

CONTENTS

CONTRIBUTORS TO VOLUME 4	v
PREFACE	vii

Experimental Studies on *Entamoeba* with Reference to Speciation

R. A. NEAL

I. Introduction	2
II. Nomenclature of Genus	2
III. Morphology	3
A. The Morphology of <i>E. hartmanni</i>	5
B. Structure of <i>E. polecki</i>	7
C. Electron Microscopy	8
D. List of Species Described	8
IV. Nuclear Division	9
V. Excystation and Metacystic Development	12
A. Excystation	13
B. Metacystic Development	14
VI. Host-restriction	20
A. <i>E. muris</i>	21
B. <i>E. coli</i>	22
C. <i>E. gallinarum</i>	23
D. <i>E. histolytica</i> and <i>E. hartmanni</i>	23
E. <i>Entamoeba</i> of Reptiles	26
F. <i>E. ranarum</i>	28
G. <i>E. moshkovskii</i>	29
VII. Biochemistry and Physiology	30
A. Metabolism	30
B. Drug Sensitivity	30
C. Growth at Different Temperatures	31
D. Locomotion and Polarity of Amoebae	33
E. Contractile Vacuoles	34
VIII. Serological Differences between Species and Strains of <i>Entamoeba</i>	34
A. Immobilization Test	35
B. Precipitin Test	36
C. Fluorescent Antibody Test	37
D. Indirect Haemagglutination Test	39
E. Complement Fixation Test	39
IX. Taxonomic Significance of Experimental Data and Conclusions	39
References	41

Clonorchis and Clonorchiasis

YOSHITAKA KOMIYA

I.	Introduction	53
II.	Structure and Biology	54
	A. The Egg and its Mode of Formation	54
	B. Adult Structure	58
	C. Food of the Adult	61
	D. First Intermediate Host and Development Therein	62
	E. Piscine Host and Development Therein	65
	F. The Metacercaria	73
	G. Final Hosts and Development Therein	78
III.	Clonorchiasis	81
	A. Pathology	81
	B. Clinical Symptoms	82
	C. Diagnosis	83
	D. Epidemiology	85
	E. Prevention of Infection	96
	F. Treatment	97
	References	101

Embryogenesis in Cestodes

KRYSTYNA RYBICKA

I.	Introduction	107
II.	Gametogenesis	107
	A. Spermatogenesis	107
	B. Oogenesis and Fertilization	117
III.	Vitelline Cell and Capsule Formation	119
	A. Pseudophyllidea	119
	B. Cyclophyllidea	122
IV.	Mehlis's Gland	125
V.	Embryonic Development	126
	A. Cleavage	127
	B. Preoncospherical Phase	131
	C. Oncosphere (Hexacanth)	159
VI.	Discussion	170
VII.	Pattern for Further Study	176
	References	178

The Structure and Composition of the
Helminth Cuticle

D. L. LEE

I.	Introduction	187
II.	Platyhelminthes	188

III. Trematoda	188
A. Historical	188
B. Structure	189
C. Composition	197
D. Functional Considerations	200
IV. Cestoda	203
A. Historical	203
B. Structure	203
C. Composition	207
D. Functional Considerations	210
V. Origins of the Epidermis of Cestodes and Trematodes	211
VI. Nematoda	214
A. Historical	214
B. Structure	214
C. Composition	231
D. Growth of the Cuticle	234
E. Functional Considerations	235
F. Moulting	237
VII. Acanthocephala	239
A. Historical	239
B. Structure	239
C. Composition	247
D. Functional Considerations	248
VIII. General Summary	249
References	250

Dynamics of Parasitic Equilibrium in Cotton Rat Filariasis

D. S. BERTRAM

I. Introduction	255
II. Host Susceptibility	257
III. Early Development of Adult Worms	261
IV. The Mature Adult Worms	264
V. Distribution of Adult Worms	269
VI. The Microfilaraemia and Transmission	270
VII. Quantitative Transmission	271
A. By the Mite-vector	271
B. By Inoculation of Infective Larvae	273
VIII. Primary Infections	274
A. Unisexual Infections	274
B. Bisexual Infections	275
IX. Worm Development and Immunity	280
A. The Immune Stimulus	280
B. Persistence of Immune Response	282
C. Other Effects in Reinfections	284
D. The Nature of the Immune Response	285
X. Superinfections	286
A. Double Exposure	286
B. Intermittent Exposure for Brief Periods at Long Intervals	292

C.	Intermittent Exposure for Long Periods at Short Intervals	296
D.	Continuous Exposure	301
XI.	The Length of Female Worms	303
A.	Growth Curves for Primary Infections	304
B.	Growth in Superinfections	305
C.	Other Aspects of Female Growth	307
XII.	Sex Ratio	308
XIII.	Transmission Efficiency and Pathogenicity	310
XIV.	Conclusions	313
	References	317

Some Tissue Reactions to the Nematode Parasites of Animals

D. POYNTER

I.	Introduction	321
II.	Gastrointestinal Nematodes	322
III.	Pulmonary Reactions	334
A.	<i>Dictyocaulus viviparus</i>	334
B.	<i>Dictyocaulus filaria</i>	337
C.	<i>Dictyocaulus arnfieldi</i>	338
D.	<i>Protostrongylus rufescens</i>	338
E.	<i>Muellerius capillaris</i>	338
F.	<i>Metastrongylus</i> spp.	339
G.	<i>Filaroides</i> spp.	342
H.	<i>Aelurostrongylus abstrusus</i>	343
I.	Other Nematodes	344
IV.	Nematodes and Blood Vessels	345
V.	Nematodes and the Central Nervous System	350
A.	Cerebrospinal Nematodosis	350
VI.	Visceral Larva Migrans	356
VII.	Nematodes and Other Sites	369
VIII.	Nematodes and Cancer	372
IX.	Nematodes and Viral Diseases	375
X.	Conclusion	377
	References	378
	AUTHOR INDEX	385
	SUBJECT INDEX	399