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CU S100/20

Title : Science course unit 20.
(clock title- Species and populations.)
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M.E. Varley:

Tape No. 6LT/70183
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Seq.	Time	Footage	Sequence List	Sound Cue
	53"		Pentz introduces the unit. He briefly discusses the need for studying individual behaviour in the study of population.	
	1'26"		Varley with a wasp speciman-nemeditis - crawling over pile of flour in a container. Varley explains that it lays its eggs in the flour moth caterpillar.	
	1'46"		C.U. shot of nemeritis. Varley points out the ovipositor and explains its function.	595.7980446
1/	2'18"		Shot of memeritis on flour again. Varley introduces the film on nemeritis behaviour taken at Oxford.	595.79804524
	3'30"		C.U. film shots of wasp probing flour with its ovipositor. The wasp finds and injects an egg into a caterpillar. Process repeated twice.	595.7980416
	4'30"		Varley discusses the waps behaviour. It is possible to tell if the wasp has actually laid an egg by studying the probing movement. The wasp must cock its ovipositor after it has injected a caterpillar.	
	5'46"		Film shots of wasp probing again. The cocking movements is pointed out each time it takes place.	
	6'30"		Varley cuts off the tip of an ovipositor. Each time the wasp cocks the ovipositor, an egg shoots out. Film shots show this. Shots of wasps probing a caterpillar which has already been injected with an egg. A second egg is not laid.	
	6'56"		Varley explains why this economy is desirable.	
	8'00"		Varley shows an experiment to determine wasp ability to find hidden caterpillars. The wasps go to the flour which contains hidden caterpillars and ignore the other. Varley explains why these characteristics make the wasp so efficient.	some pest insects

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Continuation

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2/	9'42"		Varley with a jar filled with mashed bananas and fruit flies, drosophila. This is from a home experiment which was carried out by students). Varley explains how to get the fruit flies out of the jar. She demonstrates the technique.	Now i'm going..... 595.774
	10'01"		Shot of drosophila mounted on slide.	
	10'17"		Shot of drosophila maggot and pupa.	
	10'59"		Varley describes a rare parasite which students may have found in their jam jars at home. She asks students to let her know if they have found some. Shot of this parasite (name not given)	and let us know.....
	1'21"		Pentz introduces Holmes who will discuss a study of predator-prey relationship.	
	12'31"		Holmes in studio with a North Sea plaice. He shows others of different sizes and points out adaptive advantage of being flat existence on the ocean bottom.	597.5045222
	12'49"		Shots of plaice swimming at ocean bottom.	
	14'27"		Holmes with histograph showing the amount of plaice taken from the North Sea in the period 1907-1960. Holmes explains that the evidence points to over exploitation of plaice.	
3/	16'18"		Holmes with a model which simulates the exploitation of plaice. He compares the results of 50% and 80% exploitation over a period of 4 years. The model shows that fishing at a lower intensity can result in larger yields over a period of time.	639.275 639.9775
	16'52"		Holmes discusses the possibility of determining an optimium rate of plaice exploitation. A graph shows the curve for maximium sustainable yield.	
	18'06"		Holmes takes up other factors which determine the size of plaice populations. 1. Growth of new stock 2. Rate of growth of individual fish to marketable size. Holmes gives the formula $S_2 = S_2 + (G+A) - (C+M)$ which sums up the situation. The formula is captioned.	
	18'54"		Holmes examines the growth rates of individual plaice. An animated graph shows age against size. It shows the greatest growth taking place in the fish early years.	

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3/	19'20"		Holmes with a map of the North Sea showing distribution pattern of plaice of different sizes. As the plaice grow larger they move from the coast of Holland to the deeper waters of the North Sea.	
	20'48"		Holmes discusses an experiment which was done to determine the factors responsible for the limits of growth in the shallow waters off Holland. Lack of food seemed to be the determining factor.	trawling and so forth
	21'25"		Holmes discusses growth of new stock as a factor in determing plaice population size. High mortality rate of very young plaice (plaice larvae) examined.	Now what about
4/	22'11"		Film shots and commentary of attempts to commercially control the survival of very young plaice. 1/ Larvae 2/ Very small, stage stamp size fish. Shots of small plaice being fed at a trough.	
	22'38"		Holmes explains why these attempts have failed.	
	23'26"		Holmes takes up the possibility of limiting the catching of plaice. He shows a piece of netting which has mesh size regulated by international agreement. The mesh allows small plaice to escape.	639.9775
	24'14"		Film shots of this net in action. The underwater shots show plaice being caught and small plaice escaping.	of marketable size.
5/	24'26"		Credits.	