

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ
РОССИЙСКОЙ ФЕДЕРАЦИИ
КУРГАНСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ
ЕСТЕСТВЕННОНАУЧНЫХ СПЕЦИАЛЬНОСТЕЙ

АНГЛИЙСКИЙ ЯЗЫК
МЕТОДИЧЕСКИЕ УКАЗАНИЯ
ПО РАЗВИТИЮ НАВЫКОВ
ЧТЕНИЯ И ПЕРЕВОДА ТЕКСТОВ
ДЛЯ СТУДЕНТОВ
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Предисловие

Методические указания ориентированы на обучение студентов, специальностью которых является биология. Методические указания ставят своей целью научить студентов быстро извлекать информацию при чтении, излагать содержание по-английски, делать сообщения и обсуждать темы. Используя самые употребительные языковые средства и основные термины биологии.

Методические указания включают в себя тематические тексты по биологии, а также послетекстовые лексические, переводческие и коммуникативные упражнения и задания, обеспечивающие активную деятельность в области речевой практики.

Text 1

Do you know ...

... if a flower sleeps at night?

The answer to this question is yes; plants go to sleep at night.

Plants take in carbonic acid, which contains the carbon from the air. They use the carbon and give off the oxygen, and so they material for the life of animals. Animals breathe out carbonic acid so they form material for the life of plants.

We may say that we cannot live without plants, and plants cannot live without us.

When the sun is shining, the plant takes the carbonic acid from the air and gives off the oxygen. When the night comes, the plant stops taking in the carbonic acid; while it is sleeping, it gives off its carbonic acid and takes in the oxygen though in less quantities than by daylight.

A plant takes its food in the day and grows both during the day and during the night. Pollen is brought to many flowers by insects. Some insects sleep in the day and work at night. These insects visit the night flowers and bring them the pollen they need.

Exercise 1

Pick out from the text all the word combinations with the following words and give their Russian equivalents:

Pollen

Insects

Carbonic acid

Exercise 2

Complete the sentences according to the text:

They use the carbon and give off the oxygen, and ...

We may say that ..., and plants ... us.

When the sun is shining, ... from the air and gives off the oxygen.

Some insects sleep in the day and ...

A plant takes its food in the day and ... and during the night.

Plants take in ... , which contains the carbon from the air.

Exercise 3

Give a short retelling of the text.

Text 2

Golden glow of the lesser celandine

I

A sunny bank, glowing with golden lesser celandine flowers is a welcome sign that spring is on its way.

Sunlight is reflected from its smooth, heart-shaped leaves as well as from its flowers, thus contributing to the sparkling appearance of the bank.

Adventurous bees, attracted by the shining yellow petals, fly from flower to flower, sucking the nectar produced by nectaries found at the base of each petal.

The numerous yellow stamens open outwards, thus ensuring a thorough dusting of pollen on the hairy heads of the visitors, as they push their long tongues between the petals and stamens.

After fertilization, the green ball of ovaries in the centre of the flower turns into a group of one-seed fruits like those of the buttercup².

II

A carpet of celandine may be found in a shady damp hollow, where insects are few. In such a sport the plant depends as much on its roots as its seeds to colonise the ground. Its weak stems trail over the ground and in the leaf axils small tuberous³ growths arise.

They develop hairs on their surface, which help them to absorb moisture from the air and the soil, and they contain a store of starchy food.

They use up the food, pushing their way down into the soil and trusting up small shoots that bear leaves and buds.

When the old stems die away at the end of the season, each of the new shoots will form an independent plant.

A secret of the success of the celandine lies in its storage of food at the end of the season in a group of tuberous roots at the base of its stems.

This food store enables it to develop early, before the shade of larger plants becomes too dense to allow lowgrowing plants to obtain sufficient sun to enable them to make their carbohydrate foods.

Although celandine may spread over a whole hedge bank or shady hollow, they rarely encroach on gardens to form a problem for gardeners, like their relatives the buttercups do.

Strangely enough the plant called the greater celandine is not related to the lesser celandine, but belongs to the poppy⁴ family.

It has yellow flowers and rough divided leaves, and does not flower till June. When the stems are broken a yellow juice comes out, which resemble the milky juice of poppies or dandelions⁵. This is acrid and poisonous.

Лекарственные растения



Лекарственные растения помогают людям бороться с болезнями: 1 — ландыш и его плоды; 2 — женьшень и его корень; 3 — валериана и её корень; 4 — зверобой; 5 — мята перечная; 6 — череда; 7 — тысячелистник.

Notes

- 1) celandine ['sel ɒndain] - чистотел;
- 2) buttercup - лютик;
- 3) tuberous ['tju:bɜrðs] - клубневый;
- 4) poppy ['pɒpi] - мак;
- 5) dandelion ['dændilaʊn] - одуванчик лекарственный.

Exercise 1

Make the following sentences complete by translating the phrases in brackets:

1. (после опыления), the green ball of ovaries in the centre of the flower turns into a group of one-seed fruits like those of the buttercup.

2. A carpet of celandine may be found in a shady damp hollow, (где мало насекомых).

3. They develop hairs on their surface, which help them (всасывать влагу из воздуха и почвы), and they contain a store of starchy food.

4. This food store enables it to develop early, before the shade of larger plants becomes too dense to allow (низко растущим растениям) to obtain sufficient sun to enable them to make their carbohydrate foods.

5. Strangely enough the plant called the greater celandine is not related to the lesser celandine, but (принадлежит к семейству маковых).

Exercise 2

Give the English equivalents:

Лепесток, тычинка, опыление, почка, едкий (на вкус), ядовитый, стебель, побег.

Text 3 Lesser Celandine

I

This is a common perennial herb found in woods, meadows, grassy banks and along the sides of streams. Many of you know its familiar yellow flowers which appear in March, April and May. If you dig up a plant in December you will see that it has several swollen pale brown root tubers which are attached to a very short stem. These are the roots of the previous year's growth which have collected a store of starch in the early summer.

Test for this store in the usual way with iodine solution. You will also see some new thin white roots growing from the stem above the attachment point of the root tubers. At this time the stem is very short and is seen clearly only when it is cut down the centre because it is surrounded by white scale leaves and by the bases of the young leaves which a rosette.

At this stage, only the tips of the outermost leaves will be visible at the soil surface, and the buds, which will grow into the next year's leafy stems, are well below. It is difficult to see them, and they lie on the stem tucked away inside the sheaths formed by the bases of the leafstalks. The arrangement of leaves and buds in their axils is more obvious if you examine a well-grown plant at the time of flowering, when the length of the main stem is several centimetres.

II

In June the aerial parts of the plant, i.e. the parts above ground, start to die off. They have a period of rest during the autumn but start their new growth early in the year. This helps them to make their food before they get overgrown by other taller plants which make new growth later in the year.

So far we have considered only perennial plants i.e. plants in which individual plants survive for several years. But you will realize that even annual² plants, such as field poppy, shepherd's purse³, and groundsel perennate as seeds. The seeds contain a store of food and a young shoot

(really a bud) protected inside the seed coat. Of course, perennial plants also survive the winter in the form of seeds.

Biennial⁵ plants are those which take two years to complete their growth and set seeds. Familiar examples are the carrot⁶ and parsnip⁷. The carrots are the tap roots of the first-year plants from which the leaves and lateral roots have been stripped. Examine a carrot to find out how its buds are protected (preferably a carrot still in the ground). Where does it store food, and what happens to the plant if it is left to grow a second year?

Notes

- 1) tuber - клубень;
- 2) annual - однолетний;
perennial - многолетний;
- 3) shepherd's purse - пастушья сумка;
- 4) groundsel - крестовник;
- 5) biennial двухлетний;
- 6) carrot - морковь;
- 7) parsnip [ˈpɑːsnɪp]-пастернак посевной.

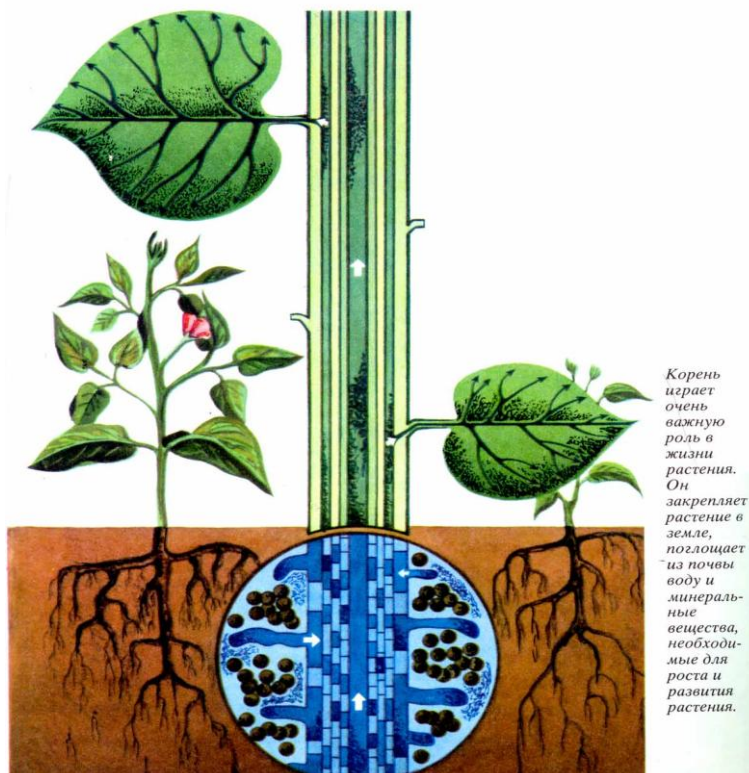
Exercise 1

Ask questions to the first part of the text.

Exercise 2

Make up your own sentences with the words given in notes.

Корень



Exercise 3

Fill in the blanks with the given words: *tubers, dig up, stem, leafstalks, annual, perennate, biennial, seed.*

If you ... a plant in December you will see that it has several swollen pale brown root tubers which are attached to a very short stem.

You will also see some new thin white roots growing from the stem above the attachment point of the root

But you will realize that even ... plants, such as field poppy, shepherd's purse³, and groundsel ... as seeds.

... plants are those which take two years to complete their growth and set

Text 4

The Golden Weed In The Green Meadow

What a wealth of beauty June provides. The fresh green of the beech' and larch², grey-green of willow³, the ups of the oaks⁴ tinged with red, silvery white beams with stretches of green young corn or golden buttercup⁵ meadows at their feet.

Buttercups are beautiful, but gardeners do not welcome them, for the creeping buttercup⁶ is the most persistent weed.

It sends runners, which root and form new plants, so that if one plant is missed during weeding it will quickly cover the ground again. The three commonest buttercups are all troublesome weeds, although the creeping buttercup is the only one which spreads over the ground by runners.

All of them produce numerous one-seeded small fruits from the many ovaries in the centre of the flower.

Masses of pollen are shed from their many stamens to insects that visit them for the nectar they produce at the base of each petal so there is every chance of their ovules being fertilized.

All of them grow best on heavy soils, but the bulbous buttercup will also grow on chalk.

The bulbous buttercup differs from the other two, not only because of the swollen base of its stem, but also because its sepals are bent back against the flower stalk, while those of the others rest against the five bright yellow petals.

The common buttercup has neither runners nor a swollen stem and its flower stalk is smooth instead of being furrowed.

In the group *Ranunculus*, to which they belong, there are a number of other common, wild flowers. The flowers are all very similar, but the leaves show considerable differences.

Buttercup leaves are much divided, but spearwort has grasslike leaves, while the lesser celandine has heart-shaped ones.

Water crowfoot, which makes a pond or the edges of a stream look as if covered in a sheet of white, is another common *Ranunculus*.

Its white flowers rise above the surface of the water and shiny three-lobed leaves float on the surface, while under water are finely-divided leaves, which offer no resistance to the flow of water.

The whole plant is riddled with air passages, so that it easily floats and its under-water parts are well supplied with air.

Notes

- 1) beech [bi:tʃ] - бук;
- 2) larch [la:tʃ] - лиственница;
- 3) willow ['wilou] - ива;
- 4) oak [ouk] - дуб;
- 5) buttercup - лютик; corn buttercup - лютик полевой;
- 6) creeping buttercup - лютик ползучий.

Exercise 1

Answer the questions:

1. What flowers can you see in the meadow?
2. Do the gardeners welcome buttercups? Why?
3. What stem does the common buttercup have?
4. What group does the common buttercup belong to?
5. What kind of leaves do the flowers have?

Exercise 2

Give the Russian equivalents of the words and learn them:

Bulbous, persistent weed, stamen, petal, ovule, fertilize, sepal, furrow.

Внутреннее строение листа (при сильном увеличении). Сверху и снизу лист покрыт тонкой кожицей. В клетках листа видны зелёные зёрна хлорофилла. В центре показан разрез жилки. По таким жилкам движутся вещества, необходимые для жизни растения.



*Листья
бывают
самой
различной
формы.*



Text 5

Bulbous Buttercup

There are exceptions to almost every general statement made about living things, and to illustrate this point we have included the bulbous buttercup. It is an exceptional plant because it passes a large part of the summer in a resting state below ground. First we must learn to distinguish it from the two other very common buttercups which is frequently found growing in old meadows.

The reason why buttercups are so common in old meadows is that cattle avoid eating them as they contain a substance which raises blisters² on their tongues and lips, and produces ulcers³ in their stomachs⁴.

The bulbous buttercup is unfortunately named; its underground part is a corm⁵, not a bulb, because it does not have the separate fleshy layers of a typical bulb. It is simply a swollen globular stem containing a lot of starch and surrounded by a few decaying remnants⁷ of leaf stalks.

In this it rests in the ground through most of summer, but, in the autumn, a lateral bud grows out to form a new corm below ground and a rosette of leaves above. During March and April more leaves are produced from the new corm, and the buds, which have till now been protected underground in the axils of leaves whose bases sheath the corm, grow out from flowering shoots. By the end of June fruits are dispersed and the plant

dies off leaving a scar on the new corm. Meanwhile the old corm has decayed into a slimy mass. Thus no part of the plant survives for more than one year, but there is a continuous annual cycle of replacement.

Notes

- 1) bulbous buttercup - луковичный лютик;
- 2) blister ('blistə) - волдырь;
- 3) ulcer — язва;
- 4) stomach - желудок;
- 5) corm [ко:m] - клубнелуковица;
- 6) bulb - луковица;
- 7) decaying remnants - гниющие остатки.

Exercise 1

Ask questions to the text

Exercise 2

Retell the text

Text 6

The Woodland Ballerina

It is seven weeks since the shortest day and the sun gives a pleasant warmth when there is one of those mild days that February often brings to deceive us into thinking that spring has come.

A look round garden shows that the snowdrops are showing white buds that will soon break through their protective sheath.

When they bend over and open their petals exposing their yellow stamens, there may be few insects about to visit them, pollinating them, as they suck their nectar.

The flowers remain open many days before their petals begin to fade but often few seeds form from the numerous ovules in their little green ovaries.

Although the increase in numbers of snowdrop bulbs does not take place so fast as in the case of tulips or daffodils², it is probably the chief cause of the striking masses growing in old-established gardens where the leaves are allowed to die down without interference or premature tidying up.

The food made in the pair of leaves that surround each flower stem goes down to the base of the leaves, which swell to form the food store for next year's growth.

Each bud can produce a new bulb, so over the years a row of

snowdrops can become a carpet, even without the help of seeds.

If single snowdrops set few seeds, because they are out too early for bees to help in pollinating them, the double snowdrops, which have sacrificed their stamens to make their extra petals, must depend even more upon their bulbs for reproducing themselves.

Their mass of petals makes them look like little ballet dancers with a green bodice and a mass of frilly white petitcoats.

Notes

- 1) snowdrop ['snoudrop] - подснежник снеговой, ветреница пятилистная;
- 2) daffodil - нарцисс желтый, лженарцисс.



Exercise 1

Fill in the blanks with the given words: petals, snowdrops, ovules, bulb, break through, to die down,

1. A look round garden shows that the ... are showing white buds that will soon ... their protective sheath.
2. The flowers remain open many days before their ... begin to fade but often few seeds form from the numerous ... in their little green ovaries.
3. It is probably the chief cause of the striking masses growing in old-established gardens where the leaves are allowed ... without interference or premature tidying up.
4. Each bud can produce a new ..., so over the years a row of snowdrops

can become a carpet, even without the help of seeds.

Exercise 2

Translate the following sentences:

1. When they bend over and open their petals exposing their yellow stamens, there may be few insects about to visit them, pollinating them, as they suck their nectar.
2. The increase in numbers of snowdrop bulbs does not take place so fast as in the case of tulips or daffodils.
3. Each bud can produce a new bulb.
4. They are out too early for bees to help in pollinating them.
5. Their mass of petals makes them look like little ballet dancers with a green bodice and a mass of frilly white petitcoats.

Text 7

It Turns Toward The Sun

Sunflowers¹ and artichokes² belong to the same family of plants - the composites³. But there are three kinds of artichoke: the Jerusalem artichoke, the globe⁵ artichoke and the Chinese artichoke⁶.

The latter is not a composite and now is not often seen or eaten. The globe artichoke is a thistle⁷, whose flowers are eaten with melted butter as a luxury. It is mentioned by Pliny in the Natural History, which he wrote early in the first century A.D.

The Jerusalem artichoke is a true sunflower, for its name Jerusalem is an Italian mispronunciation of "Girasole", the sunflower. In Britain it only flowers when we have had an exceptionally good summer, and it then has a small flower similar to that of the perennial⁸ sunflower.

This artichoke is grown for its tubers, which cluster round below ground at the end of the tall stem like knobby potatoes⁹. But, unlike potatoes, which are full of starch, the artichoke tubers contain inulin¹⁰ - a different carbohydrate.

Notes

- 1) sunflower - подсолнечник;
- 2) artichoke (a:t itkouk) - артишок;
- 3) composite - сложный;
- 4) Jerusalem artichoke - земляной груша, топинамбур;
- 5) globe artichoke = artichoke;
- 6) Chinese artichoke - хорога, чистец клубненосный;
- 7) thistle - бодяк, артишок;
- 8) perennial - многолетний;

- 9) knobby potatoe - клубневый картофель;
10) inulin - инулин.

Exercise 1

Read the text and render it in English.

Подсолнечник

Впервые увидели его европейцы, когда открыли Америку. Четыреста лет назад они завезли подсолнечник в Европу. Назвали его «цветок солнца». Триста лет назад появился он в России. Его разводили сначала для украшения садов. Вскоре обнаружили, что плоды подсолнечника – семечки - могут быть лакомством, и стали разводить его на огородах. В 1830 году крепостной крестьянин Бокарев из слободы Алексеевка Воронежской губернии догадался выдавить из семечек масло. Теперь подсолнечник – самая распространенная масличная культура. Наша страна стала второй родиной подсолнечника.

У культурного подсолнечника – крупная корзинка. В ней бывает до 7000 семечек. Да и стебель культурного подсолнечника вырастает до 4м и толщиной в руку.

В домашнем обиходе семечки так и остались лакомством, но главное, что дает нам подсолнечник – это хорошее масло. Когда отожмут масло из семечек, остается жмых: им кормят коров, овец, лошадей. Некоторые сорта подсолнечника сеют на силос. В этом случае его убирают, когда еще не созрели семечки.

Text 8

Tulip

The tulip is a plant with bell-shaped and mildly scented flowers. Tulips are strange plants: they can walk. If you plant them in dark, shady places, where it is cold and damp, they will walk away from the dark place into the sun. The bulb does not actually move but its substance is transferred little by little, until only the outer wrapping of brown tissue is left. The bulb sends out a delicate shoot that runs below the ground till it has reached a distance of several inches. Then near its point a swelling begins to take the shape of a tulip bulb, which grows larger and larger as the food-material of the old bulb is brought into it. This is done by the little

shoot. If the sunny or light spot towards which the tulip is walking gets unexpectedly shaded, it will immediately begin to move in some other direction.

The Dutch have always loved tulips. In the 17th century there was a craze in Holland for the cultivation of the flowers, which spread like an epidemic; bulbs in those days were sold and resold at fabulous¹ prices².

Notes

- 1) fabulous ['fæbjulos] - баснословный;
- 2) price [praɪs] - цена.

Text 9

Iris

The iris is an ornamental plant remarkable for its handsome delicately-scented flowers and sword-shaped leaves. The iris and the daisy² differ. The daisy opens when the sun is at its height and shuts altogether when the sun goes down. The iris opens widest in darkness and closes when the sun shines full upon it.

The iris has a peculiar history. The Greeks believed this flower to be personification of the rainbow³ and gave it the name of the goddess⁴ of the rainbow. At one time the iris was used for making scents and powders and as a remedy⁵ for many diseases⁶. In the 19th century a French scientist discovered that the seeds of iris when well roasted made a drink very much like coffee.

It is worth while mentioning, too, that when the iris root is dried, powdered and distilled it has the smell of violets.

Notes

- 1) iris ['aɪrɪs]- ирис;
- 2) daisy ['deɪzɪ] - маргаритка;
- 3) rainbow ['reɪnbəʊ] - радуга;
- 4) goddess ['gɒdɪs] - богиня;
- 5) remedy ['remɪdi] - лекарство;
- 6) disease [di'zi:z] - болезнь.

Text 10

Poppies

Poppies are very old flowers. The ancient people thought that they were made by Somnus, the god of sleep, to help the goddess Ceres' in her cares and to make her sleep.

Farmers, however, do not like to see poppies among their crops because they rob the soil of the nourishment which the crops need. It is

difficult to get rid of them. Their seeds germinate after 24 years. This is not surprising because the poppy is a very hardy² plant. It was brought to Britain by the Romans. It grows as a wild flower in all the Mediterranean countries and in the Middle East.

People found poppy capsules³ on the sites of prehistoric dwellings. It shows that the plant is cultivated for centuries, partly for its edible seed. The athletes ate poppy seed when they trained for the early Olympic games, mixing it with wine and honey.

Bread glazed with the yolk⁴ of egg and sprinkled with poppy seed for ornament and flavour became popular.

Morphine, the pain killing drug, which is used in medicine, is made from the juice obtained from the unripe head or seed capsule of the white poppy. When it is dried, the juice becomes opium⁶, which the ancients used as a medicine.

The poppy became a symbol of peace after the First World War. Britons wore them to recall those who died in the two world wars.

Notes

- 1) Ceres ['siəri:z] - Церера;
- 2) hardy ['hɑ:di] - выносливый;
- 3) capsule ['kapsju:l] - семенная коробочка;
- 4) glazed with yolk [jɒk] - глазурованный желтком;
- 5) morphine ['mɔ:fi:n] - морфий;
- 6) opium ['ɒpjʊm] - опиум.

Text 11

Madonna Lily

The beautiful madonna lily is one of the oldest domesticated² plants because it already existed 3000 years B.C. Ancient people who lived 1750-1600 years B.C. liked this lively lily and showed it on their works of art.

The Assyrians³ and other Eastern Mediterranean people knew of it. The Phoenicians⁴, who were the greatest sailors in the ancient world, probably carried the lily westwards.

Probably, the lily was brought to Britain by the Romans but the first record of it was made in the 10th century. However, the name madonna lily was given to the flower only in the 19th century.

Notes

- 1) madonna lily - белая лилия;
- 2) domesticated - культивированное;
- 3) Assyrians - ассирийцы;
- 4) Phoenicians - финикийцы.

Read texts 8,9,10,11 and describe your favourite flowers.

Do you know other stories about flowers?

Read the following texts and retell them in English.

Водяная лилия

Растут в наших озерах и прудах два замечательных растения – кувшинки: белая кувшинка (водяная лилия) и желтая кубышка. И листья у них похожи, и корневища, большие, тяжелые. После цветения у них остаются темно-зеленые плоды, где хранятся семена. Вот кончается весна, совсем близко лето – и на воде появились первые зеленые листья-блюбочки кувшинок. Следом за листьями поднимаются плотные зеленые бутоны. Через день-другой появится первый цветок белой кувшинки, названной в народе водяной лилией. Открывается и закрывается лилия в один и тот же час. Легенда гласит, что давным-давно этот цветок был чудесной девушкой.

Кактусы

Кактусы родом из Мексики. Древние индейцы считали их священными.

Кактусы замечательно приспосабливаются к засушливому климату. Листья у них превратились в колючки, волоски, щетинки, которые не испаряют столько влаги, как листья. Поэтому растения даже в самую сильную жару удерживают в стволах влагу и остаются сочными. Некоторые из них хранят в себе до 3000 литров воды!

Кактусы бывают самые разнообразные – древовидные, кустарниковые, травянистые. Мексиканцы из плодов земляничного кактуса готовят мармелад. Стебли некоторых кактусов пекут или жарят. Сок плодов пьют. В Россию кактусы привез Петр I.

Ландыш

В тени больших деревьев, в густой траве притаился цветок – два больших остроконечных овальных листа, а между ними, на одной высокой тоненькой ножке, несколько маленьких колокольчиков. Это ландыш. Его цветы и листья узнаешь сразу, но у него есть и ягоды – самые настоящие, большие, красного цвета. Ягоды его хорошо заметны, но люди их не замечают, так как интересуются только цветами весной, а ягода появляется в конце лета. Ягода. Как и цветок, ядовита. Ландыш не только красивый, с приятным запахом цветок. Из него готовят лекарство для лечения болезней сердца.

Text 12

Wallflowers

Let us examine some young wallflower plants. You will notice immediately that the plant has two distinct parts - the root system which is not green and has no leaves and the shoot system which is composed of green leaves and stems.

The root systems of wallflowers consists of a main or tap root which grows more or less vertically downwards with several lateral roots growing out from it. If you use a hand lens you will see that each lateral root issues from a slit in the tap root where it has burst its way out; also they are arranged in four rows. Much smaller roots growing in all directions branch from the lateral roots. It is very unlikely that you will be able to see any root hairs growing out near the tips of the finest roots because these are usually broken when the plant is dug up. If you want to see what these hairs look like, sow a few mustard or cress seeds' on damp blotting-paper and keep them in a moist atmosphere for a few days. They will soon germinate and part of the roots will be covered with a white furry mass of root hairs unobscured by soil.

The root hairs are important because they absorb water and dissolved substances from the soil. Another important job of the root system is to anchor the plant.

The main stem and leaves will be obvious to everyone. Examine the leaves, starting from the bottom of the main stem and working up. Evidently the lowest leaves are the oldest for they are dying and losing their dark green colour, but the upper leaves are fresh and green. If the plant is not too young there will be leaf scars right at the base of the main stem where old leaves have fallen off.

Now trace the leaves right to the uppermost tip of the main stem where they become so small that you will not distinguish them. Apparently new leaves are constantly produced from the stem tip which is called a growing point. If the main stem ends in a series of flowers, look at one of the branches of the main stem to see a growing point surrounded by its cluster of tiny leaves.

Next notice on the main stem running down from the point where the leaves are attached. How many ridges are there at any one point on the stem? Cut across the stem with a razor blade to check your answer. You will imaginary line up the stem passing through the point where each leaf is attached. It is a spiral line and so we say that leaves are spirally arranged.

What do you notice in the angle between a leaf and a stem? There is

either a small bud or a small bud, or a recognizable stem with leaves, i.e. a lateral branch of the main stem. You will see that buds do not arise anywhere on the stem but just above the point of leaf attachment, or in the axil² of a leaf. Not all buds are able to grow into new branches because the plant never has enough food; some always remain dormant and small.

Notes

- 1) cress seeds - семена кресс-салата;
- 2) axil - пазуха.
- 3) wallflower – желтофиоль (садовая)

Exercise 1

Answer the questions:

1. How many parts does the plant have?
2. What does the root system consist of?
3. Why is the root system so important?
4. Describe the leaves of the wallflower.
5. How does the young plant and the old one differ from each other?

Exercise 2

Make the following sentences complete by translating the phrases in brackets:

1. You will notice immediately that the plant has two distinct parts - the (корневая система) which is not green and has no leaves and the shoot system which is (состоит из зеленых листьев) and stems.
2. (более мелкие корни) growing in all directions branch from the lateral roots
3. If you want to see what these hairs look like, sow a few mustard or cress seeds on damp blotting-paper and (оставьте во влажном месте) for a few days.
4. Another important job of the (корневая система) is to anchor the plant.
5. It is (спиральная линия) and so we say that leaves are spirally arranged.

Text 13

It's Azalea Time At Cypress² Gardens

The brilliant and beautiful azalea collection at Cypress Gardens has

inspired many thousands of visitors to plant these delightful decorative shrubs in their own gardens. Azaleas are not limited to the south. They will grow in all climates from Florida to Canada, and they offer a tremendous variety of colours and growth patterns. The azalea is truly an adaptable shrub.

Cypress Gardens offers many different varieties, including native American species, as well as those originally imported from Japan and India.

Versatility is another attribute of the azalea. They can be used in hedges and for screening, as border or foundation plantings. Certain lowgrowing varieties are particularly suitable for border planting (Red Wing, Vivid, Celestine, Due de Rohn and White Due), while others seem specifically designed for the delicate proportions of the Japanese garden.

The most popular varieties are evergreen, with colourful, abundant bloom. Azaleas are hardy shrubs and wind exposure is rarely a problem. Colours run the gamut from pure white through pink, rose, purple, crimson, salmon, orange-scarlet and variegated.

The height of the azalea season is generally from December to April, but now the great new varieties have some blossoms the year round.

Notes

- 1) azalea - азаля;
- 2) Cypress ['saɪprɪs] - Кипр.

Exercise 1

Make pairs

decorative shrubs	специально выведены
a tremendous variety	виды
an adaptable	декоративный кустарник
species	огромное разнообразие
versatility	легкоприспосабливаемый
specifically designed	многосторонность
abundant bloom	гамма
gamut	обильное цветение

Exercise 2

Complete the sentences according to the text:

Azaleas are ... to the south.

The azalea is truly

They can be used ... , as border or foundation plantings.

The most popular varieties are ..., with colourful,

Colours ... from pure white through pink, rose, purple, crimson, salmon, orange-scarlet and variegated.

Exercise 3

Retell the text.

Text 14

The Birch¹ And Other Trees

The birch is the "Lady of the Woods", for there are few trees so graceful and beautiful. Its silvery bark has caused the tree to be christened the "Silver Birch", and winter cannot rob the tree of its beauty, for even the branches are slender and delicate. The leaves are small, broad at the base, and narrowing to a sharp point at the apex. Born on thin stalks, the slightest breeze will cause them to quiver like an aspen².

The last-named tree is a variety of the poplar³; the quivering of the leaves, which are broadly elliptical in shape with dented margins, has given rise to the saying, "trembling like an aspen", and is due to the thinness of the leaf stalks. The leaves become almost white on the lower side, and the waves of white, when a breeze sets the leaves in motion, produce a pleasant effect.

The leaves of the white poplar are also white on the underside, but the tree is larger than the aspen, which usually reaches a height of only fifty feet, while the limit of the growth of the white poplar⁴ is about a hundred feet. The bark is smooth and grey on the upper part of the trunk, pined with lozenge-shaped marks, while the lower part has a number of vertical ribs. The leaves vary in shape; the upper side is dark green, while the lower side is covered with a white down⁵. The absence of this white down has caused another variety of the poplars to be known as- the black poplar⁶; in June the seed capsules of the female of this tree are lined with a white cotton.

Notes

- 1) birch - береза;
- 2) aspen ['aspɛn] — осина;
- 3) poplar ['pɒplə] - тополь;
- 4) white poplar - тополь белый, тополь осинообразный;
- 5) down [daʊn] - пушок;
- 6) black poplar - осокорь, тополь черный.

Exercise 1

Translate into English:

1. На светлых полянах береза иногда растет одиночно, а иногда образует леса.
2. Зацветает береза в конце апреля или в первых числах мая, следом за орешником и ивой.
3. Плоды березы легко разносятся ветром.
4. За четверть века береза поднимается на высоту пятиэтажного дома, особенно на сырых почвах. Из них дерево выкачивает за теплые летние сутки до сорока ведер влаги.
5. Из почек березы готовят лекарства.

Text 15

Gymnosperms-Class Gymnospermal The Pine²

The familiar pine tree is the sporophyte. It resembles the other evergreens (firs³, hemlocks⁴, cedars⁵ and spruces⁶) in general structure, but differs from them in the arrangement of the needles. They are grouped in clusters from two to five, and are surrounded at the base by a whorl of scales⁷.

Male and female cones⁸ are produced on the same tree. The female cone is called carpellate (pistillate) cone, or the macrosporangiate strobilus; the male cone, the staminate, or microsporangiate strobilus. On these strobili, the macro- and microsporophylls are grouped spirally about a central axis. The carpellate cones are the familiar pine cones, and are much larger than the staminate cones. They remain on the tree for two years. The staminate cones appear in the early spring in terminal clusters on some of the branches. The cones develop on the clusters laterally. At the end of a few weeks they shed the pollen and drop to ground.

The life history of the pino occupies the greater part of two years. In the spring of the first year pollen grains are formed and scattered widely by the wind. The few which come in the vicinity of the carpellate cones are shifted through the openings between the sporophylls and come to lie close to the opening of the micropyle. A swelling of the tissue about the micropyle serves to imprison some of the pollen grains, and in the course of the following year a pollen type will reach the ovule.

At the time of pollination, the macrosporangium (ovule) consists of a mass of tissue, the nucellus, and integuments. Only one of these remains to produce the macrogametophyte tissue in which the archtgonia develop. The process takes a year.

Immediate development then takes place and a proembryo is formed. Late in the second year the mature seed drops from the tree.

Notes

- 1) gymnosperms - голосемянные растения;
- 2) pine- сосна;
- 3) fir - пихта;
- 4) hemlock ['hemlok] - болиголов, тсуга; гемлок;
- 5) cedar - кедр, можжевельник, туя, кипарис;
- 6) spruce [spru:s] - ель;
- 7) scale [skeil] - чешуя;
- 8) cone [koun] - шишка.



*Ветка
кедровой
сосны с
шишкой.*



*Кедровая
сосна.*

Exercise 1

Translate into English:

Кедр – вечнозеленое хвойное дерево. Это редкое декоративное растение. Часто кедром называют кедровую сосну. Это красивое и могучее дерево высотой до 40 м. Каждая хвоинка бывает длиной больше 10 см. Кедровые семена находятся в крупных шишках.

Через каждые 5-6 лет бывают обильные урожаи семян. Люди собирают кедровые семена впрок. Из них добывают кедровое масло.

Растет сибирский кедр долго. Есть деревья, которым до полтысячи лет. Из древесины – легкой, прочной и красивой – делают мебель.

Look at the picture and tell your groupmates what you know about these trees



Хвойные деревья:
 1 — шишка ели; 2 — ель;
 3 — лиственница осенью;
 4 — ветка лиственницы
 с шишкой; 5 — ветка
 кедровой сосны и её
 иголки; 6 — шишка ке-
 дровой сосны; 7 — шиш-
 ка сосны; 8 — сосна;
 9 — кедровый стланик.

Text 16

Horse-Chestnut Tree

Everyone knows that horse-chestnut trees drop their leaves in autumn and have prominent sticky buds throughout the winter. This plant's leaves are delicate and lose water to the air rapidly by evaporation, so their fall will appreciably reduce the amount of water required by the plant. The plant finds most difficulty in obtaining large supplies of water in winter since the roots cannot absorb it quickly when the soil is cold. Casting off² the leaves in autumn is an advantage to this plant.

Find a winter twig³ of horse-chestnut and examine it carefully. You will see that the buds are in opposite pairs above horseshoe shaped scars left by the leaves. These scars are covered by waterproof bark which formed across the base of the stalk shortly before leaf-fall⁵. The small dots within the leaf scar are the blocked ends of the "pipe-line" cells which conveyed water to the leaf. You will also notice slit-like scars scattered over the bark. They permit gases to pass in and out of the twig. A complete covering of bark prevents the cells which are inside the stem to get oxygen.

II

Now look at the buds more closely. The terminal bud⁷ is the largest and it is easy to dissect it. Then dip it in methylated spirit⁸ to dissolve off the sticky resin. With the help of a mounted needle take off the scales in pairs. Start at the farthest from the tip and lay them out.

Inside are pairs of next year's foliage leaves covered with fine hairs

but you can easily recognize them by their shape. If you remove them you may also find a mass of next year's flowers. Thus next year's shoots are protected in three ways-by hairs, by resin and by scales which are cast off as the buds burst in spring.

Does the horse-chestnut store food through the winter? If you use a razor blade to cut a thin slice⁹ across the twig, and immerse the slice in iodine solution, you will soon detect the black colour which indicates the presence of starch in certain parts.

Notes

- 1) horse-chestnut - конский каштан;
- 2) casting off- сбрасывание;
- 3) twig - веточка;
- 4) horseshoe - shaped scars - подковообразные рубцы;
- 5) leaf-fall - сбрасывание листьев;
- 6) slit-like - щелевидный;
- 7) terminal bud-верхушечная почка;
- 8) methylated spirit - метиловый спирт;
- 9) slice [slais] - слой.

Text 17

History From Trees

Could the rings on the trunks of trees tell us when a lost civilization was destroyed?

If you cut through the trunk of a tree, you will find series of concentric rings. Each represents one year's growth and the thickness of the ring will show you whether it was a good or bad growing season. Researchers at the University of Arizona, in the United States, have been using this method of counting rings on tree trunks to fix dates of changes in the climate going back thousands of years. Their evidence comes from widespread studies of a very slow-growing tree in the western United States, called the bristle-cone pine, and timber from archaeological sites. Some bristle-cone pines are thousands of years old. Other dead trees preserved in the Arizona desert, have growth rings that overlap with those of the living trees and so extend the records even further back.

Recent experience has shown that volcanic eruptions¹ seem to affect the climate. The dust from an eruption can cut out sunlight and cause an unusual drop in temperature. This happened after the eruptions at Mount St Helens in 1980 and El Chichon in 1982. Frost damages² trees and the effect of frost in a tree can be seen on the growth rings in the trunk.

The tree-ring researchers found evidence of periods of frost damage

covering huge areas at various times going back 4.000 years. They found that, in many cases, frost damage followed major, well-known eruptions. Krakatoa in Java, which erupted in 1883, led to severe frosts in Arizona in the following year. Tree-ring evidence shows frosts in 42 BC which may have resulted from an eruption of Mount Etna in Sicily, in 44 BC.

Records of eruptions so far back in history are less accurate than recent ones, so the evidence of the tree rings is of great interest to archaeologists. Perhaps the most interesting evidence from tree rings is one recording frost damage in 1626 BC.

The philosophers of Ancient Greece mention a great civilization which was destroyed by an earthquake³ and sank beneath the sea.

Radio-carbon dating evidence on the Greek island of Santorini, in the Aegean, has shown that it was a centre of great civilization in the seventeenth century BC, when a great eruption destroyed it. No one has known exactly when Santorini met its violent end, but the tree rings could provide an exact date.

Notes

- 1) eruption - извержение;
- 2) damage - повреждать, повреждение;
- 3) earthquake - землетрясение.

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АНГЛИЙСКИЙ ЯЗЫК

МЕТОДИЧЕСКИЕ УКАЗАНИЯ

ПО РАЗВИТИЮ НАВЫКОВ
ЧТЕНИЯ И ПЕРЕВОДА ТЕКСТОВ
ДЛЯ СТУДЕНТОВ
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