

EXAMEN (session 1) – 2^{ème} semestre 2021/2022
Samedi 14 mai 2022

Durée : 1 heure 30 – mode distanciel

WHAT IS A GOOD APIARY SITE ?

- (a) A good apiary site is one that is secluded, exposed to full sunlight, and close to a multitude of flowering plants; it must have good air circulation and water drainage, and a reliable source of fresh water. It is helpful to have a small building nearby in which beekeeping equipment can be kept. An access road that is usable all year round is a necessity.
- (b) The apiary site should be secluded because some people are afraid of bees, and others might vandalize the hives. While vandalism is not a serious problem, it is a temptation, especially for a youngster, to molest or even tip over a hive of bees. If an apiary site is hidden, this means that the individual bees leaving the hive must fly up and over surrounding vegetation. It also means that they cannot accidentally fly into someone walking in the vicinity. This is an interesting aspect of bee biology. Close to the hive almost any bee is quick to defend the nest. A bee disturbed in the field, on the other hand, usually flees the site of danger or interruption as soon as possible. *Although an individual can be stung when not near a nest, it is a rare occurrence.* Quite frequently, too, people who have been stung while walking through a field have offended a wasp, not a bee. Unfortunately, *most people do not know the difference between a wasp and a bee.*
- (c) We have kept an apiary of 20 to 40 colonies of bees only a few hundred yards from the active part of the Cornell University campus for many years with no difficulty. Our apiary is surrounded by a hedge about 15 feet high and about as thick. The hedge consists of evergreens, and inside the row of evergreens is a second hedge of deciduous bushes that grow to about 10 feet in height. The bees must fly up and over the hedge to forage; they are also hidden from view. *We have the room to grow such a large hedge, but in more confined areas a board fence would serve the same purpose.* Commercial beekeepers often place their apiaries in a woods, usually close to a good road, but hidden just enough so the colonies cannot be seen by people driving by.
- (d) An apiary should be exposed to as much sunlight as possible. Foraging bees will fly to the field earlier in the morning and will work later in the evening if their hive is warmed by the sun's rays. This is especially true in the spring and fall, critical times for honey bee colonies. A sun-warmed colony with a large force of bees to send into the field will gather more honey than a colony that is shaded and cool and has a smaller field force.
- (e) Bees maintain a brood rearing¹ temperature of about 92°F to 96°F (33°C to 35°C). If their hives are warm and dry, fewer bees are required to produce the energy to maintain this temperature, another reason sunlight is important. The maintenance of a uniform temperature within the colony is also important in helping the colony to control certain diseases that can occur when the brood rearing temperature falls. Critical bee diseases—for example, sacbrood and European foulbrood²—develop only in colonies under stress. A hive that is cool because of an improper location is one important stress factor that can be eliminated by the beekeeper.
- (f) Perhaps more important to the beginner is the question of hive temperament. Bees, or at least colonies of bees, have a temperament. On warm days, when the colony is able to maintain normal activities with little or no difficulty, the bees within the colony are much less inclined to sting. Experienced beekeepers will testify to the

¹ brood = progéniture ; to rear = élever

² maladies s'attaquant aux larves

differences in stinging behavior between bees exposed to sun and those in shade; *bees in full sunlight always have a much better temperament.*

(g) Good air circulation and water drainage are important in an apiary. It is especially important to keep colonies of honey bees dry. Colonies that are damp or have wet bottomboards have difficulty maintaining a normal brood rearing temperature. A dry hive is a healthier hive. Honey bees also give off large quantities of metabolic water when they eat honey. It is important that water be allowed to escape from the hive and not condense inside. If moisture condenses in or near the brood rearing area, it will cool the nest and make it more difficult for the bees to rear brood.

(h) *The best location for an apiary is on the side of a hill that slopes to³ the east or south* and is devoid of trees in the immediate vicinity that might shade the location. While trees for a windbreak are helpful, they should not be too close to the site.

(i) Bees collect water to dilute the honey they feed to brood and also to air-condition their nest. In the spring, water may be a critical factor for a honey bee colony. If fresh water is not available nearby, it should be provided. In remote locations, a 55-gallon drum (*approx. 200 liters*) filled with water and containing some straw, leaves, or branches onto which the bees might crawl while collecting water, will provide the bees with water for up to a week or 10 days. In the home apiary, it may be possible to allow a water faucet hose to drip onto a long board from which the water may be collected by the bees. In the northern states, beekeepers will notice that the number of bees at a watering site will increase greatly during July and August, when it becomes dry, indicating the bees' need for water. The beekeeper who locates the apiary near a source of clean water will save the bees much work.

(j) Approximately one cell of honey and one cell of pollen are required to produce a young bee. While it is true that a bee may fly as much as eight or nine miles, if necessary, to collect pollen and nectar, research shows that colonies that gather most of their food within a half-mile radius prosper much more than those whose field force must fly further. Beekeeping is limited by the natural vegetation available to the field bees. Even the best physical location is worthless without an abundance of pollen- and nectar-producing plants.

“What Is a Good Apiary Site?” by Roger A. Morse, from *The New Complete Guide to Beekeeping*, 1994

³ dont la pente est orientée à

PART A. General comprehension. MCQ. Choose the ONE correct answer. (0,5x8 + 1,5x2=7 points)

A.1 According to paragraph (b), what is the main reason for locating an apiary in a secluded spot?

- a. to keep people from disturbing the bees
- b. to make sure it is far from other apiaries
- c. to make sure fresh water is nearby
- d. to give the bees access to fresh air

A.2 What does the first sentence of paragraph (c) reveal about the author?

- a. his main job is to perform scientific experiments on bees.
- b. his advice is supported by his experience with bees.
- c. he feels keeping bees requires little effort.
- d. he sells honey from his own beehives.

A.3 Based on paragraph (d), how would an apiary that is exposed to a lot of sunlight differ from one that gets relatively little sunlight?

- a. it would be more productive.
- b. it would produce larger bees.
- c. it would become dangerously hot.
- d. it would be exposed to vandalism.

A.4 Based on paragraph (e), what contributes most to successful brood rearing?

- a. the hive's age
- b. the hive's size
- c. the hive's location
- d. the hive's temperature

A.5 According to paragraph (g), wet bottomboards are a sign that

- a. the hive is not ventilated properly.
- b. the hive is not storing water well.
- c. the bees are too far away from flowers.
- d. the bees are producing too much water.

A.6 Based on paragraphs (g) and (f), what is most likely true about wind and apiaries?

- a. Apiaries need to be tied down in windy areas.
- b. Apiaries should be located in windy areas.
- c. Apiaries benefit from moderate winds.
- d. Apiaries need wind to chill the hives.

A.7 In paragraph (d), foraging bees are

- a. becoming angry.
- b. looking for food.
- c. looking for mates.
- d. defending the hive.

- A.8 The main objective of the colony is
- a. to keep cool
 - b. to live a quiet, secluded life
 - c. to colonize other apiaries
 - d. to maintain satisfactory brood rearing conditions

A.9 Select three adjectives from the list below to describe ideal conditions for a beehive to prosper (1,5 pts) :

dry – full – damp – wet – low – secluded – shaded – good – warm – evergreen – reliable

A.10 Select three verbs from the list below that best describe the bees’ essential activities in a colony (1,5 pts):

shade – rear – occur – sting – slope – maintain – forage – save – fly – circulate – vandalize

PART C. General comprehension ; summarising, discussing (2 + 2 points)

C.1 What is the purpose of this text ? How does the author organise and structure the information ? What is the likely audience ? Answer in 30 words.

C.2 Based on this text, is it possible to conclude that bees stand as much risk from people as they stand to benefit from their presence ? Answer in 20 to 30 words.

PART D. Syntax, grammar, tenses. (8 points)

D1. Rephrase the following excerpts (in italics in the text) by using the suggested prompt. [4 pts]

Example :

Item	Paragraph	Sentence	Prompt
Example	b	<i>Although an individual can be stung when not near a nest, it is a rare occurrence.</i>	<i>seldom</i>

Answer :-> *Individuals are seldom stung when not near a nest.*

Item	Paragraph	Excerpt	Prompt
1	b	<i>most people do not know the difference between a wasp and a bee.</i>	<i>few</i>
2	c	<i>We have the room to grow such a large hedge, but in more confined areas a board fence would serve the same purpose</i>	<i>if</i>
3	f	<i>bees in full sunlight always have a much better temperament</i>	<i>improve</i>

4	h	<i>The best location for an apiary is on the side of a hill that slopes to the east or south</i>	<i>avoid + west or north</i>
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D.2. Change one word in the sentence in order to say the exact opposite of its original meaning. (1,5 pts)

NB Do NOT add any extra words or otherwise modify the sentence.

- A. « It is helpful to have a small building nearby. »
- B. « An apiary should be exposed to as much sunlight as possible. »
- C. « Colonies that gather their food within a half-mile radius prosper much more than others. »

D.3. Reformulate to say the exact same thing, using your own words : (2 points)

- A. 'A hive that is cool because of an improper location is one important stress factor that can be eliminated by the beekeeper' [in paragraph e]
- B. 'Beekeeping is limited by the natural vegetation available to the field bees', [in paragraph i].

D.4. Use the model to complete the sentences. Pay attention to the changes in each proposition. (1,5 points)

Model : If the colony is under attack, the bees will sting

- A. If the colony was under attack, the bees _____ sting
- B. If the colony had _____ under attack, the bees would _____ stung.

PART E. Expression guidée. (10 points)

Write the diary – or work log - of a beekeeper (using the first person singular) **OR** that of a worker bee (using the first person plural).

Use information from the text to relate events that are plausible and use your imagination to insert incidents or protagonists that flesh out your scenario.

Write at least 10 chronological entries and no fewer than 180 words. Do not copy passages from the text or other sources.

Vous serez noté sur votre respect de la consigne, la correction et la variété des structures lexicales et syntaxiques ainsi que l'emploi de formes verbales variées et appropriées.

