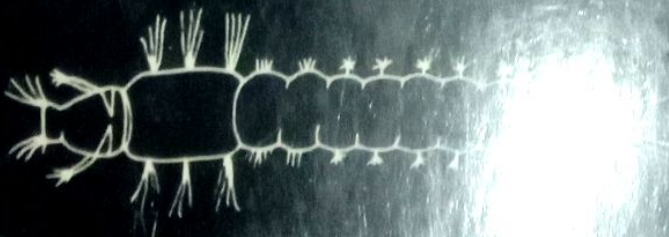
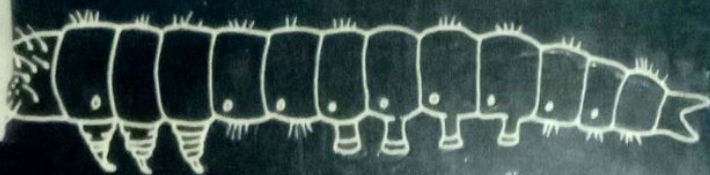
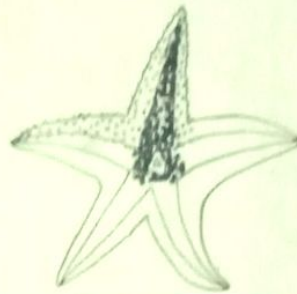
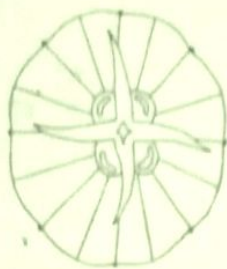
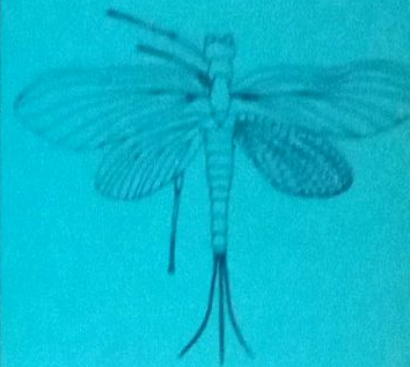


Second Edition

ANIMAL TYPES 1

Invertebrates

M. A. ROBINSON AND J. F. WIGGINS



Contents

Preface		viii
KINGDOM ANIMALIA – grades of organisation		1
PHYLUM PROTOZOA		3
Class Flagellata (Mastigophora)	<i>Euglena</i>	4
Class Rhizopoda (Sarcodina)	<i>Amoeba</i>	5
Class Ciliata (Ciliophora)	✓ <i>Paramecium</i>	6
Class Sporozoa	✓ <i>Monocystis</i>	7
	<i>Plasmodium</i>	8
PHYLUM PORIFERA		9
Class Calcarea	✓ <i>Sycon</i> – sponge	10
PHYLUM COELENTERATA		11
Class Hydrozoa	<i>Hydra</i>	12
	<i>Obelia</i>	13
Class Scyphozoa	✓ <i>Aurelia</i> – jelly fish	14
Class Anthozoa	<i>Actinia</i> – sea anemone	15
PHYLUM PLATYHELMINTHES		16
Class Turbellaria	✓ <i>Planaria</i> – planarian	18
Class Trematoda	✓ <i>Fasciola</i> – liver fluke	19
Class Cestoda	✓ <i>Taenia</i> – tapeworm	20
PHYLUM ASCHELMINTHES		21
Class Nematoda	✓ <i>Ascaris</i> – roundworm	22
PHYLUM ANNELIDA		23
Class Polychaeta	✓ <i>Nereis</i> – ragworm	24
	<i>Arenicola</i> – lugworm	25
Class Oligochaeta	<i>Lumbricus</i> – earthworm	26
Class Hirudinea	<i>Hirudo</i> – leech	27
PHYLUM ARTHROPODA		28
Class Crustacea		28
Subclass Branchiopoda	<i>Daphnia</i> – water flea	30
Subclass Cirripedia	<i>Balanus</i> – acorn barnacle	31
	<i>Lepas</i> – goose barnacle	32

Contents

	33
	35
Subclass Malacostraca	
<i>Astacus</i> – crayfish	36
<i>Carcinus</i> – crab	37
<i>Palaemon</i> (Leander)	
– prawn	38
<i>Oniscus</i> – wood louse	39
Class Myriapoda	
Subclass Chilopoda	
	40
	42
Class Insecta	44
Subclass Pterygota	46
Division Exopterygota	47
Order Dictyoptera	48
Order Orthoptera	49
Order Ephemeroptera	50
Order Odonata	51
Order Hemiptera	52
Division Endopterygota	54
Order Lepidoptera	56
Order Diptera	57
	59
	60
	61
	63
	65
	66
	68
	69
	70
	71
Order Coleoptera	
Order Hymenoptera	
Order Trichoptera	
Order Siphonaptera	
Class Arachnida	
Order Scorpionidea	
Order Araneida	
Order Acarina	
	73
	74
	75
	76

Contents

PHYLUM MOLLUSCA	77
Class Gastropoda	<i>Helix</i> – snail 79
	<i>Limax</i> – slug 80
Class Lamellibranchia (Bivalvia)	<i>Mytilus</i> – mussel ✓ 81
	<i>Pecten</i> – scallop 82
Class Cephalopoda	<i>Sepia</i> – cuttlefish 83
	<i>Loligo</i> – squid 85
	<i>Eledone</i> – octopus 87
PHYLUM ECHINODERMATA	88
Class Asteroidea	<i>Asterias</i> – star fish ✓ 89
Class Echinoidea	<i>Echinus</i> – sea urchin 90
Experimental Approach to the Invertebrates	91
Glossary	109