

CONTENTS

INTRODUCTION

CHAPTER 1: INFECTIOUS AGENTS AND THE HUMAN IMMUNE RESPONSE

Infectious Agents: Categories of Organisms	1
Bacteria	3
Viruses	3
Fungi	9
Parasites	10
Modes of Agent Survival	10
Commensal Organisms	11
<i>Fluke</i>	12
Environment and the Spread of Infectious Agents	14
Family Patterns	14
Population Density	16
Social Habits	16
Temperature and Humidity	17
Movement	18
Occupation and Commerce	19
The Inanimate Environment	19
Immune Response to Infection	20
Natural and Acquired Immunity	22
Immunization	24

CHAPTER 2: BACTERIAL DISEASES: LEPROSY AND TUBERCULOSIS

Leprosy	27
Mysteries of the Disease	27
Transmission	29
Course of Disease	30
Therapy	30
Leprosy Through History	31
Tuberculosis	32
The Course of Tuberculosis	35
Diagnosis and Treatment	37
Tuberculosis Through History	38
<i>World TB Day</i>	40
Other Mycobacterial Infections	42

CHAPTER 3: BACTERIAL DISEASES: CHOLERA AND PLAGUE

Cholera	45
---------	----

46

X

7

25

36



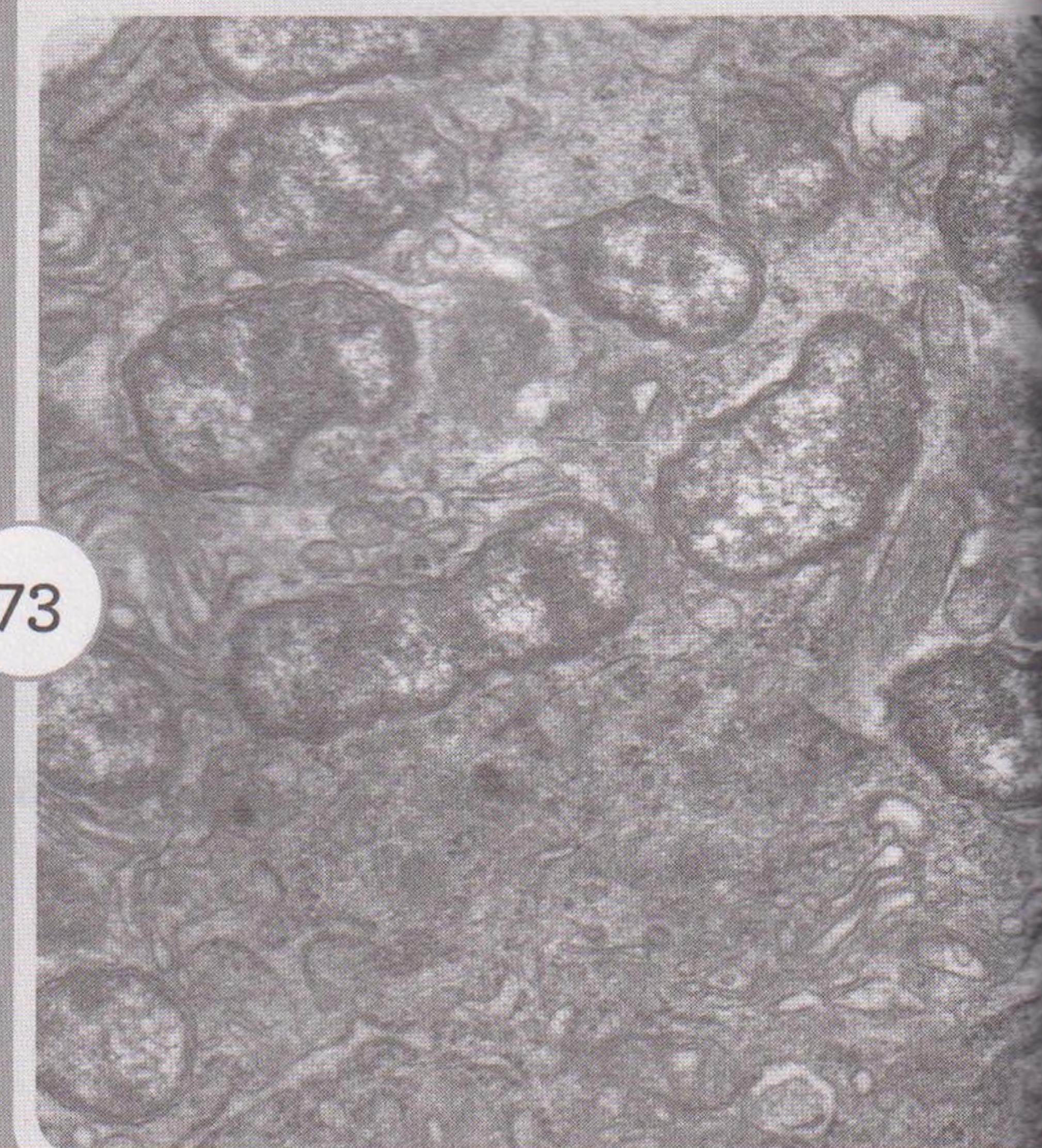
The Cholera Bacterium and Toxin	46
Symptoms and Treatment	47
Prevention	48
Cholera Through History	50
Plague	56
Nature of the Disease	56
Plague Through History	58
<i>Black Death</i>	60
<i>Great Plague of London</i>	62

CHAPTER 4: RICKETTSIAL AND CHLAMYDIAL DISEASES

Rickettsial Diseases	63
Bartonellosis	63
Boutonneuse Fever	64
<i>Howard T. Ricketts</i>	64
Epidemic Typhus	65
Q Fever	65
<i>Charles-Jules-Henri Nicolle</i>	68
Rocky Mountain Spotted Fever	69
Scrub Typhus	70
Trench Fever	72
Chlamydial Diseases	73
Psittacosis	73
Trachoma	75

CHAPTER 5: BACTERIAL DISEASES: ANTHRAX TO YAWS

76	76
Anthrax	76
Botulism	80
Diphtheria	81
Lyme Disease	83
Relapsing Fever	84
<i>Tick</i>	85
Syphilis	86
Course of Disease	87
Detection and Treatment	88
Syphilis Through History	89
Tetanus	90
Tularemia	91
Whooping Cough	93
Yaws	94



CHAPTER 6: VIRAL DISEASES: POX, POLIO, AND CLASSIC CHILDHOOD INFECTIONS

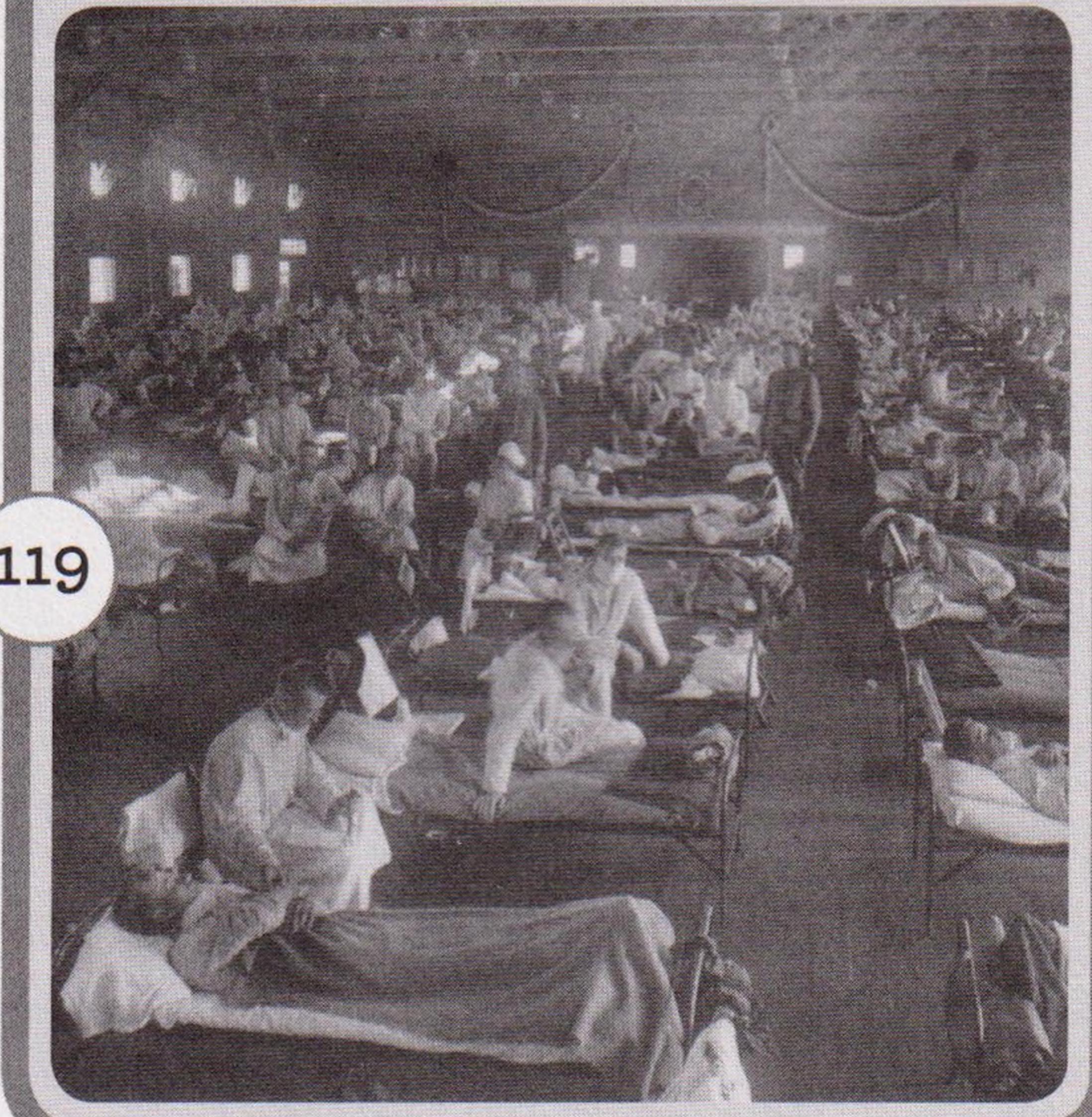
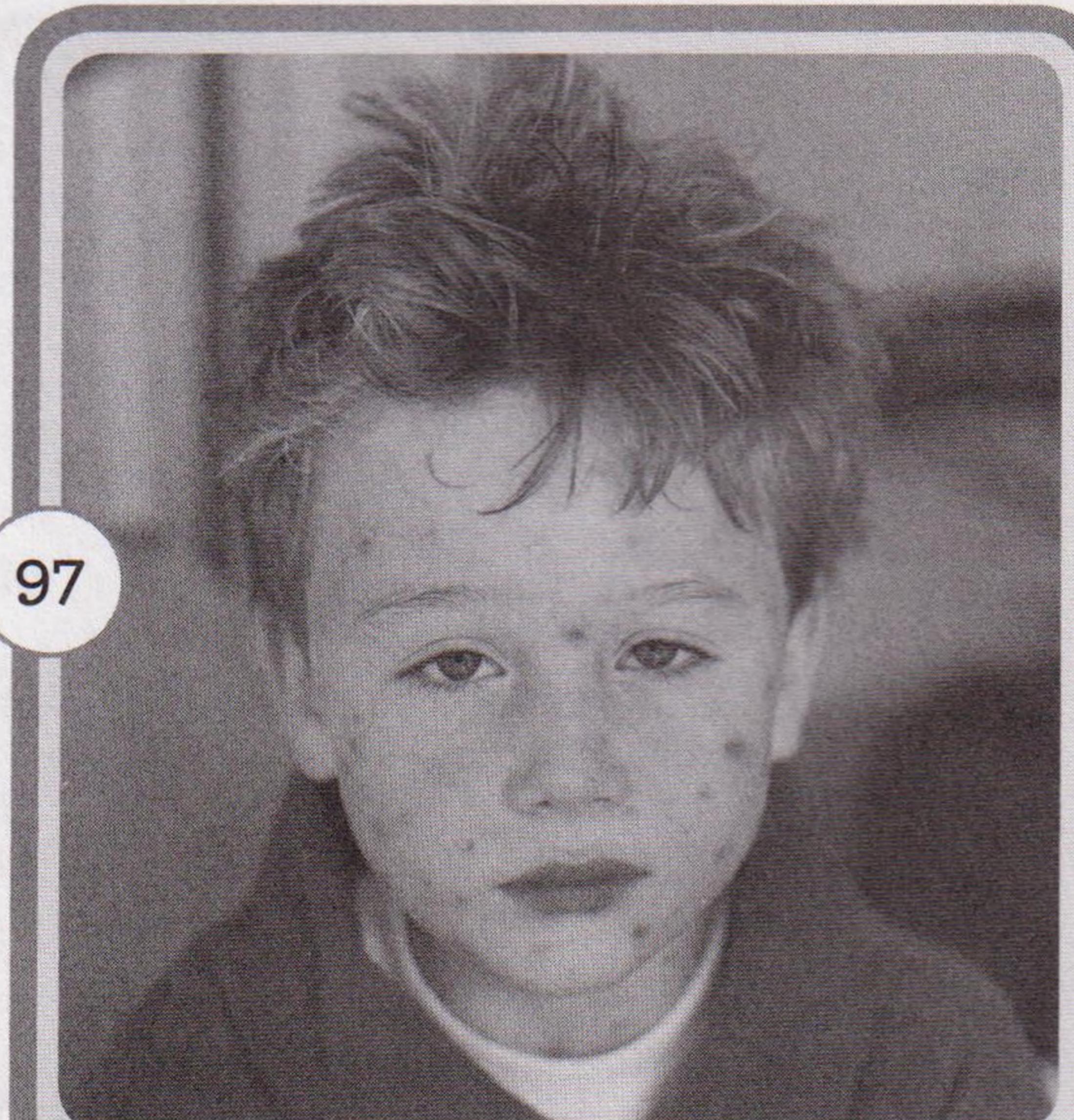
Pox Disease	96
Chickenpox	97
<i>Shingles</i>	97
Cowpox	99
Smallpox	100
Polio	104
Course of Disease	104
Treatment and Vaccination	106
Polio Through History	108
Measles, Mumps, and Rubella	111
<i>Maurice Ralph Hilleman</i>	113

CHAPTER 7: VIRAL DISEASES: INFLUENZA

Classification of Influenza Viruses	115
Evolution and Virulence of Influenza Viruses	116
<i>Thomas Francis, Jr.</i>	116
Transmission and Symptoms	117
Treatment and Prevention	117
Historical and Modern Influenza Outbreaks	118
Influenza Pandemic of 1918–19	118
Asian Flu of 1957	119
Hong Kong Flu of 1968	120
Influenza Pandemic (H1N1) of 2009	121
Influenza Pandemic Preparedness	122
Bird Flu	126
	127

CHAPTER 8: VIRAL DISEASES: HEMORRHAGIC FEVERS AND ACUTE VIRAL INFECTIONS

Chikungunya Fever	131
Transmission and Symptoms	132
<i>Chikungunya virus</i>	132
Diagnosis, Treatment, and Prevention	133
Historical and Modern Outbreaks	134
Dengue	134
Viral Transmission	136
Diagnosis and Treatment	137
Dengue Through History	137
Ebola	138
Strains of Ebola	138



Course of Infection and Treatment	139
Outbreaks	140
Pappataci Fever	140
West Nile Virus	141
Yellow Fever	142
Course of Disease	143
Diagnosis, Treatment, and Control	143
Yellow Fever Through History	144
Rabies	146
SARS	147
Viral Encephalitis	148

CHAPTER 9: VIRAL DISEASES: AIDS

The Emergence of HIV/AIDS	150
<i>Luc Montagnier</i>	150
<i>Françoise Barré-Sinoussi</i>	151
Groups and Subtypes of HIV	152
Transmission	153
Life Cycle of HIV	153
Genome of HIV	154
Course of Infection	156
Diagnosis, Treatment, and Prevention	156
<i>World AIDS Day</i>	158
Social, Legal, and Cultural Aspects	160
	161

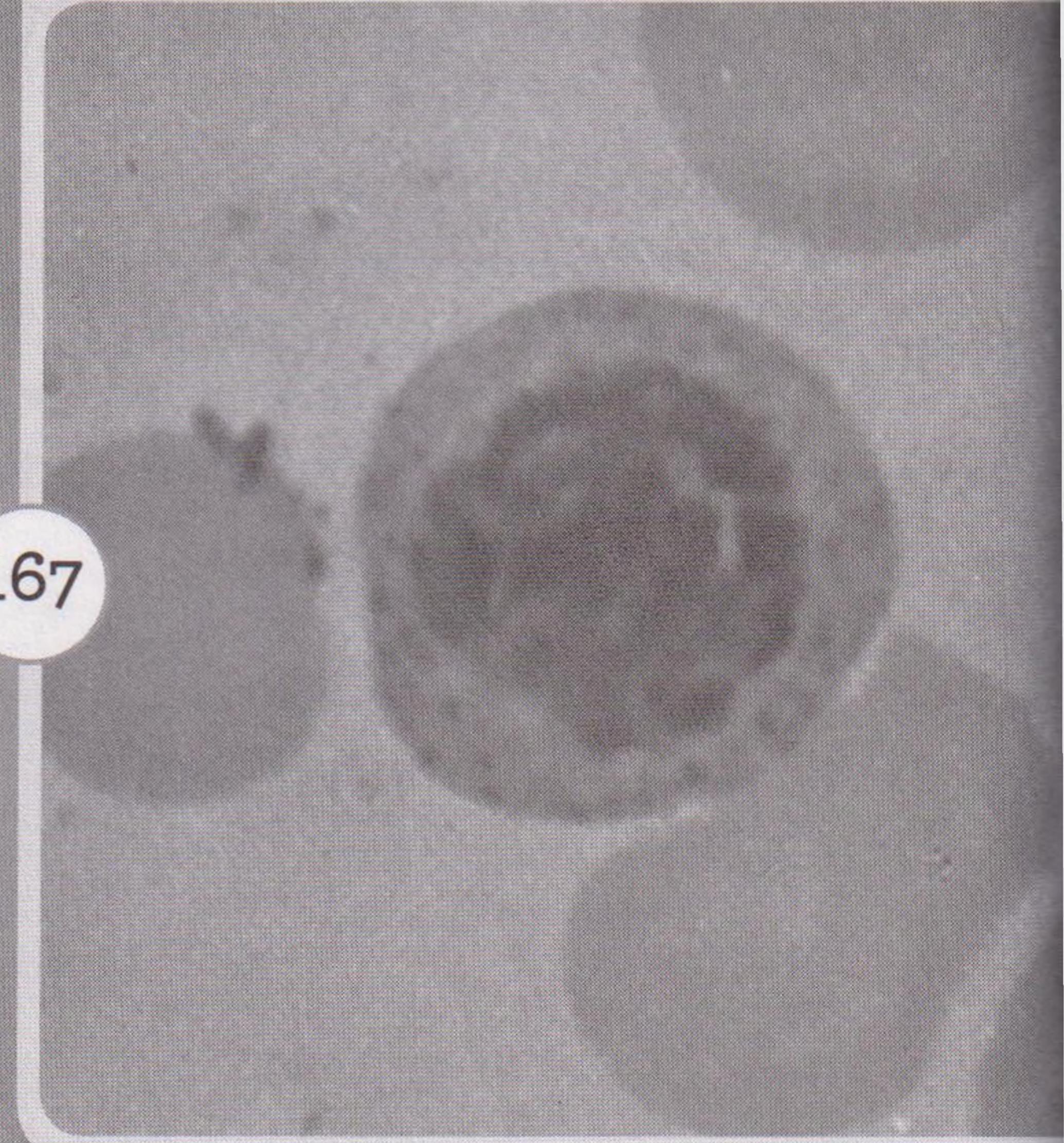
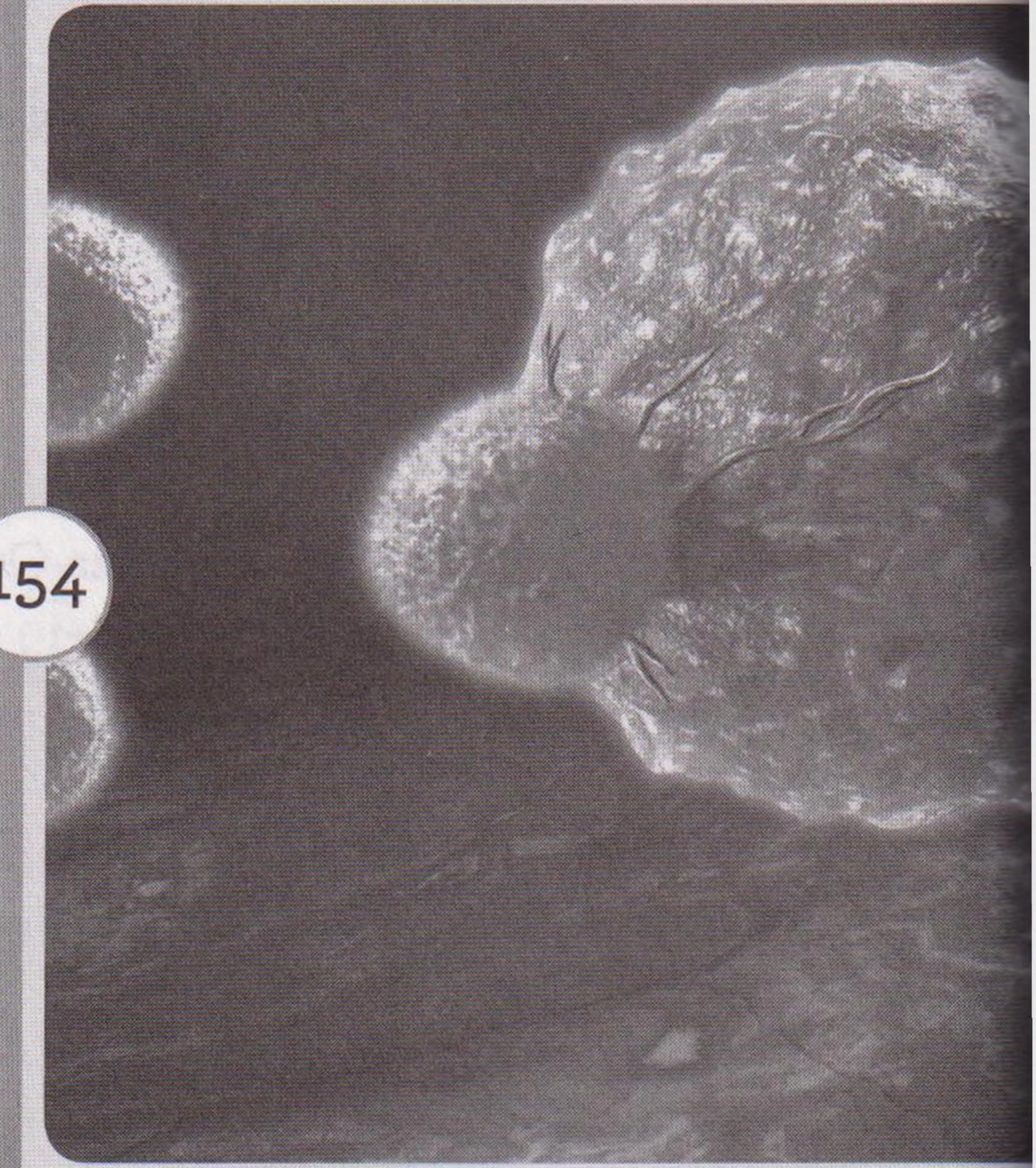
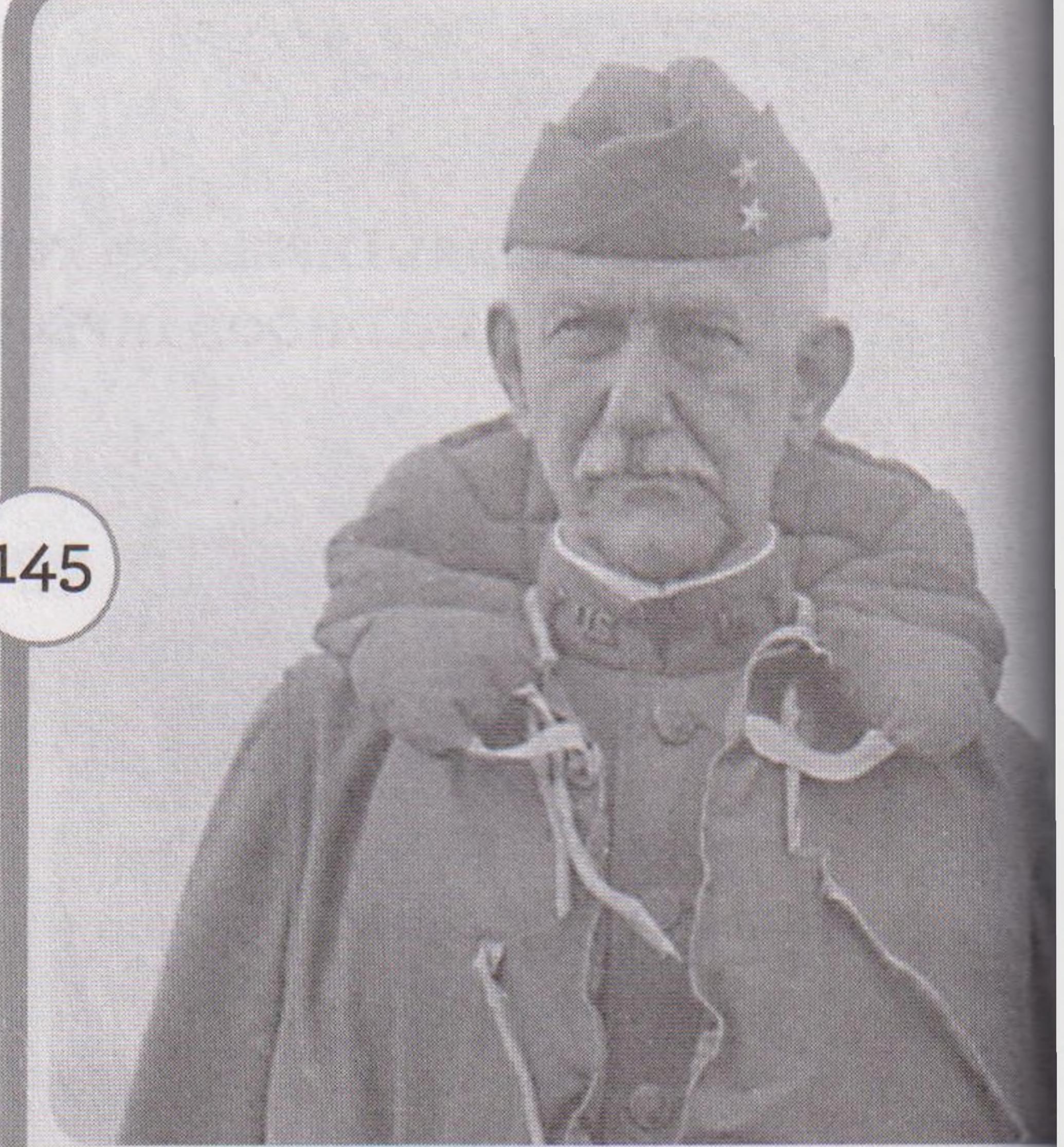
CHAPTER 10: PROTOZOAL DISEASES

Malaria	164
Course of Disease	164
Diagnosis and Treatment	166
Malaria Through History	168
Evolution of Malaria Parasites in Primates	170
<i>World Malaria Day</i>	173
Neglected Protozoal Diseases	174
Amebic Dysentery	175
<i>Entamoeba</i>	175
Chagas' Disease	176
Leishmaniasis	176
Sleeping Sickness	177
Toxoplasmosis	178
	180

145

154

167



CHAPTER 11: INFECTIOUS DISEASES:**WORMS, PRIONS, AND FUNGI**

Infectious Worms and Intestinal Disease	181
Cestodiasis	182
<i>Tapeworm</i>	183
Dracunculiasis	184
Filariasis	184
Onchocerciasis	185
<i>Filarial Worm</i>	187
Schistosomiasis	187
Prions	188
Bovine Spongiform Encephalopathy	190
Creutzfeldt-Jakob Disease	191
<i>Stanley B. Prusiner</i>	192
Kuru	193
Fungal Diseases	194
Blastomycosis	194
Cryptococcosis	195
Histoplasmosis	195
Ringworm	196
Conclusion	198

GLOSSARY**BIBLIOGRAPHY****INDEX**

186

197

199

201

202

