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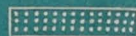
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LOW INCIDENCE

**TO THE
BUILDERS
OF TOMORROW**

TO THE BUILDERS OF TOMORROW

BY
MADHURI DESAI

FOREWORD BY
R. N. COOPER, M.S. (Lond.)

Illustrated by Nivedita Parmanand
Photographs by Sunil Janah



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He was of the soil, brought up in the sticky mud of the Indian village. Fearlessly he broke away from the old retrograde society that sought to engulf him. He was born in an age when diseased man was at the mercy of merciless fate. He lived to see the triumphant march of science, and the force it radiated in the conquest of the bitterest enemy of mankind—disease.

He had faith in constructive science. He hoped that the builders of tomorrow would step forward, and succeed in admitting light into the dark, filthy, stinking hovels of our villages and towns.

TO BHAI

Born of the people, hewed by the people, he lived
and died for the people.

'I look for you everywhere, and find you not.'

FOREWORD

IT HAS been a rare pleasure to me to read through the manuscript of *To the Builders of Tomorrow*. I have had the privilege of knowing the author for many years. However I must confess that I had never suspected that behind that modest and charming personality was hidden a writer of rare merit who, as a lay person, has succeeded remarkably in presenting an account of the evolution of modern medicine in a readable and interesting manner.

It is a sad commentary on the Indian medical practitioner that it should be left to a lay person to write this book. But then Medicine has always learnt from the priest, the barber, the postman, the street vendor and others. It is with the full knowledge of the guilt that lies on the head of the medical practitioner that I have consented to write the Foreword.

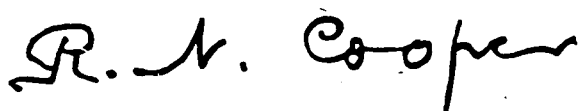
This book deals with the Romance of Medicine and brings home to the reader the long way that Medicine has travelled from the marshes of magic and mysticism to the bright and promising fields of scientific and rational practice.

The modern child, as the result of the prevailing system of education, grows up to believe that modern civilization is the direct outcome of the attainments of victorious warriors and successful politicians. There is no room in the curriculum of studies of the youth of this country for him to know the work of those who toil and sweat behind the test-tubes and the microscopes, and who submit themselves to dangerous experiments so that disease may be conquered and man may live healthily and happily.

However glorious may have been the civilization of the past, it is certain that none of them could claim cities of the magnitude of New York, London, Berlin, Moscow or Bombay. In those 'good old days' a city could not grow beyond a certain size because of a fearful mortality resulting from unhygienic ways of living. It is Medicine that has made it possible for the architects and the engineers to build their modern mammoth cities. Soviet Russia seems to be the only state where the pride of place in society is given to the scientist, and where Medicine seems to be the centre round which every new enterprise is built. This has been well brought out in the concluding chapter of this book.

Science will play an important part in the world of tomorrow. Builders of tomorrow will find in this book a message which will make them realize that healthy living is an essential requisite of human progress. The beautiful illustrations enhance the value of this book. The message contained in the book should be made to reach the whole length and breadth of this country. It is devoutly to be wished that translations of this book will appear in the different provincial languages of this country.

Builders of tomorrow, keep the torch of Medicine in the forefront of your progress. It has guided you from the dark ages to the present enlightened period. It will guide you to a full realization of the rarest gift of God—Life.

A handwritten signature in black ink, reading "R. N. Cooper". The signature is written in a cursive, flowing style with a large, stylized 'C' at the end.

21 Queen's Road, Bombay

11 January 1947

PREFACE

I TAKE this opportunity of acknowledging my debt of gratitude to my friends for the kindness, sympathy and sustained interest they have shown during my first venture into the realms of book-writing. They have appreciated my motive-spring in writing the book: an attempt to bring much needed knowledge to the generation of the builders of tomorrow, so that the days of filth and frustration may end.

I must make special mention of the great trouble taken by my friend, Dr R. N. Cooper, who read the whole manuscript and checked up the medical facts. He very kindly put at my disposal his library and helped me to wade through the technical aspect of medical science. Mr Jamshed J. Bhabha, another friend, offered valuable suggestions after reading through the early part of the manuscript.

Mr W.E. Nenninger furnished me with medical literature and much useful material was gleaned that way.

I am obliged to Mr Mithaiwalla and Mr Ananda Tamhane who supplied the photographs for Plates 1(a) and 1(b).

Last but not the least, I must acknowledge the unstinted labour of a friend who insists on remaining nameless. He relieved me of the burden of looking after the book in the press, helped me to gather the illustrations and spent a lot of his valuable time in seeing that this my first effort did not lack the best that technical aid could procure in this country.

To you all, I am deeply grateful.

M.D.

CONTENTS

	PAGE
THE ORPHAN'S WAIL	
Letter I	1
THEY HELD BACK THE FUTURE	
Letter II	4
Letter III	15
THE UNIVERSAL FOE: MALARIA	
Letter IV	25
Letter V	35
Letter VI	41
THE EYE OF SCIENCE: THE MICROSCOPE	
Letter VII	51
Letter VIII	57
Letter IX	62
THE CURSE OF GOD: ANTHRAX	
Letter X	68
THE WHITE PLAGUE: TUBERCULOSIS	
Letter XI	77
Letter XII	81
Letter XIII	89
THE ASIATIC SCOURGE: CHOLERA	
Letter XIV	97
Letter XV	108
THE UGLY MINISTER OF DEATH: SMALLPOX	
Letter XVI	112
Letter XVII	122
THE BLACK DEATH: PLAGUE	
Letter XVIII	129
Letter XIX	139
Letter XX	150
THE PRISON FOR INFECTION: QUARANTINE	
Letter XXI	154
NO LONGER THE DISTANT GLOW	
Letter XXII	164
GLOSSARY	177
BIBLIOGRAPHY	179
INDEX	180

ILLUSTRATIONS

PLATE	FACING PAGE
1 (a) Road builders' homes in Bombay suburbs	24
(b) Milkman's home in Bombay City	24
2 Food being sold near a refuse dump in a Calcutta bazaar	25
3 Children in an orphanage in Orissa	32
4 A woman suffering from epidemic dropsy	33
5 A working-class district in Bombay City	42
6 A woman searching for food in the refuse in a main street in Calcutta ..	43
7 Malaria victim from a village in East Bengal	46
8 A beggar in a Lahore street	47
9 Working-class slums in Deolali	56
10 A Calcutta railway worker's home near Sealdah Station	57
11 A Delhi working-class girl, blind from birth, for her parents are diseased..	64
12 A boy with smallpox in a village in Pariyaram, Cochin State	65
13 A breeding-ground for malaria and disease	72
14 Gypsies from the North-West Frontier Province with all their belongings in their tent	73
15 An Assamese peasant family	80
16 An old woman suffering from malaria in an Oriya village	81
17 A boy suffering from scabies, in a street in Swarna Town, Guntur District	96
18 A destitute woman and child arrive at a relief centre in Orissa	97
19 Coir workers, Kerala	104
20 Flies swarming on the face and body of a child, in a peasant hut in a village near Mayasandra, Mysore State	105
21 A working-class mother and child in the Matunga Labour Camp	112
22 A destitute family in the Kashmir Valley	113
23 Hajang (tribal) mother and child, Mymensingh, Bengal	120
24 Disease is waiting to strike	121
25 Jute workers' children, Budge-Budge, Calcutta	128
26 (a) 'We have no bread-winners'	129
(b) Tidal wave victim, Andhradesa	129
27 What will tomorrow bring for them?	136
28 Poverty, sickness and death is their heritage	137
29 Kashmiri carpet-worker and child	144
30 A woman deformed from birth	145
31 Tannery worker and child, Ellore, Andhra	152
32 Starvation and disease	153
COLOUR PLATES	
Comparative figures of medical personnel and equipment	BETWEEN PAGES
Germs which cause human diseases	164-5
Mortality rate in 1937	

GLOSSARY

ANTIBODY	Substance produced by an antigen as a reaction to its presence
ANTIDOTE	That which counteracts poison
ANTIGEN	A substance which produces an antibody when introduced into the tissues of man or animal, it includes toxins, ferments, proteins, etc.
ANTISEPTIC	Chemical substance which prevents the growth of bacteria, decay or putrefaction
BACILLUS (pl bacilli)	(L. 'little stick') A stick like bacterium
BACTERIUM (pl bacteria)	(L. 'little rod') Minute one-celled living organism which has no definite nucleus
BACTERIOPHAGE	A virus preparation which dissolves bacteria
BOVINE	Pertaining to, or derived from, the ox or cow
BROTH	Clear fluid medium for the growth of bacteria
CARBOHYDRATE	Organic substance such as starch or sugar, composed of the elements carbon, hydrogen and oxygen
CELL	Small living mass of protoplasm enclosed by envelope and usually containing a nucleus
COCCUS	A spherical or ovoid bacterium
COLONY	A single group of bacteria in a culture
CONTAGION	Communication of disease by direct or indirect contact, or by effluvia
CULTURE	Artificial growth of microbes
CUTICLE	The outer layer of the skin
CYST	A sac, which contains liquid matter
DISINFECTION	Destruction of disease producing microbes
EPIZOOTIC	An epidemic among rodents
FLAGELLATE	A minute organism with thin whiplike projections with which it moves about through liquid
FLUID	A liquid
GENUS	A large group of animals or plants including within its fold one or more species of common characteristics
HOST	Any animal or plant upon which another living organism lives as a parasite
IMMUNITY	Power of resistance against disease, poison or infection of any kind
INFECTION	Microbe growth in the tissues of a living animal resulting in disease
INFLAMMATION	The condition caused by injury to tissues, typified by swelling, pain, redness and heat
INHALATION	The drawing of air or other vapour into the lungs
INOCULATION	Introduction of infective material or serum into tissues of animals or human beings to produce a mild form of disease, in order to secure immunity against it
LYMPH	A transparent yellowish fluid taken from the lymphatic glands
MALIGNANT	With a tendency to go from bad to worse
MICROBE	Any minute, one celled, living organism
MICRON	One thousandth of a millimetre
NUCLEUS	Structure found within all cells except bacteria, forming its vital and essential part

PAPULE	A small rounded solid elevation of the skin
PARASITE	Living organism which lives and feeds on a host, a plant or an animal at whose expense it obtains sustenance without giving anything in return
PATHOGEN	Microbe which produces disease
PLASMA	Liquid part of blood before clotting
PLEURA	The membrane that surrounds the lungs, the thorax, and the diaphragm with a serous fluid which permits movement
PROPHYLAXIS	Preventive treatment of disease
PROTEIN	Organic substance made up of oxygen, hydrogen, nitrogen and carbon.
PROTOPLASM	Jelly-like form of matter of which living organisms are mainly composed, it is mainly made of carbohydrates, inorganic salts, lipins and proteins
PROTOZOA	The unicellular and other organisms forming the lowest division of the animal kingdom
PUSTULE	A small elevation of the skin filled with pus or lymph
SCABS	The crust of a sore
SEPTICAEMIA	Existence of bacteria in circulating blood
SERUM	A clear animal liquid separated from its solid elements, fluid separated from corpuscle when blood clots, obtained from animals inoculated with bacteria and their toxins
SORDES	Foul, brown crusts or accumulations on teeth, etc.
SPECIES	A group of animals or plants within a genus, with certain characteristics in common
SPORE	Round or ovoid body produced by some bacteria, which is able to withstand certain amount of heat and dryness, absence of food, and certain chemicals.
SUB-CUTANEOUS	Situated beneath the skin
T.B	Tuberculosis
TISSUE	Structure composed of cells in which they are dependent on one another for their food and are united in the performance of a special function
TOXIN	Poisonous substance produced by certain bacteria like the bacillus of tetanus, diphtheria, dysentery etc.
TUBERCLE	A nodule or a solid elevation of the skin or an eminence on a bone, produced by the bacillus of T.B
TUBERCULIN	A sterile liquid containing the products extracted from the tubercle bacillus
UNICELLULAR	Consisting of one cell only
VACCINATION	Inoculation with virus of cow pox by placing lymph of an affected cow upon the scarified skin of humans
VACCINE	A preparation of killed bacteria which produces immunity by formation of antibodies, lymph taken from a vesicle of cow-pox and used in inoculating that disease
VARIOLA	Smallpox
VESICLE	A small bladder-sac or circumscribed elevation containing serous liquid
VIBRIO	Short curved bacterium with one, two or three polar flagellae
VRULENT	Capable of causing disease, noxious or deleterious
VIRUS	A very minute organism which is a cause of disease, composed of living virulent microbes as distinguished from a vaccine which carries dead bacteria.

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INDEX

- Adrianople, Treaty of, on quarantine, 160
 Afghanistan, and cholera, 99
 Africa, East, belief about malaria, 26,
 French West, plague vaccine in, 153,
 leprosy in, 6
 amulets, *see* charms
 animalcules, of Leeuwenhoek, 56
 Anopheles, *see* mosquito
 Anthrax, 68 et seq., experiments of Koch,
 70-3, mode of travel from host to host,
 72, 73, microbe cause of, 71, 165, pre-
 vention of, 74
 Aoyama, and plague, 133
 Apicolysis, *see* tuberculosis
 Aralen, *see* malaria
 Aronson, uses BCG vaccine in America,
 92
 arsenic, *see* tuberculosis
 Atabrine, *see* malaria
- bacillus, of anthrax, 71, of cholera 103,
 of plague, 135, of T.B. 77-8, of typ-
 hoid, 164
 Bacteriophage, *see* plague
 Bale, and quarantine, 158, 159
 Bayle, founder of correct teaching on
 T.B. 81
 BCG vaccine, treatment in T.B., 91, 92
 bedclothes, in T.B. infection, 86
 Ben Jonson, on smallpox, 115
 Berlin Academy, and Spallanzani, 65
 Bernabo, Viscomte, edict on plague, 156
 bezoar stone, as medicament, 10, 22, 23
 Bhattacharya, Dr. of Pakur Raj case,
 137-8
 birds, Ross experiments on, 31, 32, T.B.
 of, 83
 Black Death, *see* plague
 blindness, the shaman's explanation, 8
 blood, dehydration of, in cholera, 110,
 human, as medicament, 22, letting, in
 primitive healing, 9, 110
 blue-stain, for T.B. bacillus, 77, 82
 blue-glass, as quack remedy, 21
 Boccaccio, and plague in Florence, 131,
 132
 Bodington, George, open-air sanatorium
 of, 93
 Bolyston, and smallpox inoculation, 116
 Bombay, experiments of Plague Com-
 mission, 141 et seq.
 bones, T.B. of, 85
 bone-setters, J. Smith etc. 20-1
 Borrel, and anti-plague serum, 152
 Botulinus, bacillus, research on, 165
 Boyle, Robert, 52
 brain fever, discovery of germ of, 165
 Brehmer, Hermann, 93-4
 Bruce, discovers *Brucella Melitensis*, 165
 bubo, *see* plague
 Buchner, and cholera, 105
 bugs, as medicament, 22
 burgundy-pitch, as medicament, 23
- Cagliostro, 18, 19, 168
 calcium, in T.B. treatment, 90
 Calcutta, Public Health Department, 138,
 School of Tropical Medicine, 137, 138
 Calmette, Albert, and BCG vaccine in
 T.B. 91, and anti-plague serum, 152
 camphor, spirit of, repellant to mosquito,
 47
 Canton, plague in, 133
 Capaccio, plains of, and Grassi's experi-
 ments, 39
 Carbolic acid solution, and T.B. bacil-
 lus, 86
 Carman, and plague treatment, 153
 carriers, human, in cholera, 106, 108, 109,
 in plague, 151
 Celsus, 25
 Central Epidemics Commission in Soviet
 Russia, 170
 charlatans, 18-20, and plague in Lon-
 don, 129
 charms, and plague in London, 129, used
 by kings and queens of England 18,
 used by the shaman, 7
 chicken-pox, 125
 child-birth, painless, claim of Caglios-
 tro, 19
 cholera, Asiatic, 97 et seq., carriers of,
 106, 108-9, cause of, 101, 105, 108-9,
 epidemic of, in Danzig, 158, in Egypt,
 102-3, in Hamburg, 106-7, in Hamp-
 stead 101 2, in Hardwar, 108, in In-
 dia, 100, 103, 108, in Iran, 99, in
 Jerusalem, 100, in London, 101 2, 166,
 in Madras, 108, in Paris, 98, in
 U.S.A., 100, germs in stools, 104, 108,

- history of, 99 101, incubation period in, 108, inoculations, 109 et seq; comma bacillus, 103, 165, Metchnikoff on, 105, Pettenkoffer and 105, prevention against, 108 11, 166, quarantine in, 108-9, route taken by epidemics of, 99, 100, symptoms, 99, toll of, 108, treatment of, 108-10, useless remedies for, 110
 christian superstitions, 15-16
 cinchona, bark of, 25, 42, 45, history of, 43f, in World War II, 45
 citronella oil, repellent to mosquito, 47
 cod liver oil, in T.B. treatment, 90
 Cohn, Professor, 73
 Cohnheim, and T.B., 82
 coli, bacillus, discovery of, 165
 comma bacillus, 103 et seq
 Commission, Indian Plague, 141, German Plague, 136
 cow pox, and smallpox, 118
 creosote, *see* tuberculosis
 cupping, for healing, 6, 7, 23, 110
 Cyanogas, 151

 Davine, on anthrax, 70
 Danysz, Jean, method of rat destruction, 151
 Dayong, the Borneo shaman, 11
 DDT, 49
 death-rate, in different countries, 167
 dentists, 167
 Dettweiler, Peter, 94
 dhatura, in primitive medicine, 12
 d Herelle, and plague serum, 153
 Dimsdale, Thomas, and smallpox inoculation in Russia, 116-17
 disease, result of magic, 8
 divine power of healing, claimed by English monarchy, 13
 drugs, patent, 22
 Drummond, Sir Jack, 87
 dust, in T.B. infection, 86, 90
 dysentery, discovery of bacillus, 165, toll of, 168

 Eberth, discovers typhoid bacillus, 164
 electro-magnet, 21
 electron-microscope, 60-1
 Ellis, exposed by Spallanzani, 65-6
 England, cholera in, 100, disease statistics, 166, infant mortality rate, 167, result of medical science in, 168

enteritidis, discovery of bacillus, 165
 Epidaurus, 154
 Ermengem, van, research on *bacillus botulinus*, 165
 Escherich, discovers bacillus coli, 165
 evil eye, in nineteenth century Europe, 69, in primitive medicine, 10
 excreta, as medicament, 22, as source of infection, 108
 exercise, in T.B. treatment, 90
 expectation of life, in Great Britain, 42, in India, 42, 167, in Kanara, 42, in U.S.A., 167

 faeces, *see* excreta
 faith-healing, 4 et seq, 18 et seq, 17, 24
 Ferran, and anti-cholera inoculations, 109
 fever, explanation of the shaman, 8, toll of, 168 9
 Five Year Plans, *see* Russia
 flea, *see* rat
 flies, as carriers of disease, 108-9, 125
 food, in cholera treatment, 108-9, in T.B. treatment, 95, in T.B. infection, 85, 87, poisoning, cause of, 165
 Fraenkel, discovers germ of pneumonia, 165
 Fratz, Emmy, 68-9

 Gaffy, and Egyptian cholera epidemic, 103
 Galen, 25, 81
 Gambusia, 50
 Gartner, discovers *enteritidis bacillus* 165
 gas-gangrene, discovery of germ of, 165
 Gauthier, on plague, 143
 germ theory of disease, 74
 German Plague Commission, 136
 Girard, and plague vaccine, 152
 Goa exposition of St Francis Xavier, 17-18
 gold, as medicament, 22, injection in T.B., 91
 Golgi, and malaria, 26
 Graaf, Regnier de, 52
 Grassi, and malaria, 35 et seq, campaign against the mosquito, 36, practical demonstration on avoiding malaria, 39-40, proves malaria needs intermediary host, 38 9
 Great Britain, expectation of life, 42, plague in, 131

- Greece, malaria in, 41, plague in, 160
 Guérin, Camille, and use of BCG vaccine in T.B. 91
- haemorrhage, in plague, 140
 Haffkine, anti-cholera inoculations, 110, injections for plague, 152, Institute, Bombay, 137, 138
 Hamburger, and T.B., 83
 hanging drop, invention of Koch, 71
 heart trouble, the shaman's explanation, 8
 herbs, and the shaman, 12
 heredity, and T.B. 83, 85
 Hertel, 58
 Hippocrates, 25, 81
 Holmes, Oliver Wendell, and smallpox inoculations, 116
 Hooke, Robert, and his microscope, 58
 hospitals, number of beds in, 167, need for T.B., 95
 Huzelands Journal, 158
 hygiene, and cholera, 111
- Imperial Health Office, Berlin, and Koch, 74
 incubation period, in cholera, 108, in plague, 139, 145
 India, cholera in, 100, 103, 108, 168, cinchona plantations in, 45, death rate in, 167, expectation of life, 42, 167, infant mortality in, 167, malaria in, 41 et seq; medical personnel in, 167, plague in, 132 et seq, 168, smallpox in, 122, 126-7, 168, T.B. in, 77, daily toll of disease in, 168
 Indran Plague Commission, 141
 infant mortality rate, in different countries, 167, 174
 ingestion, mode of T.B. infection, 85
 inhalation, mode of T.B. infection, 85 6
 inoculation, anti-cholera, 109 et seq, in England, 114, in European countries, 116-17, in Russia, 117, smallpox, 114 et seq, T.B. infection through, 85
 insects, and disease, 108, 125
 International Bureau of Public Hygiene, 160, Health Office, 161, Quarantine Convention, 160, Sanitary Convention, 161
 Invisible College, 52
 isolation, *see* quarantine
- Janssen's flea glass, 57 8
 Japan, death rate in, 167, the shaman in, 9
 Jefferson, Thomas, and smallpox vaccination, 121
 Jenner, Edward, and James Phipps, 120, and Jesty, 120, and Napoleon, 121, early life, 119, first vaccination, 120, theory about smallpox, 119
 Jesty, Benjamin, and Jenner, 120, and smallpox vaccination, 118
 Johnson, Dr Samuel, 18
 joints, and T.B., 85
 Jorge, and plague, 135
- Kanara, expectation of life in, 42
 Khajura, used against larvae of mosquito, 49
 kidneys, and Malpighi, 59
 Kina Bureau, 45
 king's evil, 18
 Kircher, 60
 Kitasato, and plague, 133 4, 138, 165, on human carriers, 151
 Koch, Robert, and blood serum jelly, 79, and Egyptian cholera epidemic, 102 3, and Emmy Fratz 68, and Grassi, 35 8, and Kitasato, 134, and Pasteur, 76, 102, and Pettenkoffer, 105, and Tuberculin, 82, camera attached to microscope, 74, discovery of anthrax bacillus 71, 165, cholera bacillus, 103, 165, T.B. bacillus, 77-8, 82, 165, early life, 68 9, experiments with anthrax blood 70 4, T.B. bacillus, 78 80, grows bacteria on solid media, 75, 'hanging drop' invention, 71, in Japan, 134, pure culture microbes, discovery of, 75, T.B. immunity of certain animals, 80
- Laennec, Rene, and T.B., 81
 larvae of mosquito, war against, 48
 Laveran, and malaria parasite, 26, 28
 League of Nations, health statistics, 49, report on smallpox, 126
 Leeuwenhoek, Antony von, and Graaf, 52, and discovery of microbes, 52 6, early life, 51, Fellow of Royal Society, 53, letters to Royal Society, 52 5, microscope of, 57
 leprosaria, 156
 leprosy, 154-6
 lipovaccine, used in plague, 153

- Laston, and plague, 135
 Lowry, and plague, 133
 Lubeck, and BCG vaccine experiment, 91
 lunacy, and the shaman, 12
 lungs, and Malpighi, 59, *see* tuberculosis
- magic, 5, 7 8
 Mahamari, Indian name for plague, 130
 Maitland, introduces smallpox inoculation in Germany, 116
 malaria, and Alexandra the Great, 25, anti malaria squads, 45, cause of, 47 8, cost to India, 41 2, 45, Aralen, 46, Atabrine in treatment of, 45, 46, Grassi, 35 et seq, Golgi on, 26, history of, 25 et seq, Institute of India, 49, in World War I, 41, and II, 45, in Brazil, 48, in Italy, 36, 35, 38 9, Laveran establishes parasitic nature of microbe, 26, Manson's theories, 27, Meckel on 26, parasites of, seen by Ross, 31, poverty and, 42, prophylaxis, 42 et seq, story of cinchona bark, 43 et seq, symptoms, 2, 49, Survey of India, 42, transference of, to birds, 31, treatment of, 45 7, toll of, 25, 41, world distribution, 41
 Malpighi, M 59, 60
 Manson, Patrick, and Ross, 26, 27 8, 33, theories about malaria, 27, 29
 Maratha Hospital, Bombay, 148
 marriage, early, and T B 96
 Mather, Cotton, and smallpox, 113, 116
 Mbu, 26
 Meckel, and spleen in malaria, 25 6
 medical science, and profit motive, 175, dearth in India, 169, discoveries in, 164 5, frauds, 19, history of, in Russia, 169 et seq, importance to civilization of, 130, personnel, need for, 95, 167, 174, preventive vs curative, 172, primitive, 6, 12-13
 medicine man, *see* shaman
 meningococcus, discovery of, 165
 menstrual blood, magical powers attributed to, 22
 mercurochrome, 220, soluble, 153
 Metchnikoff, death from cholera vibrio, 105
 Methyl bromide, 151
 microscope, and the camera, 74, binocular, 58, electron, 60 1, flea glass, 57 8, Hertel's 58, history of, 57 et seq, Kirchers, 60, Koch 68 et seq, Laveran and, 26, Leeuwenhoek and, 51, 57, 59, Malpighi and, 59 60, Meckel and, 26, modern, 58-60, role of, 61 5, and Spallanzani, 62 et seq
 midwives, 167
 milk, and cholera, 109, and T B 83-7
 mulpreve stone, and the shaman, 10
 Ministry of Health, British, 87
 Montagu, Lady Mary, and smallpox, 113 et seq
 Morgagni, and T B 81
 Morton, and malaria, 25, and T B 81
 mosquito, and Grassi, 35 et seq, measures against the, 46 9, brown, 30, gray, 31, haunts of, 47 8, link with malaria, 26 et seq, use of Paris green against larvae, 48, repellants, 47, spores in stomach of, 31, theories of Manson, 26 7
 Museum in Munich, 58
- National Tuberculosis Association, U S A., 92
 Needham, J and Spallanzani, 63, and spontaneous generation, 63, and 'vegetative force', 64
 neem leaves, in primitive medicine, 12
 Newman, Sir George, on smallpox 127
 Newton, Isaac, 52
 Nicolaier, discovers tetanus bacillus, 165
 Norway, and BCG vaccine for T B 92
 nurses, 167
 Nuttall and T B infection, 86, discovers *bacillus Welchii*, 165
- Ogata, and plague bacilli, 135
 Ogston, discovers Staphylococci, 164
 oil, immersion lens, 60, in war against larvae of mosquito, 48
 Omnadin, and plague, 153
 osteopathy, 21
 Otten, and plague inoculation, 152
 ovary, human, and Regmer de Graaf, 52
- Pakhoi, and plague, 133
 Pakur Raj case, 137 8
 Pali, Indian name for plague, 130
 Paludrine, remedy for malaria, 45
 Paris, Medical Faculty, 132, Pasteur Institute in, 134, 152
 Paris green, *see* Mosquito

- Pasteur, Louis, and Egyptian cholera epidemic, 102-3, and microbe theory, 69, and Robert Koch, 76, 102, 134, Institute, *see* Paris
- Pasteurella Pestis*, bacillus of 134 7, 149, 165
- pasteurisation, of milk, 85, 95 6, 109
- Pavia, and Spallanzani, 67
- People's Commissariat of Health, in Soviet Russia, 172 3
- perchloride of mercury, use in plague, 143
- Peru, *see* cinchona
- Pestifuge, and plague, 153
- pestilential, 130
- pestis minor, 141
- Pettenkofer, Max von, and cholera vibrio, 105
- pharmacists, 167
- Phipps, James, and Jenner, 120
- phrenic nerve, *see* tuberculosis
- phthisis, *see* tuberculosis
- plague, 129 et seq, air, 158, and Kitasato, 133-4, 151, and Yersin, 133 4, 152 3, aqueous vaccine in treatment of, 153, bacillus, *see* *Pasterella Pestis*, bacteriofage in, 153, bubo, 140, 153, bubonic, 140, 145, 148, cause of, 134, Commission, Bombay, experiment of 141f, culture, 137, 143, 152, effect of, on masses, 129, 131, endemic foci, 133, epidemics, 129 33, 150 66, flea, 134 et seq, German Commission, 135, haemorrhage in, 140, Haffkine, 152, Haffkine Institute, 137, history of, 130 et seq, houses, 148, in China, 133 4, in England, 129, 131, in Europe, 130, in India, 132, in Italy, 130 2, incubation period in, 139, 140, 145, infection, 132, 148, 150-2 Indian Commission, 141 et seq, Kircher finds germs of, 60, larval, 141, method of transmission, 135, 137, 141, 146 48, mortality, 168, period of transmission, 145, pneumonic, 140, 148, 153, prophylaxis, 132, 143, 150, 152, quarantine in, 132, 150, 154, 156, 157 rat, 132 et seq, sanitary measures in, 150 1, season in 145, 149, septicaemic, 140, 145 153, serum, 152-3, sources of infect on, 142-5, 148, spreaders, 132, stage of recovery in, 140, symptoms of, 132, 139, daily toll of, 168, treatment of, 150, 152 3, vaccine in, 152 3, victims of, 136
- Plasmoquine, 45
- pneumonia, discovery of germ of, 165
- pneumonic plague, *see* plague
- Pneumothorax, 91
- pregnancy, and cholera, 99, and T B 96
- primitive man, and the unknown, 6, 8, beliefs of, 5, 11, medicine, animals as teachers in, 12
- Protosil soluble rubrum injection, in plague, 153
- protozoa, and Leeuwenhoek, 55
- pulex cheopis*, 144, *felis*, 148, *irritans* 148
- Pyrethrum acrosols, anti mosquito sprays, 49
- quarantine, 154 et seq, and Mecca pilgrimages, 160, and Suez Canal, 160 and USA 161, and Treaty of Adrianople, 160, and Stromeyer, 158, Convention, International, 160, edicts of Charlemagne, 154, Viscomte Bernabo, 156, in cholera, 108, 110, in Dnizog, 158, in Greece, 160, in leprosy, 154 6, in Marseilles, 157, 160, in Mecca, 100, 160, in Milan, 158 in plague, 154, 156 60, in Ragusa, 157, in St Petersburg, 160, in T B 81, Isolation Hospital, Bombay, 137 modern regulations, of, 160, opposition to, 158
- Quina quina, 43
- quinine, compared with Atabrine, 46, as cure for malaria, 42, history of, 42 et seq
- radiography, and T B 90, 95
- rat, as plague carrier, 132 et seq, epizootic, 143, 148 9, methods of destruction, 151, 160, sewer, 135, flea, anatomy of, 147, breeding of, 149, capacity to store plague germs, 147, habits of, 147, life cycle of, 146, method of plague infection, 147, *pulex cheopis*, 144, *pulex felis*, 148, *pulex irritans*, 148, *see* plague
- Raybaud, on plague, 143
- Rayer, and anthrax, 70
- Redi, 62, 63
- Reggio, University of 62
- Rennie, and plague, 133
- rheumatism, and Cagliostro, 19

- Rockefeller Foundation, and malaria in Brazil, 48
- Rogers, Leonard, and smallpox, 124, saline injections in cholera, 110
- Rome, plague in, 154
- Ross, Sir Ronald, and Grassi, 33, 35, 38, 40, and Laveran's theories, 27-8, early life, 27, experiments on birds, 31 2, men, 28 31, mosquito stomach, 29, in India, 28 31, measures growth of microbe, 32, meets Manson, 27 8, observes spores in salivary glands of mosquito, 33, observes spores in mosquito stomach, 31, wins Nobel Prize, 40
- Rothschild, 144
- Roux, Emile, in Egypt, 103
- Royal Society, and Leeuwenhoek, 52 et seq
- Russia, and cholera, 99 100, as example to India, 169 et seq, and T B 92, Five Year Plans in, 174, health budget of, 172, health plan, 174 5, medical history of, 169 et seq, socialized medicine in, 171 et seq
- Salomonson, and T B 82
- sanatoria, in T B treatment, 92 5
- sanitation, in cholera, 111, in plague, 142 5, 148
- Schlatter, Francis, 20
- School of Tropical Medicine, Calcutta, 137 8
- Schutze, and plague, 153
- scrofula, 18
- septicaemic, *see* plague
- serum, in plague, 152 3
- sewage disposal, and cholera, 107
- sewer rat, 135
- sex, and T B 83
- shaman, the, 9 14
- Shiga, Kiyushi, discovers *bacillus dysenteriae*, 165
- Sinton, Lt Col, 42
- slums, and T B 95
- smallpox, 112 et seq, in Boston, 113, 116, 165, and chicken pox, 125, and cowpox, 118 20, and Dimsdale's inoculations, 117, and James Phipps, 120, and Jenner, 119 et seq, and Jesty, 118, 120, and Lady Mary Montague, 113 16, and quarantine, 125 6, and Waterhouse, 121, cause of, 123 5, complications in, 123, history of, 113 et seq, immunity in, 125, in China, 115, in England, 114-15, 118, 121, 127, in India, 122, 126-7, 168, in Russia, 117, in Turkey, 113-15, in the U S A, 113, 116, 121, 165 6, inoculation against, 114 et seq, League of Nations Report on, 126, stages in, 122 3, symptoms of, 122, treatment of, 126, toll of, 166, vaccination in, 118 et seq, vaccine lymph in India, 127, varieties of, 123
- Smith, Joseph, 20
- Snow, Dr John, and cholera in London, 101 2
- social insurance, in Soviet Russia, 173 4
- socialized medicine, four basic pillars of, 173, in India, 171, 175, in Soviet Russia, 171 et seq
- Sola, Signor, 38
- Spallanzani, Lazaro, and Ellis, 60 6, and Needham, 63-4, early life, 62, microbes and, 65 6, on spontaneous generation of microbes, 62-4
- Spielberg, Dr, and plague, 136
- spleen, Meckel's experiment, 26, enlarged in malaria, 49
- sputum, and T B 86 7, 90, 95 6
- Staphylococci, discovery of, 164
- Stucker, Dr, and plague, 136
- Stull, Andrew, 20
- Streptomycine, and T B 87
- Stromeyer, and quarantine, 158
- sulfa drugs, in plague, 153
- Swammerdam, Jan, 58
- Sweden, and BCG vaccine, 92
- Sylvius, and T B 81
- temperature, and T B bacillus, 86, and T B treatment, 90
- tetanus bacillus, discovery of, 165
- thoracoplasty, 91
- Thuillier, and cholera in Egypt, 103
- Tort, and malaria, 25
- touch-healing, by kings and queens of England, 18, by Greatrakes, 19
- trephining, primitive, 13 14
- Trudeau, Edward, 94
- Tuberculin, 82, 90
- tuberculosis, 77 et seq, air borne infection, 86, and America, 83-4, 92, and animals, 80 3, and Aronson, 92, and Bodington, 93, and Brehmer, 93-4, and Dettweiler, 94, and Hamburger 83,

- and Koch, 76 et seq, 165, and Nuttal, 86, and Trudeau, 94, avian variety, 83, bovine variety, 83, in Hawaii, 83, heredity in, 83, history of, 81 et seq, in Italy 81, mode of infection, 83-7, 90, piscine variety, 93, prophylaxis, 95-6, spread of, 83-4, symptoms of, 90, 94, toll of, 77, 174, treatment of, apicolysis, 91, climate in 90, and segregation 81, arsenic, 90, BCG vaccine, 91, 92, fresh air, 89, gold injections, 91, phrenic nerve operation, 91, pneumothorax, 91, sanatoria, 92 3, streptomycin, 87, 88, thoracoplasty, 91, vaccines, 82, 90, X-ray, 90, tubercle bacillus, discovery of, by Koch, 77, 78, 165, unity of, 81, varieties of, 82, 83, watched as in a mirror, 82
- Turkey, cholera in, 100, 113, smallpox in, 113 15
- typhoid, discovery of bacillus, 164, not amenable to faith healing, 24
- typhus fever, in 1915, 170, in Soviet Russia, 174
- Uganda, plague vaccine in, 152
- undulent fever, discovery of germ of, 165
- unicorn's horn, as medicament, 10, 22
- United Kingdom, medical personnel statistics, 167
- United Provinces, and malaria, 41
- University of Padua, 65
- urine, as medicament, 22
- Ursula, Church of St, and trade in relics, 17
- U.S.A., and cholera, 100, and T.B. 84, 92, 94, death-rate in, 167, expectation of life in, 167, health budget of, 172, curative vs preventive expenditure, 172
- U.S.S.R., *see* Russia
- vaccination, against smallpox, 118 et seq, against typhoid, etc, 121, and Jenner, 119, 120, 121
- vaccines, in plague, 152, 153, in smallpox, 127, in T.B. 82, 90, 91, 92
- vacuum, microbes in, 65
- Valsalva, and T.B., 81
- Vandals, the, 25
- Variguana, and plague, 156
- vegetative force, 64
- Venetians, and plague, 132
- Venice, and quarantine, 156
- Villemin, and T.B., 84
- vinegar, repellant to mosquito, 47
- viper's flesh, as medicament, 22
- Virchow, Rudolf, and T.B., 81
- virus, filterable, and electron microscope, 60, of smallpox, 123
- Vogel, de, and plague inoculation, 152
- Volga Valley, 47, cholera in, 100
- Waterhouse, and smallpox, 121
- water supply, and cholera, 108, 109
- Weichsalbaum, discovers meningococcus, 165
- weight, in T.B. treatment, 90
- Welch, discovers germ of gas gangrene, 165
- wells, healing, 10
- whipping, as cure of disease, 12
- White Plague, T.B., 77 et seq
- witchcraft, practised by the shaman, 8
- witches, condemned by the shaman, 6, 7, persecution of, 69, plague spreaders, 129
- Woldenburg, Brehmer's sanatorium, 94
- Wollasten Doublet, 58
- Wood, General Leonard, on smallpox vaccination, 121
- World War I, disease toll in Russia, 170, toll of malaria during, 41
- World War II, and BCG vaccine, 92, toll of malaria, 45
- Wu Lien Teh, on plague, 134
- Xavier, St Francis, exposition of, 17, 18
- X ray, role in detecting T.B. 90, 95
- Yeki, Japanese name for plague, 130
- Yellow Pills, Atabrine, 45
- Yersin, and plague, 133, 134, 138, 152, 165, and rivalry with Kitasato, 134
- Zan za ro ne, and Grassi, 37 et seq



PLAGUE



ENDEMIC FOCI