UNIT 11 "MALARIA—A NEW THREAT"

Structure

11.0 OBJECTIVES

In this unit our aim is to give you practice in reading comprehension by (a) setting a passage dealing with malaria, (b) giving a glossary of difficult words, (c) asking questions relating to comprehension of the passage and (d) setting a question on rephrasing of some expressions used in the passage. We have also set exercises on some items of vocabulary. The section on grammar and usage gives you practice in active and passive sentences and listing. For practice in writing you will first read the information given in a tabular form and write a paragraph based on these points in about 200 words.

11.1 READING COMPREHENSION

11.1.1 Study Guide

The aim of this section is to help you to read with understanding and to expand your vocabulary. It has a reading passage, followed by a glossary. You should first read the whole passage silently and quickly to get the main points, then you should read it once again, slowly and carefully, to comprehend all the details. You should also consult the glossary for meanings of unfamiliar words, besides trying to guess the meanings of words and phrases from the contexts in which they appear. After you have read and understood the passage you must answer all the questions. You should then check your answers with the answers given by us at the end of each unit.

11.1.2 Passage for Reading

Malaria - a new threat

Malaria has been the scourge of humanity since the earliest times, and there are ominous signs that it is fighting back against modern science. The first great breakthrough in the treatment of malaria was the discovery by Sir Ronald Ross that the disease was transmitted by the female anopheles mosquito. Giovanni Grassi worked out the life cycle of the human malaria parasite.

With the connection between malaria and the mosquito clearly established, steps could be taken to fight the disease.

One method was to attack the breeding places of the mosquito. It was known that mosquitoes laid their eggs in water. So, in malaria – infested areas work was started on draining marshes, stagnant

pools, and trying to ensure generally that there were no areas of water where mosquitoes could breed. Where areas of still water could not be drained, they were sometimes covered with oil or detergent which made them unusable by the mosquitoes.

One of the more ingenious modern methods of preventing mosquitoes from multiplying is to introduce a different variety of mosquito into an area: When the two varieties mate, the females are infertile. This kind of 'biological engineering' has had some limited success in the field, but it is not always possible to reproduce laboratory conditions in real life. Since there are over 2,600 different kinds of mosquitoes, the research problems are enormous.

The most obvious and easiest method of prevention is to use wire screens and mosquito netting to prevent people from being bitten. But this is obviously not of much use in poor areas, or when people are travelling about.

A more flexible method is to take protective drugs such as quinine. This drug was at one time extremely widely used, but during the Second World War most of the supply areas fell to the Japanese and alternative methods had to be found in the West. These drugs proved to be more effective in many ways, and the use of quinine tailed away. Recently, however, there have been indications that certain varieties of malaria germs are becoming resistant to the more modern drugs, and quinine is coming into use once more.

At one time, it seemed that insecticides, especially, DDT, might wipe out malaria co.npletely. One of the most successful DDT campaigns was carried out in India. In 1952, at the beginning of the campaign, seventy-five million Indians a year suffered from malaria. By 1965, the spraying of DDT had reduced the number of cases to 100,000.

However, as with the malaria germ and preventive drugs, there is evidence that mosquitoes are developing resistance to DDT. One of the reasons for this has been the initial success of the operation. People became careless. Also, owing to the fuel crisis, poorer countries found it impossible to maintain the eradication programme. The situation now is that malaria is staging a comeback, and there are new breeds which are resistant to DDT.

So we see that there are various methods of fighting malaria. They involve: preventing mosquitoes from breeding; preventing mosquitoes having the opportunity to bite people; using protective drugs, and using insecticides. Dangerous new developments are that some malaria germs are developing a resistance to modern drugs, and the mosquitoes themselves are becoming resistant to insecticides.

(From *Study Skills in English* by Michael J. Wallace)

11.1.3 Glossary

(The numbers refer to the lines in the reading passage).

humanity : mankind
Scourge : cause of suffering
ominous : evil ; bad
breakthrough : success
transmitted : Passed on
life cycle : changes in the life of an organism.
parasite : a) animal or plant living on another and getting its food from it.
b) a person supported by another and giving him nothing in return.
established : proved ; found.
breeding places : the places where mosquitoes lay their eggs.
laid : past tense of lay; produced or gave birth to
malaria infested areas : places badly affected by malaria.
draining : make liquid flow away; or make a place or a thing dry by letting the water run off.
marshes : wet land.
stagnant : standing or still water
pool : a hollow in the ground where water collects.

detergent : a sort of powder or liquid for washing things e.g., Soap is a kind of detergent.
ingenious : sophisticated ; skilful, clever in design
preventing : stopping something happening.
multiplying : increasing
mate : bird or animals coming together for the purpose of producing young ones.
infertile : not productive ; barren
biological engineering : The act of contriving a union between two varieties.
reproduce : to produce a copy of the original.
laboratory conditions : artificial conditions
enormous : very great
flexible : easily changed to new conditions
protective drugs : medicines that keep people safe
alternative : another; different
tailed away : became very small; insignificant
germs : tiny, living things that may bring illness e.g., Flu germs, Malaria germs.
becoming resistant : offering opposition; hold out against (something)
insecticides : preparation used for killing ants, flies, wasps,
wipe out : destroy completely
campaigns : a series of planned activities to gain a special object; propaganda.
carried out : given effect to
spraying : make liquid shoot out
initial : at the beginning; first
fuel : wood, coal, oil etc. that you burn to make heat or power
crisis : time of great trouble. Fuel crisis would mean shortage of wood etc.
eradication : destruction; uprooting
staging a come back : to come back after having failed.

11.1.4 Comprehension Questions

Exercise 1

Answer the following questions on the passage you have read (Section 1.1.2). You may refer to the passage again to find the answers.

1. Has modern science been able to control malaria completely?
2. What according to Sir Ronald Ross was the source of malaria?
3. What did Giovanni Grassi find out about malaria ?
4. Where did malaria mosquitoes lay their eggs ? Name two such places mentioned in para 3.
5. What was the most common method used earlier to fight malaria?
6. How does mixing of two different varieties of mosquitoes, prevent the multiplication of malaria?
7. Why has the method of mixing two varieties of mosquitoes not been very successful?
8. Why are wire screens and mosquito netting not found useful?
9. What was the effect of the Second World War on the use of quinine?
10. Why is quinine becoming popular once again?
11. Which two methods are not as effective as they used to be at one time?
12. List all the methods that have been used against malaria.
13. Why is malaria called a new threat?

11.1.5 Rephrasing

Exercise 2

Rewrite the following sentences relocating the words underlined with expressions from the passage which have the same meaning.

Example

Malaria has been the *cause of suffering* of humanity.

This sentence can be written as Malaria has been the scourge of humanity.

1. Sir Ronald Ross found that malaria was passed on by the female mosquito called Anopheles.
2. There are dangerous signs that malaria is fighting back against modern science.
3. One very popular method to fight malaria was to make wet lands dry.
4. The places where water could not be made to flow away, they were covered with oil or detergent
5. Another method of preventing mosquitoes from increasing their number is to introduce a different variety of mosquito into the area and make them come together for the purposes of producing young ones.
6. It is not always possible to copy laboratory conditions in real life.
7. At one time it looked certain that D. D. T. would destroy malaria completely.
8. Some malaria germs are developing opposition to modern drugs.
9. One of the most successful D. D. T. propaganda was carried out in India
10. There are new varieties of mosquitoes which are resistant to DDT

11.2 VOCABULARY

Exercise 3

Refer back to the passage and find synonyms (i.e., words with similar meanings) for the following words. The synonyms can be found in the para number indicated against each word.

	Word		Synonyms
Example:	Sophisticated	(p. 4)	ingenious
	1. Curse	(p. 1)	_____
	2. success	(p. 1)	_____
	3. still	(p. 3)	_____
	4. barren	(p. 4)	_____
	5. hinder	(p. 5)	_____
	6. huge	(p. 5)	_____
	7. different	(p. 6)	_____
	8. adaptable	(p. 6)	_____
	9. proof	(p. 8)	_____
	10. first	(p. 8)	_____

Exercise 4

Look at the word *insecticides* used in the passage. It means insect-killing substances. About the house and garden we can use germicides and pesticides, which refer to the substances that kill germs and pests respectively. The cides attached at the end of these words means killing. Similarly, bactericides and gametocides mean substances which destroy living bacteria, and the sexual cells of malarial parasite respectively.

Now find what persons or things mentioned in column A match with the proper words from column B. The first one has been done for you.

Column A	**Column B**
1. suicide	a. parents
2. regicide	b. man
3. vermicide	c. self
4. sororicide	d. king
5. parricide	e. sister
6. canicide	f. fungus

7. apicide	g. children
8. fungicide	h. worms
9. uxoricide	i. birds
10. filicide	j. dogs
11. avicide	k. bees
12. homicide	l. wife
13. infanticide	m. race
14. genocide	n. monkey
	o. child
	p. dandruff

11.3 GRAMMAR AND USAGE

11.3.1 Passive with an agent, expressed or unexpressed

Change the verbs in the following sentences from the active to the passive. When the agent is personal, omit it.

Examples:

a) We call the eye socket the orbit.
The eye socket is called orbit.

b) Chemists extract quinine from cinchona.
Quinine is extracted from cinchona.

c) Age, sex and function influence the rate of bone growth.
The rate of bone growth is influenced by age, sex and function.

Exercise 5

1. The female Anopheles mosquito transmits malaria.
2. They could take steps to fight malaria.
3. They had to find alternative methods in the West.
4. They carried out one of the most successful campaigns in India.
5. When we add iodine solution to glycogen, we produce a port - wine colour.
6. Lack of oxygen interrupt conduction in the nerves.
7. The nervous system controls heat production.
8. Motor fibres activate muscles.

11.3.2 Listing

When a list is written out within a sentence, items are separated by commas and the last two items are separated by *and* .You may put a comma, before *and* if you want to.

The principal bones of the face are the front bone, the temporal bone, the nasal bone, the maxilla and the mandible.

The following is a very common sentence pattern in scientific and technical writing:

There are x parts : a, b, c, and d.

Examples

a) There are four valves in the heart: the mitral valve, the tricuspid valve, the pulmonary valve and the aortic valve.

b) The heart pumps blood round two circuits; the pulmonary and the systemic.

Exercise 6

Now make each of the following short paragraphs into a sentence of the pattern illustrated above. Fill in the number and use a colon. Make any changes necessary, so that there are no main clauses within the list. One example is done for you.

The heart is divided into — cavities. These are the right atrium, the right ventricle, the left atrium and the left ventricle.

= The heart is divided into four cavities: the right atrium, the right ventricle, the left atrium and the left ventricle.

1. The stomach consists of — parts. There is a large vertical portion on the left. A smaller transverse portion lies below it and to the right.
2. The heart is supplied with — sets of nerve fibres one set runs from the medulla oblongata in the vagus nerve. The second set runs from the sympathetic ganglion at the base of the neck.

11.4 WRITING

In this section we shall give you practice in paragraph writing.

Exercise 7

Look at the following table based on the information given in the reading passage. Using this information write paragraph of about 200 words about the cause of malaria, methods of fighting it and the fresh problems posed by the malarial germs.

Malaria

Cause	Methods of Fighting	Problems
Malaria is caused by the female anopheles mosquito.	1. draining of breeding places. 2. Using oil or detergents 3. Making different varieties of mosquitoes mate. 4. Using wire screens, mosquito drugs and netting. 5. Using protective drugs (e.g. quinine) Using insecticides (e.g. D. D. T.)	Malarial germs are developing resistance to preventive drugs and insecticides

11.5 LET US SUM UP

In this unit we have given you practice in

i) Understanding a science passage dealing with malaria

ii) Rephrasing

iii) Finding out words having similar meanings

iv) Words ending in 'cide'.

v) Making active voice sentences into passive voice

vi) Listings items in a sentence or a paragraph, and

vii) writing a short paragraph on malaria based on the information provided in a tabular form.

11.6 ANSWER TO THE EXERCISES

Exercise 1

1. No
2. According to Sir Ronald Ross, the source of malaria was the female mosquito called Anopheles.
3. Giovanni Grassi found out the life cycle of the malaria mosquito.
4. The malarial mosquitoes laid their eggs in water. Two such places were: marshes and stagnant pools.
5. The most common method used to fight malaria was to drain breeding places or to cover the breeding place with oil or detergents.
6. When two varieties of mosquitoes mate the female becomes barren and is thus not able to lay eggs. In this way this method helps in preventing mosquitoes from multiplying their species.
7. The method of mixing two varieties of mosquitoes has not been very successful because it is not possible to reproduce laboratory conditions in real life.
8. They are very expensive and cannot be used during travel
9. The effect of the Second World War on the use of the quinine was that its use was reduced.
10. Quinine is becoming popular again because other drugs are proving ineffective against malaria.
11. Drugs and insecticides are no longer effective.
12. a) Wire screens, netting.
    b) Drugs (e.g. Quinine)
    c) insecticides (e.g. DDT)
    d) mating of different varieties of mosquitoes.
13. Malaria is called a new threat because malaria is staging a come back, and there are new breeds of mosquitoes which are resistant to DDT.

Exercise 2

1. Transmitted	2. Ominous	3. Marshes	4. Drained	5. Mate
6. Reproduce	7. Wipe out	8. Resistance	9. Campaign	10. Breeds

Exercise 3

1. Scourge	2. Breakthrough	3. Stagnant	4. Infertile	5. Prevent
6. Enormous	7. Alternative	8. Flexible	9. Evidence	10. Initial

Exercise 4

1. c,	2. d,	3. h,	4. e,	5. a,	6. j,	7. k,
8. f,	9. l,	10. g,	11. i,	12. b,	13. o,	14. m.

Exercise 5

1. Malaria is transmitted by the female Anopheles mosquito.
2. Steps could be taken to fight malaria.
3. Alternative methods had to be found in the West.
4. One of the most successful campaigns was carried out in India.

5. When iodine solution is added to Glycoden, a port-wine colour is produced.
6. Conduction in the nerves can be interrupted by lack of oxygen.
7. Heat production is controlled by the nervous system.
8. Muscles are activated by motor fibres.

Exercise 6

1. The stomach consists of two parts: a large vertical portion on the left and a smaller transverse portion lying below it and to the right.
2. The heart is supplied with two sets of nerve fibres: one set running from the medulla oblongata in the vagus nerve, and the second set running from the sympathetic ganglion at the base of the neck.