

7-69.5

1213

A TEXTBOOK
of
CLINICAL NEUROLOGY

with an
INTRODUCTION to the HISTORY of NEUROLOGY

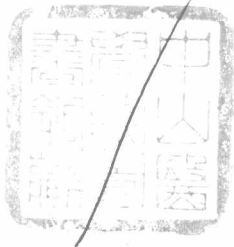
By

ISRAEL S. WECHSLER, M.D.

Clinical Professor of Neurology, Columbia University, New York;
Neurologist, The Mount Sinai Hospital; Consulting Neurologist,
The Montefiore and Rockland State Hospitals, New York



FIFTH EDITION, REVISED



PHILADELPHIA AND LONDON

W. B. SAUNDERS COMPANY

MADE IN U. S. A.

PRESS OF
W. B. SAUNDERS COMPANY
PHILADELPHIA

Reprinted November, 1943, October, 1944, and November, 1945

All Rights Reserved
This book is protected by copyright. No part of it
may be duplicated or reproduced in any manner
without written permission from the publisher

Copyright under the International Copyright Union

Copyright, 1943, by W. B. Saunders Company

Copyright, 1927, 1931, 1935 and 1939, by W. B. Saunders Company

To
FREDERICK TILNEY, M. D., Ph. D.

IN RECOGNITION
OF HIS
EMINENCE AS A NEUROLOGIST
AND
INFLUENCE AS A TEACHER

PREFACE TO THE FIFTH EDITION

THE revision of a textbook is at once a pleasant and a difficult task. The pleasure naturally derives from the mere call for a revision; the difficulty springs from the need of judiciously selecting facts worthy of incorporation in a new edition. But there is the added obligation of carefully editing the text so as to bring the book completely up to date. Every page, therefore, had to be "fine-combed."

The brief period of four years since the last edition appeared witnessed a number of advances in neurology: Chemotherapy of meningitis is practically new; headache is better understood; and electroencephalography, "degenerative" diseases, and the autonomic nervous system, have all received further study. Quite a few new syndromes demanded inclusion, and a number of minor and major changes, too numerous to mention, had to be made. But while I feel that the book has been considerably enriched, it has not been unduly expanded. And now that the task is completed, I hope that I have kept an author's faith with his readers.

Once more it is a pleasure to acknowledge my indebtedness to the publishers and to thank them for their ever cordial cooperation.

I. S. WECHSLER.

70 EAST 83RD STREET,
NEW YORK CITY.

PREFACE

Of all the branches of medicine, clinical neurology lends itself best to the interpretation of signs and symptoms in terms of diseased structure and function. The modern tendency is to weave into one texture anatomy, physiology, pathology, and symptomatology. This can best be done in a semiology or neurological diagnosis. The task is somewhat more difficult in the treatment of disease entities as they present themselves at the bedside. As this is essentially a textbook of clinical neurology I have attempted to present, wherever possible, the various diseases in such a way that the signs and symptoms grow out, as it were, of the anatomico-pathological substratum and are seen to be consequent upon the underlying physiological disturbance. In most instances I have outlined in a brief paragraph or two the anatomical and pathological facts on which the subsequent description of the clinical entity, its development and course, is based. This method justifies, I believe, the omission of the customary introductory chapters on anatomy and physiology; for unless they actually form part of each disease entity they have no place in a clinical neurology. Besides, special works treat those subjects much better, and no student would think of learning either anatomy or physiology from a textbook of neurology.

I have also departed somewhat from the customary practice of illustrating the text with numerous photographs of patients and relied more on reproductions of pathological specimens and anatomical drawings which permit of the interpretation of signs and symptoms and lend understanding to the clinical manifestations.

As the object of this textbook is to give a digest of what is known in neurology without stressing polemic material or detailing case reports, references to literature have been more or less consistently left out of the text. This work is based mainly on personal teaching and clinical experience, representing in a great measure an individual approach to bedside neurology, and I hope that the personal touch will make up for many of its omissions and defects. But for the benefit of those who would pursue the subject further I have given at the end of each chapter a few of the more useful references bearing on the topics under discussion. This necessitated

considerable winnowing of the literature, but I hope to have retained much of the wheat.

The field of nervous diseases has grown so vast that it is almost impossible, without making a work encyclopedic, to gather everything between two covers. I left out most of the diseases of the ductless glands hitherto included under neurology, because they more properly belong to general and experimental medicine, and discussed only such endocrine disturbances as have direct neurological implications. Similarly, I left out psychiatric material, but included a chapter on the neuroses. I also included one on Psychometric Tests, for which I am indebted to my brother, Dr. David Wechsler.

The classification of diseases presents many difficulties. Because of inevitable overlapping one does equal violence to consistency whether one follows a pathological, anatomical, or clinical classification. To be consistent with the title of the book I adhered roughly to nosology based on the last two and adopted the order followed by Oppenheim.

It is quite impossible for me to acknowledge individual indebtedness to all the writers of special books, monographs, and articles on neurology, much as I should like to mention by name every author whose works I consulted; but I am grateful to every writer from whose contributions I gleaned useful knowledge. The references at the end of each chapter make up but a partial list of those to whom I owe acknowledgment. I would especially mention (for the benefit of those who would know more of neurology) Tilney and Riley, *The Form and Functions of the Nervous System*; Oppenheim's *Lehrbuch*, seventh edition (German); Dejerine's *Sémiologie du Système Nerveux* (French); Lewandowsky's *Handbuch der Neurologie* (German); Sir James Purves-Stewart, *The Diagnosis of Nervous Diseases*, sixth edition; Bing, *Compendium of Regional Diagnosis*; Herrick, *Introduction to Neurology*; Freud, *A General Introduction to Psycho-analysis*; and Hart, *The Psychology of Insanity*.

I wish to take this occasion to express my indebtedness to men with whom I worked so many years and whose association has been so valuable to me. Foremost among them is Professor Frederick Tilney of Columbia University. To Professors Louis Casamajor, Oliver S. Strong, Charles A. Elsberg, and S. P. Goodhart, of the same department, I cannot sufficiently express my gratitude. Most of the clinical work on which this textbook is based was done at the Vanderbilt Clinic, The Mount Sinai and Montefiore Hospitals, and it is a pleasure to acknowledge cordial and profitable association with Drs. B. Sachs, I. Strauss, I. Abrahamson, and many others.

I wish to express to my friend and associate, Dr. S. Brock, my sincere appreciation of his most valuable help in reading the manuscript; to thank Drs. Walter M. Kraus and Leon H. Cornwall for their kindness in putting at my disposal photographs of pathological material; and Dr. L. Aronson for permission to reproduce slides of specimens which he collected in Paris. I am especially grateful to Dr. L. Vosburgh Lyons for the drawings which he kindly made in illustration of the text. Finally, I wish to thank the publishers, W. B. Saunders Co., for all they have done and to assure them of my sincerest appreciation.

I. S. WECHSLER.

CONTENTS

PART I

METHOD OF EXAMINATION	PAGE
SYSTEMATIC EXAMINATION.....	1
ANAMNESIS.....	3
NEUROLOGICAL EXAMINATION.....	8
Gait.....	9
Coordination.....	10
Skilled Acts.....	12
Abnormal Movements.....	13
Reflexes.....	16
Examination of the Muscular System.....	26
Electrical Examination.....	31
Nerve Status.....	41
Sensory Examination.....	42
Examination of the Cranial or Cerebral Nerves.....	55
Cranial Morphology.....	74
Examination of the Vertebral Column.....	75
Examination of the Cerebrospinal Fluid.....	76
PSYCHOMETRIC TESTS.....	91

PART II

THE SPINAL CORD

ACUTE ANTERIOR POLIOMYELITIS (INFANTILE SPINAL PARALYSIS).....	104
ACUTE ASCENDING (LANDRY'S) PARALYSIS.....	110
FAMILY PERIODIC PARALYSIS.....	112
MYELITIS.....	112
CAISSON DISEASE (DIVER'S PARALYSIS).....	118
COMBINED DEGENERATION OR SCLEROSIS (ATAXIC PARAPLEGIA).....	119
FRIEDREICH'S ATAXIA.....	122
LATERAL SCLEROSIS.....	125
FAMILY SPASTIC SPINAL PARALYSIS.....	125
AMYOTROPHIC LATERAL SCLEROSIS.....	126
SYRINGOMYELIA (INCLUDING SPINAL GLIOSIS).....	130
COMPRESSION OF THE SPINAL CORD.....	135
Tumors of the Spinal Cord.....	138
Tumors of the Spine.....	152
Caries of the Spine (Tuberculous Spondylitis or Pott's Disease).....	154
Abscess of the Spinal Cord.....	158
Hypertrophic Cervical Pachymeningitis.....	159
Circumscribed Serous Meningitis or Adhesive Arachnitis.....	161
Syphilis of the Spine.....	161
Spondylitis.....	162
LESIONS OF THE CAUDA EQUINA AND CONUS MEDULLARIS.....	162

INJURIES TO THE SPINE AND SPINAL CORD.....	167
Dislocation, Fracture, Gunshot and Stab Wounds.....	167
Concussion of the Spinal Cord.....	173
VASCULAR DISORDERS OF THE SPINAL CORD.....	174
Hemorrhage into the Spinal Meninges.....	175
Hematomyelia.....	177
CONGENITAL MALFORMATIONS OF THE CORD AND ITS COVERINGS.....	180
MUSCULAR ATROPHIES (THE AMYOTROPHIES).....	182
Progressive Spinal Muscular Atrophy.....	183
The Myopathies (Progressive Muscular Dystrophies).....	185
Neuritic Muscular Atrophy (Charcot-Marie-Tooth Type).....	188
Myotonia Congenita (Thomsen's Disease).....	189
Myatonia or Amyotonia Congenita (Oppenheim).....	191
MYASTHENIA GRAVIS.....	192

PART III

THE PERIPHERAL NERVES

NEURITIS AND NEUROPATHY.....	195
Multiple Neuritis and Neuropathy.....	202
Alcoholic Polyneuropathy.....	203
Lead Neuropathy.....	204
Diphtheritic Paralyzes.....	206
Arsenic Polyneuropathy.....	207
Mercurial Polyneuropathy.....	208
Infectious Neuritis.....	208
Diabetic Polyneuritis.....	208
Beriberi (Kakke).....	209
Pellagra.....	210
Leprous Neuritis.....	210
Erythredema Polyneuritis.....	211
PERIPHERAL NERVE INJURIES.....	215
DISEASES OF THE SPINAL NERVES AND PLEXUSES.....	222
The Cervical Plexus.....	222
The Nerves of the Brachial Plexus.....	223
The Brachial Plexus.....	231
Cervical Ribs.....	234
Scalenus Anticus Syndrome.....	235
Obstetrical Paralysis or Birth Palsy.....	235
The Nerves of the Lower Extremities.....	236
The Lumbosacral Plexus.....	244
INTERSTITIAL HYPERTROPHIC NEURITIS (DEJERINE-SOTTAS).....	246
OCCUPATION NEURITIS.....	246
RADICULITIS.....	246
HERPES ZOSTER.....	248
TUMORS OF NERVES: NEUROMAS.....	250
Von Recklinghausen's Disease.....	251
DISEASES OF THE CEREBRAL NERVES.....	253
The Olfactory.....	254
The Optic.....	255
The Ocular.....	259
Nystagmus.....	262
Ophthalmoplegias.....	263

DISEASES OF THE CEREBRAL NERVES:

The Trigeminal.....	265
The Facial.....	267
The Auditory and Vestibular.....	271
Tinnitus.....	272
Vertigo.....	273
Ménière's Syndrome.....	275
Gerlier's Disease.....	276
Seasickness.....	277
The Glossopharyngeal.....	278
The Vagus.....	279
The Spinal Accessory.....	282
The Hypoglossal.....	284
NEURALGIA.....	285
Special Neuralgias.....	288
Trigeminal (Tic Douloureux).....	288
Sphenopalatine Ganglion (Sluder's).....	291
Glossopharyngeal.....	292
Occipital.....	293
Phrenic Nerve.....	293
Brachial.....	294
Intercostal.....	294
Lumbar.....	295
Pudendal... ..	295
Sciatica.....	295

PART IV

THE BRAIN

GENERAL SYMPTOMATOLOGY AND FOCAL OR REGIONAL DIAGNOSIS OF DISEASES

OF THE BRAIN.....	300
Focal Signs.....	302
Jacksonian Convulsions.....	303
Hemiplegia.....	305
Syndromes.....	309
Disturbances of Sensation.....	312
Thalamic Syndrome.....	314
Headache.....	318
Pulse, Respiration, and Temperature.....	320
Disturbances of Consciousness.....	322
Sleep Anomalies.....	322
Insomnia.....	324
APHASIA.....	326
Apraxia.....	334
CIRCULATORY DISTURBANCES OF THE BRAIN.....	336
Cerebral Anemia.....	336
Cerebral Hyperemia.....	338
Sunstroke (Insolation).....	338
Polycythemia Vera.....	340
Acute Vascular Lesions of the Brain—Apoplexy.....	341
Hemorrhage, Embolism, Thrombosis, and Encephalomalacia.....	342
Cerebral Arteriosclerosis, Senile Dementia, Alzheimer's Disease, and Pick's Disease.....	364

PSEUDOBULBAR PALSY.....	367
DISEASES OF THE MEDULLA AND PONS.....	370
Acute Bulbar Palsy.....	372
Progressive Bulbar Palsy.....	376
MENINGITIS.....	378
Epidemic Cerebrospinal.....	382
Tuberculous.....	386
Purulent.....	390
Acute Serous.....	392
Acute Spinal Leptomeningitis.....	399
ENCEPHALITIS.....	401
Encephalitis in the Course of Other Diseases.....	403
Acute Hemorrhagic Encephalitis.....	404
Polioencephalitis Superior of Wernicke.....	404
Acute Serous Encephalitis.....	406
Postvaccinal Encephalitis.....	406
Epidemic Encephalitis.....	407
CHOREA.....	421
ABSCESS OF THE BRAIN.....	426
SINUS THROMBOSIS.....	434
SYPHILIS OF THE NERVOUS SYSTEM.....	438
Syphilis of the Brain.....	438
General Paresis.....	450
Tabes.....	462
Syphilitic Meningomyelitis.....	475
TUMORS OF THE BRAIN.....	478
General Symptoms of Brain Tumor.....	492
Focal Signs and Symptoms of Brain Tumors.....	494
Aneurysms.....	509
Diagnosis of Brain Tumor.....	512
Treatment of Brain Tumors.....	517
Parasites of the Brain.....	520
HYDROCEPHALUS.....	522
INJURIES OF THE BRAIN.....	530
Concussion of the Brain.....	532
Fracture of the Skull.....	534
Traumatic Meningeal Hemorrhage.....	540
Pachymeningitis Hemorrhagica Interna and Chronic Sudural Hematoma.....	541
Subarachnoid and Spontaneous Meningeal Hemorrhage.....	545
CEREBRAL PALSIES OF CHILDREN.....	548
MULTIPLE SCLEROSIS.....	561
ENCEPHALITIS PERIAXIALIS DIFFUSA (SCHILDER'S DISEASE).....	572
AMAUROTIC-FAMILY IDIOCY (TAY-SACHS DISEASE).....	574
NIEMANN-PICK DISEASE.....	577
DIFFUSE AND LOBAR SCLEROSIS.....	578
TUBEROUS SCLEROSIS.....	579
THE CEREBELLAR SYNDROME.....	580
Diseases of the Cerebellum.....	586
DISORDERS OF MOTILITY AND DISEASES OF THE BASAL GANGLIA.....	586
Paralysis Agitans (Parkinson's Disease).....	597
Hepatolenticular Degeneration.....	602
Progressive Lenticular Degeneration (Wilson's Disease).....	602
Pseudosclerosis of Westphal.....	605

DISORDERS OF MOTILITY AND DISEASES OF THE BASAL GANGLIA:	
Dystonia Musculorum Deformans.....	606
Double Athetosis.....	610
Chronic Degenerative Hereditary Chorea (Huntington's Chorea).....	612
TICS, SPASMS, AND MYOCLONIAS.....	614
Facial Tic (Convulsive Tic) and Facial Spasm.....	617
General Tics, Maladie des tics convulsifs.....	618
Torticollis.....	619
Other Tics and Spasms.....	621
Hiccough (Singultus).....	622
Paramyoclonus Multiplex.....	623
Myoclonus Epilepsy.....	623
THE EPILEPSIES AND THE CONVULSIVE STATE.....	624
THE MIGRAINES OR PAROXYSMAL HEADACHES (HEMICRANIA).....	647
TETANY.....	654
TETANUS.....	658
RABIES (HYDROPHOBIA OR LYSSA).....	662
DEVELOPMENTAL ANOMALIES OF THE BRAIN.....	666
AFFECTIONS OF THE AUTONOMIC NERVOUS SYSTEM.....	668
The Endocrines and the Nervous System.....	668
The Autonomic Nervous System.....	672
The Angioneuroses or Trophic and Vasomotor Neuroses.....	678
Acroparesthesia.....	678
Raynaud's Disease.....	679
Thrombo-angiitis Obliterans (Buerger's Disease).....	682
Erythromelalgia.....	683
Angioneurotic Edema.....	684
Scleroderma.....	685
Facial Hemiatrophy.....	688
Progressive Lipodystrophy.....	689
Adiposis Dolorosa (Dercum's Disease).....	689

PART V

THE NEUROSES

INTRODUCTION.....	693
MENTAL MECHANISMS.....	698
ETIOLOGY OF THE NEUROSES.....	702
CLASSIFICATION OF THE NEUROSES.....	710
MANIFESTATIONS OF THE NEUROSES.....	716
DIAGNOSIS, COURSE, AND PROGNOSIS.....	734
TREATMENT.....	740
Psycho-analysis.....	744
TRAUMA AND THE NERVOUS SYSTEM.....	748
Traumatic Neurosis and Hysteria.....	754
<hr/>	
INTRODUCTION TO THE HISTORY OF NEUROLOGY.....	758
<hr/>	
INDEX.....	799

CLINICAL NEUROLOGY

PART I

METHOD OF EXAMINATION

SYSTEMATIC EXAMINATION

IN order to arrive at a correct diagnosis of a neurological condition a *systematic examination* of the patient is perhaps more important than in any other field of medicine. No other branch lends itself so well to the correlation of signs and symptoms with diseased structure, but only through methodical examination can one elicit all of them or properly interpret most of them. Certainly in neurology less than in any other specialty may one permit himself a "snap" diagnosis. It may be conceded that no amount of method ever made a neurologist, but it is equally certain that the want of it often marred one. Some persons, fortunately, are endowed with a keen diagnostic sense (this really consists of very rapid, almost "unconscious," logical thinking based on extensive experience); in general, it can only be gained through scientific discipline in repeated practical examinations of patients. The scheme which one follows matters comparatively little. Every neurologist has a method more or less his own, but all of them follow a fairly consistent order. The method presently to be described is an adaptation of the one we use in teaching at Columbia University and in the examination of patients at the Vanderbilt Clinic.

It is unwise to draw conclusions before the whole examination is completed. Diagnostic interpretation has no place either in taking a history or eliciting objective findings. Accurate observation and correct notation alone constitute a thorough examination. Therefore neither in the history nor in the examination is there room for notations such as hemiplegia, aphasia, neuritis, hysteria, and so forth. These are diagnoses which can only be made at the end of the examination. It is much better to describe the gait and attitude of the patient; the specific and detailed speech disturbance, the nature and distribution of the pain or the type of mental reaction and the behavior of the patient, and let the diagnosis logically unfold itself out of the numerous observations.

But in order to make a correct examination one must be able to evaluate properly the signs and symptoms which are elicited. For this a thorough knowledge of the physiology and anatomy of the nervous system is necessary. Unless each sign or symptom is properly understood the facts accumulated during an examination become a meaningless jumble. It is necessary to know not only what this or that sign means, but why we seek to elicit it at all. Such a "dynamic" approach to neurology obviates the need of remembering by rote a number of meaningless or eponymic signs and syndromes or their grouping into arbitrary clinical entities.

If all the facts point to the presence of a lesion of the nervous system, the next step is to localize it. A *focal diagnosis* based on knowledge of anatomy and physiology is necessary before determining the probable nature of the lesion. The latter is finally determined by proper evaluation of the history, the onset, course and development of the illness, and by a sound knowledge of pathology.

No neurological status is complete without a mental examination. This trite observation is even truer than its converse, and yet both neurologists and psychiatrists frequently ignore the maxim; though it may be said that psychiatrists are the greater sinners. Many organic neurological conditions, to mention only cerebral arteriosclerosis, tumor of the brain and neurosyphilis, are frequently accompanied by mental symptoms or actually run the course of psychoses. Every aspiring neurologist should not only learn to take a good psychiatric history, but acquire more than a smattering of mental diseases by actual contact with patients in a psychiatric institute. But more important if possible than a knowledge of the psychoses is a thorough understanding of the borderline cases or the psychoneuroses. Knowledge, insight, tact, and understanding of normal human behavior in all its biological and social aspects are necessary for a proper approach to the problem of the neuroses.

Owing to the tremendous growth of neurology as a specialty the fact is sometimes overlooked that it is closely linked with internal medicine. Indeed, a neurological diagnosis frequently can only be based upon a sound knowledge of medicine, the neurological condition in many instances being merely the incidental expression of an underlying general pathologic state. To make a diagnosis of hemiplegia and ignore the nephritis or endocarditis which may be the cause of it, or to overlook pernicious anemia in stating that the patient has combined sclerosis, is to show skill in neurological technic without practising medicine. A more correct point of view is to regard every patient who shows neurological symptoms as a medical "case." Therefore every neurological status should include exam-

ination of the heart and lungs, palpation of the pulse and abdomen, search for glands, examination of the urine, blood pressure and temperature determination, sometimes a rectal or vaginal examination, and occasionally a complete blood count or blood chemistry determination or x-ray examination.

Finally, a complete and detailed history is almost as essential as an examination. While it is unwise to jump at conclusions, an accurate history very often points to a diagnosis even before a neurological examination is completed.

ANAMNESIS

One elicits the present, past and family history practically in the same way as in any other medical condition, but there are a number of facts which have special bearing in a neurological case. Before taking a history it is well to let the patient state his complaints in his own words. Meanwhile the examiner observes his manner, attitude, behavior, and emotional reaction. Particularly is this important with neurotics, toward whom one should assume a sympathetic but not too intimate attitude. One often hears a patient complain of terrible pain or headache with a smile on his face, and another bemoan his loss of memory by reciting with meticulous accuracy innumerable details of his ailment. After the patient has told his story without any suggestions on the part of the examiner a number of questions may be put to fill in the gaps. It is particularly important to ascertain, if possible, the *exact date* of onset of the illness, whether it came on *suddenly* or *gradually*, what was the character of the first sign or symptom, and whether the condition is *better* or *worse*, *constant* or *remitting*. It is obvious that a vascular insult is generally apt to give sudden or acute symptoms, that a tumor or some degenerative process will show gradual onset and progressive course while psychogenic disorders and especially multiple sclerosis are characterized by remissions. It is also well to ascertain whether there were any precipitating factors, such as mental or emotional upsets and *trauma*. In the case of trauma to the head the question of unconsciousness and its duration, convulsions, bleeding from the ears, eyes, nose and mouth, and subsequent headache, memory or personality defects must all be investigated.

The question of previous attacks of *unconsciousness* or *convulsions* is particularly important. Many a hysteric complains of fainting spells during which, it is found on closer inquiry, they hear and know what is going on about them. Is there complete amnesia for the "spell"? Has there been tongue biting, incontinence of urine, subsequent somnolence or headache? Were there localized

(jacksonian) or generalized tonic or clonic twitchings, followed by paralysis? With reference to headache it is well to find out whether it is local or diffuse, limited to one side of the head (migrainous), paroxysmal or constant, diurnal or nocturnal, aggravated by coughing or sneezing (intracranial pressure), and accompanied by dizziness or vomiting. Has the *vomiting* anything to do with meals or is it spontaneous, "projectile" in nature and not accompanied by nausea? *Vertigo* especially should be properly evaluated. Some patients complain of dizziness when they mean "nervousness," fullness in the head, "swimming before the eyes," and what not. True giddiness consists either of a *subjective* sensation of turning or falling or *objective* vertigo, as if the floor, ceiling, or house were turning about oneself. It is accompanied by tendency to fall, occasionally by nausea or vomiting, and sometimes by pallor or sweating.

Inquiry should be made about the occurrence of speech disturbances (dysarthria and aphasia, *v. i.*), tremors, special weaknesses or paralysis, ataxia, that is, staggering gait, especially in the dark. Among disturbances of vision it is particularly important to ask about double vision (diplopia), bearing in mind the possibility of encephalitis, syphilis, or multiple sclerosis. Subjective disturbances of hearing (tinnitus, hissing, roaring noises) may point to a cerebellopontine angle tumor even before deafness and other objective findings confirm the diagnosis. With reference to *urinary disturbances* inquiry should be made into the question of polyuria, nocturia, difficulty in starting the stream, incontinence or dribbling, retention, urgency, frequency, and enuresis. The question of the kind (dull, burning, sharp, etc.) and location of the *pain*, its direction, intensity, and whether accompanied by numbness, is also important. Is there a girdle sensation, or a feeling as of walking on carpet? Does the patient suffer from *insomnia* or excessive *somnolence* by day? Is sleep disturbed by dreams accompanied by anxiety? Excessive thirst, polydipsia (pituitary, infundibulum, interbrain), polyphagia, anorexia (*nervosa*), sweating, constipation, excessive use of alcohol or tobacco, gain or loss of weight are to be inquired into. The question of *menstruation*, amenorrhea, natural or artificial menopause are important, especially in relation to disturbances of the glands of internal secretion.

Inquiry into the *sexual life* of the patient requires knowledge, skill, and tact. Boys and men should be asked directly whether they masturbate (or a simpler expression used if they do not understand) and promptly assured that it is not an "awful" thing in order to forestall a possible denial. (Self-gratification is infinitely more descriptive and less odious than self-abuse.) With girls and women the same question can be put more tactfully, but ultimately