

207/11

THE INVERTEBRATE ZOOLOGY

A MANUAL FOR THE USE OF B.S.C. STUDENTS

Library Govt College for Women W. C. C.

Serial No. 207/11

Page Initial

NAME NAME BAKHT

A.Sc. Ph.D. (Canada)

Fellow of Pakistan Academy of Sciences

Formerly Head of Zoology Department, University of the Punjab

and

Professor of Zoology, P.C. College, Lahore

AND

TAJAMUL HUSAIN HASHMI

M.Sc., L.L.B. - D. Sc. (Law)

Formerly Associate Professor of Zoology, P.C. College, Lahore



Authors of

THE CHORDATE ZOOLOGY



B.Sc. Practical Zoology Note Book (Condensed)



The Caravan Book House

Kutchery Road - Lahore

CONTENTS

	Page
Preface	vii
List of contents	ix
Introduction	xi
<u>SUBKINGDOM AND PHYLUM PROTOZOA</u>	
✓ General account of Protozoa	1
Class Rhizopoda	1
Type— <i>Amoeba proteus</i>	7
Classification and General Survey	7
Class Mastigophora	9
Type 1— <i>Euglena viridis</i>	16
✓ Type 2— <i>Trypanosoma gambiense</i>	18
Classification and General Survey	19
Class Sporozoa	21
Type 1— <i>Monocystis magna</i>	28
Type 2— <i>Eimeria perforans</i>	28
Classification and General Survey	29
Class Ciliata	31
✓ Type— <i>Paramecium caudatum</i>	35
Classification and General Survey	35
Class Suctorina	39
Relationship of Protozoa with other organisms	43
2 <u>SUBKINGDOM PARAZOA</u>	44
<u>PHYLUM PORIFERA</u>	
Class Calcarea	46
✓ Type— <i>Sycon gelatinosum</i>	46
General Account of Porifera	46
Classification and General Survey	49
3 <u>SUBKINGDOM METAZOA</u>	56
<u>PHYLUM COELENTERATA</u>	
Class Hydrozoa	59
Type 1— <i>Hydra vulgaris</i>	59
✓ Type 2— <i>Obelia geniculata</i>	59
Classification and General Survey	65
Class Scyphozoa	72
Type— <i>Aurelia aurita</i>	84
Classification and General Survey	84
Class Actinozoa	90
Type— <i>Tealia crassicornis</i>	94
General Account	94
	98

x Contents
Classification and General Survey
Class Ctenophora
Type—*Hormiphora plumosa*
General Account and Classification
Affinities

4 PHYLUM PLATYHELMINTHES

Class Turbellaria
Type—*Planaria*
Classification
General Account
Affinities

Class Trematoda
✓ Type—*Fasciola hepatica*
Classification
General Account
Affinities

Class Cestoidea
✓ Type—*Tapeworm*
Classification
General Account
Affinities
Mode of life in Platyhelminthes

5 PHYLUM NEMATODA

✓ Type—*Ascaris lumbricoides*
Classification
General Account
Affinities

6 PHYLUM NEMERTEA

Classification
General Account
Affinities

7 PHYLUM ROTIFERA

Type—*Brachionus rubens*
Classification
General Account
Affinities

8 PHYLUM ANNELIDA

Class Polychaeta

✓ Type—*Nereis dumerilii*
Classification
General Account

Class Oligochaeta

Type—*Pheretima posthuma*

Classification	...	229
General Account	...	230
Affinities	...	236
Class Hirudinea	...	237
Type— <i>Hirudinaria granulosa</i>	...	237
Classification	...	255
General Account	...	257
Class Archiannelida	...	261
General Account	...	261
Affinities	...	264
Class Echiuroidea	...	264
General Account	...	265
Affinities	...	267
Class Sipunculoidea	...	267
Type— <i>Sipunculus nudus</i>	...	267
Affinities	...	270

9 PHYLUM ARTHROPODA

Class Trilobita	...	271
General Account	...	271
Class Crustacea	...	273
Type— <i>Palaemon malcolmsonii</i>	...	273
Distinctive Characters	...	304
Classification	...	305
General Account	...	309
Affinities	...	329
Mutual Relationship	...	329
Class Insecta	...	330
Type— <i>Periplaneta orientalis</i> <i>Cockroach.</i>	...	330
General Account	...	339
Classification and General Account	...	354
Class Myriapoda	...	374
Classification and General Account	...	374
Class Arachnida	...	377
General Account and Classification	...	378
Class Onychophora	...	385
Type— <i>Peripatus</i>	...	385
Affinities	...	388

10 PHYLUM MOLLUSCA

Class Amphineura	...	390
Type— <i>Chiton</i>	...	390
General Account	...	390
Class Gastropoda	...	393
Type— <i>Pila globosa</i>	...	395
Classification	...	395
	...	410

General Account
Affinities

Class Scaphopoda
General Account
Affinities

Class Lamellibranchiata
Type—*Anodonta* ✓

Classification
General Account

Class Cephalopoda
Type—*Sepia officinalis*
Classification

General Account
Sub-class Dibranchiata
Sub-class Tetrabranchiata
Type—*Nautilus* ✓
Affinities of Mollusca

11 MINOR COELOMATE PHYLA

Phylum Bryozoa (Ectoprocta)
Phylum Brachiopoda
Phylum Phoronida
Phylum Chaetognatha

12 PHYLUM ECHINODERMATA

Class Asteroidea
Type—*Asterias* ✓
General Account
Classification
Class Ophiuroidea
General Account and Classification
Class Echinoidea
Type—*Echinus*
General Account
Classification
Class Holothuroidea
Type—*Cucumaria*
General Account
Classification
Class Crinoidea
General Account
Regeneration in Echinoderms
Affinities
Index

...	412
...	422
...	423
...	423
...	424
...	424
...	424
...	432
...	433
...	442
...	442
...	451
...	457
...	45
...	455
...	455
...	459
...	461
...	461
...	465
...	468
...	470
...	473
...	473
...	473
...	485
...	488
...	490
...	490
...	492
...	492
...	497
...	499
...	501
...	501
...	503
...	505
...	506
...	506
...	509
...	509
...	511

Fresh H₂O
in vessel

SUBKIN

The P
being a sin
one or m
organisms
a single co
structure t
but we find
whereas a
particular
lular or ace
body is ph
cells, Met
tioned into
Protozoa ar
be of more
throughout
Internal par
Some w
organs of lo
Protozoa int
Class
serve for lo
binary fission
Class II
locomotor o
Class II
asexual repro
Class IV
Class V
Acineta,

Shape A

have a definit
odium there are
lopodi, elongat
plasmoplasm ;