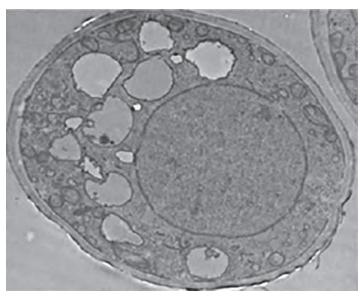
- 7 Hymenoscyphus fraxineus (H. fraxineus) is the fungus that causes ash dieback. This disease usually kills all the ash trees that it infects.
 - (a) The electron micrograph shows a section through a fungal cell.



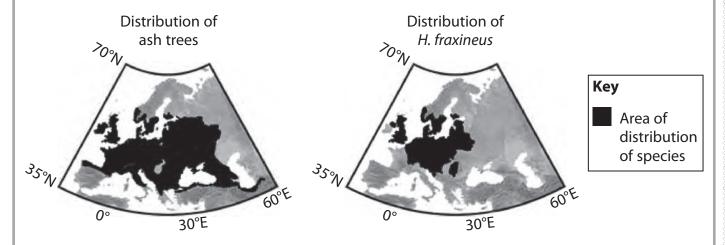
Magnification ×1000

To which group do fungi belong?

(1)

- **A** Archaea
- B Eukaryota
- □ C Prokaryota
- D Viruses

(b) The diagrams show the distribution of ash trees and *H. fraxineus* in 2007.



In 2007 the mean atmospheric carbon dioxide concentration was 398 ppm.

Models have been used to predict the effect of increasing atmospheric carbon dioxide concentration on the distribution of ash trees and *H. fraxineus*.

The table shows these predictions.

Concentration CO ₂ / ppm	Predicted region suitable for ash trees	Predicted region suitable for H. fraxineus	Predicted distribution of ash trees
430	35°N 0° 30°E 60°E	35°N 0° 30°E 60°E	35°N 0° 30°E 60°E
1080	35°N 0° 30°E 60°E	35°N 0° 30°E 60°E	35°N 0° 30°E 60°E

- (i) Which of the following is an abiotic factor that should be considered in the model?
- A ash tree resistance to H. fraxineus
- **B** *H. fraxineus* pathogens
- C humidity
- **D** ocean pH



(ii)		nich of the following could be caused by an increase in atmospheric bon dioxide from 398 ppm to 1080 ppm?	(1)
×	Α	decreased photosynthesis	(1)
×	В	global warming	
×	C	increased plant respiration	
×	D	ozone depletion	
(iii)	An dis	alyse the data to explain the predicted effect of climate change on the stribution of ash trees.	(5)
		(Total for Question 7 = 8 ma	rks)

