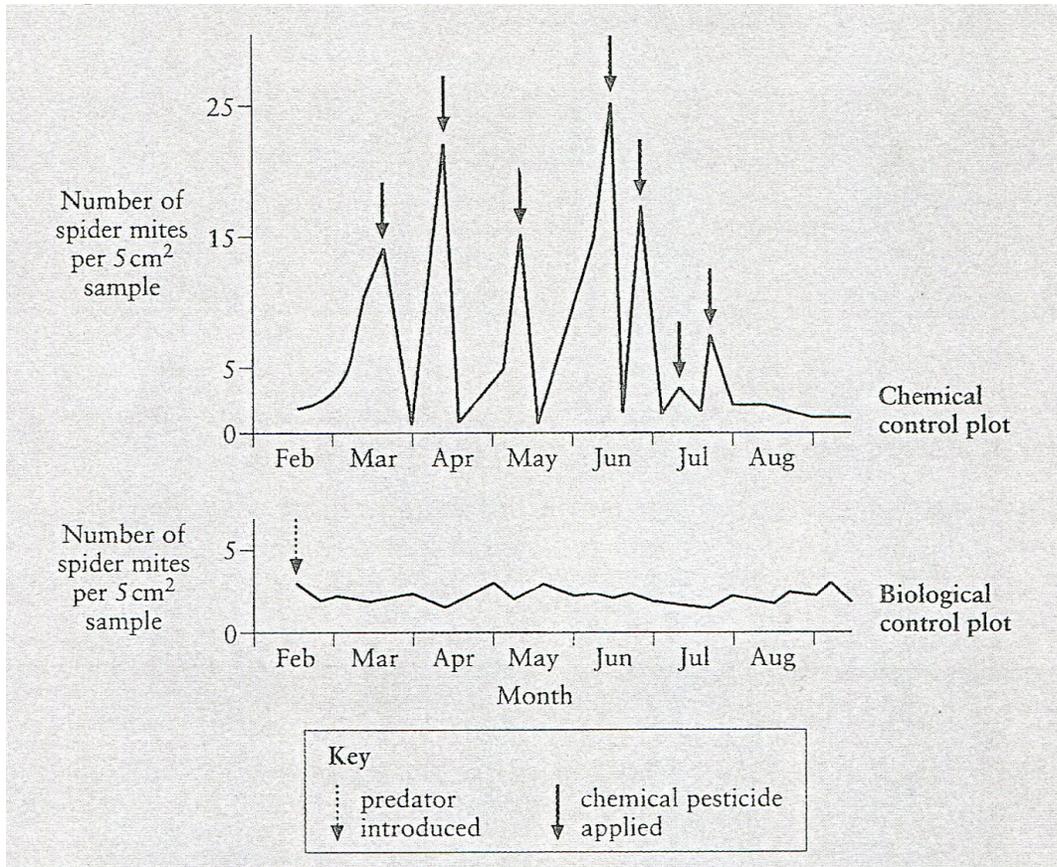


Spider mites are important pests of cucumbers. The graphs below show the results of an experiment using a chemical pesticide and biological control on two plots of cucumber plants infested with mites.

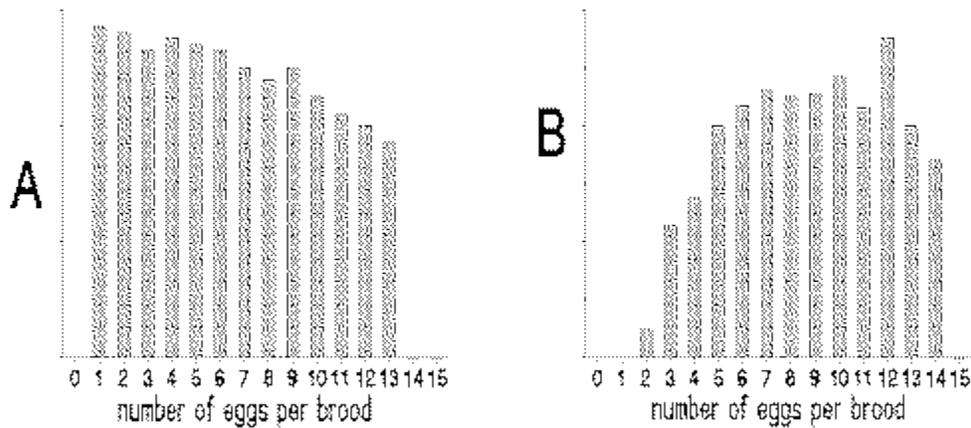


- (a) Using evidence from the graphs, give two possible advantages of biological control over chemical control.
- (b) Describe two features of a predator that are essential if it is to be a successful biological control agent

Someone has investigated the fitness of a population of the coal tit (*Parus major*) in relation to the number of eggs per nest. He determined:

- I the frequency of number of eggs per nest
- II the average weight of the young birds at the moment they flew out
- III the number of birds caught back per nest at the end of the summer
- IV the average area of a territory

The two diagrams A and B are showing the results of two of these four aspects.



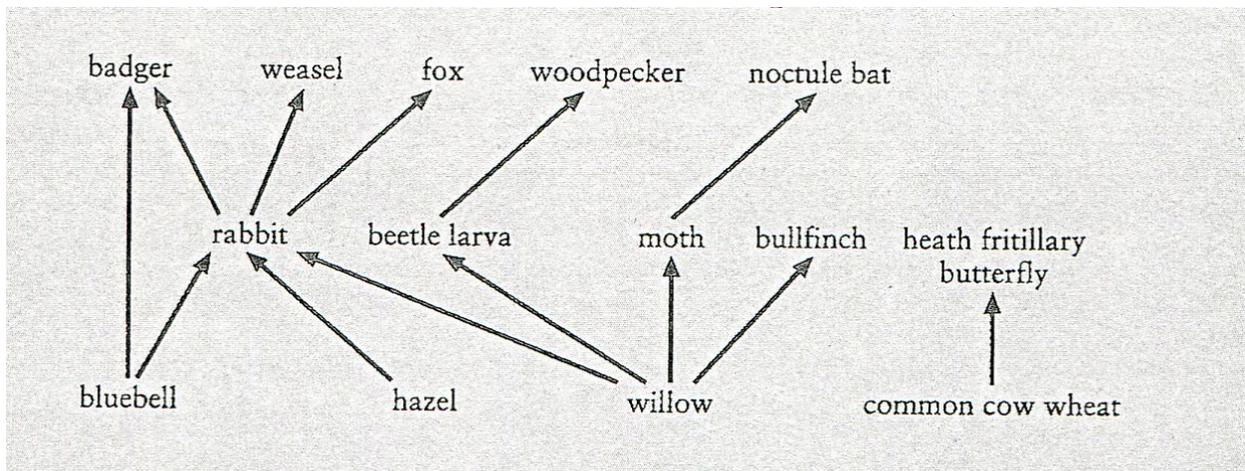
What are the diagrams representing ?

	Aspect(s) (fill in I, II, III and/or IV)
Diagram A	
Diagram B	

For the two aspects that you did not choose in the original list of four, predict and draw a line graph that would expect to see for those other two aspects.

Coppicing is a technique of woodland management in which trees are cut down regularly. Open spaces or areas of reduced tree canopy are thus produced.

(a) The diagram below shows the food web in part of a coppiced woodland.



- (i) State how many trophic levels are shown.**
- (ii) State why there are usually not more than four trophic levels in most food webs.**
- (iii) Suggest how coppicing may change the ground flora of a woodland.**
- (iv) Suggest a reason why this change may occur.**