



Memoirs of a Plague

A STUDYGUIDE BY ROGER STITSON

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Creatures of the Flood



SYNOPSIS

Set against the amazing lifecycle of locusts, we witness man's efforts to kill them. The battle against the locusts takes place on two continents. In Australia the largest plague ever recorded has hit the agricultural heartlands. In Ethiopia a swarm of locusts has descended on a small subsistence farming community. In both cases the reaction of authorities is the same; massive amounts of pesticides and resources costing millions of dollars are deployed.

While these efforts are very efficient at killing the locusts, the film's director, himself an old locust killer, questions whether they are worth the environmental and financial costs. The course of the current locust plague in Australia was unchanged by pesticides despite the spraying of hundreds of thousands of acres. In Africa, while the dramatic locust swarm panicked villagers in its path, it caused no damage. In both cases the farmers were

sure that their livelihoods were at an end, and the State stepped in and killed as many locusts as they could find.

The primary weapon against locusts is pesticide, developed from nerve gas used against humans during World War Two. The authorities aim to predict the locusts' breeding and migration. Then they set about spraying every locust they can find. In the meantime the locust carries on, living its life via the natural environmental rhythms in which it has evolved.

Macro cinematography shows the important stages of the life of the locust. We see in detail the anatomy of the locust and hear of how it has evolved into an aviator that can cross oceans. Seen through the eyes of the director as he travels Australia and Ethiopia, this program bears witness to events that are a sign of how our relationship with nature is dominated by ancient fears and preconceptions.

STUDY GUIDE
BY ROGER STITSON

CURRICULUM LINKS

This study guide is mainly aimed at middle and upper secondary school levels, with relevance to Biological Sciences, Environmental Studies, English, Media and Film Studies, SOSE/HSIE, Politics.



LOCUSTS – IMAGERY, STORIES, MYTHS AND LEGENDS

Before examining the narrative details of the documentary program, perhaps we should first look at what we have always known, or thought we had always known about locusts, based on what we have previously seen, heard or read prior to viewing the program. Note that activities related to the central arguments proposed during the program – the views presented by writer-director Robert Nugent – may be found in the section titled, ‘Opinion and controversy’.

- Discuss in class your previously-held views of what a locust is, what it does, how it behaves, and the effect it has, not only on the lives of human populations but as an image affecting the minds and emotional responses of humans.

You might draw upon stories you have seen in fictions films and TV programs (including cartoons), and literature (novels, short stories, comic books), and from religious mythology such as the stories of the ten plagues of ancient Egypt, the eighth of which was a plague of locusts.

- At the beginning of the program the narrator and director, Robert Nugent, says, ‘All over the world locusts are creatures that have come to haunt our imaginations. They are seen as a primordial foe of man... In our minds there is always a plague coming... a menace that comes from the future’.

First, explain why the narrator refers to locusts as a ‘primordial foe’. In what sense do these creatures ‘haunt our imaginations’? Why does he suggest that the locust is ‘a menace that comes from the future’? Explain why

he prefers to say ‘future’ rather than ‘past’, or from ‘somewhere else’?

- Drawing from your discussions throughout the previous two activities, plan and write your own horror, fantasy, science fiction, fable or historical drama in which locusts feature as an important and necessary element of the story. Your task is to be aware of narrative and image stereotyping, and to use them constructively in your storytelling. You may wish to include illustrations in your story.

LOCUSTS – LIFE CYCLE AND HABITAT

The program informs us of stages of growth that locusts go through to reach full maturity, and also the preferred environment or habitat in which locusts breed and feed.

- Comment on whether locusts are a type of grasshopper, or a completely different species of insect.
- There are various species of locusts around the world. The two that mainly feature during the program are the desert locust (filmed in Ethiopia) and the Australian plague locust (filmed in Australia). Carry out research then write a short commentary on whether there are any essential points of difference between the





two species, such as morphology (size, colouring etc), habitat, food sources, behaviour and breeding characteristics. (As an introduction, see 'Locusts – general overview' and 'Morphology – biology' in website references.)

- Following from the previous activity, on poster paper draw and label the exterior of a mature-stage Australian plague locust. (See 'Australian Plague Locust' and 'Australian Plague Locust Commission' in website references.)



- We find out during the program that after a locust hatches, to survive to adulthood it passes through five stages of moulting, where it sheds its exoskeleton. First, explain in your own words the meaning of 'exoskeleton', and the purpose of an exoskeleton. In other words, why might an insect have an exoskeleton while other creatures such as mammals and fish do not? Note that the program comments upon, and displays, an example of conditions when an exoskeleton is of great advantage to a locust.

Also describe the stages of a locust's growth. In what way is each stage different from its previous stage? You may wish to draw a picture of a locust at each of its stages, showing the comparative differences in physical size and other characteristics.

- From the program and from further research if necessary, explain when, in what locations and under which conditions, are locusts likely to breed, and then to lay eggs. Under which conditions are the eggs then likely to hatch.

- The narrator suggests that, 'Relatively little is known about how locusts fit into an entire ecosystem'. If necessary carry out further research then discuss in class what you think might be the place and the role of locusts in the natural ecosystem. Do they, in fact, play an essential role within the natural environments in which they move, or are they merely creatures of destruction? Is their reputation bad simply because they are viewed by humans as enemies and rivals in their search for food, especially those food crops grown by humans?

LOCUSTS AND PHASE CHANGE

An essential characteristic of locust behaviour, as an element of its life cycle, has been termed by scientists as 'phase change'.

- From the program and elsewhere, define 'phase change' as it applies to the behaviour of locusts, ensuring that you explain the meanings of the polar opposites of 'solitary' and 'gregarious'. Under what



conditions do locusts become gregarious, and why? What is the purpose of a locust's gregarious behaviour, and how does this relate to the formation of locust plagues?

- During the program there is a scene filmed at Sydney University where scientists attempt to induce phase change in captive locusts, under controlled conditions. Describe how the scientists induce a phase change in locust behaviour. Explain what you think the purpose of this kind of laboratory research might be? How might the findings of this research be put to some form of benefit, for example, to the natural environment of grasslands, or to farmers of tilled land who fear for their crops whenever a locust plague looms. How might the study and application of genetics assist in this research into locust phase change?
- From the program write an explanation as to why the scientists are finding it difficult to make the locusts 'behave normally in a laboratory system'. You may wish to consider other reasons that might explain this problem.
- Drawing from the previous activities in this section, imagine you are a solitary locust experiencing the phase change phenomenon, surrounded by millions of other solitary locusts who are also undergoing the same changes. From the locust's personal viewpoint, write a commentary on its observations,

the sensations, thoughts and reactions it experiences. Alternatively, you may wish to create this scene as a comic strip narrative either on poster paper or as a computerised graphic file for screen display.

METHODS OF ERADICATION

The program shows us various methods used around the world to eradicate locusts from human environments: chemical pesticide spraying – chemicals that are artificially or synthetically manufactured, and those made from naturally-created biological sources – as well as the use of flame throwers and the introduction of natural predators or parasites into the locusts' environment. Some of these methods may be considered questionable – a point we will examine later in this study guide.

Synthetic chemical spraying

- Explain the type of synthetic chemicals used to eradicate locusts. In other words, what are these chemicals originally derived from? Why might they be considered dangerous to humans, to other animal life forms and flora, also planted crops, and in general the entire natural environment? How does the insecticide actually kill locusts?

Note that the political imperatives surrounding chemical spraying, as distinct from the environmental issues, are introduced in the section, later in this study guide, titled, 'International and governmental responses to locust threat'.

- Discuss whether spraying these insecticides from light aircraft is the





most effective means of reaching and destroying locusts in plague conditions. From the program discuss the problems, for example, that Captain Arralleh encountered when flying his plane over a locust-infected region in southern Ethiopia.

- In order to carry out a successful spraying attack on locusts from his aircraft, explain the 'military-like logistics' and the coordination with others that Captain Arralleh must rely upon when he arrives on location to carry out his work for the Desert Locust Control Organization for Eastern Africa.
- Following from the previous activity, discuss the problems the south Ethiopian villagers of Konso have with attempting to assist Captain Arralleh from the ground, as they try to fight the locust plague. While in the air, what problems does

Arralleh have with the villagers in carrying out a successful mission?

Biological insecticides

- From the program and from further research if necessary, explain the essential differences between biological and those discussed above, chemical insecticides. What are the advantages and disadvantages of biological insecticides? (For more information see 'Biological insecticides' in website references. Note also that if you combine this search term with 'locusts', in a web search engine, you will find many scholarly research papers on the subject.)
- From further research if necessary, illustrate and label a flow chart diagram showing an example of how an introduced biological insecticide interferes in, and dis-

rupts, the life cycle of a locust or grasshopper, in such a way that it does not affect other creatures nor the environment.

Flame throwers

- Describe the use of flame throwers to eradicate locusts, as depicted during the program. Where might flame throwers be used, and where might they either be too dangerous to use, or too inefficient to use? Discuss your own reaction to these scenes, and your opinions on the effectiveness, and the advantages and disadvantages of this method. (For more examples, see 'Flame throwers' in website references. Note that the reference is a link to an interesting silent newsreel from 1930, shot in Palestine. There are many other references from the 1920s and 1930s that you will also find on the internet.)



Natural predators and parasites

- From further research compile a list of locust predators, and the ways in which they control, or at least have an effect on locust populations. (See 'Natural enemies of locusts' in website references.)
- Following from the above activity, describe the way in which certain kinds of wasps parasitise locust eggs. Explain how this activity is



of benefit to the wasp. You may wish to include a diagram of the way in which the locust life cycle is disrupted by these wasps. Discuss whether there are any environmental and ecological dangers in deliberately introducing large quantities of these wasp species into regions where the locusts swarm.

Food source for humans

- The program does not look at the issue of whether locusts are edible and nutritious within the human diet. Carry out research then write a report on this topic. Ensure you respond to the question as to whether most of us in the western world might have preconceived negative views about locusts, and about locusts as a food source, and whether it would be possible to reverse these attitudes. (See 'Locusts as food for humans' in website references.)



INTERNATIONAL AND GOVERNMENTAL RESPONSES TO LOCUST THREAT

As we see during the program, governments around the world, and large, specialist and funded regional organisations, are dedicated to controlling the locust threat. Captain Arralleh, for example, is but one of the personnel working for the Desert Locust Control Organization for Eastern Africa, while in Australia the Plague Locust Commission is an Australian government-funded organisation.

- Draw a map of the world indicating the main regions and countries where large locust plagues are likely to occur.
- During the program there is a scene filmed at the Rome headquarters of the Food and Agricultural Organization of the United Nations (FAO). After carrying out relevant research, discuss the role and activities of the FAO, and in particular look at the work being carried out on locust control and eradication. (See 'Food and Agricultural Organization of the United Nations' in website references. If you do a search for 'locusts' from within the FAO site you will find many references and the latest updates as to where new infestations

are occurring around the world.)

- Imagine you are writing for a popular magazine about world environmental issues. Plan and create illustrated magazine page spreads about both the Desert Locust Control Organization for Eastern Africa and the Australian Plague Locust Commission, looking at their stated aims and objectives, and the activities they carry out. How are they funded, and to what extent? Comment on personnel numbers, types of equipment, facilities and transport. How would you rate the relative success and effectiveness of these organisations? (See 'Desert Locust Control Organization for Eastern Africa' and 'Australian Plague Locust Commission' in website references.)
- The program's narrator says that, 'environmental considerations are not the priority when it comes to killing locusts. For locust killing is political'. Discuss in class the statement that 'locust killing is political'. In what way is it political, and why? Do governments and farmers have much choice in this matter? If they were to take the environmental issues of chemical spraying into consideration over the political issues, what might be the feared result of their actions (or non-actions)?



plain why this has become a major problem. Can we fairly apportion blame or not? What steps should have been taken, or ought to be taken, to solve this existing situation, and to ensure that it does not take place again?

OPINION AND CONTROVERSY

In the press kit notes for the longer version of *Locusts: Creatures of the Flood*, Robert Nugent, the writer-director and narrator of the program, says:

‘... no one has ever proved that spraying insecticides to kill locusts has prevented a plague. Politics and pesticides justify all the actions we see portrayed.

‘I know a bit too much about these things. For more than ten years I worked for the Australian government and the United Nations, hunting and killing locusts. This experience allowed me to enter into the liminal moments, conversations and decisions, which make up our efforts to control our world. The locusts, of course, could not care less about us.’

Consider the legal ramifications of allowing plagues to spread, and the possible connection between this and political relationships across national, regional, state and provincial borders around the world – and here in Australia. For example, why does one Australian farmer, speaking on-camera during the program, raise the possibility of being sued if he harvests his crop rather than sprays the locusts? Who does he think could sue him?

- John Hopkins, a sheep and wheat farmer, discusses on camera the range of problems associated with harvesting his crop, despite the fact that even though the locusts are ‘hovering all through’ the wheat they are not eating it. If he drives his harvester through the crop in order to cut it down, and to ready it for sale, what is likely to happen both in terms of crop quality and his financial income? What are his choices?
- Explain the state laws in Australia that compel farmers to spray insecticides if locust plagues are present. Find out then write a short report on whether there are any penalties upon farmers if they disobey or ignore these laws. Discuss whether the laws are practical, effective and worthwhile, or an unnecessary burden on farmers. Note that each state has its own laws on this issue; you may wish to select and examine one state’s laws only, or compare each state’s laws for similarities and differences.
- From what you have learnt about the issues facing Australian

farmers affected by both locust plagues, governmental regulations, crop quality and the politics of locust control, plan and write a short fiction story about a farmer, or a family in the land, in which you try to dramatise and personalise these important issues and themes. You may wish first to discuss in class the narrative possibilities for your story, in terms of style, point of view, locations and story structure.

- We are informed that, ‘In the last big locust plague in Africa in 2004 over eight million litres of insecticide were given by Western countries as aid. At the end of the plague over six million litres of insecticide remained unused.’ Ex-





Note also that during the preparation of this study guide, Nugent also made the following observations:

‘The facts are that environmental conditions end plagues categorically. Our capacity to influence this outcome is open to a range of opinions. Chemical companies benefit from the structures and systems that have been established to control not just locusts but most pests. Having been involved directly with Desert Locust campaigns I have witnessed first hand the role of companies in selling pesticides for locust control and the methods they employ to promote their products. These include from my first hand experience, cash inducements, in kind rewards, educational sponsorship, the provision of research funding and free outreach materials aimed at promulgating the fear of locusts.’

- During the program Robert Nugent says that, ‘The problem with locusts is that in reality they rarely live up to their reputations.’ Discuss whether there is any evidence presented throughout the program that locusts rarely live up to their reputations. To carry out this discussion you should first indicate what kind of reputations locusts have. Some of the activities in the first section of this study guide, ‘Locusts – imagery, stories, myths and legends’, should be of assistance in this discussion. Com-

ment, for example, on whether the scenes of locust plague and infestation shot by Nugent in Ethiopia and Australia support his viewpoint.

- Nugent also argues that locusts, ‘... just keep coming even though chemicals are sprayed over vast areas. More often than not it’s the weather that brings a plague to an end.’

First, discuss how the weather – or a change in the weather – might bring a locust plague to its end.

From viewing the relevant scenes in the program, comment on the likely degree of effectiveness of the insecticide spraying that was carried out from light aircraft. Do you think the purpose of the spraying was to prevent plagues from happening or to reduce and minimise the destructive effects of locusts behaving in plague mode? In other words, would the outcome of a plague be different if there was no spraying at all?

- Carefully examine the contents of the documentary for further statements, reports, and uses of statistics presented by Nugent to extend his basic arguments, and evidence, about the effectiveness of present-day locust control, and the political elements behind these methods of locust control.

- Following from the previous activity, discuss whether the documentary allows screen time for an ‘official’ or government-sponsored viewpoint towards locust control, and their reaction to Nugent’s opinions, either in Australia, Ethiopia, or in the scenes filmed at the FAO headquarters in Rome. You may wish to carry out further research on this question. Are, for example, the state-sanctioned approaches to locust control about to change or not? Are the official locust-control organisations around the world satisfied that the work they carry out is not only effective, but is maintained and supported by the appropriate methods, assumptions and attitudes? In general, is there any sympathy within world organisational and political circles for Nugent’s beliefs? Are there others in Nugent’s field of expertise and experience who hold similar opinions?
- On a more general and universal level we should return to the introductory paragraph of this section of the study guide, and note Nugent’s comments about ‘the liminal moments, conversations and decisions, which make up our efforts to control our world’. Discuss what he means by this observation. Are all ‘our efforts to control our world’ doomed to failure?



Plan and write a short fiction story about 'our efforts to control our world', from an individual, personal viewpoint. Your story does not necessarily have to be about controlling the spread of locust plagues!

Media studies

Carry out the following Media studies activities that arise from a viewing of *Locusts: Creatures of the Flood*. Note that questions on the program's viewpoint and arguments about its central subject matter – as expressed by writer-director Robert Nugent – may be found in the previous section, 'Opinion and controversy'.

- Discuss whether '*Locusts: Creatures of the Flood*' is a suitable title

for the program. Does it capture an adequate impression of the program's narrative, subject matter and themes? If you were asked to give the documentary an alternative title, what would you call it, and why?

- One of the themes running through the documentary is the role of the mass media in its reporting of the threat and the arrival of locust plagues upon the land. For example, in various sequences we often hear on the soundtrack radio broadcasts of news items, interviews or listener talkback sessions. Examine the language usage, rhetoric and style of this reporting, and write a commentary on the way in which the media confronts the general issue. What kinds of

messages and imagery does the news media broadcast to the public? Discuss whether it is informed, balanced and responsible.

- Following from the previous activity, discuss the program's attitude towards mass media reporting about the threat of locust plagues. In order to do this, you should examine carefully what is being presented visually, on screen, to see if sound and image complement each other or not, and also listen to the narrator's commentary throughout these sequences.
- Plan and write two newspaper reports of about 200-300 words each, about the impending arrival of a plague of locusts in an Australian environment. One should be presented in a populist, 'tabloid' mode, the other in 'responsible' and informed style. Ensure you provide each report with a suitable headline.
- As previously noted in this study guide, the voice-over narrator of the program is also its writer and director, Robert Nugent. Is this important to our understanding and appreciation of the program? Comment on whether it would have made a difference to us if the narrator were not the writer-director. Sometimes, in documentaries such as this, the narrator may be





referred to as the 'voice of God'. Why do you think this is so? Discuss the program's voice-over narration as an example of the 'voice of God' approach to documentary filmmaking.

Note that a longer version of this documentary, titled *Memoirs of a Plague*, also uses a 'voice of God' narrator. However, in that documentary, the narration is presented in the first rather than third person style. Those who have been able to view *Memoirs of a Plague* may wish to explore why the narration is different, and whether this affects our understanding and perception of the views presented.

- Now that you have viewed the program, carried out activities on it, and thought about the issues it raises, discuss whether your impression of locusts, and your gut reaction to images of them, are unchanged from before you viewed the program. Discuss, commenting on what you have learnt. (You might wish to compare your thoughts here to your response to the very first activity at the beginning of the study guide.)
- What do you think the program narrator's views about locusts are?
- There are many unusual camera shots during the program. One that may stick in the memory is

the shot (and the sound effects) of a boy riding a bicycle through his rural town, casually swatting at locusts with a squash racquet. Comment on the possible reasons for the insertion of this camera shot. For example, is it merely intended as a moment of light relief for the audience, or does it have another purpose?

- Comment on the role of the soundtrack music in various sequences of the program. What

kind of moods does it evoke while you are viewing? Does the music suggest in its own way a commentary on the visual content?

- In about 300 words write your own program review of *Locusts: Creatures of the Flood* for a daily newspaper TV liftout supplement. Remember that you are aiming at a generalist viewing audience so the content and style of your writing must be kept in mind.



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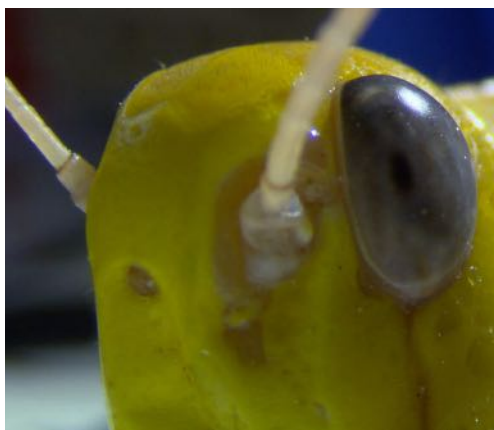
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