде простіший поїхати туди на метро. 4. Їй було б важко вирішити це завдання. 5. Нам було приємно знову зустріти наших друзів. 6. Нам буде корисно відпочити. 7. Вам шкідливо стільки палити. 8. Їй було важко мовчати. 9. Не мені давати вам поради. 12. Не їм обговорювати це питання.

Ex. 4. Complete the following sentences by adding objective for-phrases to them.

1. She is out playing. The doctor does not think it necessary.... 2. Under the circumstances I really think it best.... 3. All right, I'll go. Why are you so anxious.... 4. After a long telephone conversation with John we arranged 5. He stood there with a bunch of flowers waiting 6. The manager was very cross and said that he did not mean

Ex. 5. Translate the following sentences.

1. Ви думаєте, мені легко відмовитися від цієї думки? 2. Я вважаю необхідним, щоб ти закінчив школу. 3. Нам було важко зрозуміти, чого ти

хочеш. 4. Мама випекла пиріг, щоб ми з'їли його за вечерею. 5. Він залишив двері відчинені, щоб ми могли увійти. 6. Я привезу книг, щоб ви могли читати влітку. 7. Я залишив записку на столі, щоб усі могли її бачити. 8. Дітям там ніде спати. 9. Мені тут більше нічого робити. 10. Не така це гра, щоб діти могли в неї грати.

Ex. 6. Add infinitives to complete for-phrases in the sentences below.

1. It's getting cold. It's bad for the children 2. Have you brought something for me... on the train? 3. There's simply nobody there for a young girl... 4. I can't find a place for us 5. Those are not the right people for you 6. I have bought a few things for Tony

Ex. 7. Replace the following pairs of sentences by sentences with adverbial for phrases of result.

Model: The street is very narrow. He won't be able to turn the car.

The street is too narrow for him to turn the car.

1. The way to the village was long. I felt hungry again. 2. The heat was oppressive. We did not stay long on the beach. 3. The problem was comparatively easy. I solved it in half an hour. 4. The situation was getting complicated. We could no longer cope with it. 5. The conversation was interesting. The children did not want to go to bed. 6. The noise of the traffic grew loud. I could not sleep. 7. The light was good. She could read the inscription.

Ex. 8. Translate the sentences from Ukrainian into English.

1. Машина йшла занадто швидко, щоб я міг розгледіти обличчя водія. 2. Вона говорила так повільно, що ми розуміли кожне слово. 3. Я був занадто засмучений, щоб мама цього не помітила. 4. Він говорив англійською досить добре, і ми зрозуміли, що йому потрібно. 5. У печері було такий темно, що ми не змогли знайти вихід.

Ex. 9. Translate the sentences from English into Ukrainian.

1. There is no need for the steamer to call at Tuapse. 2. It was necessary for him to return immediately. 3. There is no reason for us to change the terms of payment. 4. There was no time for them to examine the goods that day. 5. It is too late for you to go there.

Ex. 10. Translate the sentences from Ukrainian into English.

1. Я залишила листи на столі, щоб містер Пітерс підписав їх. 2. Вам необхідно бути тут завтра о 5-ій годині. 3. Нам важко зробити цю роботу в такий короткий термін. 4. Дітям там зовсім нічого робити. 5. Їй дуже важко перекласти цю статтю. 6. Дуже мило, що ви прийшли. 7. Зараз надто пізно, щоб діти йшли гуляти. 8. З його боку було неввічливо спізнюватися. 9. Необхідно, щоб документи були відіслані сьогодні. 10. Йому легко це зробити. 11. Дуже важливо, щоб він отримав документи цього тижня. 12. Сподіваюся, ви розумієте, що мені дуже незручно залишатися в Лондоні влітку. 13. Йому дуже легко зробити цю роботу. 14. Вашій сестрі необхідно побачити його. 15. Усе це настільки просто, що кожен може зробити це сам. 16. Текст був занадто важкий, щоб він міг перекласти його без словника. 17. Нам дуже важко отримати ці відомості. 18. Йому буде простіше показати вам дорогу туди по карті. 19. Сьогодні досить тепло, щоб він йшов до школи без пальта. 20. У нас занадто мало часу. Я не зможу тобі все розповісти.

REVISION

Ex. 1. Translate the following sentences.

I.

1. She is extremely likely to succeed. 2. We're not allowed to go out. 3. He had been asked to stay to lunch. 4. He seemed to have noticed something interesting on the beach. 5. A girl with long straight yellow hair appeared to be attracting everybody's attention. 6. The girl was not likely to have taken an overdose of sleeping tablets by mistake. 7. It was bound to happen. 8. They seem to be planning a new attack. 9. The children are sure to have been fighting again. 10. The secret was believed to have been lost. 11. I'm not going to change my mind because twelve stupid men happened to make a mistake.

II.

1. Oil has been known to exist in Azerbaijan since ancient times. 2. The cargo does not seem to have been damaged by the storm. 3. This invention is considered to be of great importance in shipbuilding. 4. The negotiations are likely to continue until Saturday. 5. The cargo of this steamer is stated to consist of 3,000 tons of wheat and 2,000 tons of barley. 6. The parties are reported to be

considering the question of extending the agreement for 6 months. 7. Lake Baikal, which is said to be the deepest lake in the world, is fed by 336 rivers.

Ex. 2. Rewrite the sentences, replacing the words in italics by a Gerund or Infinitive Construction.

Model: His doctor recommended that he should try taking sleeping pills for a while.

His doctor recommended him to try taking sleeping pills for a while.

1. He preferred that I should say nothing about it at present.
2. She couldn't bear that he should think of her in that way.
3. He was surprised to find the door open. He distinctly remembered that he had locked it before going to bed.
4. The speaker making the radio appeal urged that his listeners should give more attention to the problem.
5. The publishers withdrew the offending passages in the book, and publicly regretted that they had caused anyone embarrassment.
6. The law requires that all cars should be regularly tested for safety and efficiency.
7. His lawyer advised him that he should drop the case since it was unlikely to succeed.

Ex. 3. Translate into English, using infinitive attributes.

1. Мені потрібно вам дещо сказати. 2. У мене є хороша новина, яку я повинен вам розповісти. 3. Він перший перервав мовчання. 4. Мені потрібно багато про що поговорити з вами. 5. Він пішов з лабораторії останнім. 6. Ось книга, яку добре читати в потягу. 7. У мене не було часу прочитати цю статтю. 8. Він не така людина, щоб забути про свою обіцянку. 9. У неї є дитина, про яку їй потрібно піклуватися. 10. Ось стаття, яку ви повинні прочитати.

Ex. 4. Translate the following sentences using Infinitive Constructions.

1. Я думаю, що він хороший інженер. 2. Я хочу, щоб ви, нарешті, мене зрозуміли. 3. Ми спостерігали, як діти грали в саду. 4. Вона чула, що вони повернулися пізно увечері. 5. Я вважаю, що він акуратна і пунктуальна людина. 6. Вони не хотіли, щоб я робив цю роботу один. 7. Ніхто не помітив, як він пішов. 8. Дозвольте мені допомогти вам. 9. Він дозволив мені дзвонити йому у будь-який час. 10. Я не чекав, що вони повернуться так скоро. 11. Я відчув, що хтось уважно дивиться на мене. 12. Що змусило

вас сказати це? 13. Я бачив, що він підійшов до неї і щось сказав. 14. Мати змусила маленького сина зробити уроки перед тим, як йти гуляти. 15. Я чув, як він щось пояснював їй. 16. Усі батьки хочуть, щоб їх діти були сильними і здоровими. 17. Хто велів йому (сказав йому) прийти сьогодні? 18. Викладач порадив нам більше читати англійською мовою. 19. Вона порадила мені подивитися цей фільм якнайскоріше. 20. Ми не чекали, що він запізниться на лекцію.

Ex. 5. Translate into English using the Complex Object (Objective-with-the-Infinitive Construction) where possible.

1. Пеготи знала, що містер Мердстон черства і жорстока людина, і не хотіла, щоб місіс Копперфильд виходила за нього заміж. 2. Містер Мердстон змусив дружину покорятися йому. 3. Девід відчував, що рука його матінки тремтить. 4. Містер Мердстон і його сестра вважали Девіда ледачим і упертим хлопчиком. 5. Містер Мердстон наказав, щоб Девіда замкнули в його кімнаті. 6. Девід прокинувся, почувши, що хтось пошепки кличе його. 7. Пеготі чула, що містер Мердстон збирається віддати Девіда до школи. 8. Містер Мердстон не хотів, щоб Девід жив удома, і добився того, що місіс Копперфильд віддала його до школи. 9. Пеготи бачила, що місіс Копперфильд нещасна, але не могла нічого зробити, щоб допомогти їй. 10. Містер Мердстон хотів, щоб Пеготі відмовили від місця (to dismiss), але місіс Копперфильд не могла допустити, щоб її вірна служниця пішла від неї. 11. Міс Бетсі побачила, що до саду увійшов брудний обірваний хлопчик. 12. Міс Бетсі відчувала, що Девід говорить правду (що розповідь Девіда правдива).

Ex. 6. Translate into English using For-to-Infinitive Construction where possible.

1. Кожен вечір містер Пеготі ставив свічку на підвіконня, щоб маленька Емілі знала, що він її чекає. 2. Коли містер Пеготі знайшов Емілі, він вирішив, що найкраще, що вони можуть зробити, - це поїхати до Австралії. 3. Девід купив кухарську книгу (cookery book), щоб Дора користувалася нею. 4. Дора сказала, що перше, що вона повинна зробити, - це приготувати Джипу добру вечерю. 5. Дора розуміла, що Девіду необхідно поїхати з міс Бетою до Кентербері, і сказала, що їй буде навіть корисно (bénéficiai) побути одною. 6. Містер Мікобер попросив Тредльса допомогти йому, оскільки викриття (exposing) Урії Гіпа було занадто важкою справою, щоб він міг з нею впоратися один (to cope with). 7. Містер Мікобер попросив, щоб принесли папери і конторські книги

(account - books) Урії Гіпа. 8. Урії Гіпові нічого не залишалося робити, як зізнатися.

Ex. 7. Translate into English using the Infinitive or Infinitive Construction where possible. (Based on Uncle Tom's Cabin by Beecher-Stowe.)

1. Коли Джордж втік від свого хазяїна і пробирався в Канаду, він випадково зустрів містера Вільсона, власника фабрики, де він раніше працював, і розповів йому усю історію свого життя. 2. Говорили, що покійний батько Джорджа був багатий знатний джентльмен. 3. Здавалося, він любив своїх дітей, але він був занадто легковажною людиною, щоб подумати про їх майбутнє, і після його смерті усі його діти були продані, щоб сплатити його борги. 4. Джордж чув, як кричала і плакала його мати, коли його забирали від неї. 5. Джордж і його старша сестра були випадково куплені одним і тим же рабовласником, і перший час дитина не почувала себе дуже самотньою. 6. Але він часто бачив, як хазяїн б'є його сестру, і від цього дитина жорстоко страждала (і це примушувало дитину жорстоко страждати). 7. Він не міг не плакати, коли чув стогони і ридання нещасної дівчини. 8. Незабаром хазяїн наказав відвезти сестру Джорджа у Новий Орлеан і продати її там на ринку. 9. Хлопчик залишився один: не було нікого, хто міг би потурбуватися про нього, хто міг би сказати йому ласкаве слово. 10. Коли Джордж виріс, його послали працювати на фабрику містера Вільсона, який виявився дуже доброю людиною і добре повадився зі своїми робітниками. 11. Джордж винайшов дуже цінну машину, яка, як було відомо, приносила його хазяїну великий прибуток. 12. Незабаром Джордж зустрів Елізу і одружився з нею. Вона була дуже красива і добра, і Джордж вважав себе найщасливішою людиною на землі. 13. Але щастя його було недовговічне (to be of short duration): його хазяїн був не така людина, яка могла б допустити, щоб її негр був щасливий. 14. Джорджа змусили піти з фабрики, кинути роботу, яку він так любив, і повернутися до хазяїна. 15. Щоб принизити Джорджа ще більше, хазяїн наказав йому кинути Елізу і одружитися з іншою жінкою. Цього Джордж вже винести не міг, і він вирішив тікати в Канаду.

(From "English Grammar Exercises" by В.Л. Каушанская та ін.)

Ex. 8. Translate into English using the Complex Subject (the Nominative-with-the-Infinitive Construction).

1. Вальтер Скотт вважається творцем історичного роману. 2. Повідомляють, що експедиція досягла місця призначення. 3. Навряд чи його призначать головним інженером, адже він закінчив інститут всього два роки тому. 4. Він, мабуть, добре знає англійську мову; напевно, він

вивчав її в дитинстві. 5. Я випадково знаю номер його телефону. 6. Він виявився хорошим спортсменом. 7. Шум, здавалося, все наближався. 8. Я випадково проходив повз вокзал, коли в Петербург приїхали артисти Шекспірівського меморіального театру (Shakespeare Memorial Theatre). 9. Він, здається, пише нову статтю; здається, він працює над нею вже два тижні. 10. Його стаття, поза сумнівом, буде надрукована. 11. Я випадково зустрів його в Києві. 12. Обов'язково прочитайте цю книгу; вона вам, поза сумнівом, сподобається.

Ex. 9. Translate the following sentences into English.

1. По правді кажучи, мені не подобається його пропозиція. 2. Чай був занадто гарячим, його неможливо було пити. 3. У вас є що додати? 4. Погана погода змусила нас повернутися додому. 5. Ми чекаємо, що товари будуть доставлені через три тижні. 6. Ми стояли біля воріт, чекаючи, коли прибуде таксі. 7. Учитель бачив, що студенти не знають, як виконати це завдання. 8. Він виявився не дуже хорошим спортсменом. 9. Я випадково зустрів його на виставці. Говорять, він нещодавно повернувся до Одеси.

Ex. 10. Translate the following sentences into English.

1. М'яко кажучи, вона була не дуже красива. 2. Він був досить розумний, щоб зрозуміти все відразу. 3. Є ще одна справа, яку потрібно зробити. 4. Вона була настільки легковажна, що пішла туди одна. 5. Мама не дозволяла синові грати на вулиці. 6. Викладач любить, щоб студенти записували його лекції. 7. Я чув, що товари навантажили (load) на пароплав, але я точно цього не знаю. 8. Ймовірно делегація пробуде у Полтаві декілька днів. 9. Він відправився туди, щоб перевірити усі факти. 10. Він, здавалося, був невдоволений результатами своєї роботи.

Ex. 11. Translate the following sentences into English.

1. Коротше кажучи, вони одружилися і переїхали жити в інше місто. 2. Проблема занадто важка, щоб вирішити її негайно. 3. Архітектор показав мені проект пам'ятника, який буде споруджений на площі. 4. Дайте мені знати, коли він подзвонить. 5. Я хочу, щоб мені показали ці записи. 6. Я бачив, що він злиться, і вирішив поговорити з ним. 7. Здається маловірогідним, що їх пропозиція буде прийнята. 8. Товари неодмінно будуть доставлені вчасно. 9. Ніхто не чув, як вона увійшла до кімнати.

Ex. 12. Translate the following sentences into English.

1. Розпочнемо з того, що я ніколи не був знайомий з цією людиною. 2. Ви достатньо його знаєте, щоб рекомендувати його на цю посаду? 3. Цього тижня у мене багато справ, які я повинен обов'язково зробити. 4. Не давайте йому розмовляти з ув'язненими. 5. Чи вважаєте ви, що він досвідчений лікар? 6. Я чув, що про нього говорили на останніх зборах. 7. У цьому семестрі навряд чи будуть які-небудь зміни в розкладі. 8. Валіза була занадто важка, щоб вона могла нести її. 9. Я бачив, як він підійшов до них і сказав щось. 10. Мені дуже шкода. Я прийшов, щоб повідомити вам неприємну новину.

Ex. 13. Translate the following sentences into English.

1. На довершення всього, вона розбила улюблену чашку мами. 2. Вона знає англійську мову досить добре, щоб поїхати у відрядження без перекладача. 3. Вона знала, що не винна, їй нічого було боятися. 4. Не дозволяйте дітям купатися в струмку. Вода дуже холодна. 5. Я думаю, що це питання має велике значення. 6. Я бачив, що він дуже засмучений. 7. Говорять, що ця будівля була побудована в XVII столітті. 8. Здається маловірогідним, що вони дійдуть згоди. 9. Він не чекав, що його запитають про це. 10. Я бачив, як темні хмари вкрили небо, і чув, що піднявся вітер.

THE PARTICIPLE

FORMS AND FUNCTIONS

	Active	Passive
Indefinite Participle (Participle I)	asking	being asked
Past Participle (Participle II)	asked	
Perfect Participle	having asked	having been asked

Indefinite Participle (Active and Passive) shows that the action named by the Participle takes place at the same time with that of the finite verb. These forms denote simultaneous action in the present, past or future.

Do you see the child **waving** the flag?
That day we *stayed* at home **watching** TV.
In a few minutes the guests *will be arriving* **wearing** smiles
and **carrying** presents.

Past Participle has no tense distinctions; it has only one form which can express both an action simultaneous with and prior to the action expressed by the finite verb. In most cases it denotes priority or refers to no particular time.

He is a man **loved** and **admired** by everybody.
The dog **carried** by the child *gave* a sharp yelp.
She *took* the long **forgotten** letter out of the bag.

Perfect Participle (Active and Passive) shows that the action named by the Participle preceded that of the finite verb. Its forms denote priority to a present, past or future action.

Having explained everything, I want to tell you how sorry I *am*.
Having finished the letter, he *went* to the post office.
Having settled the problem, you *will find* something new to worry about.

NB! A prior action is not always expressed by the Perfect Participle with some verbs of sense perception and motion: *to see, to hear, to come, to arrive, to seize, to look, to turn*, etc. The Indefinite Participle is used even if priority is meant.

Hearing footsteps he rose and went to open the door.
Почувши кроки внизу, він встав і пішов відчиняти двері.

The Participle has special forms to denote **the Active and Passive Voice**.

When **writing** letters, he doesn't like to be disturbed.
Being written in pencil, the letter was difficult to read.
Having written the letter, he went to the post-office.
Having been written long ago, the manuscript was impossible to read.

THE FUNCTIONS OF THE PARTICIPLE IN A SENTENCE

	An Attribute	An Adverbial Modifier
building	The young men building our house with me are my brothers. Молоді люди, які <i>будують</i> наш будинок разом зі мною, - мої брати.	He made his living building summer houses or garages for people. Він заробляв на життя, <i>будуючи</i> людям альтанки і гаражі.
being built	The white stone house being built near the park is a new building of our Art museum. Білокам'яна споруда, <i>що будується</i> у парку, - нова будівля нашого музею образотворчих мистецтв.	Being built with great skill and care, the mansion has been used by the family for centuries. Оскільки особняк <i>був побудований (будучи побудованим)</i> дуже майстерно, він служить сім'ї вже декілька віків.
built	They are reconstructing the house built in the 18th century. Вони реставрують будівлю, <i>побудовану</i> в XVIII столітті.	If built of the local stone, the road will serve for years. Якщо <i>побудувати</i> дорогу з цього місцевого каменю, вона служитиме довгі роки.
having built		Having built the house, he began building a greenhouse. <i>Побудувавши</i> будинок, він взявся за оранжерею.
having been built		Having been built of concrete, the house was always cold in winter. <i>Оскільки будинок був побудований з бетону</i> , в нім завжди було холодно взимку.

NOTES:

- In some cases Participle I Active in the function of an attribute is rendered in Ukrainian by a clause.
He came back and stood on the steps **leading down to the street**.
Він повернувся і стояв на сходах, *які вели на вулицю*.
- Participle I Passive (being read) is very seldom used as an attribute.
- The Past Participle (Participle II) can be an adverbial modifier when it is used with the conjunctions *when, while, as if/as though, though, unless, if*.
When told to come in he seemed to change his mind.
Коли його запросили увійти, він, здавалося, передумав.
She continued staring at the screen **as if fascinated**.
Вона продовжувала дивитися на екран, неначе заворожена.
- The verbs *catch, spot, find, discover* and *smell* are not followed by an infinitive. All may be followed by **an object and a Present Participle** (Participle I).

The teacher *caught* the pupil **cheating**.

The search party *found* (*spotted, discovered*) the climbers **clinging** to a rock face.

He *smelt* the meat **cooking**.

The verbs *spot, find* and *discover* may be followed by **an object + Past Participle**: The police *found the money hidden* in a disused garage.

5. The verbs *leave* and *keep* (someone in a certain situation or condition) share some of the characteristics of *find* and *discover*. They can be followed by **an object + Present or Past Participle**:

He *left me sitting* in the restaurant alone.

He *kept me waiting*.

He *left his bicycle propped* against a wall.

He *kept the dog chained up*.

6. If the actions named by the Participle and by the predicate closely follow each other, the Indefinite Participle is used instead of the Perfect Participle.

Seeing me he smiled happily.

Побачивши мене, він щасливо посміхнувся.

7. When we mention two consecutive actions one of them may be named by the Indefinite Participle.

He looked at me smiling.

Він *подивився* на мене і *посміхнувся*.

Seeing that it was getting cold we went home.

Ми *відчули*, що стає холодно, і *пішли* додому.

EXERCISES:

- Ex. 1. Translate the sentences from English into Ukrainian, paying special attention to the function of the Participle in the sentence.

I.

1. The boy playing in the garden is my sister's son. 2. You can get the recommended book in the library. 3. He asked her to go on with her story, promising not to interrupt her again. 4. Receiving no letters from her father, she called him. 5. He left the office at three o'clock, saying he would be back at five. 6. She stood leaning against the wall. 7. He lay on the sofa reading a newspaper. 8. Seeing her he raised his hat. 9. Having signed the letter the manager asked the

secretary to send it off at once. 10. Informed of the arrival of the ship, they sent a car to the port. 11. Having lived in that town all his life, he knew it very well. 12. Having arranged everything, he went home on the 10.30 train. 13. Having been well prepared for the interview, he could answer all the questions. 14. Being checked with great care, the report didn't contain any errors. 15. These machines will be sent to the plant being constructed in this region. 16. Having been advised by the doctor to go to the south, she decided to spend her leave in Sochi. 17. Being told of his arrival, I went to see him. 18. Having been three times seriously wounded, he was no longer fit for active service.

II.

1. A person bringing good news is always welcome. 2. While skating yesterday, he fell and hurt himself. 3. She showed the travellers into the room reserved for them. 4. When writing an essay we must use new words and phrases. 5. The leaves lying on the ground reminded us of autumn. 6. Books read in childhood seem like old friends. 7. The answer received from her greatly surprised us. 8. There are many wonderful books describing the life of people in the North. 9. Being a great book-lover, he spent a lot of money on books. 10. The figures mentioned in his article were published in the Izvestia. 11. Receiving the telegram, he rang the manager up.

Ex. 2. Translate the following participles.

I.

той що купує, купуючи, куплений, що купується;
отримуючи, отриманий, одержуючий, отримуваний;
перекладаючий, перекладаючи, перекладений, такий, що перекладається.

1. написаний; 2. принесений; 3. даючи; 4. той що розмовляє; 5. запитаний;
6. відповідаючи; 7. читаний; 8. розказаний; 9. видаваний; 10. працюючий;
11. читаючи; 12. той що відкриває; 13. що бере; 14. втрачений; 15.
зроблений; 16. стоячи; 17. той що йде; 18. входячи; 19. наглядач; 20.
побудований; 21. бачачи.

II.

1. розбита чашка; 2 програна гра; 3. розірваний конверт; 4. програвша команда; 5. команда, що програє; 6. кип'ячена вода; 7. кипяча вода; 8. забутий метод; 9. людина, що забула (раніше); 10. гавкаючий собака; 11. випробуваний метод; 12. смажена риба; 13. риба, що смажиться; 14. кіт, що підскаочив на стіл; 15. стрибаючий собака; 16. вкрадена тема; 17. голос, що сміється; 18. дівчина, що сміялася; 19. вибрана тема; 20. печена картопля;

21. втрачений шанс; 22. знайдене рішення; 23. спортсмен, що виграв; 24. написаний лист.

Ex. 3. Open the brackets using the correct form of the Participle. Do not mix these:

interesting films	interested spectators
exciting games	excited children
boring lessons	bored students
burning fires	burnt woods
sinking ships	sunk ships

1. A crowd of (excite) people were watching the firemen trying to save the (burn) building. 2. "During my vacation I came across several extremely (interest) books," said he. "Which ones?" she asked in an (interest) voice. 3. Why do you look so (worry)? - I've had a number of (worry) telephone calls lately. 4. I don't know what was in the (burn) letter, I didn't read it. 5. Nothing can save the (sink) ship now, all we can do is to try and save the passengers. 6. It was an (excite) incident. No wonder she spoke about it in an (excite) voice. 7. After hearing the (frighten) tale, the (frighten) children wouldn't go to sleep. 8. The doctor did his best to convince her that there was nothing seriously wrong with the boy, but the (worry) mother wouldn't calm down.

Ex. 4. Paraphrase the sentences using participles instead of *italicised* clauses.

Model: When the shop assistant discovered that he had a talent for music, he gave up his job to become a professional singer.

Discovering that he had a talent for music, the shop assistant gave up his job to become a professional singer.

As he had witnessed the crime, he was expected to give evidence in court. Having witnessed the crime, he was expected to give evidence in court.

1. *When the editor learned that his newspaper had been taken over by another publisher, he resigned from his position.*
2. *I declined his offer of a loan and said that I didn't like owing people money.*
3. The demonstrator *who protested violently* was led away by the police.
4. *When I visit a strange city, I like to have a guide-book with me.*
5. Motorists *who intend to take their cars with them to the Continent* are advised to make early reservations.
6. *Now that I have heard your side of the question, I am more inclined to agree with you.*
7. *As he had been warned that bad weather lay ahead, the ship's captain changed the course.*

Ex. 5. Join the groups of sentences, using participles, and making any necessary changes in the word order.

I. Model: 1. He got off the bus. He helped his grandmother.

Getting off the bus, he helped his grandmother.

2. They found the treasure. They began quarrelling about how to divide it.

Having found the treasure, they began quarrelling about how to divide it.

3. He was exhausted by his work. He threw himself on the bed.

Being exhausted by his work, he threw himself on the bed.

1. He realized that he had missed the last train. He began to walk. 2. She didn't want to hear the story again. She had heard it all before. 3. She entered the room suddenly. She found them smoking. 4. I turned on the light. I was astonished at what I saw. 5. We visited the museum. We decided to have lunch in the park. 6. He offered to show us the way home. He thought we'd got lost. 7. She asked me to help her. She realized that she couldn't move it alone. 8. He fed the dog. He sat down to his own dinner. 9. I have looked through the fashion magazines. I realize that my clothes are hopelessly out-of-date. 10. I didn't like to sit down. I knew that the grass was very wet.

II.

1. I was away at the time of the disastrous floods. I could, therefore, do nothing to help with salvage work.
2. The world disappointed him. He became a monk.
3. The rescue party decided that it would be hopeless to carry out a search while the fog persisted. They put off their rescue bid until the next day.
4. He was brought up in the belief that pleasures were sinful. As a result, he now leads an ascetic life.
5. This letter was addressed to the wrong house. It never reached my friend.
6. One can allow for the fact that the orchestra was under-rehearsed. Even so, last night's concert was extremely disappointing.
7. He was very angry when his car broke down. He had had it serviced only a week before.
8. A new conception has been developed in theoretic linguistics. The conception is useful in language teaching.
9. The man lost interest in his work. He had been passed over in favour of an outsider when a senior position became vacant.

10. He had to put off buying a house. He was unable to borrow the money from any bank.

Ex. 6. Change the following sentences using the Participle.

Model: All the people who live in this house are students.

All the people *living* in this house are students.

1. The man who is speaking now is our new secretary. 2. The apparatus that stands on the table in the corner of the laboratory is quite new. 3. The young man who helps the professor in his experiments studies at an evening school. 4. People who take books from the library must return them in time. There are many pupils in our class who take part in the performance.

Ex. 7. Replace the adverbial clauses of time by the Participle.

Model: When you speak English, pay attention to the intonation.

(When) *Speaking* English, pay attention to the intonation.

1. Be careful when you cross a street. 2. When you leave the room, don't forget to switch off the light. 3. When you begin to work with the dictionary, don't forget my instructions. 4. When they were travelling in Central Africa, the explorers met many wild animals. 5. When you copy English texts, pay attention to the articles. 6. You must have much practice when you are learning to speak a foreign language.

Ex. 8. Replace the *italicised* adverbial clauses of time by the appropriate form of the Participle using the model.

Model:

побачивши	seeing (тоді)
коли побачив	having seen (раніше)

1. *When I entered the room*, I felt some change in the atmosphere at once. 2. *When we had finally reached the river*, we decided to stay there and wait for the others. 3. *When I reached out in the darkness*, I felt a stone wall where I expected to find the door. 4. *When she opened the parcel*, she saw a large box of pencils. 5. *When they had finally opened the safe*, they found that most of the papers had gone. 6. *When she closed the suitcase*, she put it on the bed. 7. *When she had closed and locked the suitcase*, she rang for the porter to come and take it downstairs. 8. *When she had cut the bread*, she started to make the coffee.

Ex. 9. Replace the *italicised* adverbial clauses of time by the appropriate form of the Participle using the models.

Model 1: читаючи, коли читаю, коли читав – (when, while) reading

Model 2: прочитав, коли прочитав, тому що прочитав - having read

1. As she had been walking most of the night, she felt tired and sleepy. 2. When I take a child to the circus, I always know I'm going to enjoy myself. 3. As I had never seen anything like that before, I was eager to see the performance. 4. When he had passed the last examination, he began to look round for a job. 5. When he had drunk his second cup of coffee, he folded the newspaper and rose. 6. Whenever she spoke on the subject, she was liable to get all hot and bothered. 7. When I had finally made up my mind, I told my parents about my new plans. 8. As she had spent most other housekeeping money, she reluctantly decided to go home. 9. As she had not had any lunch, she wanted her tea badly. 10. When I spoke to her I always tried to make my meaning clear. 11. When we were playing chess that evening, we kept watching each other. 12. When she had taken the children to school, she could go and do her weekly shopping.

Ex. 10. Complete the sentences, using suitable constructions.

1. Did anyone see you ...?
2. I hope your friend didn't hear you ...
3. A huge crowd watched the firemen ...
4. We could feel the sun ...
5. "Don't worry!" said the doctor. "I'll soon have you ..."
6. You must have been very late last night. I didn't even hear you ...
7. The pickpocket was observed ...
8. High on the mountain, he could perceive three small figures ...
9. I searched the desk, and discovered the letter...
10. The woman caught her husband ...
11. Leave the car with me. I'll have it...
12. I was asked if I had noticed anyone ...
13. When his leg was examined, it was found ...
14. Where's my umbrella? I thought I left it...
15. Although the station was crowded, I soon spotted my friend ...
16. The assistant kept the customer...
17. The iron's far too hot! Can't you smell the material...?
18. I hope they won't keep us ...
19. They found the survivors ...
20. We all suddenly sensed danger...

Ex. 11. Fill in the blanks with the appropriate forms.

1. The houses ... many years ago are not as convenient as the modern ones. 2. What is the number of apartment houses ... in the past few years? 3. The number of apartment houses ... for the population of Moscow is rapidly growing. 4. The workers ... this house used new construction methods. 5. At the conference they discussed new methods ... in building. 6. The new methods ... in the building of houses proved more effective. 7. Here are some samples of the products of this plant... to different parts of the country. 8. These are the samples of products ... last month.

(building, being built, built, used, using, sent, sending, being sent)

Ex. 12. Open the brackets using the appropriate form of the Participle.

I.

1. She went to work, (to leave) the child with the nurse. 2. (to lay) down on the soft couch, the child fell asleep at once. 3. (to wait) in the hall, he thought over the problem he was planning to discuss with the old lady. 4. He left (to say) he would be back in two hours. 5. (to write) in very bad handwriting, the letter was difficult to read. 6. (to write) his first book, he worked endless hours till dawn. 7. (to spend) twenty years abroad, he was happy to be coming home. 8. (to be) away from home, he still felt himself part of the family. 9. (not to wish) to discuss the problem, he changed the conversation.

II.

1. (to reject) by the publisher, the story was returned to the author. 2. (to reject) by publishers several times, the story was accepted by a weekly magazine. 3. (to wait) in the reception room, he thought over what he would say. 4. They reached the peak at dusk, (to leave) their camp with the first light. 5. The friends went out into the city (to leave) their cases at the left-luggage department. 6. (to leave) a note with the porter, he said he would be back in a half an hour. 7. (to write) in an archaic language, the book was difficult to read. 8. (to write) his first book, he used his own experiences. 9. (to be) away so long he was happy to be coming back.

Ex. 13. Fill in the blanks with Passive Participles of the verb in brackets.

1. a) I cannot forget the story ... by him. b) They listened breathlessly to the story... by the old man. (to tell). 2. a) One can't fail to notice the progress ... by

our group during the last term, b) These are only a few of the attempts now ... to improve the methods of teaching adult students, (to make). 3. a) We could hear the noise of furniture ... upstairs, b) For a moment they sat silent... by the story, (to move). 4. a) The monument... on this square has been recently unveiled, b) The monument... on this square will be soon unveiled, (to erect).

Ex. 14. Translate the words in brackets.

I.

1. We came up to the man (що стояв на розі) and asked him the way. 2. Go to the shop and ask the man (що стоїть там) to show you the way. 3. The man (що стоїть біля вікна) was our teacher last year. 4. Did you see in what direction the man (що стояв тут) went? 5. He wants to write a book (яка б підсумувала) his impressions of the trip. 6. The people (очікуючі вас) have been sitting here since 3 o'clock. 7. The people (що чекали вас) have just gone.

II.

1. (Розповівши все, що він знав) the man left the room. 2. (Постукавши двічі і не отримавши відповіді) he came in. 3. (Штовхнувши двері) he felt that it was not locked. 4. (Тихо закривши двері) he tiptoed into the room. 5. Each time (розповідаючи про цей випадок) she could not help crying. 6. (Приїхавши в готель) she found a telegram awaiting her. 7. (Приїхавши сюди) many years before he knew those parts perfectly. 8. We took a trip in a boat down the river (і повернулись) when it was dark. 9. I felt very tired (пропрацювавши цілий день) in the sun. 10. (Впустивши монету на підлогу) he did not care to look for it in the darkness.

III.

1. The conference (що проходить зараз) in our city is devoted to the problems of environment protection. 2. Unable to attend the conference (що проходила тоді) at the University, we asked to inform us about its decisions. 3. They are now at a conference (що проходить) at the University. 4. Suddenly I heard a sound of a key (що повертається) in the lock. 5. (Коли їх поставили у воду) the flowers opened their petals. 6. The flowers faded (оскільки їх довгий час тримали без води).

Ex. 15. Translate the following sentences into English.

1. Пишаючись своїм батьком, він часто говорить про нього. 2. Виступаючи на зборах, я забув згадати про цей факт. 3. Як звуть людину, що говорить

зараз по телефону? 4. Нарешті вона побачила людину, що врятувала її сина. 5. Деякі питання, які зачіпаються в доповіді, заслуговують на серйозну увагу. 6. Вони усиновили (adopted) хлопчика, що втратив батьків в авіаційній катастрофі. 7. Не знайшовши потрібної книги вдома, я відправився до бібліотеки. 8. Не виконавши роботу вчасно, я вимушений був вибачитися перед ними. 9. Пробувши в Лондоні близько тижня, я міг розповісти їм багато цікавого. 10. Подорожуючи по країні, ми познайомилися з багатьма пам'ятками. 11. Зрозумівши, що не зможе виконати усю роботу одна, вона попросила мене про допомогу. 12. Знаючи, що у мене досить часу, щоб дійти до кінотеатру, я не поспішав. 13. Приїхавши того вечора до свого друга, я дізнався, що його ще немає удома, але що він прийде з хвилини на хвилину. 14. Побачивши, що таксі під'їхало до будинку, він узяв речі і швидко спустився униз.

Ex. 16. Translate the following sentences into English.

1. Це була одна з історій, які часто розповідала нам мати. 2. Він не міг забути сумну історію, розказану йому старою жінкою. 3. Він уважно слухав історію, яку розповідала одна з дівчаток. 4. Дівчинка, що розповідає цю історію, упевнена, що це правда. 5. Обіцяна допомога не надходила. 6. Де людина, яка обіцяла вам допомогти? 7. Дівчина, що говорила по телефону, нарешті повісила трубку. 8. Жінка, яка говорила з моїм братом, посміхнулася мені. 9. Це один із студентів, які беруть участь в конференції. 10. Я поговорив з одним із студентів, що брали участь в конференції два роки тому. 11. Ми йшли по дорозі, що веде до міста. 12. Тут вже давно немає дороги, яка раніше вела до озера.

Ex. 17. Translate the sentences from Ukrainian into English.

I.

1. Секретар відправив підписані директором листи. 2. Ми уважно прочитали надіслану Іваном статтю. 3. У цій кімнаті є декілька зламаних стільців. 4. Він показав нам фотографію відновленої будівлі Російського Музею в Петербурзі. 5. Розбита склянка лежала на столі. 6. Усі отримані товари були негайно відправлені на склад. 7. Він приніс мені декілька ілюстрованих журналів. 8. Ми послали каталоги за вказаною адресою. 9. Його несподівана відповідь здивувала нас усіх. 10. Прочитавши багато книг з цього питання, він зміг зробити дуже цікаву доповідь. 11. Увійшовши до кімнати, він побачив декілька приятелів, що чекали його. 12. Пропрацювавши над доповіддю весь день, він почував себе дуже втомленим. 13. Він пішов, сказавши, що скоро повернеться. 14. Знявши

пальто і капелюх, він пішов нагору. 15. "До побачення," - сказав він, подивившись на мене холодно. 16. Проспавши декілька годин, він знову відчув себе добре. 17. Побачивши батька, діти побігли йому назустріч. 18. Він сказав ці слова і посміхнувся. 19. Він сидів, спершись ліктем на стіл. 20. Побачивши мене, він сказав посміхнувшись: "Я дуже радий вас бачити".

II.

1. Картина, що висіла тут минулого року, зараз знаходиться в музеї. Картина, що висіла у вестибюлі, притягнула мою увагу. 2. Я учора розмовляв з одним інженером, який працював кілька років тому в порту. Хлопчик, який працював в саду, не бачив, як я підійшов до нього. 3. Студенти, які перекладали цю статтю, кажуть, що вона дуже важка. Я підійшов до студента, який перекладав якусь статтю, і запитав його, чи потрібен йому словник. 4. Я хочу прочитати цю книгу, оскільки мій приятель, який читав її, каже, що вона дуже цікава. Я запитав у молодшої людини, яка читала газету, котра година. 5. Він не помітив листа, що лежав на столі. 6. Учений, який написав цю статтю, зробить доповідь в нашому інституті. 7. Усі студенти, які отримали запрошення на цю лекцію, були присутніми на ній. 8. Мені сказали, що жінка, яка сиділа в коридорі, чекала директора.

Ex. 18. Translate the sentences into English. Use the Present Participle instead of the italicised verbs.

Model: Він стояв біля вікна та *палив* цигарку.

He stood at the window *smoking* a cigarette.

1. Ми *залишили* йому записку і відправилися на прогулянку в парк. 2. Він *відкрив* книгу і показав мені підкреслене місце. 3. Вона *посміхнулася* і вийшла з кімнати. 4. Вона важко *зітхнула* і налила собі другу чашку кави. 5. Вона відкрила парасольку і хоробро *пішла* під дощ. 6. Ми *залишили* валізи в камері схову і відправилися на пошуки кімнати в готелі. 7. Він ще раз *подивився* на карту і сказав, що ми звернули не там. 8. Ми не *застали* його удома і залишили йому записку. 9. Я *не був упевнений*, що вона права, і нічого не сказав. 10. Вона повільно *друкувала* щось на машинці і іноді запитувала мене, як пишеться те або інше слово.

REVISION

Ex. 19. Replace the Infinitive in brackets by the appropriate form of the Participle.

1. She stayed (to lock) in her room, (to refuse) to come downstairs. 2. He had a good practical knowledge of the language, (to work) as an interpreter for many years. 3. They went out as they had come, (to see) nobody and (to see) by no one on their way. 4. Except for the grand piano and the pianist (to sit) before it, the stage was empty. 5. He looked so beautiful and peaceful, (to sit) in that chair under the tree. 6. He looked at the scene (to shake) to the depth of his heart. 7. The boy came out of the water, all blue and (to shake) from head to foot. 8. (To arrive) at the airport where he was to change, he had to wait for three hours for the connection. 9. (To arrive) in the town about twenty years before, he had succeeded thereafter beyond his wildest expectations. 10. (To support) by her elbow, Mary listened to their talk. 11. (To support) her by his arm, he helped her out of the carriage. 12. The girl was fascinated by the dark surface of the water (to reflect) the stars. 13. The young foliage of the trees, (to reflect) in the river, looked like lace. 14. I saw the figure of an old woman (to come) towards me. 15. My brother is a soldier just (to come) back home on leave. 16. He retired (to leave) the laboratory in the hands of a talented successor. 17. He retired (to turn) the laboratory into a big research centre. 18. (To finish) their meal, they went for a stroll in the park. 19. (To look) through the paper, he gave it to the secretary to be typed. 20. The room had a musty smell as though (not to live) in for quite a time. 21. My father hates being disturbed when (to engage) in some kind of work. 22. He always keeps a diary while (to travel).

Ex. 20. Translate the following sentences into English.

1. Я ще не переглянув усіх журналів, надісланих нам з Петербургу. 2. Я вже перевірів усі твори, написані студентами моєї групи. 3. Усі студенти, які беруть участь в цій роботі, повинні прийти в інститут сьогодні о 6-й годині вечора. 4. Оскільки у нього було досить часу (маючи багато часу), він пішов на вокзал пішки. 5. Переходячи через міст, я зустрів Дмитра. 6. Ви маєте бути дуже уважні, граючи в шахи. 7. Будучи дуже втомленим, я вирішив залишитися удома. 8. Ми довго сиділи в саду, розмовляючи про нашу поїздку на південь. 9. Він поклав сплячу дитину на диван. 10. Вони швидко йшли, розмовляючи про щось з великим інтересом. 11. Я учора прочитав дуже цікаву розповідь, що описує життя шахтарів. 12. Читаючи цю розповідь, я зустрів декілька цікавих виразів. 13. Будучи хорошим інженером, він зміг виконати цю роботу в короткий термін. 14. Він сидів за столом, переглядаючи кореспонденцію, отриману напередодні. 15. Чекаючи трамвая, я побачив Ганну. 16. Залізниця, що сполучає це село з містом, була побудована минулого року. 17. Оповідання, надруковані в цьому журналі, дуже цікаві. 18. Я сподіваюся, що ви не повторите помилок, зроблених в минулому диктанті. 19. Людина, яка сиділа біля відчиненого вікна, дивилася на дітей, що грали в саду. 20. Загасивши

світло, він ліг спати. 21. Прочитавши лист, він поклав його в шухляду столу. 22. Увійшовши до кімнати, він запалив світло, сів за стіл і почав працювати. 23. Почувши кроки в коридорі, я вийшов з кімнати.

Ex. 21. Open the brackets. Use the appropriate forms of the Participle or of the Infinitive.

1. He did not wish himself (to criticize). 2. She's been like that ever since she had her youngest (to kill) in Africa. 3. Do you want your things (to move) to room 305? 4. Nobody expected any measures (to take). 5. How can I make myself (to hear) in this uproar? 6. And I want everything (to deliver) at my hotel. 7. Nobody heard the door (to open). 8. When do you want the letters (to type)? 9. I had the dress (to copy) and sent the original back. 10. How could you leave that child (to cry) in the darkness? 11. There were so many people there and nobody saw it (to do). 12. They found him (to wander) in the park. 13. They found the lock (to break) and the man (to go). 14. He ordered the garage door (to lock and to seal). 15. How he got himself (to elect) is a mystery.

HAVE SOMETHING DONE

The construction is used to say that we arrange for someone else to do something for us. It means *замовити, найняти, запросити кого-небудь зробити що-небудь*.

The Past Participle (*done/repaired/cleaned*, etc.) comes after the object.

Have + object + Past Participle

I have my coat cleaned every month.
We had the roof repaired yesterday.
They are having the house painted at the moment.
How often do you have your car serviced?
She has just had her car cleaned.

Sometimes the model is used to say that something (often something not nice) happened to someone.

He had all his money stolen.
У нього вкрали усі його гроші.
George had his nose broken in a fight.
Джорджу розбили ніс у бійці.

EXERCISES

Ex. 22. Answer the questions using the model.

Model: Did Ann make the dress yourself?
No, she had it made.

1. Did you cut your hair yourself?
2. Did they paint the garage themselves?
3. Did Jim cut that tree himself?
4. Did you repair the car yourself?
5. Do you clean your house yourself?

Ex. 23. Complete the situation using to have smth done.

1. Sue is at the hairdresser's at the moment. She ...
2. Ann's watch had been broken, she took it to a jeweller's. Now it is working
Ann ...
3. What are the workmen doing in your garden? Oh, I...
4. Can I see the holiday photographs you took? I'm afraid not, I...

Ex. 24. Translate into English using the pattern *to have smth done*.

Model: 1) Я роблю зачіску в перукарні кожну п'ятницю.
I have my hair done every Friday.
2) Тут вам почистять пальто за одну добу.
Here you can have your coat cleaned overnight.

1. Вам потрібно відпрасувати і почистити костюм. 2. Мені потрібно сфотографуватися. 3. Тут можна віддати в чистку плащ? 4. Вам не поладять кран до понеділка. 5. Де вам шиють? 6. Де вам шили цю сукню? 7. У нього вкрали документи минулого року. 8. Їй пофарбували кухню в ясно-зелений колір. 9. Вона зшила собі нове пальто. 10. Мені треба зробити зачіску.

THE ABSOLUTE PARTICIPIAL CONSTRUCTION

It is a construction in which the participle has the “subject” of its own. This “subject” is not the subject of the sentence.

The letter having been written, he went out to post it.
Лист був написаний, і він пішов на пошту відправити його.
*The room **being** dark, I couldn't see him.*
Оскільки в кімнаті було темно, я не бачив його.

Though formally independent of the sentence the absolute construction is a logical adverbial modifier of time, cause, condition and is rendered in Ukrainian by means of an adverbial clause (*оскільки; хоча; коли; після того; як...*).

EXERCISES

Ex. 25. Translate the sentences from English into Ukrainian.

1. Many men preceded Newton in the field of mechanics, perhaps the most outstanding being Galileo. 2. Red phosphorus being a more stable form, its reactions are much less violent. 3. The fuel exhausted, the engine stopped. 4. Probably the first metals used by man were gold, silver, and copper, these metals being found in nature in the native or metallic state. 5. Electrons moving through a wire, electrical energy is generated. 6. Mars has two satellites, Deimos ("Horror") and Phobos ("Fear"), both discovered during the favourable opposition of 1877. 7. A magnet being broken in two, each piece becomes a magnet with its own pair of poles. 8. Many technical and scientific problems having been solved, the first space flight could be realized. 9. An electron leaving the surface, the metal becomes positively charged. 10. The plant supplied with good raw materials, the quality of products has been much improved.

Ex. 26. Replace the clauses with the Absolute Participial Construction.

Model: As the book was translated into Ukrainian, it could be read by everybody.

The book being translated into Ukrainian, it could be read by everybody.

1. As the rain had ruined my hat, I had to buy a new one. 2. After this was done, they set off with light hearts. 3. As few people were buying his pencils, he could hardly earn a living. 4. As there was a severe storm at sea, the steamer couldn't leave the port. 5. As it was Sunday, the library was closed. 6. As the weather was fine, they went for a walk. 7. As the Professor was ill, the lecture was put off.

REVISION

Ex. 1. Supply where necessary the particle “to” before the Infinitives.

1. He was making every effort to induce his father... change his mind. 2. But I got him ... talk. 3. Nevertheless, on those mornings he could not bring himself... read the political correspondents' gossip-columns. 4. I knew that he would never encourage his daughter... marry a fortune. 5. As he answered her question, I noticed her... look surprised. 6. I could feel the blood ... leave my face in a rush. 7. Understand once and for all, I won't have you ... say this sort of thing. 8. The doctor had expressly forbidden him ... talk. 9. He did not hear the car... arrive. 10. He had never known his uncle ... express any sort of feeling. 11. I wasn't prepared to let him ... go out alone. 12. He was not only giving them the chance, he was pressing them ... do so. 13. I shall try to make the thing ... work. 14. They watched Esther... return after a time. 15. He drew out a stiff, plain pocket-book as I had often seen him ... use it in meetings, and began to write down numbers.

Ex. 2. Supply Infinitives and ing-forms for the following texts:

I.

Saturday. It was the day on which he had promised ... his landlady (to pay). He had expected something ... up all through the week (to turn). Yet he had found no work. All he could do now was ... her that he could not pay the bill (to tell). But he hadn't the courage ... the woman (to face). It was the middle of June. The night was warm. He made up his mind ... out (to stay). ... down the Embankment, he kept... to himself that he had always tried ... what he thought best, but everything had gone wrong (to walk, to say, to do). He was ashamed of ... so many lies to his friends (to tell). It had been absurd ... his pride ... him from ... for assistance (to let, to prevent, to ask). Now his lies made it impossible for him ... to anyone for help (to turn). But it was no good ... about it (to think).

II.

When my sister Anne was six years old, I saved her from ... (to kidnap). At the end of the war there were rumours about strange men who lured little children into quiet places with promises of toys and sweets, persuaded them into ... about their parents and if the parents turned out... of no further interest to them, they usually left the children ... their way home in tears (to talk, to be, to find). So my parents spent a great deal of time ... Anne about ... to strange men (to warn, to talk). One day, Anne went out ... in the street after tea and could not be found an hour later (to play). We looked through ... streets, but no one had seen her (to

surround). My father went off in the car ... for her, and I decided ...10 in the park (to look, to search). Some boys there told me that they had seen a small girl in a blue dress ... a cricket match, and someone else said that she had been seen ... off with a man who was pushing a bicycle (to watch, to walk). The chances were against this child ... my sister, but I walked off in the direction in which they had been seen ... (to be, to walk). This brought me to a back alley. I called Anne's name, and was surprised ... her voice ... back (to hear, to call).

(From "An English Grammar Practice Book")

Ex. 3. Translate the following using Infinitives or ing-forms.

1. Дружина фермера приходила щодня, щоб прибрати кімнати, (to clean) 2. Йому порадили не розповідати їм історію свого життя, (to advise) 3. Дівчинці веліли розлити в чашки чай. (to tell) 4. Чули, як кілька хвилин тому вони сперечалися на терасі, (to hear) 5. Філ сунув гроші в кишеню, не полічивши їх. (count) 6. Вважають, що він глибоко прив'язаний до своєї сім'ї, (to believe) 7. Було відомо, що він пише книгу про звичаї, (to know) 8. Крізь вікно можна було бачити, що водій чекає біля машини, (to see) 9. Я був занадто збуджений, щоб їсти, (to be excited) 10. Повідомили, що він змінив своє рішення, (to report) 11. Я знав, що він не здатний приймати рішення, (be capable of) 12. Він любив сміятися над тими, хто був боязкий, (be fond of) 13. Йому дозволили залишити у них своє прізвище і адресу, (to allow) 14. Симон і Дік залишилися розмовляти у вітальні (to leave) 15. Він без зусиль знайде собі роботу в Нью-Йорку, (no difficulty) 16. Можливо, вам цікаво подивитися, що за чоловік цей Роберт, (be of interest) 17. Нас залишили, щоб ми подивилися фільм, (to leave) 18. Його не видно цілий тиждень. Говорять, що він у відпустці, (to say) 19. Йому веліли прийти сюди до містера Еббота, (to tell) 20. Ми знайшли Фокса. Він чекав нас на терасі. (Фокса знайшли очікуючим нас на терасі) (to find) 21. Він спостерігав, як люди квапилися до потягів, (watch) 22. Я чув, як він кликав нас. (hear) 23. Його присутність була несподіваною, тому що говорили, що він подорожує на сході. 24. Я подивився на свою матір, яка щасливо сміялася над жартами Тома.

Ex. 4. Translate the following using Infinitives or ing-forms.

I.

1. Прибувши до відкриття конференції, вони встигли оглянути місто. 2. Вона сиділа і посміхалася. 3. Ця людина, яка сидить біля вікна, учора зробила цікаву доповідь. 4. Коли я дивився цей фільм, я згадував своє

дитинство. 5. Я прочитав декілька книг цього автора, перекладених українською мовою. 6. Люди, які чекали вас, тільки що пішли. 7. Упізнавши його ближче (got to know), я зрозумів, яка це хороша людина. 8. Людина, яка тільки що стояла тут, пішла. 9. Уважно прочитавши доповідь, я знайшов в ній декілька помилок. 10. Будучи дуже засмученим, він вирішив піти, не прощаючись.

II.

1. Будинки, побудовані багато років тому, не такі зручні як сучасні. 2. Подумавши, що він може зацікавитися цією книгою, я порадив йому прочитати її. 3. Постукавши двічі, вони вирішили, що удома нікого немає. 4. Не почувавши себе винуватим (guilty), він відмовився вибачитися. 5. Деякі марки, зібрані ним, дуже цікаві. 6. Будучи досвідченим лікарем, він відразу зрозумів, що сталося. 7. Жінка, яка відчинила мені двері, виглядала дуже мило. 8. Він показав мені список товарів, що експортуються цією фірмою. 9. Він лежав на дивані і читав книгу. 10. Подумавши, що вона сказала це жартома, я розсміявся.

III.

1. Пропрацювавши цілий день на сонці, я почував себе дуже втомленим. 2. Приїхавши в готель, він виявив телеграму, що чекала на нього тут. 3. Вони стояли і голосно розмовляли. 4. Спізнюючись на переговори, вони пішли до закінчення вечора. 5. Твори, які пишуть сучасні діти, дуже відрізняються від тих, які писали діти 20-х років. 6. Вона показала мені лист, написаний в 1941 році. 7. Я купив книгу, що містить відомості про систему освіти в США. 8. Почувши кроки, він підняв голову. 9. Моя бабуся, яка розповіла мені цю казку, живе в місті. 10. Купивши квитки, він поспішив на платформу.

IV.

1. Сказавши це, він вийшов з кімнати. 2. Отримані учора вісті справили на усіх велике враження. 3. Я не міг переодягнутися, оскільки залишив свої речі на вокзалі. 4. Не знаючи причини її відсутності, я вирішив подзвонити їй. 5. Дівчинка, яка плаче, була голодна. 6. Казка, розказана мамою, налякала (scare) дитину. 7. Будучи зайнятий, він не відразу почув мене. 8. Прочитавши багато книг Діккенса, він добре знав цього письменника. 9. Бабуся дивилася на дітей, які грають у дворі. 10. Як вам подобається книга, яку зараз обговорюють?

V.

1. Вчені, які брали участь в цій експедиції, були нагороджені нашим урядом. 2. Втративши ключ, я не зміг увійти до кімнати. 3. Лежачи на дивані, він дивився телевизор. 4. Хлопчик, який біжить повз будинок, раптом зупинився. 5. Привітавшись з усіма, він увійшов до свого кабінету. 6. Будучи дитиною, він не зміг зрозуміти, що сталося. 7. У будинку, який будується на площі, буде великий магазин. 8. Дуже цікаво читати твори, написані дітьми. 9. Повернувши ліворуч, ми побачили велику білу будівлю. 10. Я показав йому список книг (list), прочитаних минулого року.

THE GERUND

FORMS. TENSE/VOICE DISTINCTIONS

	Active	Passive
Indefinite	waiting	being waited
Perfect	having written	having been waited

(Like the finite forms the verbals have tense and voice distinctions, but their tense distinctions differ from those of the finite verbs.

THE TENSE DISTINCTIONS OF THE GERUND ARE RELATIVE:

The Indefinite Gerund denotes an action simultaneous with that of the predicate:

He avoided ***making*** the same mistake again.

The Perfect Gerund denotes an action prior to that of the predicate:

He admitted ***having made*** the mistake.

1. Prior action is not always expressed by a Perfect Gerund. In some cases we find an Indefinite Gerund.

After the verbs: *remember, excuse, forgive, thank.*

After the prepositions: *on (upon), after, without.*

I don't remember ***hearing*** the legend before.

You must excuse my ***not answering*** you before.

The Gerund has special forms for the Active and Passive Voice.

He liked neither *reading* nor *being read to*.

2. After the verbs: *want, need, deserve, require, be worth* the Gerund is used in the active form though it is passive in meaning.

The room *needs* **painting**.

The film *is worth* **seeing**.

The child *deserves* **praising**.

THE USE OF THE GERUND

In modern English the Gerund is widely used and competes with the Infinitive.

I. The Gerund is always used after:

1. Verbs followed by prepositions:		<p>They <i>succeeded in</i> finding a good flat. Can you <i>stop</i> the child <i>from</i> getting into mischief? <i>Thank you for</i> conning. He was <i>accused of</i> having broken the law. <i>I insisted on</i> his coming with us. Who is <i>to blame</i> for starting the fire? Are you <i>thinking of</i> buying a house? <i>I apologize for</i> being so awkward.</p>
<i>accuse of</i> <i>apologize for</i> <i>approve of</i> <i>blame smb for</i> <i>forgive for</i> <i>congratulate on</i> <i>count on</i> <i>depend on</i> <i>hear of</i> <i>inform of</i> <i>insist on</i>	<i>object to</i> <i>persist in</i> <i>prevent</i> <i>result in</i> <i>stop from</i> <i>succeed in</i> <i>suspend</i> <i>thank for</i> <i>think of</i>	
2. Nouns used with Prepositions:		<p>He has no <i>intention of</i> staying. The <i>importance of</i> being earnest. There is no <i>chance of</i> winning. We had no <i>opportunity of</i> meeting interesting people there. <i>I have no experience in</i> building houses. There are different <i>ways of</i> solving this problem. Do you have any <i>reason for</i> saving such a thing?</p>
<i>art of</i> <i>chance of</i> <i>difficulty (in)</i> <i>experience in</i> <i>habit of</i> <i>harm of</i> <i>idea of</i> <i>importance of</i> <i>interest in</i> <i>means of</i> <i>mistake of</i>	<i>opportunity</i> <i>plan for</i> <i>point in: of</i> <i>preparation</i> <i>process of</i> <i>purpose of</i> <i>reason for</i> <i>right of</i> <i>sense of</i> <i>skill in</i> <i>way of</i>	
3. Phrasal verbs:		<p>He <i>gave up</i> smoking two years ago. She <i>kept on</i> interrupting me while I was speaking.</p>
<i>burst out</i> <i>give up</i>	<i>leave off</i> <i>keep on</i>	

(see “English through Reading”)		
4. Such verbs as:		
<i>avoid</i>	<i>involve</i>	Would you <i>mind</i> closing the door?
<i>consider</i>	<i>justify</i>	He <i>denied</i> having seen this man
<i>delay</i>	<i>mind</i>	before.
<i>deny</i>	<i>miss</i>	You can hardly <i>avoid</i> meeting her.
<i>escape</i>	<i>postpone</i>	We’ve just <i>missed</i> having nasty
<i>excuse</i>	<i>practise</i>	accident.
<i>fancy</i>	<i>recall</i>	They <i>postponed</i> sending an answer
<i>finish</i>	<i>recollect</i>	to the request.
<i>forgive</i>	<i>resent</i>	My work <i>involves</i> filing and typing
<i>include</i>	<i>risk</i>	letters.
5. Word		I’ll <i>risk</i> trying my hand in it.
<i>be afraid of</i>	<i>be guilty of</i>	There is <i>no use</i> crying over spilt
<i>be angry for</i>	<i>be interested in</i>	
		milk.

John went to his office *in spite of* **being ill**.

NOTES:

1. After the verbs **come** and **go** we often use the Gerund related to outdoor activities: *climbing, driving, fishing, riding, sailing, shopping, skiing, walking*, etc.

Why don’t you **come sailing** with us?

Let’s **go skiing**!

2. The following verbs always have a direct object: *catch, find, notice, observe, see*.

I’d better not **catch you doing** that again!

3. It is necessary to distinguish two particularly confusing verb phrases, **used to** and **be used to**.

Used to + Infinitive

Used to + Infinitive refers to habitual action in the past, and **used to** can not be followed by a noun (or a gerund):

When I was in England, I used to eat a big breakfast.

Used to is a fixed idiom and is not used in any other tense.

Be used to + noun/gerund

The phrase is parallel in structure to *to be interested in*, and it is possible to put a noun after *to*:

I'm used to his curious ways.

I'm used to hearing about the odd things he does.

The verb *to be* in *to be used to* can be used in any appropriate tense.

To be used to suggests familiarity through a repetition of the activity or occurrence; it does not state the existence of a habit as such.

EXERCISES:

Ex. 1. Translate the sentences from English into Ukrainian.

I.

1. Could you please stop making so much noise? 2. I don't enjoy writing letters. 3. Does your work involve meeting a lot of people? 4. I considered taking the job but in the end I decided against it. 5. If you walk into the road without looking you risk being knocked down by a car. 6. I don't fancy going out this evening. 7. The batteries of this radio need changing. 8. Do you think the grass needs cutting? 9. Before going out I phoned Ann. 10. Tom left without finishing his dinner. 11. I wonder what prevented him from coming to the party. 12. The arrested man was suspected of breaking into houses. 13. Have you ever thought of getting married? 14. I had difficulty in finding a place to live. 15. Do you think this book is worth reading?

II.

1. This habit of discussing other people's affairs may damage reputations and ruin friendships. 2. Well, don't go if you don't feel like going but for God's sake stop talking about it. 3. Can't you see how perfectly useless it is trying to save the shop now? 4. I see no harm in letting them enjoy themselves in vacation time. 5. So you like the part and want to play it. But is it worth going to such lengths to get it? 6. He was only thanking me for taking his part at lunch. 7. Once he gets elected there will be no holding him. 8. You can't learn to skate without falling. 9. It's no use trying to make you see my point. 10. It's different for you. You're used to walking. 11. As to me, I simply love cooking. 12. My

job is not teaching you manners. 13. She can't stand being contradicted. 14. She washed her face and combed her hair before going downstairs again. 15. Of course I'll go. I'd go any place if there's the slightest chance of getting this job.

Ex. 2. Fill in the blanks with prepositions where necessary.

I.

1. She only succeeded ... blocking the way. 2. She showed no intention ... leaving. 3. There is no point... staying. 4. He did not object... being examined. 5. I was not used ... driving a big car through crowded streets. 6. She was surprisingly clever... finding out things. 7. How can I prevent her... going there? 8. I was thinking at the time ... selling the place. 9. I can find that out... asking. 10. After all I'm personally responsible ... bringing you back safe and sound. 11. They positively insisted ... visiting all the rooms. 12. What are your reasons to accuse her ... taking the papers? 13. Everything depends ... being on the spot. 14. I thanked him again ... lending me the car.

II.

1. Jones insisted ... shaking hands. 2. I take all the blame ... not seeing further than my nose. 3. Unfortunately I haven't succeeded ... making much impression on you. 4. He made a point... never sounding disappointed. 5. His mission had very little to do ... winning the war. 6. He had never had much difficulty ... getting jobs. The trouble had always been ... keeping them. 7. She thanked him ... taking her out. 8. He did not object... seeing Francis. 9. I shall look forward ... seeing your book. 10. I thought... taking a trip up the Scandinavian coast. 11. Jack hesitated, then decided ... talking. 12. I told him that we were about to be turned out of our flat... not paying the rent. 13. Quite late, when he was on the point... going upstairs, the door bell rang. 14. He put the note under a saucer on the table to keep it... blowing away.

Ex. 3. Match the parts of sentences in A and B columns.

- | | |
|--------------------------------|--------------------------------|
| 1. It's difficult to keep them | a) sheltering in the barn. |
| 2. The police caught him | b) coming from the house. |
| 3. Will you, please, stop | c) opening the safe. |
| 4. I can hear someone | d) thinking about the problem. |
| 5. They left us | e) working all the time. |
| 6. I could smell smoke | f) shouting in the distance. |
| 7. The searchers found the boy | g) changing TV channels. |

Ex. 4. Supply Gerund forms for the words in brackets.

I.

1. The baby started crying when he woke up, and went on (cry) all the morning. 2. He didn't want to lose any more money, so he gave up (play) cards. 3. Imagine (keep) a snake as a pet! 4. Please go on (write); I don't mind waiting. 5. He offered to buy my old car, if I didn't mind (wait) a month for the money. 6. The taxi-driver tried to stop in time, but he couldn't avoid (hit) the old woman. 7. At first I enjoyed (listen) to him, but after a while I got tired of hearing the same story again and again. 8. My watch keeps (stop). - That's because you keep (forget) to wind it up. 9. I suggest (telephone) the hospitals before asking the police to look for him.

II.

1. Where is Ann? - She is busy (do) her homework. 2. Let's go for a swim. - What about (go) for a drive instead? 3. I intended to go to the cinema yesterday, but my friend told me the film wasn't worth (see). 4. Try to forget it; it isn't worth (worry) about. 5. When I came he was busy (write) a letter to his friend. 6. Do you feel like (go) to a film or shall we stay at home? 7. It's no use (have) a bicycle if you don't know how to ride it. 8. It's no use (ask) children to keep quiet. They can't help (make) noise. 9. Mr Shaw is very busy (write) his memoirs. 10. There are people who can't help (laugh) when they see someone slip on a banana skin. 11. I didn't feel like (work) so I suggested spending the day in the country. 12. What about (buy) double quantities of everything today?

III.

1. My father thinks I am not capable of (earn) my own living. 2. I am tired of (do) the same thing all the time. 3. I tried to convince him that I was perfectly capable of (manage) on my own, but he insisted on (help) me. 4. There was no way of (get) out of the building. 5. He didn't leave the house because he was afraid of (meet) someone who would recognize him. 6. I called at his house on the chance of (see) him. 7. There is no point in (remain) in a dangerous place if you can't do anything to help the people. 8. What's your idea of (do) it? 9. He expects me to answer by return but I have no intention of (reply) at all. 10. I'm not used to (drive) on the left. 11. I want to catch the 7 a.m. train tomorrow. - But you are no good at (get) up early, are you?

IV.

1. By (neglect) to take ordinary precautions he endangered the life of his crew. 2. After (hear) the conditions he decided not to enter for the competition. 3. After (walk) for three hours we stopped to let the others catch up with us. 4. Don't forget to lock the door before (go) to bed. 5. Why did you go all round the field instead of (walk) across it? 6. He surprised us all by (go) away without (say) "Good-bye". 7. Before (give) evidence you must swear to speak the truth. 8. She rushed out of the room without (give) me a chance to explain.

Ex. 5. Open the brackets using the Gerund.

Model: His hair is very long, it needs *cutting*.

1. This shirt is quite clean; it doesn't want (wash) yet. 2. The grass in the garden is very dry; it wants (water) badly. 3. The baby's crying; I think he needs (feed). 4. The house is old, and it badly wants (paint). 5. The windows are very dirty; they need (clean). 6. I know my hair wants (cut) but I never have time to go to the hairdresser's. 7. The famous man didn't need (introduce) himself. 8. Her shoes have a hole in them; they want (mend). 9. The floor is covered with dust; it needs (sweep). 10. You should tidy the room. - Yes, it needs (tidy). The flowers want (water), and the shelves want (dust).

Ex. 6. Open the brackets using the correct form of the Gerund.

1. He remembered (cross) the road, but he didn't remember (knock down). 2. I am still hungry in spite of (eat) four sandwiches. 3. He got into the house by (climb) through a window, without (see) by anyone. 4. He woke up at 7 a.m. in spite of (work) late. 5. He complained of (give) a very small room at the back of the hotel. 6. The little girl isn't afraid of dogs in spite of (bite) twice. 7. The baby went to sleep a few minutes after (feed). 8. The little girl never gets tired of (ask) her mother questions, but her mother often gets tired of (ask) so many questions. 9. Mary was pleasantly surprised at (choose) to fill that vacancy. 10. I always treat people politely and I insist on (treat) politely. 11. The boy was very thirsty in spite of (drink) a big cup of tea.

Ex. 7. Fill in the blanks choosing between the Infinitive or Gerund of the verb in brackets.

I.

1. I wished ... quite fair, (be) 2. I expected ... him in the drawing room, (find) 3. I enjoyed ... to her talk of her youth, (listen) 4. Roger promised ... in. (look) 5. I wanted ... him up. (cheer) 6. She didn't mind ... the problem again, (discuss) 7. He didn't hesitate ... such methods, (employ) 8. We arranged (meet). 9. She couldn't resist... such a lovely hat. (buy) 10. Last week you mentioned ... him in the park, (meet) 11. We can't afford ... our time, (waste) 12. He sat there sullenly and refused ... (answer) 13. He stopped ... and went into the bathroom, (whistle) 14. You certainly mustn't miss... this wonderful film, (see)

II.

1. He enjoyed ... (to need) 2. Willy began ... softly, (to whistle) 3. In my experience most people mind ... at. (to laugh) 4. I don't suppose your wife wants

... with me now. (to bother) 5. I knew that Charles had regretted ... me. (to invite) 6. He pretended ... when his mother came into his room to look at him. (to sleep) 7. He pretended not... as if the compliment were purely formal, (to hear) 8. He prefers ... by the name of John Brown, (to know) 9. I don't like ... with, (to interfere) 10. I set about... all the names from the diary, (to erase) 11. Bob asked ... to a room where he could wash and change his clothes, (to show) 12. I disliked ... Harry, (to call) 13. We stopped in front of the dance hall and pretended ... inside, (to look) 14. Maurice sat on the bench, with the picture on his knee, as though he would not risk... from it. (to part) 15. I didn't want..., his feelings, (to hurt)

Ex. 8. Replace the *italicised* parts of the sentence or clauses by gerundial phrases.

Model: He said all this *and he did not even smile*.

He said all this *without even smiling*.

1. We suspected *that the boy was lying*. 2. *Nobody could tell* when they were going to return. 3. She did not *wish to make* an effort. 4. *It is necessary to brush* the coat. 5. *It was impossible to reason with her* when she felt like this. 6. She was very clever, *she could turn* an old dress into a new one. 7. He wouldn't say whether he meant to buy the car *before he took* it for a trial run. 8. Let's go out for dinner. *I don't feel well enough to cook anything*. 9. I don't like the idea *that I should do it all*.

Ex. 9. Replace the parts in bold type by gerundial phrases.

1. When she saw him she stopped reading at once and put the letter away *and even did not explain anything*. 2. In this thick fog she was afraid *that she might be knocked down*. 3. He preferred to keep silent for fear *that he might say something inopportune*. 4. He felt much better *after he had been operated on*. 5. *He was not only the author of brilliant short stories*, but he was also a talented playwright. 6. *When he had written his report*, he remembered that he had forgotten to mention some facts. 7. Once he gets into his head an idea of doing something, *it is impossible to talk him out of it*. 8. *When the girl entered the room*, she glanced a little wonderingly at the faces of the three men. 9. The whole neighbourhood was so dreary and run-down that he hated the thought that *he would have to live there*. 10. You will do nothing but irritate him *if you will nag him all the time*. 11. *That I was on the spot* was a bit of luck for him. 12. Samuel Griffiths came back from Chicago on this particular day, *after he had concluded several agreements there*.

Ex. 10. Complete the following by translating what is given in brackets using the Gerund. Insert prepositions where necessary.

I.

1. They prided themselves ... (що першими винайшли цей прилад). 2. They accused him ... (у тому, що він зрадив своїх друзів). 3. I can't recall ... (щоб мене з ним когда-нибудь знайомили). I even don't remember... (що бачив його). 4. He couldn't get used ... (до лівобічного руху/водити машину по лівій стороні). 5. She was quite unconscious ... (що прийшла в невдалий момент). 6. Excuse me ... (що я увійшов не постукавши). 7. I'm really ashamed ... (що так поведився на вечері). 8. She denied ... (що обіцяла заглянути до нас). 9. We hope he will succeed ... (знайти своє місце в житті). 10. Why do you avoid ... (дивитися на мене)?

II.

1. From the age of four, I had been used to ... (робити все по-своєму). 2. I was not used to ... (коли мене розважають пані (entertain)). 3. How proud I was of... (що винайшов цей чудовий пристрій). 4. I was tired of always ... (носити чужий одяг). 5. In the morning she was ashamed of herself for... (що була така груба учора увечері). 6. He's merely used to ... (що за ним доглядають). 7. He was grateful to Finch for... (що умовив його зайти). 8. But they are used to ... (мати справу із справжніми бізнесменами (to deal)). 9. She wasn't fond of... (задавати безліч питань). 10. At the time I was very keen on ... (отримати власний дохід).

Ex. 11. Translate the sentences using the models.

*Model 1: mind/like/hate/avoid **doing** smth*

1. Я не міг уникнути розмови з нею. 2. Я не заперечую, що допомагаю їм. 3. Я не можу виправдати його роботу на конкуруючу (rival) фірму. 4. Терпіти не можу чекати. 5. Варто це читати? 6. Я страшенно не люблю витратити час даремно. 7. Вона нічого не мала проти того, щоб зайти ще раз. 8. Він уникав висловлювати свою думку. 9. Мені так неприємно залишати тебе тут.

*Model 2: way/intention/purpose/difficulty of **doing** smth*

1. Це хороший спосіб уникнути відповіді. 2. У нього не було анінайменшого наміру обманювати вас. 3. У мене і думки не було дозволити їй залишитися. 4. Він приїхав сюди з метою допомогти вам. 5. Наші шанси отримати обід були дуже малі. 6. Тут переходити річку не

небезпечно. 7. Шкоди в тому не буде, якщо ми скажемо йому правду. 2. У неї була звичка лягати спати рано. 9. У мене не було можливості поговорити з нею про це. 10. Не буде ніякої труднощі в тому, щоб знайти місце, де зупинитися.

Model 3: think of/object to **doing** smth

1. Я не звикла готувати собі сніданок. 2. Нарешті мені вдалося знайти дорогу. 3. Він наполягав на тому, щоб сплатити рахунок за обід. 4. Ми вибачилися за запізнення. 5. Я думаю про поїздку до Америки цього літа. 6. Він подякував їм за те, що його вислухали. 6. Ми розраховуємо закінчити в строк. 8. Вона наполягала, щоб їй показали усе. 9. Ви підозрюєте, що я вам брешу? 10. Його звинуватили в крадіжці автомобіля.

on after before by through (because of) without in spite of	doing smth
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1. Він працює без зупинки цілий день. 2. Ти нічого не доб'єшся, якщо заперечуватимеш. 3. Усе це потрібно обговорити до того, як приймати рішення. 4. Ви можете виправити фігуру, роблячи гімнастику. 5. Він дасть відповідь, порадившись зі своїм юристом. 6. Він пройшов мимо, не помітивши нас. 7. Він втратив можливість поїхати туди, тому що захворів. 8. Не робіть цього, не обдумавши все як слід.

Ex. 12. Translate the following into English using Gerunds after the verbs in brackets. Fill in prepositions where necessary.

1. Я не звинувачую тебе за те, що тобі так хочеться поїхати з міста, (to blame) 2. Тоді я запідозрив його в тому, що він мене дратує, (to suspect) 3. Нам було не важко працювати разом, (to have no difficulty) 4. Він наполягав на тому, щоб навчити її працювати на РС. (to insist) 5. Не було нічого, що могло б перешкодити йому повернутися в Лондон, (to prevent) 6. Він вибачився, що не прийшов вчасно, (to apologize) 7. Мені вдалося змусити

Енн говорити, (to succeed) 8. Батько часто звинувачував мене в тому, що я ставлюся до будинку як до готелю, (to accuse) 9. Вона наполягла на тому, щоб заплатити за таксі, (to insist) 10. Ден умовив Белу залишитися на обід, (to talk into) 11. Лікар розпочав з того, що виміряв його пульс, (to begin) 12. Він наполіг на тому, щоб Ганну негайно запросили сюди, (to insist) 13. Я запитав його, як йому подобається бути батьком, (to feel about) 14. Як ти пояснив купівлю цього автомобіля? (to account) 15. Він докоряв собі за те, що не спробував поговорити з нею. (to reproach)

Ex. 13. Translate the following into English using Gerunds after the adjectives in brackets. Fill in prepositions where necessary.

1. Я гордився тим, що працював з ним тоді, (proud) 2. Я знав, що він не здатний так вчинити, (capable) 3. Лікар звик вислуховувати всяких людей, (used) 4. Мені шкода, що я тоді заподіяв вам так багато занепокоєння, (sorry) 5. Я більше ніж ти, зацікавлений в тому, щоб знайти її. (interested) 6. Я упевнений, що ти цілком здатний розв'язати цю проблему, (capable) 7. Мені набридло намагатися робити те, що мені не подобається, (tired) 8. Мені шкода, що я змушую Вас чекати, (sorry) 9. Я був трохи розчарований тим, що не зустрів Чарльза, (disappointed) 10. Я так задоволена, що мене обрали для виконання цієї місії, (pleased) 11. Він відповідає за утримання саду і гаража в порядку, (responsible) 12. Він любив сміятися над тими, хто був боязкий (fond)

Verbs	Gerund	Infinitive
begin - починати start - починати, братися за що-небудь stop – зупинятися, припиняти cease – припиняти, призупиняти continue - продовжувати like (love) - подобатись dread - страшитися, боятися, побоюватися loathe - відчувати відразу, ненавидіти hate - ненавидіти, не	<i>a. The predicate indicates an activity or process (but the infinitive is also possible).</i> She <i>began crying</i> (to cry). When did you <i>begin learning</i> (to learn) English? <i>artaining.</i> He <i>stopped smoking</i> on his doctor's advice. (= He	<i>a. The predicate denotes a state of mind or mental activity.</i> I <i>began to feel</i> dizzy. He <i>began to realize</i> that he had made a mistake. <i>b. The grammatical subject is lifeless.</i> He <i>stopped to smoke</i> . (= in order to smoke)

<p>хотіти, випробовувати незручність remember - пам'ятати, нагадування ("не забудь") forget - забувати regret - жалкувати try - намагатися, старатися prefer - вважати за краще be afraid (of) - боятися</p>	<p>doesn't smoke anymore)</p>	<p>The old German Empire <i>ceased</i> to exist in 1918.</p>
	<p>The factory has <i>ceased</i> making bicycles.</p>	
	<p>How long will you <i>continue</i> working?</p>	<p>He <i>continued</i> to live with his parents after his marriage.</p>
	<p>I <i>like</i> cooking (= enjoy in</p>	<p>I like to cook my meals.</p>
	<p>general)</p>	<p>(= find it good or right)</p>
	<p>I dread having to visit the dentist.</p>	<p>I dread to think what may happen.</p>
	<p>He <i>loathes</i> travelling by air. (in general)</p>	<p>I loathe to have to put up here, (in particular)</p>
	<p>She <i>hates</i> getting to the theatre late.</p>	<p>I hate to trouble you. (= regret)</p>
	<p>I <i>remember</i> posting your letter. (= have a memory of the act)</p>	<p>He remembered to post the letter. (= didn't forget to do it)</p>
	<p>I <i>forgot</i> calling you the the day before. (about the past action)</p>	<p>Don't <i>forget</i> to call me tomorrow. (the action occurs at the same time or <i>later</i>)</p>
	<p>I regret saying (having said) that you were mistaken. (the action occured <i>earlier</i> in time)</p>	<p>I regret to say that you were mistaken. (= I am sorry that I <i>now</i> tell you...)</p>
	<p>Try knocking at the back</p>	<p>Try to get here early.</p>

	<p>door if nobody hears you at the front door. (= do smth as an experiment)</p> <p>I <i>prefer</i> walking to cycling. (in general)</p> <p>I don't like dogs. I'm always <i>afraid of</i> being bitten. (= there is a possibility smth bad will happen)</p>	<p>(= make an effort)</p> <p>I <i>prefer to wait</i> here. (in particular/now)</p> <p>He <i>was afraid to tell</i> his parents that he had broken the window. (= don't want to do smth because it is dangerous or the result might be unpleasant).</p>
	<p>You are afraid to do smth because you are afraid of smth happening as a result.</p> <p>I was afraid to stay in the sun because I was afraid of getting burnt.</p>	

Ex. 14. Translate the following into English using Infinitives or Gerund.

1. Вам щастило, що ви живете в такому красивому місці, (lucky) 2. Її нижня губа тремтіла, немов вона готова була розридатися, (ready) 3. Мама була зайнята приготуванням їжі на кухні, (busy) 4. Він попросився зі мною за руку: "Мені шкода, що доводиться йти", (sorry) 5. Пісню варто було записати на плівку, (worth) 6. Він швидко зміркував, що сталося, (quick) 7. Про цю новину варто було написати його батькові, (worth) 8. Він був дуже задоволений, що застав брата удома, (delighted) 9. Мені було нецікаво (не був зацікавлений в тому, щоб) продовжувати суперечку, (interested) 10. Роботу все ще було важко знайти, і мені не дуже-то таланило перші декілька днів. (hard) 11. Його дружина була в Лондоні. Вона була зайнята тим, що шукала для них нове житло, (busy) 12. Я здивувався, коли мені подзвонив Чарльз, (surprised) 13. Я глибоко поважав її і гордився знайомством з нею. (proud) 14. Я був вільний йти і приходити, коли хотів, (free) 15. Я дуже засмутився, знайшовши його таким хворим, (distressed) 16. Цю людину легко було зрозуміти, (easy) 17. Він був тепер повний рішучості залишитися там. (determined) 18. Цю пропозицію не так легко було прийняти (easy).

VERBS USED WITH THE GERUND AND THE INFINITIVE

There are a few verbs which appear in more than one combination: with the Gerund and the Infinitive. These particular verbs have different patterns associated with meanings.

Would like is followed by the Infinitive. Notice the difference in meaning between I like and I would like. I would like is a polite way of saying I want.

I like playing tennis. (= I enjoy it in general)

I would like to play tennis today. (= I want to play)

We can also use **I would love/prefer/hate + Infinitive**.

Would you prefer to have dinner now or later?

I'd love to be able to travel round the world.

There are some verbs which can be followed by the Gerund or “that-clause”.

Verb	Gerund	“that-clause”
1. admit визнавати 2. report повідомляти 3. deny заперечувати 4. suggest пропонувати	He <i>admitted</i> <u>having done</u> wrong. He <i>reported</i> <u>having seen</u> the escaped convict. He <i>denied</i> <u>knowing</u> anything about the plan. I <i>suggest</i> <u>going</u> home.	He <i>admitted</i> (that) he had made the same mistake again. It is <i>reported</i> that the expedition has already come back. I <i>denied</i> (that) the statement was true. I suggested <i>that</i> he should see a specialist immediately.
5. acknowledge допускати, признавати 6. anticipate, foresee очікувати, передбачати 7. fancy подобатись, уявляти, уявляти собі 8. imagine уявляти	He <i>acknowledged</i> <u>having been frightened</u> . We didn't <i>anticipate</i> <u>being treated</u> like that. She <i>didn't fancy</i> <u>going out</u> . (= like the idea) I can't <i>imagine</i> <u>marrying</u> a girl of that sort. (= form a picture in the mind)	He refused to <i>acknowledge</i> that he had been defeated. The directors <i>anticipated</i> that demand would fall. I <i>fancy</i> that he is in for a disappointment. (= get the idea) Don't <i>imagine</i> that I can lend you money every time you need it. (= get the idea)

With a number of verbs and word-groups both the Gerund and the Infinitive can be used. There is no change in meaning. They can also be followed by a “that-clause”.

1. love любити	She <i>loves</i> having/to have a lot of dogs and young men her.
2. regret жалкувати	I <i>regret</i> being unable to help you. He <i>regretted</i> to have said that. I <i>regretted</i> that I couldn't help.
3. intend мати намір. планувати	What do you <i>intend</i> doing/to do today? We <i>intended</i> that they should do it. (= have in mind as a plan)
4. forget забувати	I shall never <i>forget</i> hearing Chaliapin in that part. He <i>has forgotten</i> to pay me. Did you <i>forget</i> that I was coming?
5. propose пропонувати	I <i>propose</i> starting early/ to start early/that we should start early.

EXERCISES

Ex. 15. Your friend has some problems and you have to be helpful. Write questions with try.

Model: I can't find anywhere to live, (put an advertisement in the newspaper)
Have you tried putting an advertisement in the newspaper?

1. My electric shaver is not working, (change the batteries)
2. I can't contact Fred. He is not at home, (phone/at work)
3. I can't sleep at night, (take sleeping pills)
4. The television picture is not very good, (move the aerial)

Model: - Why do you never fly? (hate)
- I hate flying.

1. Why do you always wear a hat? (like)
2. Why does Ann watch TV so often? (enjoy)
3. Why do you never go to the cinema? (not/like)
4. Why does Jack take so many photographs? (like)
5. Why don't you work in the evening? (hate)

Ex. 17. Put the verb into the correct form: -ing or to - Infinitive.

1. Do you mind (travel) such a long way to work every day?
2. Ann loves (cook) but she hates (wash) up.
3. I can't stand people (tell) me what to do when I'm driving.
4. I don't like that house. I would hate (live) there.
5. Do you like (drive)?
6. When I have to catch a train, I'm always worried about missing it. So I like (get) to the station in plenty of time.
7. I very much enjoy (listen) to classical music.
8. I would love (come) to your wedding but it just isn't possible.
9. Sometimes I'd like (learn) to play the guitar.

Ex. 18. Read each situation and use the words in brackets to write your sentence.

Model: The streets are unsafe at night, (I/afraid/go out/alone)

I am afraid to go out alone.

1. I don't usually carry my passport with me. (I/afraid/lose/it)
2. The sea is very rough, (we/afraid/go/swimming)
3. We rushed to the station, (we/afraid/miss/our train)
4. I didn't tell Tom that I thought he behaved foolishly. (I /afraid/hurt/his feelings)
5. In the middle of the film there was a horrifying scene, (we/afraid/look)
6. The glasses were very full, so Ann carried them very carefully, (she/afraid/spill/the drinks)
7. I didn't like the look of the food in my plate, a) (I /afraid/eat/it); b) (I/afraid/make/myself/ill)

Ex. 19. There are a few verbs which can take a Gerund or an Infinitive, but the meaning is not the same. Use Gerunds or Infinitives in place of the verbs in brackets.

I.

1. We saw this film last month. Do you remember (see) it?
2. He was very forgetful. He never remembered (lock) the garage door when he put the car away.
3. Don't ask me to pay the bill again. I clearly remember (pay) it a month ago.
4. Did you remember (buy) bread for dinner? - Yes, I have the bread here.
5. Do you remember (post) the letter? - Yes, I remember quite clearly; I posted it in the letter-box near my gate.
6. Did you remember (air) the room? - No, I didn't. I'll go back and do it now.
7. She remembers part of her childhood quite clearly. She remembers (go) to school for the first time and (play) with Dick in

the garden. 8. Did you remember (give) him the message? - No, I didn't. I'll go and do it now.

II.

1. She forgot (bring) the sugar; she left it on the kitchen table. 2. Where is my dictionary? Have you forgotten (borrow) it a fortnight ago? 3. She often told her little boy, "You must never forget (say) "please" and "thank you"." 4. Why are you late again? Have you forgotten (promise) me that you would never be late again?

III.

1. Do stop (talk); I am trying to finish a letter. 2. I didn't know how to get to your house so I stopped (ask) the way. 3. We stopped once (buy) petrol and then we stopped again (ask) someone the way.

Ex. 20. Complete the sentences with the Gerund or the Infinitive of the verbs in brackets, using the correct form of any pronouns that are included.

1. If the Government's wages policy is to succeed, they must try (keep) prices in check.
2. The shareholders all think they know what should be done, but the board still needs (convince).
3. Let's invite him. I'm sure he would love (come).
4. Someone in the office had made a mistake, and the firm regretted (cause) the customer inconvenience.
5. We plan (take) our holidays abroad this year.
6. The teacher doesn't permit (smoke) during the lessons.
7. I vaguely remember (he, say) something like that.
8. Come over here! I'd like (you, see) this.
9. I always try (be) punctual, but I don't always succeed.
10. It's a tricky problem. I recommend (you, consult) an expert.
11. He'd prefer (you, go) to his place, if that's convenient.
12. For the second time this year Miss Black will attempt (swim) the Channel in less than five hours.
13. A child should start (learn) a language at primary school.
14. The film was so terrifying that she could hardly bear (watch) it.
15. The new committee member did not venture (speak) at his first meeting.
16. They began (drive) at six in the morning, and were still on the road ten hours later.
17. He remembered (pass) on most of the information, but omitted (mention) one or two of the most important facts.

18. The reporters asked many questions which the Prime Minister declined (answer).

THE GERUNDIAL CONSTRUCTION

In the examples discussed the subject of the main verb is also the subject of the Gerund, but there are cases when the Gerund is related to its own “subject”, expressed by a noun or pronoun.

We appreciate your helping us.

Ми (високо) цінуємо вашу допомогу (те, що ви допомогли).

We enjoyed the band's playing very much.

Нам дуже сподобалося як грав оркестр.

A gerundial construction is nearly always rendered in Ukrainian by a clause, generally introduced by “*те, що*”/“*тум, що*”/“*як*”.

The nominal element of the construction can be expressed in different ways:

1. If it denotes a living being it may be expressed by a possessive pronoun or a noun in the possessive case.

Do you mind **my** *smoking*?

Our talk was prevented by **Richard's** *coming* back.

When the nominal element consists of two or more nouns, possessive case is not used.

I object to Mary and Jane *going out* on such a windy day.

2. If the nominal element denotes a lifeless thing it is expressed by a noun in the common case.

I said something about my clock *being* slow.

Her thoughts were interrupted by the door *opening* gently.

Ex. 21. Translate the sentences from English into Ukrainian.

1. We appreciate John's helping us. 2. I can't imagine my mother approving it. 3. They resented my winning the prize. 4. I think that's enough to start her worrying. 5. I can't excuse her not answering our invitation. 6. I can't bear his interfering with what I do. 7. Would you mind my smoking? 8. Fancy her appearing at that very moment! 9. I really miss his playing the piano in the evening. 10. Excuse my asking, but does everyone in your family approve of your flying? 11. Your coming has done him good. 12. I wonder at Jolyon's allowing the engagement. 13. I understand perfectly your wanting to leave. 14. I didn't object to other people being there.

Ex. 22. Match the parts of sentences in A and B columns.

- | | |
|------------------------------------|--|
| 1. We very much appreciate | |
| 2. He strongly denied | |
| 3. We enjoyed | |
| 4. The chairman suggested | |
| 5. I agreed to delay | |
| 6. He should consider | |
| | |
| a. my leaving till next day. | |
| b. their meeting that afternoon. | |
| c. her taking more responsibility. | |
| d. the band's playing very much. | |
| e. our postponing the question. | |
| f. your helping us. | |

Ex. 23. Study the sentences, paying special attention to the *italicized* pronouns and nouns followed by Gerunds.

1. I'm not very friendly with him, so I was surprised by *his* **asking** me to dinner. 2. The thieves broke into the shop without *anyone* **seeing** them. 3. He doesn't mind his *daughter* **going** to the cinema once a week. 4. It is difficult to stop *George* **talking** once he begins.

Ex. 24. Write the following sentences again, using Gerunds.

Model 1: The children are making such a noise.

Can you stop *them making* such a noise?

Model 2: Students must write their corrections carefully. The teacher insists on

The teacher insists on the students' writing their corrections carefully.

1. I told you that my watch was five minutes slow. Have you forgotten ...? 2. He allows his son to drive his car. He doesn't mind 3. No one helped her with her homework. She did her homework without.... 4. He got my letter although I had addressed it wrongly. He got my letter in spite of.... 5. I beat him at tennis, and he wasn't pleased at all. He hated 6. Did you give me back the book I lent you? I can't remember.... 7. She was afraid that the baby would fall out of the bed. She was afraid of.... 8. The old lady said I could open the window. She didn't mind 9. I'm sure he asked you not to phone after 11 p.m. Have you forgotten ... ? 10 He doesn't believe that a boy of twelve should have too much pocket-money. He doesn't believe in 11. My father doesn't like me to stay out late at night. He doesn't like

Ex. 25. Translate the sentences from Russian into English using gerundial phrases.

1. Я чув про те, що він призначений директором великого заводу. 2. Я не заперечую проти того, щоб вони приїхали сюди. 3. Я пам'ятаю, що він мені говорив про це кілька днів тому. 4. Я наполягаю на тому, щоб ви відповіли їм негайно. 5. Я чув про те, що його посилають на південь. 6. Ви можете розраховувати на те, що він дасть вам точну інформацію. 7. Немає надії, що він закінчить свою роботу до вечора. 8. Даруйте, що я подзвонив вам учора так пізно. 9. Ви не заперечуєте проти того, щоб я прочитав цю розповідь вголос? 10. Ви нічого не маєте проти того, щоб я палив тут? 11. Ми наполягали на тому, щоб вони почали переговори негайно. 12. Він заперечує проти того, щоб збори були призначені на понеділок. 13. Ви нічого не маєте проти того, щоб він зайшов до вас сьогодні? 14. Доктор наполягає на тому, щоб він провів осінь на півдні. 15. Він відповідає за те, щоб робота була закінчена вчасно.

THE GERUND AND THE VERBAL NOUN.

The Gerund can be easily confused with the verbal noun. In some cases it is impossible to tell whether you are dealing with a gerund or with a verbal noun

and consequently impossible to translate the sentence with any degree of exactness. The meaning is not the same.

I like singing

Я люблю *cnivamu*, (if it is a gerund)

Я люблю *cniv*, (if it is a noun)

Only the person speaking knows in this case what he means. In most cases we can distinguish between the gerund and the verbal noun in the following way:

THE GERUND:

1. has tense and voice forms; so the forms *being done, having done, having been done* cannot be nouns;
2. can take a direct object; so an “-ing” form followed by a direct object (*reading a letter*) cannot be a noun;
3. can be modified by an adverb; so an “-ing” form modified by an adverb (*reading fast*) cannot be a noun;
4. can be part of an aspective verbal predicate; so “-ing” forms following the verbs *to begin, to stop, to go on, to keep, to continue* are mostly gerunds.

THE VERBAL NOUN:

1. can be used in the plural:
Memorize the proverbs and sayings.
2. can have an article:
the banging of the door
3. can be followed by a prepositional phrase in an attributive function:
the clicking of the clock
4. can be modified by an adjective, a demonstrative pronoun or an indefinite pronoun.

EXERCISES

Ex. 26. Find the sentences in which: a) “-ing” form is a gerund, b) a verbal noun.

1. You should think before speaking. 2. After finding the new word in the dictionary, I wrote it down and went on reading. 3. He spent much time on the copying of his literature lectures. 4. What do you mean by saying that? 5. The students found the reading of English newspapers rather difficult at first. 6. Instead of going home after school, the girls went for a walk. 7. Chalk is used for writing on the blackboard. 8. We sat by the river-side listening to the running of the water. 9. The cleaning of the room was done by the girls. 10. Working in

the garden is very good for the health of people. 11. I stopped knocking at the door and began waiting for my father to come. 12. She praised herself for having come. 13. The child stopped crying and quieted down. 14. The old clock kept ticking on the mantelpiece, as if counting the seconds left before the coming of daylight.

Ex. 27. Analyse the “-ing” forms in the sentences below. State which of them are gerunds and which verbal nouns. Motivate your decision.

1. She read the first act between a fitting and a rehearsal, made up her mind to play Kate and there was no persuading her that the part was too young for her. 2. The whirring and banging of the lift kept her awake most of the night. 3. She kept repeating the bright sayings of her children to bored friends and relations. 4. She insisted on my showing her the letter and explaining who Pat was. 5. On getting home she felt so faint and exhausted that she went to bed without taking off her make up and creaming her face. 6. On being told to her face that she was a liar and a schemer Polly felt like giggling and restrained herself with difficulty. 7. She broke the fastening of the purse in her hurry to get the papers out. 8. She looked with distaste at the toilet table. Dust, spilt powder and hair combings everywhere. 9. You have never learned the way of treating children kindly but without undue familiarity. 10. She promised to send me the cutting the moment she found it. 11. I could just see a faint glimmering of light in the distance. 12. For some time she said nothing and we could only hear the clicking of her false teeth - a certain sign of growing irritation. 13. On being asked what her plans were she gave a most evasive answer. 14. She lost this job through falling ill at the wrong time. 15. Her first big part was Catherine in “The Taming of the Shrew”.

REVISION

Ex. 28. Fill in prepositions where necessary.

1. Your colleagues are good ... keeping a secret, aren't they? 2. You seem very fond ... saying things behind my back. 3. You seem upset... losing Jones. 4. The man of letters is accustomed ... writing. 5. Mrs Attley was very skilful... directing the table talk away from her daughter. 6. I don't say I'm proud ... cheating him out of 300 dollars. 7. I saw quite clearly the benefit I was capable ... getting from travel. 8. He is usually fairly careful... making his statements. 9. I'm sick ... doing things for you. 10. But he was slow ... replying. 11. He is quite excited ... being among us again. 12. It was five minutes later than my usual bedtime and I felt guilty ... being still up. 13. She was quick ... finding out things. 14. Dolly seemed relieved ... not having to make a scene. 15. I tried to be as nice as possible ... refusing. 16. He selected a dingy little place where he felt sure ... not meeting any acquaintances.

Ex. 29. Open the brackets using the gerund of the given verb.

I.

1. The matter is not worth (to speak of). 2. On (to introduce) they easily fell to (to talk). 3. Why do you avoid (to see) me? He tried to avoid (to see). 4. We insist on (to send) him there at once. He insists on (to send) there instead of me. 5. Do you mind (to examine) the first? 6. He showed no sign of (to know) them. She showed no sign of (to impress). 7. I was annoyed at (to interrupt) every other moment. 8. In (to discuss) the problem they touched upon some very interesting items. 9. The equipment must go through a number of tests before (to install). 10. He hated (to remind) people of their duties or (to remind) of his. 11. The operator can set the machine in motion by (to push) the button or (to press) the pedal. 12. The water requires (to filter).

II.

1. Excuse me for (to give) you so much trouble. 2. You never mentioned (to speak) to them on the subject. 3. He was proud of (to award) the prize. 4. I don't remember ever (to see) you. 5. I don't remember (to ask) this question. 6. The boys were punished for (to break) the window. 7. The boy was afraid of (to punish) and hid himself. 8. He was quite serious in (to say) that he was leaving the place for good. 9. She seemed sorry for (to be) rude to me. 10. He confessed (to forget) that he was to come on Friday. 11. The old man could not stand (to make) fun of. 12. Letters were no use: he had no talent for (to express) himself on paper. 13. After (to examine) thoroughly by the doctor, the young man was admitted to the sports club. 14. Soon she could not help (to attract) by the fact that she was being looked at. 15. The camera wanted (to adjust). 16. They accused me of (to mislead) them. 17. She was so eagerly looking forward to (to give) the leading part to play that she was greatly disappointed at not even (to offer) it.

Ex. 30. Choose between the infinitive and the gerund as the object to an adjective in the following sentences:

I.

1. Words have weight, sound and appearance; it is only by considering these that you can write a sentence that is good ... at and good ... to. (to look, to listen). 2. I was busy ... to figure out whether he had told me the truth, (to try) 3. His brother's emotion was not easy.... (to discern) 4. His proposition was worth

(to consider) 5. Everyone in this room is competent... an opinion, (to express) 6. The picture is definitely worth (to buy) 7. You see, a lot of us are prone ... it. (to forget) 8. The girl was very wise ... their advice, (to take) 9. He was busy ... on the new play, (to work) 10. I was fascinated ... the two of them together, (to watch)

II.

1. It came as a shock to me ... that he had left his wife, (to realize) 2. I laughed. It made me feel good ... that someone else felt the same way about it as I did. (to know) 3. It didn't serve any purpose ... why Marion had decided to be friends with me. (to analyse) 4. No one has any influence over him when it comes to ... his actions, (to decide) 5. It is against the law in the country... a revolver, (to carry) 6. When it came to ... you talk about the war, I felt like a child, (to hear) 7. It amazed me ... that Pat not only understood his arguments but shared them, (to feel) 8. Our hostess made it a point never... wives with their husbands, (to ask)

Ex. 31. Translate the sentences from Ukrainian into English.

I.

1. Я не хочу сперечатися. 2. Він продовжував палити, не кажучи ні слова. 3. Я не бачила сенсу в тому, щоб продовжувати цю розмову. 4. Марно обговорювати це питання. 5. Я була проти поїздки туди із самого початку. 6. План потребує доопрацювання. 7. У неї не було надії коли-небудь поїхати до Самарканду. 8. Одними розмовами результатів не отримаєш. 9. Тепер назад вже не повернути. 10. Ми подякували йому за те, що він прийшов нас зустріти. 11. Вона не пропускає жодної можливості поговорити англійською. 12. Навчитися говорити на мові можна тільки, якщо багато говорити. Тільки читати недостатньо. 13. Хто за те, щоб запросити її?

II.

1. Я заперечую проти того, щоб ви завершили це дослідження. 2. Ви не будете проти, якщо я відчиню двері? 3. Нещодавно він кинув палити. 4. Я добре пам'ятаю, що зустрів його п'ять років тому. 5. Спробуйте бігати вранці (jog). Ви відчуєте себе набагато краще. 6. Я люблю читати. Читання - моє найулюбленіше заняття. 7. Перестаньте розмовляти. Я абсолютно не чую лектора. 8. Ми зупинилися, щоб розглянути вітрину. 9. Я запропонував поїхати туди на машині, але мої друзі не погодилися. 10. Як

щодо того, щоб піти в кіно? 11. Уникайте читати при поганому освітленні! 12. Безглуздо давати йому поради, він все одно не бере їх до відома. 13. Машина дуже брудна; її необхідно вимити. 14. Даруйте, що запізнився. 15. Я зовсім не мав наміру сьогодні йти в кіно. 16. Дитина йшла дуже обережно: вона боялася впасти. 17. Перед від'їздом на південь не забудьте мені подзвонити. 18. Чому ви пішли туди пішки замість того, щоб поїхати на автобусі? 19. Усі діти люблять, щоб їх водили в цирк. 20. Він зайнятий підготовкою до доповіді, у нього зараз дуже мало вільного часу.

Ex. 32. Translate the following into English using infinitives or gerund forms as direct object:

1. Вона почала плакати, (to begin) 2. Я хотів що-небудь з'ясувати про нього. (to want) 3. Він зовсім прокинувся і був схильний почитати, але єдиною книгою в кімнаті була біблія, (to like) 6. Він безперервно поглядав на годинник і коли він випив чай, він сказав, що повинен повертатися, (to keep) 7. Тепер я починав розуміти дещо. (to begin) 8. Незабаром я перестав бути корисним їм. (to cease) 9. Ден не міг устояти і не показати своєї роботи, (to resist) 10. Навіть у затемненій кімнаті я не міг не бачити, що обличчя місіс Джоунз розпухло від сліз, (cannot help) 11. Увесь той січневий ранок в моєму кабінеті наполегливо дзвонив телефон, (to keep) 12. Я запропонував знайти доктора і привести його до Еда. (to propose) 13. Я не думаю, щоб він згадував про те, що відвідував їх. (to mention) 14. Вони забули запросити мене, (to forget) 15. Я ніколи не забуду, як я гостював у вашому будинку в Кенті, (to forget) 16. Я намагаюся читати (to try) 17. Мені не хотілося залишати його одного в горі і я запропонував відвезти його до себе додому, (to want, to offer) 18. Я відклав лист до нього на завтра, (to put off) 19. Я не міг знести, щоб зі мною поводитися так холодно, (to endure) 20. Вона ніколи не заперечувала проти того, щоб бути однією в котеджі, (to mind) 21. Я серйозно почав писати короткі оповідання, (to set about) 22. Він був радий, що вона потрудилася написати йому. (to take the trouble) 23. Ти пам'ятаєш, як ти доставляв виноградний сік в цей будинок того ранку? (to remember) 24. Ти не забув послати гроші до Лідсу? (to remember) 25. Я вирішив не турбувати Роджера цією справою, (to decide) 26. О, я думаю, вам сподобається жити тут, коли настане літо, (to enjoy) 27. Він пробував вирощувати там картоплю, (to try) 28. Я знав, що він намагається накопичити грошей, (to try) 29. Ми не збираємося проситися піти з вами, (to ask) 30. Я втомився прикидатися, що я пишу або читаю, (to pretend) 31. Мені не хотілося жартувати (to feel like) 32. Я відмовляюся нести відповідальність за твої дії, (to refuse) 33. Він намагався уникнути зустрічі з ким-небудь, кого він знав, (to avoid) 34. Незважаючи на дощ, ми продовжували чекати, (to go on) 35. У ці дні він не

міг дозволити собі спізнюватися, (cannot afford) 36. Хью прочитав в одній американській газеті рецензію на цю книгу і запропонував купити її для їх бібліотеки, (to suggest) 37. Коли я повернувся до будинку, я не забув відчинити вікно, (to remember) 38. Я пам'ятаю, що якось говорив тобі про це, Люїс, (to remember) 39. Можливо, що Моллі пошкодувала, що вона так багато базікала, (to regret) 40. Вона все більше і більше страшилася залишитися однією з дітьми, (to dread) 41. Інші, без метушні, погодилися взяти участь, (to agree) 42. Її друзі обіцяли прислати їй роботу, (to promise) 43. Вона сіла біля каміна і приготувалася розповідати свої новини, (to prepare) 44. Сміти усе улагодили, щоб узяти на себе турботу про дітей (to arrange) 45. Він продовжував наполегливо дзвонити в готель, запитуючи, чи немає для нього яких-небудь повідомлень, (to keep) 46. Ви хочете поглянути на нього? (to see) 47. Він не потурбувався про те, щоб відповісти, (to trouble) 48. Уранці він почав переїжджати до кімнати вниз, (to start) 49. Мешканці цього будинку вважали за краще не цікавитися чужими справами (to prefer)

(From "An English Grammar Practice Book")

Ex. 33. Translate the following into English using infinitives or gerund forms.

1. Коли я прибув, він був зайнятий стрижкою (mow) газону. 2. Доктор наполягає на тому, щоб він провів літо на півдні. 3. Немає ніякої можливості знайти його адресу. 4. Я пам'ятаю, що мене вже запитували про це. 5. Він увійшов до кімнати, не постукавши. 6. Ви не заперечуєте, якщо я палитиму тут? 7. Не забудь подзвонити мені, коли приїдеш в місто. 8. Я терпіти не можу позичати речі у своїх подруг. 9. Я не могла не розсміятися. 10. Я відклав відправку листа. Потрібно перевірити усі ці факти.

Ex. 34. Translate the following into English using infinitives or gerund forms.

1. Його колекцію марок варто подивитися. 2. Я маю задоволення представити вам цього відомого письменника. 3. Я не можу перекласти цей лист, не подивившись декілька слів в словнику. 4. Я не люблю, коли мене проводжають на вокзал. 5. Він не міг не спробувати пояснити, як це сталося. 6. Вона продовжувала умиватися, хоча бачила, що я гніваюся. 7. Марно дзвонити йому, він в цей час ніколи не буває удома. 8. Пробачте, що я знову нагадую про це. 9. Він спробував знайти привід (pretext), щоб піти раніше. 10. Ви повинні упакувати ці пластинки, щоб відправити їх поштою.

Ex. 34. Translate the following into English using infinitives or gerund forms.

1. Шторм перешкодив пароплаву прибути в порт вчасно. 2. Немає ніякої надії скоро отримати від них звістку. 3. Я чув, що ваш син отримав приз за кращу розповідь. 4. Він дуже любив спати на повітрі. 5. Я люблю ремонтувати свою машину самостійно. 6. Ми з нетерпінням чекаємо вашого приїзду. 7. Перед підписанням контракту я порадився з юристом. 8. Він заперечував, що бачив цю людину. 9. Я кинув робити зарядку вранці. 10. Сон на відкритому повітрі дуже корисний.

Ex. 35. Translate the following into English using infinitives or gerund forms.

1. Ви нічого не маєте проти, щоб він зайшов до нас сьогодні? 2. Вона простудилася, оскільки не звикла спати в наметі. 3. Поліція звинуватила його в підпалі (set fire to) будівлі. 4. Я сподіваюся, ви вибачите моє запізнення. 5. Моя робота передбачає зустрічі і переговори з людьми. 6. У мене немає причин ненавидіти цю людину. 7. Після складання іспитів я поїхав до своїх батьків. 8. Коли ви закінчите одягатися? Адже ми можемо запізнитися. 9. Переходити річку в цьому місці небезпечно. 10. Перш ніж писати про ці події, він вирішив з'їздити в ті місця, де вони відбувалися.

Ex. 36. Translate the following into English using infinitives or gerund forms.

1. Мій друг наполіг на тому, щоб сплатити рахунок. 2. Я пам'ятаю, що говорив про це кілька днів тому. 3. Я намагався згадати, де я зустрічав цю людину. 4. Яка мета вашого приїзду сюди? 5. Я не люблю, коли мені читають вголос. 6. Він вийшов із залу, не чекаючи закінчення спектаклю. 7. Не покладайтесь на те, що дістанете квитки перед відправленням потягу, замовте їх заздалегідь. 8. Його досвід водіння машини згодиться йому в майбутньому. 9. Секретар зараз зайнята передруком листів. 10. Сперечатися з ним - тільки даремно втрачати час.

Ex. 37. Translate the following into English using infinitives or gerund forms.

1. Немає сенсу робити перерву. Роботи дуже мало. 2. Він наполягав на тому, щоб товари були упаковані в ящики (case). 3. Він не виносить, коли йому брешуть. 4. Він розпочав з розповіді про те, як знайшов нас. 5. Він ніяк не міг звикнути до думки, що йому доведеться залишитися там ще на

півроку. 6. Забудьте про це, не варто через це так засмучуватися. 7. Вона не заперечує, щоб ви були присутніми на її уроці. 8. Він ніколи не згадував, що зустрічався з вами в Лондоні. 9. Залишалося дуже мало надії знайти його. 10. Дощ припинився.

Irregular Verbs

arise	arose	arisen	виникати, з'являтися
awake	awoke	awoke/awoked	прокидатися; будити, пробуджуватися
be	was, were	been	бути; бувати
bear	bore	borne/born	носити; переносити, родити, народжувати
beat	beat	beaten	бити
become	became	become	ставати; робитися; перетворюватися
begin	began	begun	починати(ся)
bet	bet/betted	bet/betted	битися об заклад
bind	bound	bound	зв'язувати
bite	bit	bitten	кусатися
bleed	bled	bled	кровоточити; проливати кров
blow	blew	blown	дути
break	broke	broken	ламати(ся); розбиватися
breed	bred	bred	породжувати; розводити
bring	brought	brought	приносити, проводити
broadcast	broadcast	broadcast(ed)	передавати по радіо
build	built	built	будувати, споруджувати
burn	burn/burned	burnt/burned	палити, спалювати
burst	burst	burst	розривати, вибухати
buy	bought	bought	купувати

cast	cast	cast	кидати
catch	caught	caught	ловити
choose	chose	chosen	вибирати; відбирати
come	came	come	приходити; приїжджати
cost	cost	cost	коштувати
cut	cut	cut	різати, розрізувати
dare	dared	dared	сміти, наважуватися
deal	dealt	dealt	мати справу; займатися
dig	dug	dug	копати, рити
do	did	done	робити, виконувати
draw	drew	drawn	тягти; креслити
dream	dreamed/ dreamt	dreamed/ dreamt	бачити сон, мріяти, уявляти
drink	drank	drunk	пити
drive	drove	driven	водити, вести, правити
dwell	dwelt	dwelt	жити, мешкати, перебувати
eat	ate	eaten	їсти
fall	fell	fallen	падати, опускати(ся)
feed	fed	fed	годувати(ся), харчувати(ся)
feel	felt	felt	почувати, відчувати
fight	fought	fought	битися, боротися
find	found	found	знаходити; виявляти
fly	flew	flown	літати
forbid	forbade/forbad	forbidden	забороняти
forecast	forecast/ forecasted	forecast/ forecasted	передбачати, завбачати
foresee	foresaw	foreseen	передбачати
forget	forgot	forgotten	забувати, забути
forgive	forgave	forgiven	прощати
freeze	froze	frozen	морозити, за- морожувати
get	got	got (US gotten)	діставати, одержувати; добиратися
give	gave	given	давати; віддавати
go	went	gone	іти; їхати; їздити

grow	grew	grown	рости; збільшуватися; вироснути
hang	hung/hanged	hung/hanged	вішати, висіти
have	had	had	мати
hear	heard	heard	чути; слухати, вислуховувати
hide	hid	hidden/hid	ховати(ся)
hit	hit	hit	ударяти
hold	held	held	тримати, держати
hurt	hurt	hurt	завдавати болю; ушкодити; поранити
keep	kept	kept	тримати; зберігати
kneel	knelt	knelt	стояти навколішки; ставити навколішки
knit	knitted/knit	knitted/knit	в'язати; з'єднувати
know	knew	known	знати
lay	laid	laid	класти; накривати
lead	led	led	вести, приводити; керувати
lean	leant/leaned	leant/leaned	нахиляти(ся)
leap	leapt/leaped	leapt/leaped	стрибати
learn	learnt/learned	learnt/learned	вчити, вивчати, вчитися
leave	left	left	піти, поїхати, від'їжджати
lend	lent	lent	позичати
let	let	let	пускати; випускати; дозволяти; здавати внайом
lie	lay	lain	лежати; перебувати
light	lit/lighted	lit/lighted	запалювати, прикурити
lose	lost	lost	втрачати; програвати
make	made	made	робити, виробляти
mean	meant	meant	означати
meet	met	met	зустрічати(ся); знайомитися
mislead	misled	misled	вводити в оману

misspell	misspelt	misspelt	робити орфографічні помилки
misunderstand	misunderstood	misunderstood	неправильно розуміти
overcome	overcame	overcome	перемогти, подолати
overhear	overheard	overheard	підслуховувати
partake	partook	partaken	брати участь
pay	paid	paid	платити
prove	proved	proven/proved	доводити; виявлятися
put	put	put	(по)класти, (по)ставити
read	read	read	читати
rebuild	rebuilt	rebuilt	відбудовувати
retell	retold	retold	переказувати
rewrite	rewrote	rewritten	переписувати
rid	rid/ridded	rid/ridded	звільняти; позбавляти (чогось)
ride	rode	ridden	їхати верхи; їхати
ring	rang	rung	дзвеніти, дзвонити
rise	rose	risen	сходити; вставати; збільшуватися
run	run	run	бігати; керувати, управляти
say	said	said	говорити, сказати, мовити
see	saw	seen	бачити, дивитися
seek	sought	sought	шукати, розшукувати
sell	sold	sold	продавати, торгувати
send	sent	sent	посилати
set	set	set	ставити; класти, розміщувати
shake	shook	shaken	трусити; струшувати, трястися
shed	shed	shed	проливати (кров, сльози)

shine	shone	shone	світити(ся), сяяти; блищати
shoot	shot	shot	стріляти; убити
show	showed	shown/showed	показувати(ся), демонструвати
shut	shut	shut	зачиняти(ся), закривати(ся)
sing	sang	sung	співати
sink	sank	sunk/sunken	тонути
sit	sat	sat	сидіти
sleep	slept	slept	спати
slide	slid	slid/slidden	ковзати(ся); посковзнутися
smell	smelt/smelled	smelt/smelled	відчувати запах; нюхати; пахнути
sow	sowed	sown/sowed	сіяти, засівати
speak	spoke	spoken	говорити, розмовляти
speed	ped/speede	ped/spe	поспішати, прискорювати
spell	spelt/spelled	spelt/spelled	читати (писати, вимовляти) слово по буквах
spend	spent	spent	витрачати; проводити
spill	spilt/spilled	spilt/spilled	розливати(ся), розсипати(ся)
spin	spun/span	spun	прясти, плести
split	split	split	розколювати(ся), розщеплювати(ся)
spoil	spoilt/spoiled	spoilt/spoiled	псувати(ся)
spread	spread	spread	поширювати(ся); простягатися
spring	sprang	sprung	стрибати
stand	stood	stood	стояти
steal	stole	stolen	красти
stick	stuck	stuck	триматися, додержуватися
sting	stung	stung	жалити, уражати
stride	strode	stridden/strid	широко ступати, крокувати
strike	struck	struck/stricken	бити, страйкувати

string	strung	strung	зав'язувати, натягувати
strive	strove	striven	старатися, намагатися
sunburn	sunburnt/ sunburned	sunburnt/ sunburned	загорати
sweep	swept	swept	підмітати, чистити
swim	swam	swum	плавати, пливти
swing	swung	swung	коливати(ся), хитати(ся)
take	took	taken	брати; взяти
teach	taught	taught	учити, навчати
tear	tore	torn	рвати(ся), відривати(ся)
tell	told	told	розповідати; говорити; казати
think	thought	thought	думати, обмірковувати
throw	threw	thrown	кидати
undergo	underwent	undergone	зазнавати
understand	understood	understood	розуміти
undertake	undertook	undertaken	починати, братися
undo	undid	undone	розв'язувати; розстибати
upset	upset	upset	засмучувати
wake	woke/waked	woken/waked	прокидатися, будити
wear	wore	worn	носити (одяг)
weep	wept	wept	плакати
win	won	won	вигравати; перемагати
wind	wound/winded	wound/winded	крутити(ся); заводити (годинник)
withdraw	withdrew	withdrawn	відкликати, виводити
write	wrote	written	писати

Утворення множини іменників в англійській мові

Більшість англійських іменників можуть набирати форму однини і множини.

Способи утворення форми множини іменників

У загальному випадку множина іменників в англійській мові утворюється шляхом додавання закінчення **—S** до іменника в однині:

a dog – dogs

a book – books

a tree – trees

a computer – computers

Проте є кілька десятків іменників, форма множини яких утворюється дещо інакше.

Множина деяких іменників утворюється за допомогою додавання закінчення **—es**:

1. Якщо іменник в однині закінчується на **-s, -ss, -sh, -ch, -o** або **-x**:

a class – classes

wish – wishes

an inch – inches (дюйм – дюйми)

a box – boxes

2. Якщо іменник в однині закінчується на **y** після приголосної, то **y** замінюється на **i** та додається закінчення **—es**:

a city – cities

a lady – ladies

Якщо іменник в однині закінчується на голосну, після якої слідує **y**, то додається закінчення **—s** (однак це правило не відноситься до слів, що закінчуються на **—quy**:

an essay – essays
a monkey – monkeys

Однак:

a soliloquy – soliloquies (монолог – монологи)

3. Якщо іменники в однині закінчуються на **-f** та **-fe**, літера **-f** змінюється на **-v**, а до закінчення додається **-es**, що вимовляється як [iz]:

a life (життя) - lives (житті)
a shelf (полка) – shelves (полки)
a knife (ніж) – knives (ножі)
wife – wives (дружина – дружини)
leaf – leaves (лист – листя)

Але: roof - roofs
a chief – chiefs
proof – proofs

4. Якщо іменник в однині закінчується на **-o**, то у множині додається закінчення **-es** :

a potato – potatoes
a tomato – tomatoes
a hero – heroes

Особливі форми множини іменників

a child – children (дитина – діти)
a foot – feet (нога – ноги)
a goose – geese (гуси – гуси)
a louse – lice (воша – воші)
a man – men (чоловік – чоловіки)
a mouse – mice (миша – миші)
an ox – oxen (бик – бики)
a tooth – teeth (зуб – зуби)
a woman – women (жінка – жінки)

Множина складених іменників

В складених іменниках множинну форму набирає головне слово:

a commander-in-chief – commanders-in-chief
a father-in-law – fathers-in-law

a mother-in-law – mothers-in-law
a brother-in-law – brothers-in-law
a sister-in-law – sisters-in-law
a passer-by – passers-by
a looker-on – lookers-on

Якщо ж у складеному іменнику жодне зі слів, що входять до його складу, не є іменником, закінчення множини додається до останнього слова:

merry-go-round – merry-go-rounds
forget-me-not – forget-me-nots
grown-up – grown-ups

Деякі іменники мають форму множини, ідентичну формі однини:

an aircraft – aircraft (літак – літаки)
a cod – cod (тріска)
a deer – deer (олень – олені)
a moose – moose (лось – лосі)
a salmon – salmon (лосось)
a series – series (серія – серії)
a sheep – sheep (вівця – вівці)
a spacecraft – spacecraft (космічний корабель – космічні кораблі)
a species – species (вид – види)
a swine – swine (свиня – свині)

Деякі іменники в англійській мові мають тільки форму множини:

scissors (ножиці)
tongs (щипці)
spectacles (окуляри)
trousers (штани)
drawers (кальсони)
jeans-джинси)
breeches (бриджі)
tights (трико)
shorts (шорти)

Деякі іменники в англійській мові хоч і закінчуються –s, але, тим не менш, мають форму однини:

mathematics (математика)
physics(фізика)

electronics (електроніка)

news (новини)

measles (кір)

mumps (свинка)

rickets (пахіт)

billiards (більярд)

Наприклад:

Mathematics is his favorite subject. - Математика – його улюблений предмет.

No **news is** good news. - Відсутність новин – хороша новина.

Деякі іменники в англійській мові мають форму однини, але насправді завжди використовуються у формі множини:

cattle (худоба)

poultry (свійська птиця)

people (люди)

gentry (дворянство)

Наприклад:

These poultry are mine. - Ці кури – мої.

Who are these people? - Хто ці люди?

Деякі іменники в англійській мові використовуються тільки у формі однини:

luggage (багаж)

news (новини)

advice (рада)

information (інформація)

furniture (меблі)

scenery (пейзаж)

Наприклад:

We have received no **information**. (A HE ...no informations.)

Ми не отримали жодних відомостей.

We need to buy some **furniture**. (A HE ...some furnitures.)

Нам потрібно купити меблів.

Множина іменників латинського і грецького походження

Іменники латинського і грецького походження зберегли свою форму множини:

alumnus – alumni
analysis – analyses
agendum – agenda
appendix – appendices, appendixes
focus – foci, focuses
formula – formulae, formulas
index – indices, indexes
axis – axes
basis – bases
bacterium – bacteria
crisis – crises
criterion – criteria
curriculum – curricula
datum – data
ellipse – ellipses
gymnasium – gymnasia (гімнастичний зал – гімнастичні зали)
terminus – termini, terminuses (кінцева станція – кінцеві станції)
locus – loci (траєкторія – траєкторії)
memorandum – memoranda (замітка – нотатки)
nucleus – nuclei (ядро – ядра)
parenthesis – parentheses (дужка – дужки)
phenomenon – phenomena (явище – явища)
radius – radii, radiuses (радіус – радіуси)
syllabus – syllabi, syllabuses (програма – програми)
thesis – theses (теза – тези)

Ступені порівняння прикметників у англійській мові

В англійській мові, як і в українській, якісні прикметники мають три ступені порівняння: **звичайний** (the Positive Degree), **вищий** (the Comparative Degree) і **найвищий** (the Superlative degree).

Утворення ступенів порівняння прикметників

Форма звичайного ступеня прикметника не має якогось спеціального закінчення: *wide, pleasant, difficult*.

Форми вищого і найвищого ступенів можуть бути **простими** (вони утворюються за допомогою закінчень) і **складними** (вони утворюються за допомогою службових слів).

Прості форми вищого і найвищого ступенів утворюються додаванням закінчень **-er** (для вищого ступеня) і **-est [ist]** (для найвищого ступеня) до форми звичайного ступеня прикметника. Перед прикметниками у найвищому ступені стоїть означений артикль.

Звичайний ступінь	Вищий ступінь	Найвищий ступінь
cold simple young	colder simpler younger	(the) coldest (the) simplest (the) youngest

При утворенні простих форм вищого і найвищого ступенів слід додержувати таких правил:

1. Односкладові прикметники, які закінчуються на одну приголосну з попереднім коротким голосним звуком, подвоюють у написанні кінцеву приголосну у вищому і найвищому ступенях:

big — bigger — (the) biggest

hot — hotter — (the) hottest

У всіх інших випадках подвоєння не відбувається:

sweet — sweeter — (the) sweetest

cool — cooler — (the) coolest

2. Прикметники, які закінчуються на букву **y** з попередньою приголосною, у вищому і найвищому ступенях змінюють **y** на **i**:

easy — easier — (the) easiest

happy — happier — (the) happiest

Якщо кінцевій букві **y** передує голосна, то цієї зміни не відбувається:

gay — gayer — (the) gayest

1. Прикметники, які закінчуються у звичайному ступені на німе **e**, опускають його у вищому і найвищому ступенях:

large — larger — (the) largest

white — whiter — (the) whitest

Складні форми вищого і найвищого ступенів утворюються додаванням службових слів **more** і **(the) most** до звичайного ступеня прикметника.

Звичайний ступінь	Вищий ступінь	Найвищий ступінь
useful beautiful	more useful more beautiful	(the) most useful (the) most beautiful

Деякі прикметники утворюють вищий і найвищий ступені порівняння не за загальними правилами, наприклад:

Звичайний ступінь	Вищий ступінь	Найвищий ступінь
good	better	(the) best
bad	worse	(the) worst
much, many	much, many	much, many
little	less	(the) least

Деякі прикметники мають по дві форми вищого і найвищого ступенів, які різні за своїм значенням.

Звичайний ступінь	Вищий ступінь	Найвищий ступінь
old — старий	1) older — більш старий, старіший; старший (за ...) 2) elder — старший (у сім'ї)	1) the oldest — самий старий, старший, найстаріший 2) (the) eldest — самий старший у сім'ї
late — пізній	1) later — більш пізній 2) latter — останній з двох (по порядку)	1) (the) latest — самий пізній, останній (за часом) 2) (the) last — самий останній (по порядку); минулий

Far — далекий, дальній	1) farther — більш дальній (далекий) (про відстань) 2) further (а) більш дальній (далекий) (про відстань); (б) дальший, наступний (по порядку)	1) (the) farthest — самий дальній (далекий) 2) (the) furthest — самий далекий
near — близький	nearer — більш близький	1) (the) nearest — самий близький, найближчий 2) (the) next—наступний (по порядку); майбутній

Форми **older, oldest** вживаються, як правило, стосовно осіб, які не є членами однієї сім'ї, або стосовно неживих предметів.

*I am not **older** than you.*

*Tom is **the oldest** boy in our form.*

*This is **the oldest** building in our town.*

Форми **elder, (the) eldest** вживаються стосовно членів однієї сім'ї. Але при наявності слова **than** (порівняння) вживається форма **older**, а не **elder**.

*Her **elder** sister is called Mary.*

*My **elder** brother lives in Kyiv.*

*The **eldest** son is going to be a teacher.*

Але:

*Jane is two years **older** than her sister.*

Форми **later, (the) latest** вживаються стосовно часу:

*Here is **the latest** news.*

***Later** events showed that he was right.*

*Have you read his **latest** book?*

Форми **latter, (the) last** означають порядок послідовності.

*John and Nick like winter sports. The former is fond of skating, and **the latter** prefers skiing.*

*I saw him on the **last day** of my holiday.*

Форми **nearer, (the) nearest** вживаються при означенні відстані і часу.

*How can I get to the **nearest** post-office?*

*Come **nearer**, please.*

Форма **the next** вживається із значенням наступний (по порядку), дальший.

***The next** train leaves in half an hour.*

*What is **the next** thing to do?*

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Навчальне електронне видання

П'янова Ізабела Юріївна

Куделіна Ольга Юріївна

Бец Ольга Олегівна

Мітіна Олена Михайліна

НАВЧАЛЬНИЙ ПОСІБНИК З АНГЛІЙСЬКОЇ МОВИ

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Видавець і виготовлювач

Одеський державний екологічний університет

вул. Львівська, 15, м. Одеса, 65016

тел./факс: (0482) 32-67-35

E-mail: info@odeku.edu.ua

Свідоцтво суб'єкта видавничої справи

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