TREATMENT

in

General Practice

HARRY BECKMAN, M.D.
Professor of Pharmacology, Marquette University
School of Medicine, Milwaukee, Wisconsin

FIFTH EDITION, RESET

1946

Dedicated to my wife

JANE SMITH BECKMAN

and our son

THOMAS HOWELL BECKMAN

PREFACE TO THE FIFTH EDITION

The prodigious upheaval in which the world is now involved has deeply affected the science and art of medicine. Great numbers of young men and women in the armed forces and of individuals of all ages in civilian life have been forced into unaccustomed types of existence. Unprecedented migrations have occurred. Larger numbers of people have been brought under medical observation than ever before in history. Many physicians are today in charge of wards and even entire hospitals filled with cases of a single disorder of which in times gone by they perhaps saw only a case or two a year. Many others are dealing *en masse* with serious diseases whose names were scarcely known to them before the Germans and the Japanese erupted. Nor is it only those on foreign service who are affected; for back at home the leaven is also at work and considerable changes have taken place in medical education and practice. Old concepts have fallen and new ones have arisen, and in some cases fallen too; laboratory research has been stimulated; facilities for large-scale clinical investigations have become available; fresh minds have been brought to bear on problems both new and old; and notable additions have been made to our knowledge and understanding.

I have attempted to keep abreast of these numerous developments, to evaluate them, and to present them in a form which would be immediately usable to the medical student and the practicing physician. The revision for this edition of the book, as for that of its predecessors, has been as completely unsparing as progress itself is ruthless. In bringing all of the subjects up to date many of them have of necessity been completely rewritten. In addition, the following entities are included for the first time: *Acute Infectious Lymphocytosis, Ainhum, Airsickness, Anaphylactic Shock, Atypical or Virus Pneumonia, Benzol Poisoning, Blast Syndrome, Boutonneuse Fever, Bullis Fever, Cardiogenic Shock, Cerebral Shock, Chemical Burns, Crush Syndrome, Dimorphic Anemia, Epidemic Influenza, Gas Gangrene, Human Serum Jaundice, Idiopathic Hypoprothrombinemia, Orogenital Syndrome, Periodic Mastalgia, Phosphorus Poisoning, Primary Shock, Rh Factor Syndromes, Salmonella Food Poisoning, Secondary Shock, Shellfish Poisoning, Subclassical Deficiency States, Sulfonamide Sensitization, Surgical Shock, Thermogenic Anhidrosis, Toxoplasmosis.*

It is a pleasure to acknowledge my indebtedness to Bernice Clodius for her assistance in maintaining the files of the literature, for typing the final manuscript, and for reading the proof with me. The publishers have been as always most cordially helpful.

HARRY BECKMAN

MILWAUKEE

PREFACE

The neglect of thorough and painstaking teaching of therapeutics in this country is not so often the subject of serious consideration in our medical councils as it well might be. With only a few notable exceptions, the medical schools seem content if there is presented within their halls, usually to Junior students who have had as yet practically no contact with the sick, a ridiculously inadequate course of lectures, the rest being left to the teachers in the departments of medicine, pediatrics, obstetrics, etc. And these latter seem to shift the responsibility largely onto the gods, not through any culpability upon their part, but simply because in their immersion in the task of acquainting the student with the prodigious methodology of modern diagnosis no time is left for an exhaustive consideration with him of the treatment of disease. Hence it is that the therapeutic credo of the average young practitioner today contains but two articles: one, that there are certain therapeutic principles that invariably hold and that they need to be varied only in detail in the handling of particular diseases; and, the other, that the art of treatment is one that "comes" if only one has mastered the art of diagnosis.

It is in an attempt to shake, however feebly, the false foundations of these beliefs that the present book has been written. In it each of the principal diseases of man, exclusive of those that by prescriptive right belong within the domain of the legitimate specialties, has had its own peculiar therapy described, as that therapy has been evolved out of the experience of physicians all over the world. The true authors of the book, then, are those men and women whose names appear in the Bibliography. Whenever possible I have presented their work in their own words, but often it has been necessary to abstract and to condense, and not infrequently to present a subject in a manner and perhaps even from a point of view that has apparently little in common with that held by those who reported the original trials and observations. Always, however, I have looked upon myself merely as an editor, and I hope that no more than editorial liberties have been taken in any portion of the book. Of course it has not been possible to keep my own opinion invariably in the background; hence I elected in the beginning to write in the first person so that there might be at no time any confusion as to whose work or views were being presented.

Very humbly I recognize that the rather lengthy presentations of controversies that are to be found here and there in the book will give much offense to all save those who, like myself, have been even more disturbed by the indolent type of pedagogy that seeks sanctuary in the shameful words: "Upon this point we can say very little as the authorities are at present in disagreement." Only as I have thought and taught through the years have I been able to write, a limitation which I suppose every author recognizes. As for the many other shortcomings of the book, I can only assure the reader that, no matter how grievous he finds them, they can in no wise affect him so deeply as they do me, for only I can know with what bright hopes the work was planned and begun several years ago.

HARRY BECKMAN

MILWAUKEE, WIS.

CONTENTS

INFECTIOUS DISEASES

	Page
Acute Infectious Lymphocytosis	1
Ainhum	1
Anthrax	2
Asiatic Cholera	4
Blackwater Fever	4
Brucellosis (Malta Fever, Mediterranean Fever, Undulant Fever)	7
Chickenpox (Varicella)	11
Common Cold (Catarrhal Fever, Acute Catarrhal Nasopharyngitis)	12
Acute Paranasal Sinus Involvement	19
Otitis Media and Complications (Mastoiditis and Chronic Suppuration)	24
Dengue (Breakbone Fever)	28
Diphtheria	31
Dysentery	41
Amebic Type (Amebiasis)	41
Bacillary Type (Shigellosis)	52
Infantile Diarrhea and Vomiting	56
Epidemic Diarrhea of the Newborn	59
Flagellate Dysentery (Giardiasis, Lambliasis, Balantidiasis)	60
Strongyloides Dysentery (See Worms)	62
Ephemeral Fever (Febricula)	62
Epidemic Encephalitis (Encephalitis Lethargica, St. Louis Encephalitis, Japanese Type B Encephalitis, Australian X Disease, Equine Encephalomyelitis, Toxoplasmic Encephalitis, Russian Encephalitis, Sporadic Encephalitis of Unknown Origin)	63
Epidemic Pleurodynia (Devil's Grip, Epidemic Myalgia, Bornholm Disease, Bamle Disease)	68
Epidemic Sore Throat (Septic Sore Throat, "Glandular Fever")	69
Erysipelas	70
Erysipeloid	73
Foot-and-Mouth Disease	75
Gangosa (See Yaws)	76
Gas Gangrene (Clostridial Myositis)	76
German Measles (See Measles and German Measles)	79
Glanders (Farcy, Malleus)	79
Haverhill Fever (See Rat-Bite Fever)	80
Hydrophobia (See Rabies)	80
Infectious Mononucleosis (Glandular Fever)	80
Influenza	82
Leishmanial Infections (Kala-Azar or Visceral Leishmaniasis, Oriental Sore or Cutaneous Leishmaniasis, American or Mucocutaneous Leishmaniasis)	85
Leprosy	93
Leptospirosis (Weil's Disease, Spirochetal Jaundice)	93
Malaria	96
Measles and German Measles (Rubeola, Morbilli; Rubella, Rötheln)	120
Meningococcal Meningitis (Cerebrospinal Fever, Epidemic Cerebrospinal Meningitis, Spotted Fever)	126
Miliary Fever	133
Mumps (Epidemic Parotitis)	133

PAGE

MYCOSES ... 136
Actinomycosis ... 136
Blastomycosis and Bronchopulmonary Moniliasis ... 138
Chromoblastomycosis ... 140
Sporotrichosis ... 140
Streptothricosis ... 141
Coccidioidomycosis (Coccidioidal Granuloma and Paracoccidioidal Granuloma, Almeida's Disease) ... 141
Madura Mycosis (Madura Foot, Mycetoma) ... 143
Torulosis (Cryptococcosis) ... 144
Histoplasmosis (Reticuloendothelial Cytomycosis) ... 144
OROYA FEVER AND VERRUGA PERUANA (CARRION'S DISEASE) ... 145
PLAGUE ... 147
PNEUMONIA (TYPICAL) ... 147
PNEUMONIA (ATYPICAL) ... 164
POLIOMYELITIS (ACUTE ANTERIOR POLIOMYELITIS, INFANTILE PARALYSIS) ... 166
PSITTACOSIS (ORNITHOSIS) ... 177
RABIES (HYDROPHOBIA) ... 178
RAT-BITE FEVER (SODOKU AND HAVERHILL FEVER) ... 183
RELAPSING FEVER (SPIRILLUM FEVER, AFRICAN TICK FEVER) ... 185
RHEUMATIC AFFECTIONS ... 186
Rheumatic Fever ... 186
Rheumatoid Arthritis (Chronic Infectious Arthritis, Proliferative Arthritis, Atrophic Arthritis, Arthritis Deformans) ... 198
Palindromic Rheumatism ... 208
Osteo-Arthritis ... 209
Gout ... 209
Fibrositis ... 216
RICKETTSIAL INFECTIONS ... 217
Epidemic (Classical or "European") Typhus Fever (Louse-borne Rickettsial Fever) ... 218
Endemic (Murine) Typhus Fever (Flea-borne Rickettsial Fever) ... 220
Rocky Mountain Spotted Fever (Tick-borne Rickettsial Fever) ... 221
Boutonneuse Fever (Marseilles Fever) ... 223
Tsutsugamushi Fever (Mite-borne Rickettsial Fever, Scrub Typhus, Rural Typhus) ... 223
Trench Fever (Shin-bone Fever, Five-day Fever, Wolhynian Fever) ... 224
Q Fever of Australia and America ... 225
Bullis Fever ... 226
SANDFLY FEVER (THREE-DAY FEVER, PAPPATACI FEVER) ... 232
SCARLET FEVER ... 234
SEPSIS (SEPTICEMIA) ... 240
SMALLPOX ... 251
SYPHILIS ... 259
TETANUS (LOCKJAW) ... 305
TONSILLITIS ... 313
TOXOPLASMOSIS ... 313
TRYPANOSOMIASIS (SLEEPING SICKNESS) ... 315
TUBERCULOSIS ... 315
TULAREMIA (RABBIT FEVER) ... 329
TYPHOID AND PARATYPHOID FEVERS (ENTERIC FEVER) ... 330
VINCENT'S ANGINA (FUSOSPIRILLOSIS, TRENCH MOUTH) ... 340
WHOOPING COUGH (PERTUSSIS) ... 344
YAWS (FRAMBESIA TROPICA, PIAN, BUBAS) ... 350
YELLOW FEVER ... 354

FLUKE INFESTATIONS

PAGE
INTESTINAL FLUKES 355
LIVER FLUKES 355
LUNG FLUKES 356
BLOOD FLUKES (BILHARZIASIS, SCHISTOSOMIASIS) 357
SCHISTOSOME DERMATITIS ("SWIMMER'S ITCH") 360

WORM INFESTATIONS

TAPEWORMS 362
HYDATID DISEASE (ECHINOCOCCUS DISEASE) 366
THE COMMON ROUNDWORM 368
THE PIN-, THREAD- OR SEATWORM 370
WHIPWORM 372
GUINEA OR MEDINA WORM 373
TRICHINOSIS 374
FILARIASIS AND ONCHOCERCIASIS 377
STRONGYLOIDES INFECTION 381
HOOKWORM DISEASE (UNCINARIASIS, ANCYLOSTOMIASIS) 382
THE TOXICOLOGY OF VERMIFUGES 386

ALLERGIC DISTURBANCES

HAY FEVER 389
ASTHMA 395
ANGIONEUROTIC EDEMA AND URTICARIA 406
FOOD ALLERGY 408
SERUM DISEASE 412
PHYSICAL ALLERGY 413
DRUG ALLERGY 414

DEFICIENCY DISEASES

SUBCLASSICAL DEFICIENCY STATES 415
RICKETS (INCLUDING OSTEOMALACIA AND RENAL RICKETS) 418
SCURVY 423
PELLAGRA 426
NICOTINIC ACID DEFICIENCY ENCEPHALOPATHY 430
ARIBOFLAVINOSIS (INCLUDING THE ORO-GENITAL SYNDROME) 431
PYRIDOXIN (VITAMIN B_6) DEFICIENCY 432
BERIBERI 433
NUTRITIONAL EDEMA 436
SPRUE (NONTROPICAL SPRUE, CELIAC DISEASE [GEE-HERTER-HEUBNER DISEASE], IDIOPATHIC STEATORRHEA [GEE-THAYSEN'S DISEASE]) 437
PERNICIOUS ANEMIA (See ANEMIAS) 442
TETANY 442
XEROPHTHALMIA 447
VITAMIN K DEFICIENCY (HYPOPROTHROMBINEMIA) 449

ENDOCRINE DISTURBANCES

ENTITIES WHICH SHOULD BE LEFT TO THE SPECIALIST 454
ENDOCRINE THERAPY IN MENSTRUAL DISTURBANCES (See MENSTRUAL DISTURBANCES) 454
CRETINISM 454
MYXEDEMA AND HYPOTHYROIDISM 456
SIMPLE GOITER 459
ADENOMA 461
THYROTOXICOSIS (EXOPHTHALMIC GOITER, GRAVES' DISEASE, BASEDOW'S DISEASE) .. 462
ADDISON'S DISEASE 472

PAGE

DIABETES MELLITUS ... 476
HYPERINSULINISM AND IDIOPATHIC FUNCTIONAL HYPOGLYCEMIA ... 511
DIABETES INSIPIDUS ... 515

DISTURBANCES IN MENSTRUATION

AMENORRHEA, HYPOMENORRHEA, OLIGOMENORRHEA AND DELAYED MENSTRUATION ... 518
MENORRHAGIA AND METRORRHAGIA (DYSFUNCTIONAL UTERINE BLEEDING) ... 520
ESSENTIAL DYSMENORRHEA (PAINFUL MENSTRUATION) ... 521
PERIODIC INTERMENSTRUAL PAIN ... 526
PREMENSTRUAL TENSION ... 526
PERIODIC MASTALGIA ... 527
THE MENOPAUSE ... 527

OBESITY AND MALNUTRITION

OBESITY ... 531
MALNUTRITION ... 537

DISEASES OF THE GASTRO-INTESTINAL TRACT

STOMATITIS ... 541
DYSPEPSIA (INDIGESTION) ... 545
Nervous Indigestion ... 545
Pylorospasm ... 548
Hyperchlorhydria ... 550
Hypochlorhydria (Achylia Gastrica) ... 551
Atony ... 552
Intestinal Fermentation ... 553
GASTRITIS ... 554
PEPTIC ULCER (GASTRIC AND DUODENAL ULCER) ... 556
COLON CONSCIOUSNESS (CONSTIPATION, MUCOUS COLITIS, UNSTABLE COLON, SPASTIC IRRITABLE COLON, VISCEROPTOSIS) ... 571
NONSPECIFIC ULCERATIVE COLITIS ... 580
HEMORRHOIDS ... 585
PROCTALGIA FUGAX (SPASMODIC HIGH RECTAL PAIN) ... 587
EPIDEMIC VOMITING AND DIARRHEA (ACUTE INFECTIOUS GASTRO-ENTERITIS; "INTESTINAL INFLUENZA") ... 589

DISEASES OF THE LIVER AND BILE PASSAGES

JAUNDICE ... 591
ACUTE INFECTIOUS HEPATITIS (CATARRHAL AND HUMAN SERUM JAUNDICE) ... 592
BLEEDING IN OBTRUCTIVE JAUNDICE (See VITAMIN K DEFICIENCY) ... 595
THE CIRRHOSES ... 595
Portal Cirrhosis ... 596
CHRONIC GALLBLADDER DISEASE ... 602

DISEASES OF THE RESPIRATORY TRACT

CHRONIC BRONCHITIS AND EMPHYSEMA ... 607
BRONCHIECTASIS ... 608
ABSCESS OF THE LUNG ... 610
PLEURISY ... 611
LARYNGITIS ... 613

NEPHRITIS AND NEPHROSIS

NEPHRITIS AND NEPHROSIS ... 614
Therapy of Acute Nephritis ... 615
Therapy of Chronic Nephritis (and Nephrosis) ... 618
Therapy of Terminal Nephritis ... 624

DISTURBANCES CAUSED BY EXCESSIVE HEAT

PAGE
HEAT EXHAUSTION ... 627
HEAT STROKE ... 627
THERMOGENIC ANHIDROSIS ... 629
HEAT CRAMPS (STOKERS' CRAMPS) ... 630

THE ANEMIAS

ANEMIAS PRIMARILY BENEFITED BY IRON THERAPY ... 631
The Administration of Iron ... 633
ANEMIAS PRIMARILY BENEFITED BY LIVER-STOMACH THERAPY ... 638
Administration of Liver and Stomach Preparations ... 644
Other Therapeutic Measures ... 649
ANEMIAS PRIMARILY BENEFITED BY CORRECTING AN UNDERLYING DEFICIENCY ... 650
ANEMIAS PRIMARILY BENEFITED BY COMBATING BLOOD LOSS ... 651
ANEMIAS PRIMARILY BENEFITED BY COMBATING THE UNDERLYING INFECTIONS ... 651
ANEMIAS PRIMARILY BENEFITED BY COMBATING CHEMICAL POISONING ... 652
ANEMIAS PRIMARILY BENEFITED BY SPLENECTOMY ... 652
ANEMIAS PRIMARILY BENEFITED BY TRANSFUSION WITH RH NEGATIVE BLOOD (ERYTHROBLASTOSIS FETALIS AND CERTAIN TRANSFUSION REACTIONS) ... 653
ANEMIAS FOR WHICH THERE IS NO SATISFACTORY THERAPY ... 655

BLOOD DISTURBANCES OTHER THAN THE ANEMIAS

ERYTHREMIA (POLYCYTHEMIA RUBRA VERA) ... 656
HODGKIN'S DISEASE ... 659
LEUKEMIA ... 661
AGRANULOCYTOSIS (AGRANULOCYTIC ANGINA, MALIGNANT NEUTROPENIA, PRIMARY GRANULOCYTOPENIA) ... 664
THE PURPURAS ... 670
HEMOPHILIA ... 675
HEMORRHAGIC DISEASE OF THE NEWBORN (See VITAMIN K DEFICIENCY) ... 678
HYPOPROTHROMBINEMIA (See VITAMIN K DEFICIENCY) ... 678
HEMORRHAGE IN OBSTRUCTIVE JAUNDICE (See VITAMIN K DEFICIENCY) ... 678

CIRCULATORY DISTURBANCES

FUNCTIONAL DISTURBANCES OF THE HEART ... 679
PERICARDITIS ... 680
ENDOCARDITIS ... 681
ACUTE MYOCARDITIS ... 684
CHRONIC MYOCARDITIS (See CHRONIC NONVALVULAR HEART DISEASE) ... 685
ARRHYTHMIAS NOT OF PRIMARY THERAPEUTIC INTEREST ... 685
AURICULAR FIBRILLATION AND FLUTTER IN OTHERWISE NORMAL HEARTS ... 687
PAROXYSMAL AURICULAR TACHYCARDIA ... 689
EXTRASYSTOLE ... 691
HEART BLOCK (ADAMS-STOKES SYNDROME) ... 692
CHRONIC NONVALVULAR HEART DISEASE (THE FAILING HEART OF MIDDLE LIFE, MYOCARDOSIS) ... 694
CONGESTIVE HEART FAILURE ... 695
ANGINA PECTORIS ... 709
Immediate Relief of Pain ... 710
Subsequent Therapy ... 710
CORONARY INSUFFICIENCY AND OCCLUSION ... 714
AORTITIS AND ANEURYSM (See under the TREATMENT OF CARDIOVASCULAR SYPHILIS) 719
THROMBOANGIITIS OBLITERANS (BUERGER'S DISEASE) ... 719
VARICOSE VEINS ... 725
Treatment of Thrombophlebitis ... 731
Treatment of Varicose Ulcer ... 732

PAGE

ESSENTIAL HYPERTENSION (HYPERPIESIS) 735
ARTERIOSCLEROSIS 742
HEMIPLEGIA 743

ECLAMPSIA AND HYPEREMESIS GRAVIDARUM

ECLAMPSIA 747
HYPEREMESIS GRAVIDARUM (PERNICIOUS VOMITING OF PREGNANCY) 749

GENITO-URINARY INFECTIONS AND STONE

GONORRHEA 753
SYPHILIS (See under INFECTIOUS DISEASES) 761
CHANCROID 761
BALANITIS 763
GRANULOMA INGUINALE (GRANULOMA VENEREUM) 764
LYMPHOGRANULOMA VENEREUM (LYMPHOGRANULOMA INGUINALE, CLIMATIC BUBO, VENEREAL LYMPHOGRANULOMA, LYMPHOPATHIA VENEREUM) 766
NONTUBERCULOUS URINARY TRACT INFECTIONS (CYSTITIS, PYELITIS AND PYELONEPHRITIS) 769
STONE IN THE URINARY TRACT 773
PROPHYLAXIS OF VENEREAL DISEASES 777
Local Measures for the Male 777
Local Measures for the Female 779
Chemotherapeutic Measures 779

DISEASES OF THE NERVOUS SYSTEM

SYDENHAM'S CHOREA (ST. VITUS' DANCE) 781
HICCUP 783
TRIGEMINAL AND ASSOCIATED TYPES OF NEURALGIA 785
POSTHERPETIC NEURALGIA (See HERPES ZOSTER) 787
SCIATIC NEURALGIA 787
MÉNIÈRE'S DISEASE 789
MYASTHENIA GRAVIS 791
MIGRAINE 794
IDIOPATHIC EPILEPSY (PAROXYSMAL CEREBRAL DYSRHYTHMIA) 798
INSOMNIA 809
DELIRIUM TREMENS 813
SEASICKNESS AND AIRSICKNESS 816

GERIATRICS

GERIATRICS (THE CARE OF THE AGED) 821

DISEASES OF THE SKIN

IMPETIGO CONTAGIOSA 829
TINEA VERSICOLOR 831
ERYTHEMA MULTIFORME 832
EPIDERMOPHYTOSIS OR DERMATOPHYTOSIS (RINGWORM OF THE HANDS, FEET, GROIN, AXILLAE, BREASTS AND THE HAIRLESS SKIN GENERALLY) 832
POMPHOLYX (DYSIDROSIS) 837
RINGWORM OF THE SCALP 837
RINGWORM OF THE BEARD 838
SEBORRHEIC DERMATITIS 839
SYCOSIS BARBAE (BARBER'S ITCH) 840
LICHEN PLANUS 841
PSORIASIS 841

PAGE

LUPUS ERYTHEMATOSUS 846
ECZEMA-DERMATITIS 849
Special Antidotal Measures in Ivy Poisoning 856
BOILS (FURUNCULOSIS) 858
ACNE 860
WARTS 862
HERPES ZOSTER (SHINGLES) 864
PRURITUS ANI 866
SCABIES 868
SCHISTOSOME DERMATITIS (SWIMMER'S ITCH) (See chapter on FLUKES) 871
BODY LOUSE INFESTATION 871
HEAD LOUSE INFESTATION 872
CRAB LOUSE INFESTATION 874

ACUTE POISONING

THE CORROSIVE ACIDS AND ALKALIS 876
PHENOL (CARBOLIC ACID) AND LYSOL POISONING 877
MERCURIC CHLORIDE (BICHLORIDE) POISONING 877
GASOLINE, KEROSENE AND TURPENTINE POISONING 880
ACUTE ARSENIC POISONING 881
CYANIDE POISONING 882
STRYCHNINE POISONING 883
POISONS CAUSING STUPOR OR COMA 884
ATROPINE, STRAMONIUM AND HYOSCYAMUS POISONING 887
IODINE POISONING 888
WOOD (METHYL) ALCOHOL POISONING 889
ACETANILID, ANTIPYRINE AND PHENACETIN POISONING 889
SALICYLATE POISONING 890
COCAINE POISONING 891
METHYL CHLORIDE POISONING 891
TEAR GAS POISONING 892
STAPHYLOCOCCAL AND SALMONELLA FOOD POISONING 893
BOTULISM 894
MUSHROOM POISONING 896
SHELLFISH POISONING 896
MILK SICKNESS 897
LEAD POISONING 897
BENZOL POISONING 902
PHOSPHORUS POISONING 903
SNAKE BITE 903
SPIDER BITE 906
POISONING TREATED ELSEWHERE IN THE BOOK 907

BURNS, SHOCK, CRUSH AND BLAST SYNDROMES

BURNS 908
General Care in Major Burns 908
Local Treatment of Major Burns 912
Local Treatment of Minor Burns 913
Burns of the Eye 914
Chemical Burns 914
SHOCK 915
Primary Shock (Immediate or Neurogenic Shock; Vasovagal Syndrome) 915
Secondary Shock (Delayed, Traumatic, or Oligemic Shock) 916
Cerebral Shock 922
Surgical Shock 922

PAGE
Cardiogenic Shock 922
Anaphylactic Shock 923
CRUSH SYNDROME 923
BLAST SYNDROME 924

TOXIC AND OTHER SPECIAL FEATURES OF SULFONAMIDE THERAPY
EXTENT OF OCCURRENCE OF TOXIC REACTIONS 925
LETHALITY OF THE TOXIC REACTIONS 926
NATURE OF THE TOXIC REACTIONS 926
FACTORS INFLUENCING TOXIC REACTIONS 927
Dosage 927
Age 927
Route of Administration 927
Previous Administration (i.e., Sensitization) 928
TREATMENT OF REACTIONS 932
SULFONAMIDE ANTIDOTES 937
SULFONAMIDES AND DIET 937
SULFONAMIDES AND OTHER DRUGS 937
PLACENTAL SULFONAMIDE PASSAGE 938
SULFONAMIDE CONTRAINDICATIONS 939
MINIMAL PRECAUTIONS WHEN ADMINISTERING SULFONAMIDES 939
SULFONAMIDE RESISTANCE OR "FASTNESS" 940

BIBLIOGRAPHY 941

INDEX 1015

INFECTIOUS DISEASES

ACUTE INFECTIOUS LYMPHOCYTOSIS

A few years ago Smith (1941) reported two types of lymphocytic reaction of the blood which he designated as acute and chronic infectious lymphocytosis. The acute cases, which were the less frequently seen, manifested a short but striking leukocytosis with only minimal symptoms and physical signs of a nondifferential character. The chronic type was said to follow infection of the upper respiratory tract and to be accompanied by low-grade fever, which persisted for weeks or months, and such symptoms as anorexia, pallor, fatigability, and abdominal pain usually referred to the region of the umbilicus. All the patients were children. Duncan (1943) reported a case corresponding to Smith's acute type but with pronounced abdominal signs and symptoms at the onset and evidences of possible involvement of the nervous system during the first week of the disease. As the result of more extensive experience, Smith (1944) enlarged upon his description of the acute form of the disease and stated that hyperleukocytosis, with a relative and absolute lymphocytosis due to an increase in normal small lymphocytes, constitutes the most important element in the diagnosis. Elevated blood levels are said to persist from three to five weeks, the normal lymphocytes in this disease contrasting sharply with the atypical and abnormal mononuclear elements in infectious mononucleosis and with the lymphoblasts in leukemia; the Paul-Bunnell test, which is usually positive in infectious mononucleosis, is uniformly negative here. Biopsy of the lymph nodes in 2 cases revealed degeneration of the lymph follicles and striking proliferation of the reticuloendothelium of the sinuses. Smith's report of 3 patients from one family and 1 hospital contact, together with Finucane and Philips' (1944) report of an epidemic of 20 cases in a children's ward, indicates that the disease is both infectious and contagious; the possible incubation period seems to be between twelve and twenty-one days. I include a description of acute infectious lymphocytosis because it seems to represent a heretofore unrecognized communicable disease.

THERAPY

There is nothing to describe.

AINHUM

Ainhum is a disease which attacks the toes, usually but one toe at a time. A furrow appears at the digitoplantar fold and slowly extends and encircles the toe until it is separated from the foot. There is usually no pain, but the patient is often greatly inconvenienced by the fact that the toe beyond the constriction becomes bulbous and in the late stages dangles in an everted position. The course of the disease is slow, self-amputation usually occurring only after a number of years. Ainhum occurs in the dark-skinned races in India, Africa, South America, and to some extent in the West Indies, and a

few indigenous cases in Negroes have been seen in both Europe and the United States.

The cause of ainhum is unknown, though it has been speculatively considered by some to originate as a fungus infection; Spencer (1942) felt that in his case it was probable that the condition was a sequel to the underlying hyperkeratosis from which the patient had suffered for many years.

THERAPY

At present the only effective treatment consists in amputation of the involved toe.

ANTHRAX

(Woolsorters' Disease, Malignant Pustule)

Anthrax is an acute infectious disease of animals, especially herbivora, caused by *Bacillus anthracis*. It is transmissible to man, in whom it appears either in the cutaneous, pulmonary or gastro-intestinal form. Workers in hide, hair, bristles, wool, horn, and bone are particularly susceptible, but it may be contracted by butchers, veterinarians, farm laborers, and others in contact with animals; Pinkerton (1939) reported a case contracted through pelting an infected mink. The disease is also occasionally contracted from an infected shaving brush. The incubation period is usually three to five days but may be as short as twelve hours or as long as two weeks. The pustule and edema of the cutaneous form are usually of a distinctive character, but there is often in the beginning considerable disproportion between these local changes and the amount of constitutional disturbance as evidenced by fever, rapid pulse and malaise. Consciousness to the end being characteristic, the appearance of delirium—indicating meningeal involvement—is always an ill omen. The symptoms of the pulmonary and gastro-intestinal forms are not distinctive of the disease and thus the correct diagnosis is often made very late. There are usually about 100 cases of anthrax in man in the United States annually; the mortality rate was formerly very high but the newer types of therapy have brought it down in recent years to about 6 per cent.

Anthrax was described by Hippocrates (460–370 B.C.) in one of the books of Epidemic Diseases thought to have been the authentic work of the Coan master, and it appears to have been well known during the period (732–1096 A.D.) of Arabian and Jewish ascendency in medicine; but it is of interest to note that Galen (131–201 A.D.) had mistaken Hippocrates' description for that of erysipelas. The strange periodic malady of the middle ages, *malum malannum*, may have been anthrax, which is known with certainty to have been epidemic in the early seventeenth century. I believe the first complete treatise on the disease was that of Chabert, in 1780. Davaine discovered the organism in 1850, Koch demonstrated his cultures in 1876, Pasteur produced a preventive vaccine in 1880, and Sclavo, in 1895, offered the first of the serums which have since been widely used in therapy.

THERAPY

Local Treatment.—Other than the application of warm boric acid compresses, or of merely sterile gauze to collect the secretions, and the simple

incision of an abscess if it forms, it is nowadays considered that nothing should be done locally except to put the part at rest. Koschucharoff (1938) considered both incision and excision contraindicated on the basis of much experience with anthrax in Bulgaria; he stated that thermocautery might arrest the process if employed in the very early superficial stage but he also felt that there were many reasons operating against its routine employment. Most authorities agree that excision should not be done because of the difficulty of accurately defining the area to be excised and especially for the reason that general dissemination of the malady may be hastened by the manipulations. Enrich, discussing his treatment of 340 cases in the badly infected Bradford district in England, said that the results have been much better since the abandonment of excision in all cases except those in which the pustule is very small and on a site notoriously apt to favor rapid extension, such as the neck; but he insisted that a limb should be fixed by splints and pillows or the head held in position by a towel carried across the forehead and fixed beneath sand-bags. Lucchesi and Gildersleeve (1941), in the United States, followed a strictly "hands off" policy in their treatment of 67 patients without a fatality; so too did Gold (1942), who lost only one of his 60 patients, the fatal case having been inadequately treated systemically.

Antianthrax Serum.—The serum made by immunizing horses against virulent anthrax organisms has greatly reduced mortality throughout the world. It is given intravenously, the amount varying somewhat with the location of the lesion and the apparent virulence of the organism, but Gold (1942) stated that from 200 to 500 cc. should be given as an initial dose and that this should be repeated every twelve to twenty-four hours until edema is checked. Some observers have felt that the presence of adenopathy is an indication for the continuance of serum treatment, but Gold found that lymphoid enlargement may persist for days and weeks after the lesion has healed and the patient is on the road to complete recovery and that it gradually disappears without any therapy; control of the edema he therefore held to be the most reliable yardstick in determining whether sufficient serum has been administered in a given case.

In addition to the systemic use of antiserum, Regan advised a number of years ago that the serum also be used locally, by which was meant the injection of 2 to 3 cc. at three or four equidistant points so as to circumscribe the lesion, the needle being inserted from 1 to 1½ inches subcutaneously in the red indurated border just beyond the blanched zone. It is not generally agreed that the local injections are of value, and Gold was of the opinion that in the only one of his cases in which he used them they only served to spread the infection by the mechanical separation of the tissues which they effected.

Sulfonamides.—Gold (1942), reviewing his experience in the treatment of 60 cases of anthrax, stated that he felt the sulfonamide compounds to be a reliable and safe substitute for serum and that they should be given preference in the treatment of anthrax. His average period of hospitalization was 15.3 days in serum-treated cases and only 8.5 days in sulfonamide-treated cases. The difference in the number of work days lost was even more striking; total disability in the serum-treated cases was 37.5 days while in the sulfonamide-treated (sulfapyridine, sulfathiazole or sulfadiazine) it was 15.4 days. In addition, the sulfonamide-treated patients could be kept at home and did not experience the unpleasant reactions associated with serum therapy.

Neoarsphenamine.—The drugs of this group have long been employed in

South Africa, but only in recent years has their use begun in other parts of the world. Gilbert (1936) reported a series of 13 cases, 11 of the patients recovering when treated by neoarsphenamine alone. Only one intravenous injection of 0.6 Gm. was usually given, but if the edema persisted after twenty-four hours it was repeated. In all cases in which patients recovered the edema was relieved in thirty-six hours and had disappeared in four days; the patients were ambulatory on the sixth day. Enrich (1933) was also impressed by the value of the arsenicals, but he gave his two doses with an interval of one day between and usually combined the use of antianthrax serum with this newer treatment method. Lucchesi and Gildersleeve (1941), summarizing their experience in 67 cases, felt neoarsphenamine to be the agent of choice unless the patient is afflicted with the internal type of anthrax, or the blood stream has been invaded, or the lesion is on the face or neck; in such instances they preferred to use serum. Gold (1942) wrote that neoarsphenamine did not prove to be of much value when given in addition to serum in a small number of his cases. In Bulgaria, where from 800 to 1100 cases of anthrax occur annually, Koschucharoff wrote, just prior to the outbreak of War II, that serum is used almost exclusively and neoarsphenamine employed only occasionally.

Penicillin.—Up to the time of writing in the early spring of 1945, the only report I have seen of the use of this agent in human anthrax was that of Murphy *et al.* (1944), who obtained excellent results with the systemic employment of penicillin in 3 cases. In each instance the inflammatory reaction about the lesion showed prompt regression and the lesion itself underwent rapid involution. It was the feeling of these observers that a total of 200,000 to 400,000 units, given at the rate of 100,000 units per twenty-four hours, would likely prove satisfactory dosage in the average adult case of uncomplicated cutaneous anthrax; it was felt that in cases of visceral anthrax or severe cutaneous anthrax with bacteremia larger doses should undoubtedly be employed, probably preferably by intravenous drip, and that perhaps serum should be given in addition.

ASIATIC CHOLERA

There are five major infectious diseases whose entire handling has been taken over quite properly by public health authorities or other specialists of great experience. These five are Asiatic cholera, leprosy, plague, trypanosomiasis and yellow fever; and since they do not nowadays raise problems in treatment for the general practitioner, I shall no longer allot space to a consideration of them in this book.

BLACKWATER FEVER

This syndrome, occurring only in malarious individuals, is characterized by sudden onset with a rigor of chill and high fever, vomiting, jaundice, oliguria and finally anuria, usually severe upper abdominal and loin pain, enlarged