Journey back in time to the Triassic, Jurassic and Cretaceous periods and meet prehistory's most spectacular dinosaurs, plants and animals. Explore the prehistoric world in a kaleidoscope of colour with Milan-based design duo, Carnovsky.

Use your magic viewing lens to explore the most spectacular dinosaur discoveries from each continent. How many dinosaurs will you find on your prehistoric adventure?

Carnovsky

Illumibugs

Illumibugs

by *Carnovsky* · written by *Barbara Taylor*

Explore the world of minibeasts



with your magic 3 colour lens

CE UK CA 5 years +

⚠WARNING:
CHOKING HAZARD–
Small parts.
Not for children under 3 yrs.

UK £20.00 US $30.00 CAN $33.00

53000

9 780711 275119

www.wideeyededitions.com

Printed in China

WIDE EYED

welcome to the world of bugs

Miniature in scale, but leading incredible and surprising lives, bugs live everywhere, often in truly mind-boggling numbers. They have survived on our planet for hundreds of millions of years. Get ready to reveal the amazing world of these mini-beasts, many of which look like alien monsters from another galaxy. Dare to meet scary bugs face-to-face on the observation deck and explore the species guide to learn why they have evolved cunning disguises, deadly weapons, hairy legs and even a taste for blood! Travel all over the world to illuminate the secret world of bugs and understand the extraordinary tactics they rely on for their survival.

What will you discover on your bug adventure around the globe?

CONTENTS

Travel across the world's continents to take a closer look at the fantastic creepy crawlies living on our planet today and in the prehistoric past.

FAMILY TREE *4*

NORTH AMERICA *10*

EUROPE *16*

ASIA *22*

AUSTRALASIA *28*

CENTRAL & SOUTH AMERICA *34*

AFRICA *40*

ARCTIC *46*

UNDERWATER *52*

PREHISTORIC BUGS *58*

HOW TO USE THIS BOOK

BUG WORLD



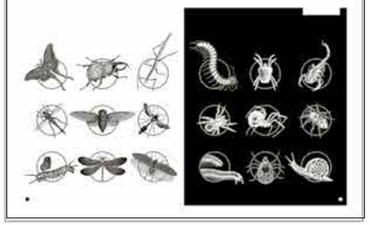
Visit a *continent*, an *underwater* world, or time-travel into *the past* to discover key facts about the habitats and their bugs.

THE OBSERVATION DECK



Step on to the *observation deck*. Tread carefully and watch out for flying insects, stinging scorpions and giant creepy crawlies…

SPECIES GUIDE



Find out the name of each species and learn more about the features that help it to survive in the *species guide*.



Use the *red* lens to reveal the INSECTS



Look through the *green* lens to highlight the PLANT LIFE.



Look through the *blue* lens to focus on the OTHER CREEPY CRAWLIES.

FAMILY TREE

Bugs lived on our planet long before dinosaurs or people, and insects were the first creatures to use their fragile wings to take to the air. Today, bugs make up more than 90 per cent of all the different kinds of animals on Earth. The greatest variety of bugs live in the hot, wet rainforests of South America, but bugs survive on all continents, including the icy Arctic and the dry African or Australian deserts. To a scientist, bugs are a particular group of insects with piercing and sucking mouthparts, such as cicadas. In this book, we have used a more informal definition of bugs, which includes all the insect groups, as well as other land and freshwater creepy crawlies, from spiders, scorpions and shrimps to centipedes, snails and worms. Bugs play many essential roles in the survival of life on our planet. They are vital links in food chains and they also pollinate plants and recycle animal poo and other natural waste. Sadly, many bugs are threatened with extinction.

WELCOME TO THE BIGGEST FAMILY ON EARTH!

Bugs may seem small but when you put them altogether they make up an almighty family. Did you know...?

1. The total weight of all the insects on Earth is about 70 times more than all the people.
2. The weight of ants on the Earth may be greater than the weight of all the humans.
3. There are more than 200 million insects for every person on the planet.
4. At any one time, scientists estimate that there are 10 quintillion (10,000,000,000,000,000,000) individual insects alive on the Earth.!
5. At least 42 per cent of all bugs are threatened with extinction because people are destroying and polluting the places where they live.
6. The rate of bug extinction is eight times faster than that of mammals, birds and reptiles.

How many bugs in the world?

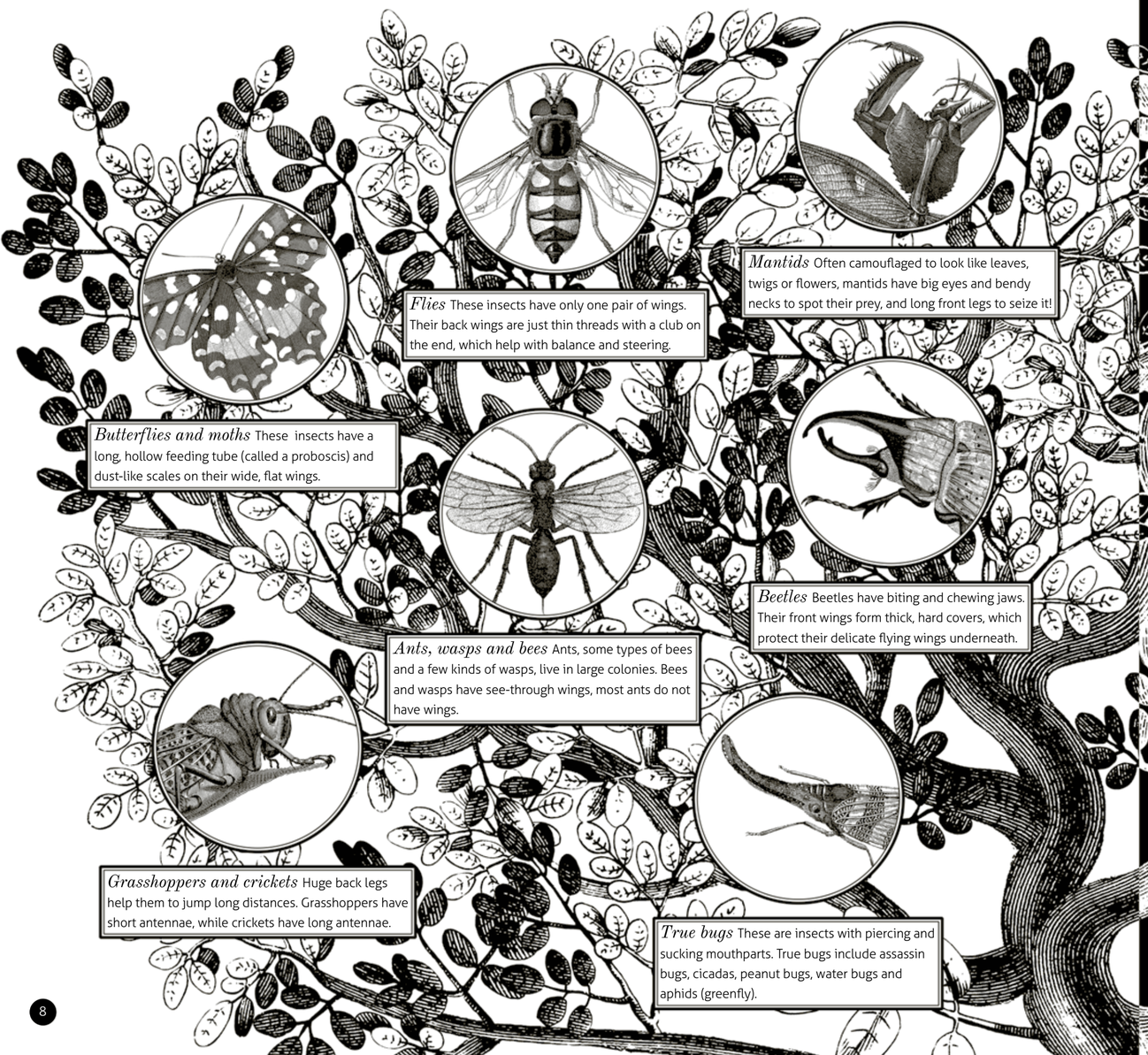
18,000 species of butterflies
160,000 species of moths
400,000 species of beetles
160,000 species of flies
150,000 species of ants, wasps and bees
80,000 species of true bugs
over 45,000 species of spiders
3,000 species of earthworms
9,000 species of segmented worms
8,000 species of centipedes
12,000 species of millipedes
2,000 species of scorpions
24,000 species of land molluscs
7,000 species of freshwater molluscs



INSECTS

Millions of different kinds of insects live on our planet. They include beautiful butterflies, speedy flies and buzzing bees, but the biggest group of insects are beetles. There are so many different kinds of them that one in every four animals on Earth is a beetle! The features that all insects share in common are six legs and three body parts, and most insects have one or two pairs of wings. Insects use two feelers, called antennae, to touch and smell their surroundings.

READ about the species below and then turn back to THE OBSERVATION DECK.
Looking through the RED lens, what can you see?



Flies These insects have only one pair of wings. Their back wings are just thin threads with a club on the end, which help with balance and steering.

Mantids Often camouflaged to look like leaves, twigs or flowers, mantids have big eyes and bendy necks to spot their prey, and long front legs to seize it!

Butterflies and moths These insects have a long, hollow feeding tube (called a proboscis) and dust-like scales on their wide, flat wings.

Beetles Beetles have biting and chewing jaws. Their front wings form thick, hard covers, which protect their delicate flying wings underneath.

Ants, wasps and bees Ants, some types of bees and a few kinds of wasps, live in large colonies. Bees and wasps have see-through wings, most ants do not have wings.

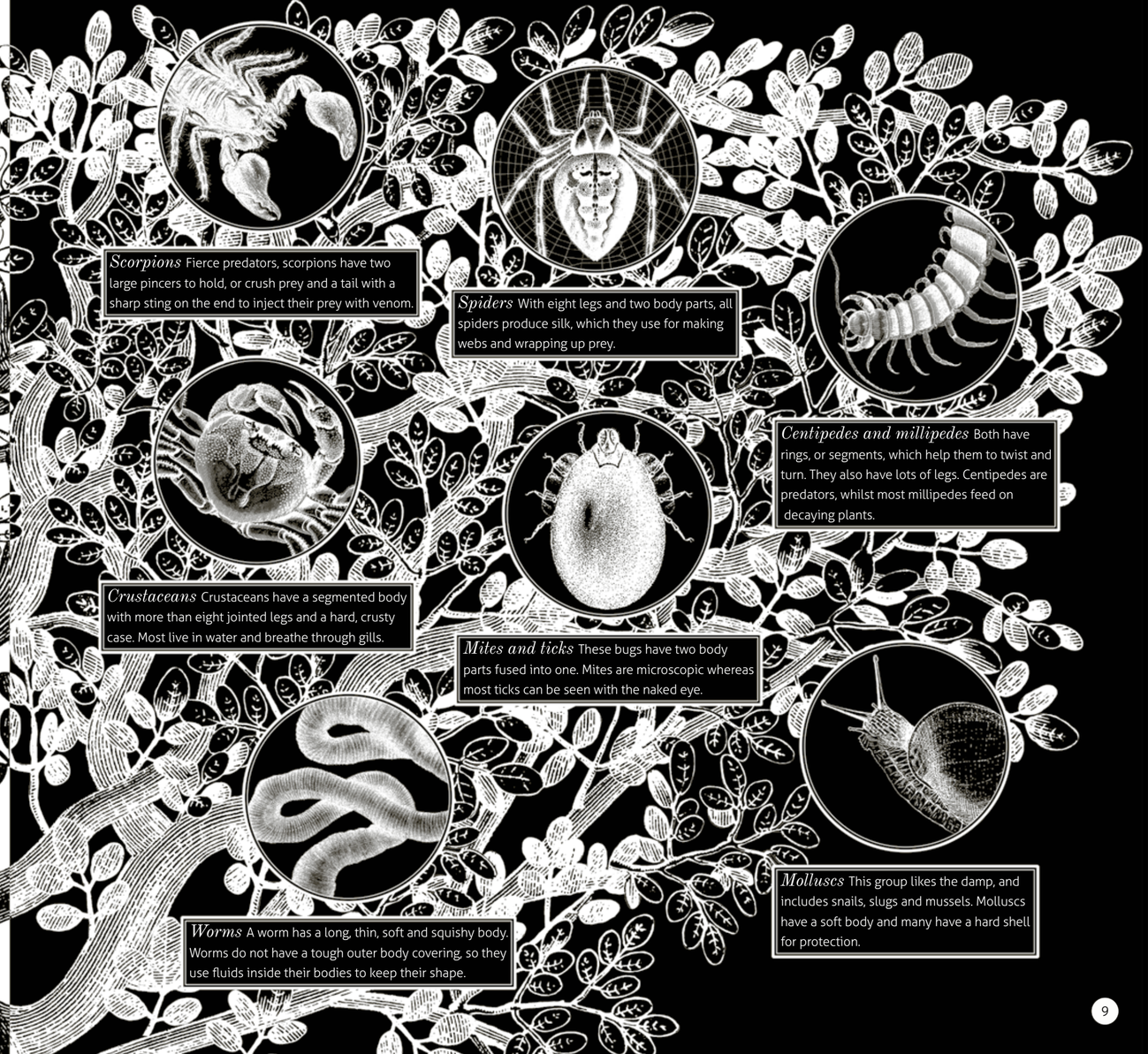
Grasshoppers and crickets Huge back legs help them to jump long distances. Grasshoppers have short antennae, while crickets have long antennae.

True bugs These are insects with piercing and sucking mouthparts. True bugs include assassin bugs, cicadas, peanut bugs, water bugs and aphids (greenfly).

OTHER CREEPY CRAWLIES

From hairy, scary spiders and deadly scorpions, to slimy slugs and wriggling worms, each group of creepy crawlies has different features, although none of them can fly. Some, such as centipedes and millipedes, may have hundreds of legs, while spiders and scorpions have eight legs, and worms have no legs at all. Slugs and snails have one big, squishy, slimy 'foot' and slide along surfaces. Creepy crawlies protect themselves with poisonous fangs, or stings and some have a hard shell to help them stay safe.

READ about the species below and then turn back to THE OBSERVATION DECK.
Looking through the BLUE lens, what can you see?



Scorpions Fierce predators, scorpions have two large pincers to hold, or crush prey and a tail with a sharp sting on the end to inject their prey with venom.

Spiders With eight legs and two body parts, all spiders produce silk, which they use for making webs and wrapping up prey.

Centipedes and millipedes Both have rings, or segments, which help them to twist and turn. They also have lots of legs. Centipedes are predators, whilst most millipedes feed on decaying plants.

Crustaceans Crustaceans have a segmented body with more than eight jointed legs and a hard, crusty case. Most live in water and breathe through gills.

Mites and ticks These bugs have two body parts fused into one. Mites are microscopic whereas most ticks can be seen with the naked eye.

Molluscs This group likes the damp, and includes snails, slugs and mussels. Molluscs have a soft body and many have a hard shell for protection.

Worms A worm has a long, thin, soft and squishy body. Worms do not have a tough outer body covering, so they use fluids inside their bodies to keep their shape.

NORTH AMERICA

The third largest continent in the world, North America is a continent of contrasts. Its high mountains, warm and cold forests, baking deserts, vast grasslands and urban environments provide homes for nearly 100,000 species of insects, as well as thousands of other creepy crawlies. The largest of these range from the giant walking stick insect to the giant millipede, while the smallest include tiny mites and blood-sucking ticks. One of the challenges for North American insects and other creepy crawlies is surviving seasonal or daily changes. To avoid cold winters, some of them migrate to warmer places, whilst others shelter in the soil, in burrows or in rotting wood, or spend the winter hidden away in a resting state as eggs or pupae. Since their bodies loose water easily, insects and other creepy crawlies often avoid hot, dry days by emerging in the cooler, damper night-time air.

Continent

North America

Countries

USA, Canada, Mexico

Habitat

Mountain, Forests, Desert, Grassland, Scrubland, Urban

Size

24.71 million square kilometres

Who lives here

Hundreds of thousands of bugs live in these three countries, including 18,000 species of bees, wasps and ants, 30,000 species of beetles, 12,000 species of butterflies and moths, 16,000 species of flies, 5,000 species of true bugs, 4,000 species of spiders, scorpions, mites and ticks, 1,400 species of millipedes and centipedes and 500 species of snails



Scan the code to turn your device
into a magic three colour lens.

Inspiring | Educating | Creating | Entertaining

Brimming with creative inspiration, how-to projects, and useful information to enrich your everyday life, quarto.com is a favourite destination for those pursuing their interests and passions.

Illumisaurus © 2020 The Quarto Group
Text © 2020 The Quarto Group. Illustrations © 2020 Carnovsky.
Written by Lucy Brownridge

First published in 2020 by Wide Eyed Editions, an imprint of The Quarto Group.
The Old Brewery, 6 Blundell Street, London N7 9BH, United Kingdom.
T (0)20 7700 6700 F (0)20 7700 8066 **www.Quarto.com**

The right of Carnovsky to be identified as the illustrators and the right of Lucy Brownridge to be identified as the author has been asserted by them in accordance with the Copyright, Designs and Patents Act, 1988 (United Kingdom).

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, electrical, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher or a licence permitting restricted copying.

A catalogue record for this book is available from the British Library.

ISBN 978-0-7112-5248-6
The illustrations were created digitally
Set in Aller Light, Bellota and Old Standard

Published by Georgia Amson-Bradshaw
Designed by Myrto Dimitrakoulia
Edited by Lucy Brownridge
Production by Chris Tucker
Consultant Professor Michael Benton
Manufactured in ShaoGuan, China SL072020

9 8 7 6 5 4 3 2 1

MIX
Paper from responsible sources
FSC® C008047

The QR code displayed in this book directs users to a Third-Party website or application controlled by its owners. Quarto Publishing plc's decision to insert this QR code to a Third-Party website or application is not an endorsement of the content or services in that linked Third-Party website or application. Quarto Publishing plc does not control this Third-Party website or application and expressly disclaims any responsibility for the content, the accuracy of the information and any products or services available on the Third-Party website or application. If you decide to access or engage in services through linked Third-Party website or application, you do so at your own risk. You should direct any concerns regarding any Third-Party website or application to the administrator of the applicable Third-Party website or application. You should also refer to the separate terms of use, privacy policies and other rules posted on Third-Party website or application before you use them.