INSTRUCTIONS

The materials in this Reading Insert are for use with the questions in Section A of the Question Paper.
Details of text extracts:

Text 1
Text: adapted from ‘Walden, or Life in the Woods’
Author: Henry David Thoreau (1854)

Text 2
Text: adapted from ‘Journey to the Ants’
Authors: Bert Holldobler and Edward O. Wilson (1994)
The poet Henry David Thoreau moved into a cabin he built for himself next to a lake in America. He lived there alone for two years, growing his own food and observing the natural world.

One day, when I went to my wood-pile, I observed two large ants, the one red, the other black and much larger, fiercely contending with one another. Having once got hold they never let go but struggled and wrestled and rolled incessantly.

Looking farther, I was surprised to find that the woodchips were covered with such combatants, that it was a war between two races of ants, and that the red were always pitted against the black. The ants covered all the hills and vales in my woodyard, and the ground was already strewn with the dead and the dying. It was the only battle which I have ever witnessed, the only battlefield I have ever trod, while the battle was still raging. On every side the ants were engaged in deadly combat, yet without any noise that I could hear, and human soldiers never fought so resolutely.

I watched a couple of ants that were locked in each other’s embraces, prepared now at noonday to fight till the sun went down or life went out. They fought with more pertinacity than bulldogs. Neither manifested the least disposition to retreat. It was evident that their battle cry was conquer or die. In the meanwhile, there came along a single red ant. He saw this unequal combat from afar – for the black ant was nearly twice the size of the red – and drew near with rapid pace till he stood on his guard within half an inch of the combatants. Then,
watching his opportunity, he sprang upon the black warrior.

I was myself excited even as if they had been men. The more you think of it, the less the difference. Certainly, there is not a fight recorded in history that will bear a moment’s comparison with this, whether for the numbers engaged in it, or for the patriotism and heroism displayed. I picked up the woodchip on which the three ants I have described were struggling and carried it into my house, and placed it under a glass tumbler on my window-sill in order to see the outcome.

They struggled half-an-hour longer under the tumbler and, when I looked again, the black soldier had severed the heads of his foes from their bodies. The still-living heads were hanging on either side of him like ghastly trophies and he was endeavouring with feeble struggles to divest himself of them, which, at length, after half-an-hour or more, he accomplished. I raised the tumbler, and he went off over the window-sill in that crippled state. Whether he finally survived that combat and spent the remainder of his days in a rest home for war veterans I do not know.

I never learned which party was victorious, nor the cause of the war, but, for the rest of that day, I felt as if I had had my feelings excited and harrowed by witnessing the struggle, the ferocity and the carnage of a human battle before my door.
The scientist Edward Wilson has studied the lives of ants for many years. Here Edward describes how his friend Bert developed an interest in the natural world.

Bert and I entered the study of insects by different routes of academic tradition, but were both impelled by a common childhood pleasure in the study of insects and encouragement by adults at a critical time of our mental development.

For Bert the beginning was on a lovely early summer day in Bavaria just before massive air raids brought World War II home to Germany. He was seven years old and had just been reunited with his father, Karl, a doctor on duty with the German army in Finland. Karl had obtained leave to visit his family. He took Bert on a walk through the woods, just to look around and talk.

But this was not just an ordinary stroll. Karl, an ardent zoologist, had a particular interest in ant societies. He was an internationally known expert on the many curious small wasps and beetles that live in ant nests. It was natural on this occasion for him to turn over rocks and small logs on the trail to see what was living underneath. Rooting through the soil to see its teeming life is one of the pleasures of entomology.

One pile of wood sheltered a colony of large carpenter ants. Caught for an instant in the sunlight, the shiny blackish-brown worker ants rushed frantically to seize and carry grublike larvae and cocoon-encased pupae (their immature sisters) down the subterranean channels of the nest. This
sudden apparition riveted young Bert. What an
exotic and beautiful world! How complete and well
formed! A whole society had revealed itself for an
instant, then trickled magically out of sight, like
water into dry soil, back to the subterranean world
to resume a way of life strange beyond imagination.

After the war Bert’s home was filled with pets,
including, at various times, dogs, mice, fish,
guinea pigs, a fox, a heron, a jackdaw and a large
salamander called an axolotl. A guest of special
interest to Bert was a human flea which he kept in a
vial and allowed to feed on his own blood in an early
attempt at scientific research.

Above all, encouraged by the example of his father
and the loving patience of his mother, Bert kept
ants. He gathered live colonies and studied them in
artificial nests, learning the local species, drawing
their distinctive anatomical traits, and observing
their behavior. All the while his enthusiasms
bubbled over. On top of everything else he collected
butterflies and beetles as yet another hobby. He was
obsessed by the diversity of life, the die was cast,
and his hopes now focused on a career in biology.
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