

MYRIAPODS

1 Myriapods are a group of arthropods that are commonly found in soil habitats in many parts of the world. Many myriapods are very small and not easy to identify.

Fig. 6.1 shows four species of myriapod, not drawn to the same scale.

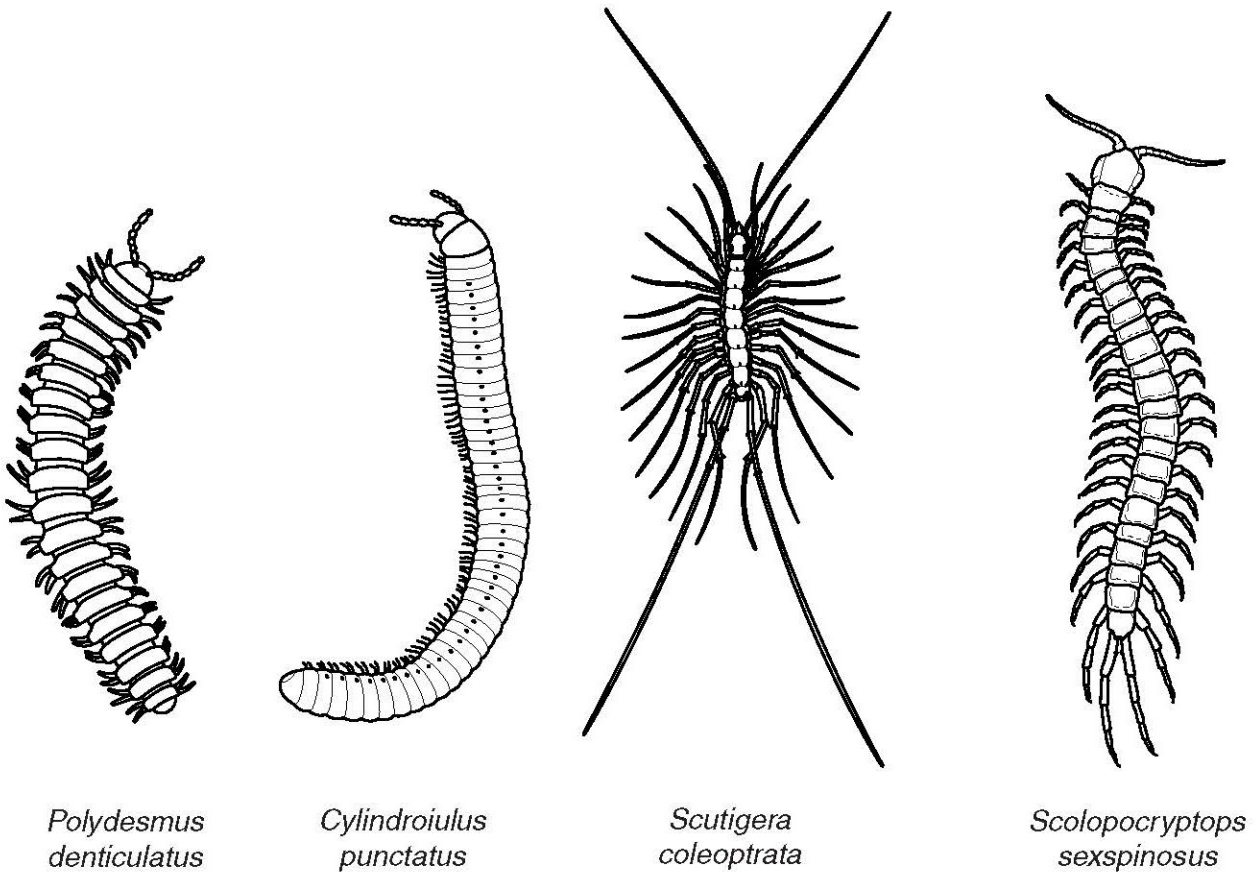


Fig. 6.1

(a) State **three** features of **all** myriapods that are visible in Fig. 6.1.

- 1
 - 2
 - 3
- [3]

(b) Describe **three** features of myriapods that could be used to make a dichotomous key distinguish between the four species in Fig. 6.1.

- 1
-
- 2
-
- 3
- [3]

(c) Mitochondria are cell structures that contain a small quantity of DNA.

Scientists are sequencing the DNA of one particular gene in mitochondria to help identify different species of many animals including myriapods. The sequences that they find are called 'barcodes'.

(i) State the part of the cell that contains most of the DNA.

..... [1]

(ii) Suggest how DNA barcoding might be useful in the conservation of animals, such as myriapods.

.....
.....
.....
.....
..... [2]

(iii) State the function of DNA in cells.

.....
.....
.....
..... [2]

-----Marking Scheme-----

(a)	<ol style="list-style-type: none"> 1 antennae ; 2 elongated bodies ; 3 segmented body / many segments ; 4 many (≥ 10) legs ; 5 (one or two pairs of) legs on each segment ; 6 exoskeleton ; 7 jointed legs ; 	max [3]	
(b)	<ol style="list-style-type: none"> 1 length of antennae ; 2 number of sections on antennae ; 3 presence / absence, of tail pieces / AW ; 4 length of tail pieces ; 5 length of legs ; 6 number of leg joints ; 7 total number of legs ; 8 position of legs on body ; 9 number of legs per segment ; 10 size / shape of segments ; 11 number of body segments ; 12 length of body ; 13 head shape ; 14 presence / absence 'spots / markings' ; 	max [3]	
(c) (i)	nucleus ;	[1]	Ignore chromosomes
(ii)	<ol style="list-style-type: none"> 1 <i>idea that</i> animals are identified accurately ; R identify unqualified 2 barcoding is, cheap / easy / quick / efficient ; 3 barcoding is useful if distinguishing characteristics / dichotomous key are difficult ; 4 identify previously unknown species ; 5 helps to identify, threatened / endangered species ; 	max [2]	
(iii)	<ol style="list-style-type: none"> 1 ref to genes ; 2 codes for (specific) proteins ; 3 stores genetic information ; 4 can be copied to pass on information to new cells ; 	max [2]	