

Unit 24

Weeds



Watch the video titled 'What are weeds?'
<https://www.youtube.com/watch?v=TcQ8UZVcxDs>

Weeds are invasive plants that can dominate and often cause permanent damage to natural plant communities. More than 2500 species of higher plants are known to live parasitically on other plants. They may be annuals, biennials or perennials. They belong to several widely separated botanical families and vary
5 from prostrate creeping plants to long climbing vines, from delicate herbs to woody shrubs, from smooth and succulent species relished by poultry and farm animals to bristly, spiny bur-bearing inedible or poisonous plants.

Weeds pose a direct threat to the integrity and biodiversity of the landscape and jeopardize cultivations in several ways. They diminish the yield, deprive
10 crops of water and nutrients, decrease the value of farm products through the admixture of worthless seeds, increase the cost of farm operations, harbour diseases and insect pests facilitating attack on cultivated crops and many are poisonous to livestock.

Weeds may reach a farm in various ways. The seeds of many plants, such as
15 beggarticks, burdock or cocklebur, have hooks and may be carried in the fur of animals. Other seeds may pass through the digestive tract of animals, or carried by birds. Winds, irrigation canals and streams may also carry thistle and similar weed seeds at a large distance.

Any effort to devise a response to the serious problem of the eradication of
20 weeds must bring together a complex set of interests that includes private landowners, industry and government agencies at all levels. Numerous selective weed-killers can be used, together with a number of practical methods, to fight

25 invasive plants. Proper tillage and suitable rotation of crops can further aid in their control. In gardens, cultivation and hand pulling are considered sufficient remedial procedures. In lawns, it is repeated mowing that may prove of help with annual weeds, whereas perennial ones may be combated by digging and pulling and by sowing more and better quality grass seed. Smother crops, buckwheat notoriously known among them, may be used additionally in certain situations.

Special Terms

Beggarticks	any weed plant of the genus <i>Bidens</i> , family Compositae.
Biennial	any plant which completes its life cycle in two growing seasons.
Bur	the rough, sticky, or prickly covering of any fruit.
Burdock	any plant of the genus <i>Arctium</i> , family Compositae.
Cocklebur	any plant of the genus <i>Xanthium</i> , family Comositae.
Mow	v., to cut the grass of a lawn or hay grass.
Smother crop	any dense-growing crop that suppresses or stops the growth of less competitive plants.
Thistle	herbs with prickly leaves of the genera <i>Carduus</i> , <i>Cirsium</i> , <i>Onicus</i> , and <i>Onopordum</i> , family Compositae.

Practice Tasks

Task 1 *True or False?*

- Weeds produce fruits edible by humans. [__]
- Weeds' seeds may be passed through the digestive tract of animals. [__]
- Some weeds are poisonous to livestock. [__]
- Weeds may be transmitted with the animals' fur. [__]
- Weeds' seeds can be transported through irrigation canals. [__]
- Buckwheat is a smother of weeds. [__]

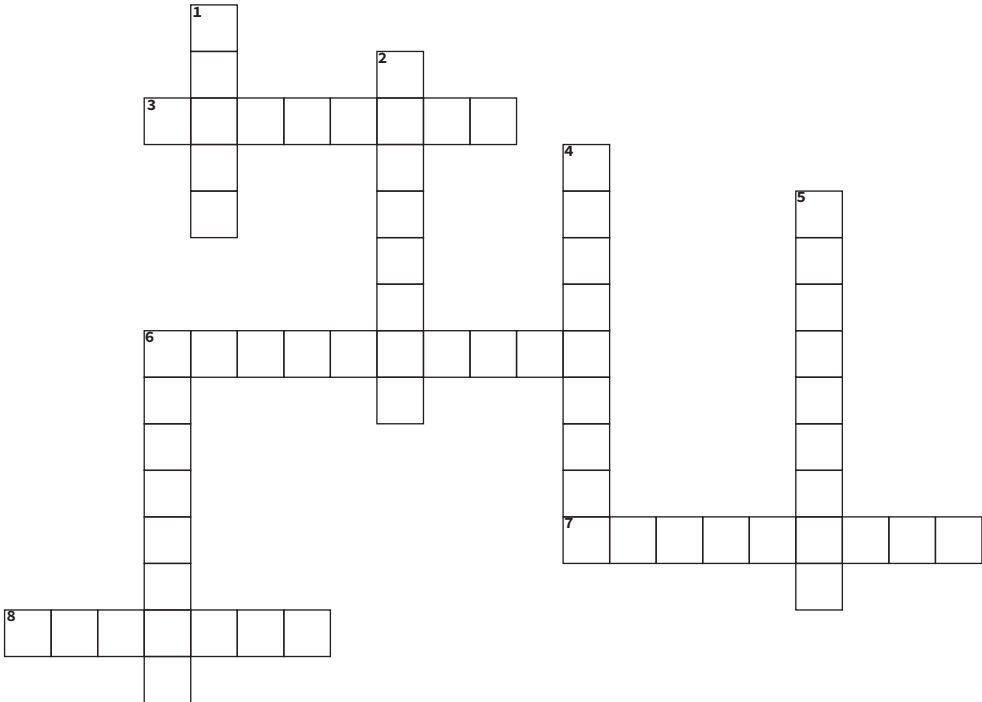
7. A way of preventing the growth of weeds is to till properly the soil and apply crop rotation. [_]
8. Mowing a lawn repeatedly is a measure taken to avoid the growth of weeds. [_]
9. Hand pulling is not recommended for destroying weeds in gardens. [_]
10. There are only perennial weeds. [_]
11. Reduction of the yield constitutes the single threat of weeds for farmers. [_]
12. It is easy to eradicate weeds. [_]

Task 2 Complete the sentences by selecting one of the options

1. To _____ means to cut the grass of a lawn or hay grass.
 a. to sow b. to creep
 c. to mow d. to germinate
2. _____ is a kind of cover crop planted near a primary crop in order to prevent the growth of weeds in that area.
 a. vine b. cereal crop
 c. sdmixture of seeds d. smother crop
3. The plants which live parasitically on other plants are called _____.
 a. weeds b. pathogens
 c. fungi d. hosts
4. An insect plant or other organism that is harmful to crops, animals or man is termed as _____.
 a. fur b. beggarticks
 c. pest d. thistle
5. _____ is the series of organs in the digestive system of an animal through which food passes, nutrients are absorbed, and waste is eliminated.
 a. the livestock b. the digestive tract
 c. the vascular system d. the irrigation canal
6. _____ is the variety of plant and animal life in the world or in a particular habitat.
 a) biodiversity b) bur
 c) thistle d) tillage

7. Plowing is also called _____ .
- a) germination
 - b) tillage
 - c) crop rotation
 - d) hand pulling

Task 3 Read the text and use the clues to fill in the crossword puzzle



Across

- 3** to reduce.
- 6** the supply of water to land or crops.
- 7** farm animals.
- 8** domestic fowl, such as chickens, turkeys, ducks, and geese.

Down

- 1** succulent.
- 2** a plant that takes two years to grow from seed to fruition and die.
- 4** a plant living for several years.
- 5** to destroy completely.
- 6** not suitable or fit for eating.

Task 4 Watch the video titled 'Growing Organic: Weed Management' <https://www.youtube.com/watch?v=QXeupnisDck> and list at least five weed control techniques



1. _____
2. _____
3. _____
4. _____
5. _____

Delve Deeper Into...

Horta*: The Indigenous Greens

Horta, from the Latin word *hortus* meaning 'garden', literally means 'weeds' in Greek and encompasses a range of indigenous greens including wild spinach, endive, fennel leaves, dandelions, amaranth and nettles.

- 5 *'Horta, or 'weeds', are a staple in every Greek household and foraging for these leaves is a national pastime. I've grown up eating mounds of these greens, lovingly tossed with olive oil and lemon, and nothing makes me happier than collecting them with my yiayia. And if I'm lucky, I get my own bag of weeds to take home.'*



Dandelion (rathikia)

*[Source: © www.dianekochilas.com]

Glossary of Edible Weeds of Greece

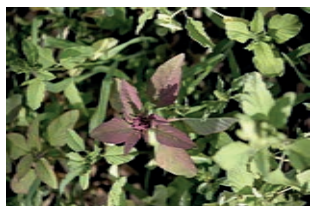
10 Around this time of the year, I start to tally up the excesses of the holidays. Too much bread, too many sweets, cheeses, meat etc. Most of us get the picture. I also start to turn to the one thing that makes me feel really good when I eat it: greens. Called horta in Greek, greens are the go-to food for foragers and healthy eaters alike. Greece is greens heaven, with something like 300 different wild edible greens and herbs. Many are also

15 cultivated and Greek farmers markets sparkle with emerald mounds of wild and cultivated chicories, arugula, chard, spinach, sorrel, collards and other greens in the brassica (cabbage) family. In the United States, anyone who's eaten in a Greek restaurant has probably at least seen a plate of boiled wild greens. Many of the greens we enjoy in the Greek kitchen are easy to find in Chinese and other Asian markets. The adventurous

20 might consider taking a walk in nature and picking a few from the wild.

I've compiled a short alphabetical list, really not even the tip of the iceberg, of greens we love to eat in the Greek kitchen. You can cook them up in the cleanest, simplest, most "detoxing" way, by simply boiling them and dressing them with great Greek olive oil and either lemon juice or vinegar. A rule of thumb is that sweet greens such as chard and

25 sweet dandelion take best to lemon, while bitter greens such as mustard greens go best with vinegar. Sprinkle with a little Greek sea salt or with the delicious smoked salt, and you'll discover that horta make up a whole world of sating, mineral-rich, super-healthy options when we're looking for something to help us detox from the holidays.



Amaranth (*Amarantus blitum*). **Vlita** is the Greek name of this ubiquitous summer green, which is boiled for salads but also cooked into pies and vegetable stews, especially with zucchini.



Arugula (*Eruca sativa*). **Roka** is the Greek name for arugula/rocket, and it is exceedingly peppery, especially compared to the flavor of arugula/rocket in the United States.



Bitter dock (*Rumex obtusifolius*). In Greece, **lapatho** is a green savored inside savory pies.



Black bryony (*Tamus communis*). Avronies are one of the most sought-after wild greens, a harbinger of spring that looks like thin-stalked asparagus but has a bitter taste. Greeks sauté them in olive oil and cook them in omelets.



Black nightshade (*Solanum nigrum*). **Styfino** is a common garden weed that grows in early summer. It's the green from which strychnine is produced, but its leaves are perfectly safe to eat, and Greeks do just that, boiling them for a delicious salad.



Blue mallow (*Malva silvestris*). Both savory pies and boiled greens salads feature **the moloha of the ancients**.



Borage. Borage leaves go into salads and so do its lavender flowers. Greeks call this springtime favorite **boratzi**.



Bur chervil (*Caucalis*). One of the most aromatic greens, with tiny tender leaves and a delicious, sweet flavor, **kafkalithra** is used in salads and pies.



Chicory (*Cichorium intybus*). Called **radiki** in Greek, this is one of the many species of wild chicory found throughout the country. It is mainly boiled in salads.



Common reichardia (*Picridium vulgare*). The Greeks call this **pikralida** or galatsida and esteem it highly, especially in boiled salads. It has a sweet taste and is one of the best winter greens.



Dandelion (*Taraxacum officinale*). Known as **radiki** in Greek, dandelion greens are eaten raw or cooked in salads.



Garden cress (*Lepidium sativum L.*). Called **kardamo** in Greek, this peppery green is one of the few enjoyed almost exclusively raw in salads.



Golden thistle (*Scolymus*). By far one of the most ancient wild prizes among Greek flora, **askolymbros** is a delicious, expensive green eaten as a boiled salad or in stews, especially with avgolemono sauce.



Grass lily, or star of Bethlehem (*Ornithogalum*). This thin-stalked green with its starlike flowers and long cluster of green buds is in season in the early spring, just before the asparagus and bryony are ripe for the picking. Greeks use it in pies.



Mediterranean hartwort (*Tordylium apulum L.*). The Greeks call this **kafkalida** and consider it one of the most aromatic greens for savory pie fillings.



Mustard greens (*Hirschfeldia incana Lag.*). The leaves and shoots of **vrouves**, as this is called in Greek, make excellent boiled salads



Nettles (*Urtica dioica*). **Tsouknida** is the term for stinging nettles, which are always eaten cooked, often in pie fillings and soups.



Prickly golden fleece (*Urospermum picroides*). Called **agriozohos** in Greek, the leaves and shoots of this green are eaten mainly boiled in salads.



Prickly lettuce (*Lactuca scariola*). The tender shoots and thin, rounded leaves of **petromaroulo**, as it's called in Greek, are typically boiled for salads.



Purslane (*Portulaca oleracea L.*). **Glistrida**, which means "slippery," is the Greek word for purslane because purslane supposedly loosens the tongue and makes people chatter.



Redstem stork's bill (*Erodium cicutarium L.*). Known as **kalogeros** in Greek, which means "monk".



Shepherd's needles (*Scandix pecten veneris*). This aromatic green, **myroni** in Greek, is eaten raw in salads as well as in fillings for savory pies.



Shepherd's purse (*Capsella bursa pastoris*). Called **kardamo** in Greek, this peppery green is typically boiled for salad.



Sow thistle (*Sonchus oleraceus*). **Zo-hos** to the Greeks, sow thistle makes for one of the best salads, especially when mixed with other greens.



White mustard (*Sinapis alba*). A spicy green whose Greek name, **sinapi**, sounds like its Latin nomenclature. It is also commonly known as **vrouves** in Greek. **Sinapi** or **Vrouves** are traditionally boiled for salads.



White upright mignonette (*Reseda alba*). Called **rezeda** in Greek, this is a rare green found along rocky coasts. It is mainly used in boiled salads and as one of many greens in savory pie fillings.



Wild Fennel (*Foeniculum vulgare*). Known as **marathon** to the Greeks, wild fennel is rampant on the Aegean islands in the spring and is used in salads, savory pies, fritters, and stuffed dishes.



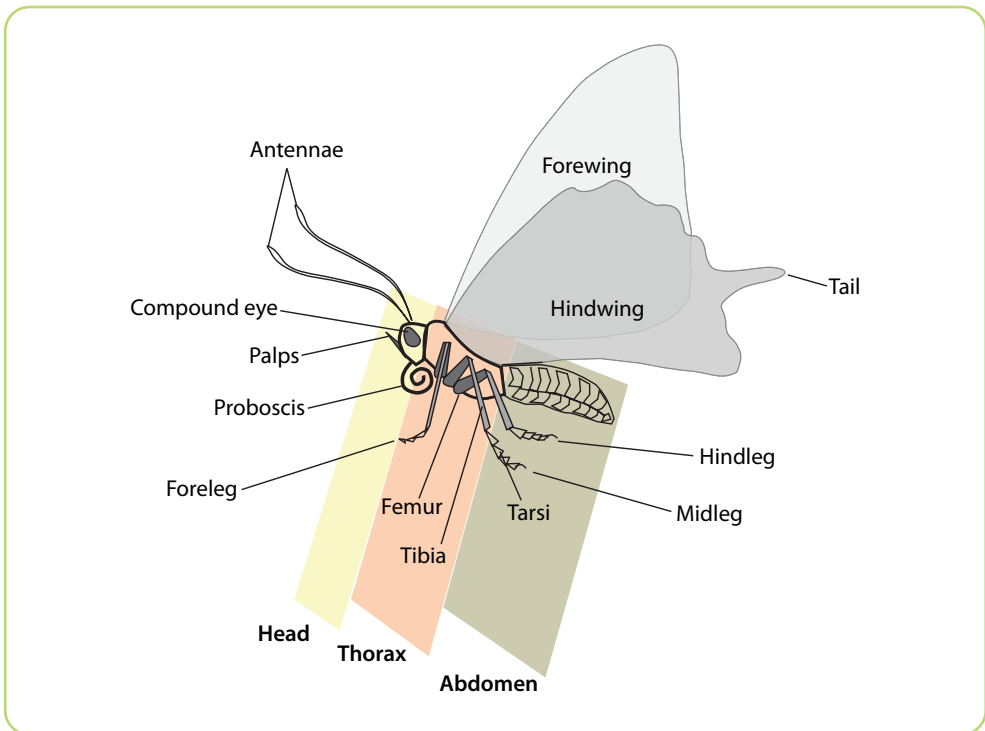
Yellow salsify (*Tragopogon*). The Greek name, **tragopogon**, is the same as the plant's botanical nomenclature. It means "ram's beard," and was inspired by the long, wispy shape of this delicious springtime shepherds' favorite.

Unit 25

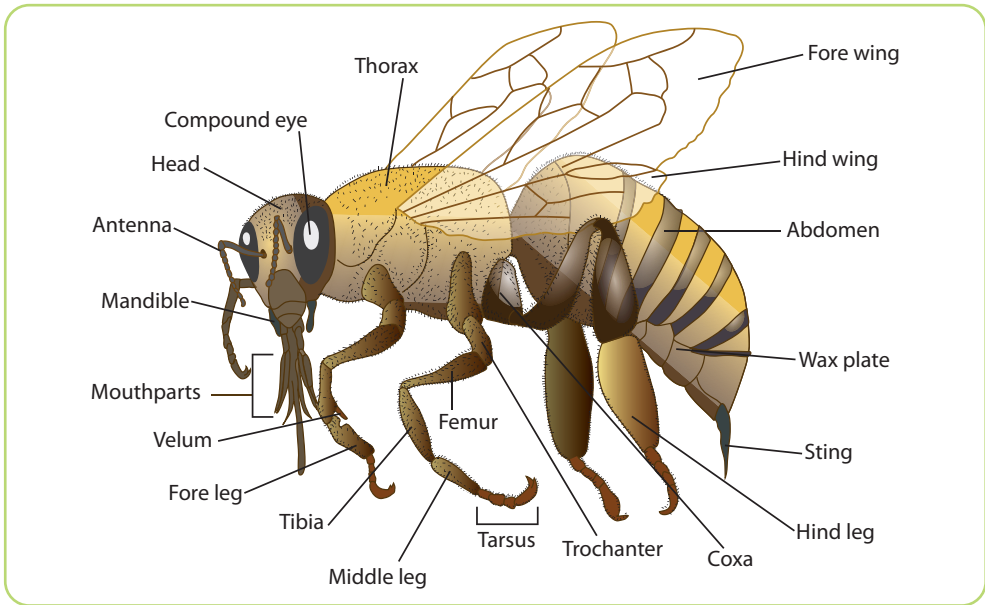
Arthropoda: The Case of Insects

Insects are invertebrate animals, that is they have no internal articulated skeleton, of the Class Insecta, the largest and (on land) most widely-distributed taxonomy within the Phylum Arthropoda. They comprise the most diverse group of animals on the earth, with around 925,000 species described. They retain their body shape by the rigidity of an external shell (exoskeleton) that protects their soft internal organs.

Their outer skeleton called the cuticle is made up of two layers, the epicuticle and the procuticle. The latter is in turn subdivided into two new layers, the exo- and endocuticle. The very tough and flexible endocuticle is built like



Butterfly parts



The Parts of Honeybee

numerous layers, called sclerites manipulated by muscles.

10 Their body is divided into three main parts: the head (6 segments), thorax (3 segments), and abdomen (11 segments).

Insects are the only invertebrate group to have developed flight, along with birds and bats. The winged insects, and their wingless relatives, some adult and all immature ones, make up the subclass Pterygota.

15 In nearly all of them abdominal limbs have disappeared, except for those near the tip of the abdomen which are part of the external copulatory apparatus and the female ovipositor.

The head supports a pair of sensory antennae, or feelers, a pair of compound eyes and a mouth - three pairs of appendages modified into mouthparts, to which
20 there are many variations with some adult insects even lacking functional mouthparts.

Insects live mainly on land and breath air, though many live in water for at least part of their life. No insect has more than three pairs of legs, except for some immature forms such as caterpillars that have prolegs. The legs are hollow
25 shells with muscles inside and constitute mechanical devices which, in Pterygota, raise the body from the ground and propel it forward by pushing against a rigid surface.

Insects usually have eyes of two kinds: one pair of compound eyes and a set of three simple eyes, dorsal ocelli, arranged in a triangle at the top of the head or
30 vertex.

<i>Special Terms</i>	
Adult insect	an insect which has reached the reproductive stage.
Antenna (plural antennae)	a movable segmented organ of sensation on the head of arthropods.
Arthropoda	a division of the animal kingdom, which includes insects, spiders, and Crustacea, and is characterized by an external skeleton and segmented legs.
Compound eyes	highly developed eyes of insects with a large number of separate compartments, each containing lens and forming an image.
Copulatory apparatus	in males, the organ for conveying the spermatozoa into the sperm receptacle of the female.
Cuticle	external non-cellular layer covering an insect, secreted by the outer cells of the body.
Dorsal ocelli	the simple eyes of adult insects which are usually three in number.
Exoskeleton	external skeleton as in insects.
Immature insect	an insect which has not reached the reproductive stage yet.
Invertebrates	animals which do not have a spinal column or backbone.
Mouthparts	jointed structures of the head used in feeding.
Ovipositor	a specialized structure in insects for placing eggs in a suitable place.
Sclerite	any of the large or small hardened areas of the body wall of insects.
Segment	part of an animal or of a jointed appendage.
Vertex	top of head.

Practice Tasks

Task 1 *True or False?*

1. The body of insects is supported by an articulated skeleton. [_]
2. The insects' exoskeleton is formed by hardened cuticle, called sklerites. [_]
3. Insects have feelers on their heads. [_]
4. Insects are classified as invertebrates and are land living and air-breathing. [_]
5. Some insects spend a considerable time of their lives in water. [_]
6. Insects can have compound eyes and dorsal ocelli. [_]
7. A characteristic shared by bats, birds and insects is the ability to fly. [_]
8. The insects' exoskeleton is formed by large hard surface areas. [_]
9. The body of insects is usually formed by two major parts: the thorax and the abdomen. [_]
10. Muscles are responsible for the movement of sclerites. [_]
11. All insects have wings. [_]
12. Insects have two eyes. [_]

Task 2 *Find synonyms to the words*

1. Feelers: _____
2. Segments: _____
3. Belly: _____
4. Eyes: _____