### THE MEDICAL EPITOME SERIES; MICROSCOPY, BACTERIOLOGY, AND HUMAN PARASITOLOGY: A MANUAL FOR STUDENTS AND PRACTITIONERS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649087846

The Medical Epitome Series; Microscopy, bacteriology, and human parasitology: a manual for students and practitioners by P. É. Archinard

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd. Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

# P. É. ARCHINARD

### THE MEDICAL EPITOME SERIES; MICROSCOPY, BACTERIOLOGY, AND HUMAN PARASITOLOGY: A MANUAL FOR STUDENTS AND PRACTITIONERS

Trieste

## The Medical Epitome Series.

# MICROSCOPY, BACTERIOLOGY, AND HUMAN PARASITOLOGY.

#### A MANUAL FOR STUDENTS AND PRACTITIONERS.

BY

P. E. ARCHINARD, A. M., M. D.,

Bacteriologist Louisiana State Board of Health and City Board of Health, New Orleans,

SECOND EDITION, REVISED AND ENLARGED.

ILLUSTRATED WITH ONE HUNDRED ENGRAVINGS AND SIX PLATES.



LEA & FEBIGER, PHILADELPHIA AND NEW YORK. Entered according to Act of Congress, in the year 1912, by LEA & FEBIGER,

In the Office of the Librarian of Congress. All rights reserved,

14

QR46 . A 67 1912 copy 2

### PREFACE TO SECOND EDITION.

In reviewing this work the author has made such additions as were necessary to bring it to date as a concise presentation of Bacteriology, as it should be understood by all students and practitioners of medicine. He has broadened its scope by including information on a few protozoa nearly akin to bacteria. This will make the book more useful to advanced students, as well as to general practitioners seeking to enlarge their knowledge of the microscopical world by attending special post-graduate courses.

The author acknowledges with thanks the very valuable services rendered in the revision by Dr. W. H. Seeman, Professor of Clinical Microscopy and Tropical Medicine in the Post-Graduate Department of the Tulane University of Louisiana.

P. E. A.

NEW ORLEANS, 1912.

#### INTRODUCTION.

11110000011010	PAGES
The Refraction of Light and the Microscope	
THE REFRACTION OF LIGHT: The Two Fundamental Laws of	
Refraction; The Principles of Refraction by Lenses	17 - 19
THE MICROSCOPE: The Simple Microscope; The Compound	
Microscope; The Lenses and Lens-systems of the Micro-	10.97
scope; The Care of the Microscope	10-21

#### CHAPTER L

$\mathbf{T}\mathbf{h}$	e Fundamental Principles	28-42
13	THE HISTORY OF BACTERIOLOGY	28
	THE CLASSIFICATION OF COUN FOR BACTERIA	28
	THE DEFINITION OF BACTERIA	29
	THE MORPHOLOGICAL CLASSIFICATION OF BACTERIA: The	
	Coccus; The Bacillus; The Spirillum	30
	THE SIZE OF BACTERIA	
1	THE REPRODUCTION OF BACTERIA: Fission; Sporulation	33-34
	THE MOTILITY OF BACTERIA	36
	THE RELATION OF OXYGEN TO BACTERIAL LIFE	37
	THE RELATION OF DEAD AND LIVING ORGANIC MATTER TO	
	BACTERIA	37
	THE ESSENTIAL CONDITIONS OF BACTERIAL GROWTH: Heat;	
	Moisture; Decomposable Organic Material; Special Chemi-	
	cal Reaction of the Culture-medium	37-39
	THE INERT AND INHIBITIVE CONDITIONS OF BACTERIAL LIFE	39
	THE VITAL MANIFESTATIONS OF FUNCTIONS OF BACTERIA .	39 - 42
	5	

#### CHAPTER II.

DIANU

The Examination and the Staining of Bacteria	42-57
THE EXAMINATION OF BACTERIA: The Hanging-Drop Prepa-	
ration	
THE STAINING OF BACTERIA: The General Mode of Proced-	
ure; The Most Commonly Used Stains; The Application of	
the Dyes; The Special Methods of Staining; The Staining	
of Capsules; The Staining of Spores; The Staining of	
Flagella; The Staining of Bacteria in Tissues	43-57

#### CHAPTER III.

The Process, Media, and Utensils of the Cultivation of	
Bacteria	57-71
THE PROCESS OF THE CULTIVATION OF BACTERIA	57
THE MEDIA OF THE CULTIVATION OF BACTERIA: The Most	
Commonly Used Liquid Culture-Media; The Most Com-	
monly Used Solid Culture-Media; The Most Commonly	
Used Special Culture-Media	57-65
THE UTENSILS OF THE CULTIVATION OF BACTERIA	

#### CHAPTER IV.

The Inoculation of Culture-Media with Bacteria		1		e e	71-78
THE METHOD OF INOCULATING FLUID MEDIA				+ 514	71
THE METHODS OF INOCULATING SOLID MEDIA					
THE CULTIVATION OF ANAEROBIC BACTERIA: The	Ŀ	net	uba	itor	
and the Thermostat	2	4			75-78

#### CHAPTER V.

Sterilization, Disinfection, and Antisepsis								79-87
THE METHODS OF STERILIZATION							34	79
The Methods of Disinfection				cia.		a.	a.	84-86
THE METHODS OF ANTISEPSIS: The Common	11	Disi	nfe	ect	ani	ls .		86-87

#### CHAPTER VI.

The Inoculation of Animals and their Study	88-94
THE INCULATION OF ANIMALS: The Various Methods of In-	
oculation of Animals	88-91
THE OBSERVATION OF THE INCULATED ANIMAL: The Roux-	
Nocard Method of Culture and Observation	92-94

#### CHAPTER VII.

CHAPTER VII.	PAGES
Infection and Immunity	94-103
INFECTION: The Theories of Infection; The Avenues and	
Factors of Infection	94 - 97
IMMUNITY AND ITS VARIETIES: The Methods of Producing	
Immunity; The Antitoxic and Antimicrobic Blood-	
serums; The Theories of Immunity	97-103

#### CHAPTER VIII.

Antibodies and	0	ps	101	nir	15	ie.	$\mathbf{x}_{i}$	14	-	1	+)	×.	19	1	•	14	10	103 - 108
ANTIBODIES .																		
Opsonins																		

#### CHAPTER IX.

The Pathogenic Bacteria	108 - 117
THE PYOGENIC MICROCOCCI AND ALLIED BACILLI	108-109
THE INDIVIDUAL FEATURES OF THE PYOGENIC BACTERIA:	
Staphylocoecus Pyogenes Aureus; Staphylocoecus Pyo-	
genes Albus; Staphylocoecus Citreus; Streptocoecus	
Pyogenes; Micrococcus Tetragenus	109-113
GONORRHEA : Micrococcus Gonorrhee (Gonococcus) ; Micro-	
eoccus Catarrhalis; Bacillus Pyocyaneus; Pnenmococcus	
or Pneumobacillus; Bacillus Coli Communis; Bacillus	
Typhosus; Bacillus Tuberculosis	113-117

#### CHAPTER X.

Th	e Other Pathogenic Micrococci and Allied Bacilli—Mi- crococcus Pneumoniæ, Epidemic Cerebrospinal Men- ingitis, and Malta Fever	117-125
	PNEUMONIA: Micrococceus Pneumoniæ Croupose (Diplococ-	201.020
	eus Pneumoniæ; Micrococcus Pasteuri; Micrococcus of	
	Sputum Septiciemia); Streptococcus Mucosus; Pneumo-	
	coccus of Friedlaender (Bacillus Pneumoniæ of Flnegge;	
	Bacillus Mucosus Capsulatus) ; Bacillus of Rhinoscleroma	117 - 122
10	EPIDEMIC CEREBROSPINAL MENINGITIS: Diplococcus Intra-	
	cellularis Meningitidis	122-124
	MALTA OR MEDITERRANEAN FEVER: Micrococcus Melitensis	124-125

#### CHAPTER XI.

PAGES

Tuberculosis		÷.		÷.	į,	4	4	2	14	÷		12	2	Ç.	4		4		2	126 - 132
BACILLUS	Tu	BE	R	U.	LO	SIS	6		4	i,	12	Si,	2			4	÷	4		126 - 132

#### CHAPTER XIL

Leprosy and	Syphilis					*				•				133 - 136
LEPROSY :	Bacillus Lepræ	÷	12						â.,	18		5		133-135
SYPHILIS:	: Bacillus Smeg	matis	(fo	rm	erly	r c	11	ed	th	e .	Bac	in,	us	
0 00	philis); Streptod			0.	. 1.1	12.								102 100

#### CHAPTER XIII.

Glanders (Farcy) .				÷	÷.	2		ii	4.54	14		÷	÷				137 - 141
BACILLUS MALLEI		à.	Ğ4			ē.	÷	i);	635		2	÷		1	x.	18	137-141

#### CHAPTER XIV.

Anthrax	÷.	÷	ŝŧ.	ł.	8	$\overline{A}$		6	÷.	÷.	×.	Ξŧ	9	$\hat{\mathbf{x}}$	ŝ,	٠		i.	÷		6	÷.	4	141 - 146
BACILLUS	A	N	гн	IB.	AC	IS	١.,	5			a.	÷	12	÷.,		10	æ	37	÷,	ac		×		141-146

#### CHAPTER XV.

Diphtheria and Pseudodiphtheria	146 - 159
DIPHTHERIA: Bacillus Diphtheriæ.	
PSEUDODIPHTHERIA : Bacillus Pseudodiphtheria; The Anti-	
toxin Treatment of Diphtheria; Bacillus Xerosis	154 - 159

#### CHAPTER XVI.

Tetanus, Malignant Œdema, and Symptomatic Anthrax	159 - 173
TETANUS: Bacillus Tetani; Anaphylaxis	159 - 166
MALIGNANT (EDEMA : The Bacillus of Malignant (Edema .	166 - 167
SYMPTOMATIC ANTHRAX: Bacillus Anthracis Symptomatici;	
Bacillus Aërogenes Capsulatus; Bacillus Botulinus	168-173

#### CHAPTER XVII.

Typhoid Fever	173 - 183
BACILLUS TYPHOSUS	173 - 176
DIFFERENTIATION OF BACILLUS TYPHOSUS FROM ALLIED	
Geoups	176-179
THE BLOOD-SERUM DIAGNOSIS OF TYPHOID FEVER	179 - 182
VACCINATION AGAINST TYPHOID FEVER	181-183