Complementary Medicine

Manual of Neural Therapy According to Huneke

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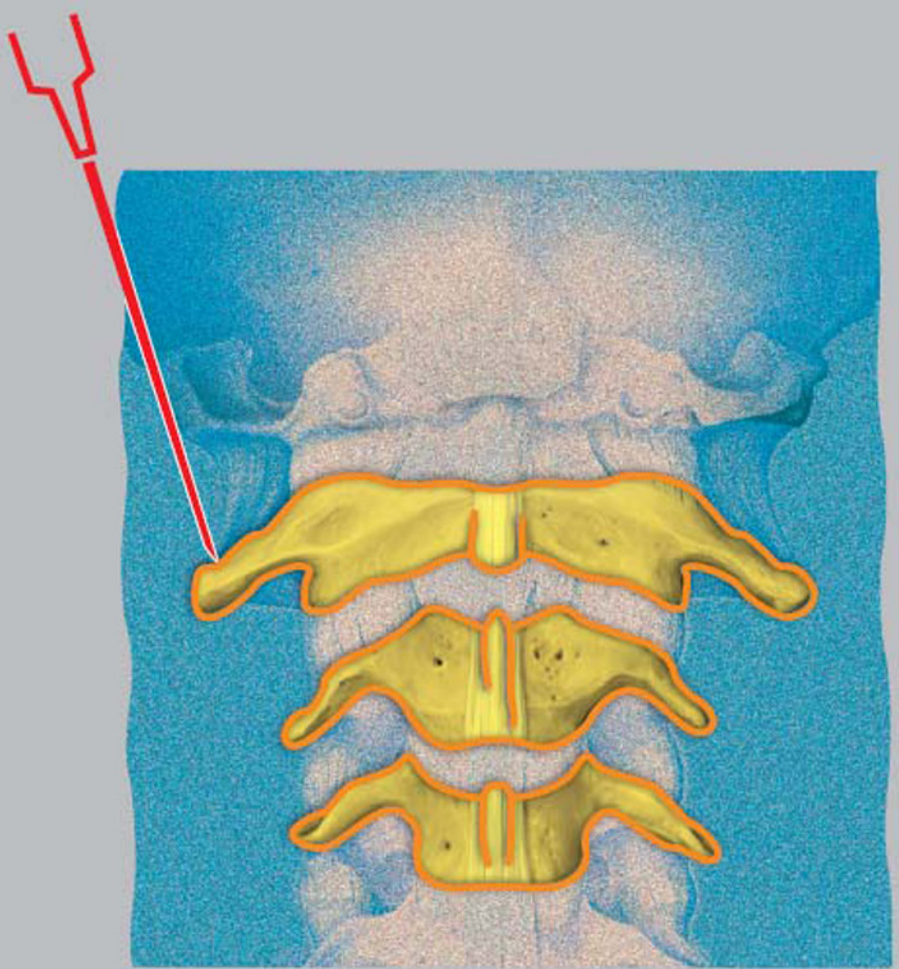

Thieme

Manual of Neural Therapy According to Huneke

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Second edition

130 illustrations

Thieme
Stuttgart · New York

Library of Congress Cataloging-in-Publication Data

Dosch, Peter.
[Lehrburch der Neuraltherapie nach Huneke. English]
Manual of neural therapy according to Huneke/J. Peter Dosch, Matthias Dosch. – 2nd ed./[translator, Ruth Gutberiet].
p.; cm.
Rev. and updated translation of: Lehrbuch der Neuraltherapie nach Huneke (Regulationstherapie mit Lokalanästhetika). 14th German ed. 1995
Includes bibliographical references and indexes.
ISBN-13: 978-3-13-140602-6 (GTV : alk. paper)
ISBN-10: 3-13-140602-X (GTV : alk. paper)
ISBN-13: 978-1-58890-363-1 (TNY : alk. paper)
ISBN-10: 1-58890-363-X (TNY: alk. paper)
1. Porcaine. I. Dosch, Mathias. II. Title.
[DNLM: 1. Huneke, Ferdinand, 1891 – 1966. 2. Huneke, Walter.
3. Complementary Therapies—methods.
4. Procaine—therapeutic use.
WB 890 D722L 2006a]
RM666.N84D68 2006
615.5'35–dc22

2006024965

This book is a revised and updated translation of the 14th German edition published and copyrighted 1995 by Karl F. Haug Verlag, Heidelberg, Germany. Title of the German edition: Lehrbuch der Neuraltherapie nach Huneke (Regulationstherapie mit Lokalanästhetika)

† Dr. Peter Dosch died 2 June 2005

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Typesetting by Sommer Druck, Feuchtwangen
Printed in Germany by Appl · Aprinta, Wemding
ISBN-10: 3-13-140602-X (GTV)
ISBN-13: 978-3-13-140602-6 (GTV)
ISBN-10: 1-58890-363-X (TNY)
ISBN-13: 978-1-58890-363-1 (TNY)

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Preface to the 1st English Edition

Therapy using local anesthetics occupies an ever more important place amongst alternative methods in medicine. The President of the American Society of Anesthetists, Professor J. J. Bonica, has stated that the nerve block as a diagnostic, prognostic, prophylactic, and therapeutic method has been received with ever-increasing interest in the USA and has been employed ever more frequently in recent years. He has expressed the view that the nerve block used as a specific therapy may well be the best clinical means to treat illness.

But the "nerve block used as a specific therapy" is precisely what the Huneke brothers of Germany introduced into medicine in 1928. They called it "neural therapy." That this is not generally known in the USA is less remarkable than the fact that even in the German-speaking parts of the world few people are aware that the use of local anesthetics for therapeutic purposes, which is far more widespread in these countries, goes back to the Huneke brothers. As long ago as 1925, the great French surgeon, Leriche, whose specialty was surgery of the sympathetic chain, observed healing reactions produced by local anesthetics administered before the operation and praised procaine as the "surgeon's bloodless knife," the use of which sometimes made surgery necessary. But these experiences were allowed to be forgotten.

In Russia, the observations made by Spiess on the anti-inflammatory effects of local anesthetics were investigated more closely. There, pupils of Pavlov, such as Speransky, Vishnevski, Bykow, Wedenski, and others, confirmed that it is possible to influence the regulating mechanisms of the neurovegetative system by means of procaine. These discoveries prompted Speransky to construct *A Basis for the Theory of Medicine*, which he published after emigrating to the USA in 1936. For a time his work remained controversial, but today it is again receiving recognition. Before him, Ricker had attempted to provide a theoretical basis for all vital processes, including the phenomena of neural therapy, in his *Pathology as a Science; Pathological Relationships*. Later, Wiener's teachings on biocybernetics and Pischinger's observations on the basic neurovegetative system provided new viewpoints to explain these phenomena of healing.

The Huneke brothers discovered the therapeutic potential of procaine by empirical means and independently of their predecessors. They recognized the importance of their discovery and expanded their systematic observations into a method that has now established itself particularly in continental Europe and in South America. Because it is so successful and has such a wide therapeutic spectrum, it has been received with special enthusiasm by the general medical practitioner, who inevitably finds him or herself standing in the firing line. Neural therapy does not regard itself as a substitute for scientific medicine as taught at medical schools, but as complementary to it. This is especially the case where mainly functional disturbances are involved, whose interacting cause–effect relationships cannot be accurately determined because they result from cybernetic regulatory dysfunctions.

Fleckenstein proved that procaine also possesses an unusual feature apart from its well-known effectiveness as a local anesthetic. The cell, which has been depolarized by endogenous and exogenous stimuli, is able, under the protection afforded by procaine, to reseal the cell membrane that has become permeable. The potassium-sodium pump is thus enabled to displace the sodium that has penetrated into the cell and to replace this again with potassium. By this means, the physiological potential of –60 mV to –90 mV needed by the cell in order to function normally is built up again. This enables us, with the use of local anesthetics such as procaine or lidocaine, to repolarize depolarized cells and thus to reactivate them in their functions, cells that would otherwise be incapable of repolarizing themselves from their own resources. From this it will be obvious that successful treatment by these injections depends on the correct positioning of the local anesthetic and on the use of a special technique in administering it.

The technique of using accurately sited injections in the area where the symptoms occur is known as "segmental therapy." There are four methods that produce a segmental effect with the use of local anesthetics:

1. Injection directly to the site of pain. The accurately sited injection of procaine or lidocaine is effective as much in treating painful conditions in the muscles, ligaments, tendons, bones, and nerves as it is for contusion, hematomas, abrasions, painful scars, and traumatic damage of any type.
2. Acting on painful areas by means of paravertebral injections in the relevant segment.
3. Neural-therapeutic treatment by direct injection to the sympathetic chain and its ganglia, i.e., the stellate, ciliary, pterygopalatine and/or the Gasserian

ganglion etc., or of the abdominal and lumbar sympathetic chains.
4. Injections into and around arteries and veins, to pleura and peritoneum, and to the afferent nerves.

Segmental therapy has now become an integral part of the curriculum at a number of medical schools in continental Europe and elsewhere.

But in 1940, Ferdinand Huneke also found that, in addition, there may be "interference fields" active in the organism, which stand outside the segmental order and send out interference impulses via the nerves, and that these impulses can become pathogenic. In making this discovery, he revised and elaborated the old teachings on foci; these had assumed that a focus is capable of spreading bacteria and their toxins only via the bloodstream, thus causing illness. But any focus or interference field is a permanent source of irritation, because it burdens the regulating systems and continually forces the body to make up for these additional stresses. This compensation calls for a greater expenditure of energy and this, in its turn, produces disequilibrium in the body's economic system. The regulating systems are made labile and any banal irritation may act as an additional stress and can then produce faulty regulatory reactions. Once the tolerance threshold has been exceeded, functional disturbances or pathological symptoms will manifest themselves. Huneke showed us how such interference fields can be eliminated via the lightning reaction (Huneke phenomenon) by accurately sited injections of procaine or lidocaine. Normal cybernetic regulation is restored instantly and the pathological symptoms disappear, insofar as this is anatomically still possible.

Thus, neural therapy according to Huneke is, first of all, segmental therapy. When this fails to produce results, the search for and elimination of the interference field can lead us to our goal. This explains why this form of therapy is suitable for the treatment of all functional and organic disturbances resulting from neurovegetative dysregulation. In some cases, the emphasis is on pain, in others it is a matter of disturbances in internal or external secretions or of the blood supply to and nourishment of the tissues; then again the central factor may be a disturbance in the blood picture or dyskinesia of the smooth or striated musculature. Gross organ changes can also provoke functional disturbances as a secondary effect of an interference field, and these are therapeutically accessible to us. But this type of pathomorphology can also lead to feedback processes that then form a vicious circle and are thus capable of rendering our usual therapy ineffective. Once we have been able to find and eliminate the cause, such therapy is again capable of working. The consequence of all this is that this cybernetic regulating therapy has an extremely broad spectrum of indications, and this, at first sight, tends to strike one as rather strange.

The objective evidence for neural therapy, including the previously controversial Huneke phenomenon (lightning reaction), has meanwhile been produced, notably as a result of the work of the Austrian professors Bergsmann, Harrer, Kellner, Pischinger, and others. The present author, whom F. Huneke described as his master pupil, has assembled the theoretical principles, indications, and techniques in this book. It is in three parts:

- A. Theory and Practice of Neural Therapy According to Huneke.
- B. Encyclopedia of Neural Therapy, which provides an abstract in alphabetical order of the vast literature on the subject of the accurately sited treatment with procaine or lidocaine.
- C. The Techniques of Neural Therapy, which provides a detailed description of suggested techniques, again in alphabetical order for ease of reference.

Also provided are 141 illustrations and nine tables that are designed to help the reader commit to memory the information they contain.

The German version of this textbook has meanwhile reached its 14th edition and has helped to spread the practice of neural therapy to an ever-widening circle of physicians. May this first English edition make this widely applicable, successful, low-risk method, which impresses on account both of its economy and its freedom from side-effects, accessible to an even greater number of physicians and, through them, to their patients throughout the world.

Peter Dosch, MD

Preface to the 2nd English Edition

In June of 2005, my father, Dr Peter Dosch, died at the age of 90. When he left us, we lost the last great neural therapist, master scholar of Ferdinand Huneke. Through his life and work, Peter Dosch made neural therapy accessible to teachers and students. It is my honorable task to continue his opus. The need for a second English edition of the *Manual of Neural Therapy According to Huneke* proves the fact that neural therapy is now completely established internationally. Today, minds are open for a therapy that my father had to fight for, and neural therapy has found its place as a complement to classic orthodox medicine.

Mathias Dosch, MD

Preface to the 14th German Edition

The physician has but a single task:
to cure; and if he succeeds,
it matters not a whit
by what means he has succeeded!
Hippocrates (fl. ca. 400 BC)

Technical development has brought not only blessings and progress to mankind. The spirits that humankind has invoked are now beginning to threaten its own existence. Centralization and increasing mechanization in medicine have led to overspecialization and to soulless robot medicine. This has reduced the doctor–patient relationship to something that concerns itself with purely somatic aspects. The demand for a more psychosomatically oriented approach to medicine concerned with the human organism as a whole has remained largely unheard and unanswered. Merely talking about such a longed-for goal does not mean that it has, in fact, been attained, the less so as long as the ultimate objective is merely to classify illness by accurate diagnosis whilst an effective therapy is lacking. No wonder, therefore, that the personalities of doctor and patient have retreated ever further into the background. That childlike trust in the doctor, which saw in him or her something of an omnipotent parent figure, has been replaced almost totally by a mere service relationship, albeit still on a "professional" basis. And illness, from being regarded as an affliction willed by God, has changed into being seen purely as a malfunction due to chemical and mechanical factors.

Today's patient comes to us programmed differently from the way he or she was in the past. Health has become a consumer product. The patient and their health insurance pay, in exchange for which health is to be supplied in the form of repairs without any personal contribution on the patient's part. To the patient, the physician has become a mere technician with whom he or she enters into a contract, by which the doctor is only required to locate the defect and eliminate it with the aid of physics and chemistry. After all, isn't that what they are paid for?

The hospital has been industrialized. It no longer sees patients as individuals, but concentrates ever more on their illness as the basis for statistically significant diagnostic groups. It takes from them whatever it finds to be of use for its own purposes. Patients are depersonalized. They are made to submit to all the various procedures, generally without ever discovering why and with what results. The findings, rather than their condition, are at the center of clinical interest. It is not the patient's interests but those of the people of science that have to be satisfied. In this way, all too often, patients find themselves caught up in the wheels of an anonymous, pseudo-scientific machine and its attendant bureaucracy. At the same time, their treatment is almost exclusively based on symptoms, organ, and laboratory findings, but hardly ever deals with causes. However, the term "natural science" can in practice be justified only if such a science does not exclude the nature of the human being, since it is ultimately supposed to be serving humanity!

Whenever the citizen of today becomes aware of an unsatisfactory situation, he or she tends to call on the state to intervene. But, in this case, the state is equally helpless, for it is above all else the state itself that is interested in the scientist only in terms of his or her productivity. The general practitioner and family doctor, in the eyes of the state, are merely by-products of badly planned medical training, which, as it were, continues to produce these models despite the fact that there is no longer any market demand for them. That this formulation is not exaggerated is shown by the selection procedure for medical students. Admission is restricted to those who can prove by their examination results that they can learn facts, figures, and scientific principles. In this way, they are then able to provide the requisite guarantees that they will later be fully competent to recognize in a perfectly disciplined manner that which is scientifically and technologically feasible.

But this does not offer any guarantee that anyone with good university-entrance examination results will also bring with him or her the personality that is essential for being a physician, a capacity for easy human contacts, and empathy, to name but a couple. In addition, today there is little relation between medical training and medical practice. The "doctoring" aspects are relegated to second place and there is little attempt made to develop the ability of thinking and acting as a doctor. As a result, the patient often finds that he or she is in the hands of pure technicians who are more or less conversant with the diagnostic machinery under their control and who are more interested in a diagnosis capable of objective proof rather than in the person and fate of the patient him or herself.

All that I have stated here should not, however, be interpreted to suggest that there are not many good

doctors, in our sense of the word, amongst these scientists and clinicians. But these have become good doctors not as a result of their training but despite the principles that are regarded as solely valid in this kind of education. The cult of anything that can be supported by objective proof has obscured the fact that the living organism must be seen as a complete and indivisible entity and has precipitated medicine into a crisis. This has, in fact, been recognized, but no way out has yet been found because we are not prepared to abandon the schematic framework that we have come to regard as immutable.

It is not our intention in any way to deny that there has been progress in medicine or to suggest that technology in medicine is a creation of the devil. But we ought to make certain that progress does not in the end come to threaten our existence and that technology does not turn into technocracy. We want to help in trying to contain the excessively mechanistic ways of thinking and acting, in order to provide more room for a less harmful form of therapy that takes the regulating mechanisms and the body's own healing powers more into account. Exact logic, science, and the ivory-tower ideas of the specialist on the one hand; the art of healing, intuition, and thinking rather more in cybernetic terms on the other: these are the two opposing poles between which medical judgment seems to be moving today. But in the interests of the patient, whom we are called to serve, neither should exclude the other. Both are necessary, each the complement of the other, and should be used intelligently. The exact sciences have drawn frontiers in places where, for many sufferers from illness, it would have been better to build bridges. We regard it not as illegal, but rather as medically essential, to cross these frontiers wherever this may be necessary for the sake of our patients. Our duty is to help them, and to carry this out we need to expand the natural sciences, concerned as they are with mathematical logic, by another, more empirical form of science. For if we fail to do so, human medicine will become ever more inhuman and more sterile.

In this time of crisis, modern cybernetics forms a bridge between the sciences and has also begun to conquer medicine. Cybernetics, with the theory of interlinked and interacting control circuits, is able to make for a better understanding of Huneke's therapy and to help this method to its final breakthrough. For it has now become obvious that the Huneke brothers have discovered cybernetic laws of tremendous importance for the future of medicine. Neural therapists are already using these discoveries today!

The attentive reader of this book will recognize that neural therapy, acting as it does upon the cybernetic energy cycle, forms an intelligent alternative to impersonal, formalized medicine as it exists in our day. We do not want to replace this medicine, but we can complement it and make it more effective.

Meanwhile, neural therapy according to Huneke has set out on its worldwide conquest of medicine. It began in the surgery of two general practitioners. Now, general practitioners and specialists from every medical discipline are using it to an ever-increasing extent in their day-to-day treatment of patients. Nevertheless, outside Germany, the Huneke phenomenon is still little known as a positive therapeutic objective, and even in Germany the odor of magic and quackery still tends to be attached to it in the minds of the ignorant. It is surely remarkable that medicine, which is usually generous enough in naming names, has been so reluctant to attach the name of their discoverers and defenders to these teachings and often enough turns its back upon them, despite the fact that what they discovered is surely one of the greatest and most beneficial achievements in medicine of the last 50 years. Nevertheless, segmental therapy is now widely accepted as an integral part of orthodox medicine and forms an important part of neural therapy as such.

Yet the lightning reaction according to Huneke is still regarded as controversial. This is not altogether surprising if one bears in mind that the thought processes that it demands are enough to shake the foundations of medicine as built up over the centuries. Yet the lightning reaction is a fact and can be produced by anyone. It has taught us to heal in the true sense of the word, where we had previously been at the end of all our supposed wisdom that we have carried about with us since our days at medical school. This is why the discoveries based on this reality can no longer be talked out of existence. And if they no longer fit into the old scheme of things, then it must be high time to alter the scheme of things!

Time has been working in favor of neural therapy according to Huneke. The Viennese professors and their helpers have provided proof that the observations made by the two Hunekes were not a form of self-deception practiced by a pair of monomaniacs. They discovered by empirical methods the effects produced by procaine. These can now be proved by scientific methods. The reality of the lightning reaction has been scientifically proved and ought no longer to remain the controversial privilege of a handful of fanatics and outsiders. These developments show that the Huneke method has now become a matter of interest to some who would not previously regard it as fit for discussion or who adopted a wait-and-see attitude toward it. From outright rejection, we have reached a point where genuine interest is being shown. We, who were among the early partisans of the Huneke brothers, are happy to know that many are now beginning to recognize that what we pursued was not a will-o'-the-wisp, but that what we have done is to prevent such a logical and

successful method from being forgotten and dying with its discoverers. We shall therefore persevere in our efforts to dismantle any prejudice and misconceptions that may still continue to exist.

But the term "neural therapy" is not intended to suggest that we claim exclusive rights to the nervous system. No surgical, physical, psychotherapeutic, or other form of treatment can afford to leave the nervous system out of account. This term is thus intended simply to bear witness to the fact that by contrast with humoral, organic, or cellular therapy we have adopted a different point of view and are trying to see all the vital processes, including those of illness and cure, as being primarily conditioned by the nervous system. Not in isolation, but in a cybernetic and holistic sense. The term "neural therapy" has become familiar enough over the last 50 years. Nowadays, we should in a way prefer to see it replaced by the more accurate description "regulating therapy." But more important than the name is the fact that the successful results obtained prove us right to such an extent that we are bound to acknowledge that the road pointed out by the Huneke brothers is right.

Neural therapy is a modern, safe method with a good chance of producing an improvement or cure. If we apply the principle of using the least force commensurate with achieving the best result, it must be the method of our choice in the day-to-day work of general medical practice. But we also know the limitations of our therapy. We know that it is not a method that can be used to cure everything, nor can we ever deny any other successful method its right to exist. Particularly in medicine, the only criterion for judging any method should be whether it is successful: whatever and whoever is able to cure the sick is right!

Orthodox medicine is divided into a number of traditional specialties related to specific organs: eyes, ear–nose–throat, gynecology, orthopedics, etc. Internal medicine itself has a large number of organ-specific subdivisions: heart, lungs, stomach, kidneys, blood, etc. But the patient who walks into the general practitioner's surgery is a whole patient, consisting of an organic entity comprising body and soul, who complains of ills that can but rarely be coerced into the straitjacket of a scheme of things concerned only with separate organs. For this reason, general practitioners have not been able to let their view of this whole being become obscured, and this is why they are delighted to use neural therapy because it is a genuinely holistic therapy. It has given back to them their responsibility for almost every one of the specialist areas in medicine, it has released them from the "crisis in medicine" and from all that is therapeutic nihilism. It enables them to make use of the neurovegetative system for cures right across the whole spectrum of medicine and frees them from the depressing task of merely acting as signposts to the nearest specialist or clinic dealing with this or that specific organ.

Despite every form of resistance to it, its successes have enabled this method discovered by the Huneke brothers to remain alive after more than 50 years. Why it did not prevail more quickly is easy to explain. Procaine has been with us since as long ago as 1905 and a large amount of literature has been published about it during this period. For the research scientist there seems to be no more grass left in this particular meadow. There are many problems of more current interest that promise them greater personal renown. The pharmaceutical industry does not exist to serve the doctors but only to pursue its own lucrative aims. The doctor merely acts as intermediary for its products on their way to the end user, and he or she is thus its guarantee of profitability. It is therefore continually developing new specialties that can be sold profitably to patients by means of brisk publicity amongst members of the medical profession. It is therefore not interested in propaganda for so cheap a preparation with so broad a spectrum of indications. Procaine and lidocaine are available everywhere, even in the primeval forests of South America. If they were to be used not only for local anesthetics but also for a wide range of therapeutic purposes, this would have a substantial impact on the sale of profitable pharmaceutical preparations. It is therefore easy to conclude from this why and by whom the fight against a wider use of the Huneke therapy is being conducted with so much determination, and it is all the more to its credit that it has succeeded to so great an extent in becoming accepted, despite its total lack of financial backing.

The clinician is fully and profitably occupied in testing the latest preparations produced by the pharmaceutical industry. He or she feels obliged at all times to adapt his or her treatment to the "latest state of scientific knowledge." Those who occupy university chairs and those who work in the editorial departments of the specialist press are subject to the same pressures. General practitioners, however, can seek their therapy in reasonable independence from the flood of publicity and the currents of fashion. They ought also to have the courage and the liberty to free themselves from dogmas and seek new ways responsibly, sensibly, and with love for their fellow human beings, and gather fresh experience when the well-trodden paths fail to lead them to their goal. Many roads lead to Rome. Similarly, there are many ways of helping nature to help itself. More than this lies beyond the power of any doctor. This is how, for many of them, procaine therapy has become a fixed component of their diagnostic and therapeutic armory. The general practitioners do not talk a great deal about it, nor do the research scientists or the clinicians want to say more about it than they can help.

It has become a habit simply to talk about "neural therapy" when procaine or some other local anesthetic is used in treatment. The collective term "neural therapy" has been taken up uncritically by so many branches of medicine and the pharmaceutical industry that we attach great importance to the additional definition "according to Huneke," whenever we mean the selective, carefully pinpointed, specific treatment with local anesthetics. This is why K. R. von Roques originally coined the term "neural therapy according to Huneke." Even if far from perfect, it is now well established and there is no reason to consider changing it. We occasionally hear the objection that similar individual observations of the healing effects of local anesthetics were in fact made by others (Schleich, Spiess, Leriche) before the Huneke brothers. But the recognition of the biological laws involved and the far-reaching therapeutic importance of the action of procaine were and remain the intellectual property of the two brothers. They built their years of experience into a complete method and fought against considerable resistance for its recognition.

Following the Huneke brothers, a number of doctors have gained recognition for their work in providing a theoretical basis and a scientific foundation for the principles underlying this new form of therapy. But this does not entitle them to claim the right to propagate the method of the Huneke brothers practically unchanged under different names of their own invention, such as "therapeutic local anesthesia," "neurotopic therapy and diagnosis," "selective neuro-regulating sympathetic-system therapy," "regional pain therapy," and other such neologisms!

There cannot be many doctors who have not heard something of the successful cures achieved by neural therapy, some of which border on the miraculous, and who have not also tried it out for themselves, though generally without the expected success. Not everyone who injects procaine, Scandicaine, Xylocaine, Xyloneural, or any one of the mass of combined preparations covered by the comprehensive designation of neural-therapeutic products is, by virtue of that fact, practicing neural therapy! Neural-therapeutic preparations are, in reality, extremely demanding and can develop their remarkable effectiveness only if they are given in the right place for the specific patient who is being treated. The localization of the injection is crucial for success or failure. No two human beings are identical and there are therefore no two identical disorders. This is why the decisive point for the injection in 10 patients with the same diagnosis can be in 10 different places. Simple as it may seem at first sight, it is not as simple as saying: "From now on, simply take some procaine and cure practically anything, since in any case in some way or other everything goes via the nervous system!"

This book has been written in order to give the busy doctor of today the possibility of using this new experience and knowledge without first of all having to wade through and digest some 10 000 publications on this subject. It is intended to be no more than a guide to the theory and practice of neural therapy. It has been designed as a work of reference and is in three parts, to enable interested practitioners to orient themselves with a minimum of effort and to discover new suggestions whenever they use it in their day-to-day practice. For the sake of clarity, I have refrained from quoting too many case histories, from giving every name and from providing a complete bibliography. The three parts of the book are:

1. Theory and Practice of Neural Therapy According to Huneke.
2. Encyclopedia of Neural Therapy. The alphabetical list of indications is an extract from the enormous amount of literature on carefully localized therapy with products containing procaine or lidocaine, based mainly on segmental therapy. Practical suggestions take precedence over theoretical considerations. On the other hand, principles regarded as important are intentionally repeated, some of them more than once. This section dealing with indications makes no claim to completeness. But from what is stated in this part of the book, it will generally be possible to decide on the procedure to adopt for other disorders presenting in similar locations to those quoted.

   It is essential to emphasize again and again that segmental therapy has its limitations and that the lightning reaction forms the coveted summit of the diagnostic and therapeutic potential available to us. This is simply because it is the only possible way to cure a large number of hitherto therapy-resistant disorders caused by interference fields, because it is the only method that can cure them at their origin.
3. The Techniques of Neural Therapy. The suggested techniques have been grouped alphabetically and are in a section by themselves. This is done for practical reasons, in order to make it possible to locate the required information quickly. Techniques are described in considerable detail, and the sketches and illustrations are intended to make it easier to commit to memory the information provided.

My son, Mathias Dosch, has produced an illustrated *Atlas of Neural Therapy: with Local Anesthetics*, also published by Thieme. This atlas is designed as a complement to this manual.

There would have been no neural therapy according to Huneke if fate had not placed these new discoveries in the hands of two brothers with very different personalities that perfectly complemented each other. Ferdinand, the dynamic fighter, who went imperturbably

on his way despite all the forces arrayed against him, and who, time after time, drummed the new teaching with penetrating eloquence into the heads and hearts of his readers and his listeners. He was supported by Walter, the prudently deliberate, more profound; a complete scientist who remained more in the background and who provided the theoretical foundations for their observations, thus helping his brother to forge the weapons for their battles against a world full of opponents. Neither could have existed and prevailed without the other.

Ferdinand Huneke died of a pulmonary infarct on 2 June 1966, at the age of 74. His death bereft us of one of the very great physicians of our time. His life was a hard struggle, and almost the only recognition that he was to receive was the love, affection, and admiration of his disciples, whose faithfulness to him was to outlast his life. Ferdinand Huneke was a fascinating personality. As a passionate doctor he was so imbued with the tightness of his ideas that any resistance would rouse him to truly Teutonic fury. Much to the distress of those who supported him, he would often reply too directly, with too little tact, too noisily and heatedly to the numerous personal and often malicious attacks made on him. Thus, he made more enemies than was good for his cause. Many of his opponents made the mistake of identifying the inconvenient personage with his cause. But there were also a number of notable clinicians who learned to induce Huneke's lightning reaction, amongst them Ferdinand Hoff, who recognized his discovery for what it was without necessarily also adopting Huneke's philosophical views and conclusions as his own.

For patient and doctor the cure is the decisive element, whilst its interpretation must be left to the people of science. If science takes offense at the person of Huneke and at the packaging of his ideas, it ought not on that account refuse to accept the contents of the package. For we owe a genuine step forward to Huneke's gift of observation: "The ability simply of looking and thinking about what one has seen is what has characterized Hippocrates and other great physicians. In great fundamental questions it takes us further than many brilliant inventions in the form of refined technical aids or a vast lumber of knowledge" (Bier). As practicing doctors, we rarely have the skill to formulate our ideas as clearly and with the same precision as that possessed by many a fluent clinician practiced in discussion and debate. But a certain roughness of expression ought not to be any reason for avoiding all discussion with us. After all, we all serve the same aims, and with our observations of the reactions of the living organism to our injections, we complement animal experiments and research in the dead regions of science.

Walter Huneke died on 4 March 1974 at the age of 76. The recognition that the two brothers deserved was denied them both. The story of their neural therapy is a sorry chapter in the history of medicine. They stand with others like Semmelweiss, Spiess, and Schleich, all pioneers whose recognition was long delayed. Today everyone knows that they were right and that the "experts" who set themselves up in judgment over them and condemned them were wrong. We shall therefore continue the fight to put an end to the injustice done to the Huneke brothers and obtain for them, if only posthumously, the recognition they deserve. This book will help to ensure that their discoveries will remain alive.

I therefore dedicate this textbook to my venerated friends and teachers Ferdinand and Walter Huneke. It is due to them that the whole of my medical ideas and actions have acquired a new meaning. Without the art of healing that they taught me, and which I pass on to others out of my gratitude to them, I should no longer wish to be a doctor.

Von Hering prophesied in 1925: "The intelligent use of the autonomic system will one day become the most important part of the art of healing." The Huneke brothers have shown us an excellent way of using it wisely. In the interest of our patients, this is the way we have to choose. Any neural therapist proficient in his or her art will be superior to the best clinic equipped with the costliest and most complex diagnostic apparatus, particularly in the roughly 30% of all disorders which, in our experience, are caused by an interference field! Since localization and the correct technique are the essential prerequisites for success, may this book of mine offer counsel and suggestions to the ever-widening circle of doctors who are turning to neural therapy according to Huneke, that they may so perfect themselves that, from being "also procaine injectionists" they may become successful neural therapists in the sense of the Huneke brothers.

Peter Dosch, MD

Contents

Part I
Theory and Practice of Neural Therapy According to Huneke

Introduction

Facts to Remember

1. Neural therapy according to Huneke is a regulating therapy, i.e., a holistic therapy. The healing stimulus produced by means of a correctly placed neural-therapeutic substance produces a response from the whole of the neurovegetative system whose pathways are those taken by both illness and recovery.
2. Segmental therapy according to Huneke refers to the selective use of procaine or lidocaine in the area of the disease process. Always examine first, then test! The improvement achieved with segmental treatment increases with repetition up to complete cure. If segmental treatment fails to produce an improvement, look for the interference field.
3. Any chronic ailment can be due to an interference field.
4. Any part of the body can become an interference field.
5. The injection of procaine or lidocaine, repeated as necessary, into the responsible interference field will cure the disorder caused by it, as far as this is anatomically still possible, by means of a lightning reaction (Huneke phenomenon).
   The conditions for a lightning reaction are:
   a. All disturbances remote-controlled from the interference field must disappear completely, as far as this is anatomically still possible, at the moment of the injection.
   b. Freedom from all symptoms must continue for at least 20 hours (8 hours in the case of teeth).
   c. If the disorder recurs, the injection(s) must be repeated, and the period of freedom from symptoms must clearly increase with every subsequent treatment. A Huneke phenomenon has been produced only if this criterion has been met.
6. If injection into the segment produces no substantial improvement, or injection into a suspected interference field does not produce a 100 % lightning reaction, further injections at these sites are pointless.
7. Always try simple injections with small quantities of local anesthetic first, with few but well-placed injections. Injections into the sympathetic chain and the ganglia are our last resort. A doctor who wants to help his or her patient must also be familiar with these. Do not stop treatment until you have tried everything.
8. All suspect teeth must be tested in a single session, similarly all scars. All scars in the same segment must always be injected as part of any segmental treatment.
9. NOTE: Intra-arterial injections into a vessel leading to the brain or into the subarachnoid space can have serious consequences. Always protect your patient and yourself by prior aspiration.

Symbols Used in the Text

→ denotes that the key word following this sign is listed in the Alphabetical List of Conditions and Indications in Part II;
→ (T) denotes the key word following this sign is listed in alphabetical order in Part III, Techniques, where the technique for the injection may be found.

A
Teachings, Theories, Experiments, Terms, and Definitions

1 Chronological Survey

The intelligent use of the neurovegetative system will one day constitute the most important part of the art of medicine.
Von Hering, 1925

ca. 6000 BC–2000 BC If we can rely on tradition, those skilled in healing during neolithic times, at whose skull trepannings we are filled with admiration, are supposed to have jabbed sharp stone splinters into the skin of the sick in order to exert an influence upon the internal organs. Doubtless their activities were originally intended to enable the demon Pain to leave the body by the hole in the head or in the skin. We may assume that their unsophisticated senses also enabled them to observe genuine possibilities of cures, the knowledge of which they passed on.

ca. 3000 BC The beginnings of acupuncture are usually placed in this period, combining the empirical experiences of many generations into a formal body of teachings. Acupuncture recognizes skin channels and points that have special relationships to specific organs and systems.

1664 The British anatomist, Thomas Willis, was the first to describe the sympathetic chain.

1801 M. F. X. Bichat introduced the term "neurovegetative system."

1851 Claude Bernard described the neural regulation of the vasomotion.

1869 The Zurich ophthalmologist, J. F. Horner, described a symptom complex that was later named after him.

1883 The great Russian physiologist, Pavlov, laid the foundation of the teaching of "nervosism." He recognized the coordinating influence of the nervous system upon all organic functions. Incidentally, it was Pavlov who first used the term "holistic medicine."

1884 Koller demonstrated the anesthetizing effect of cocaine on the eye.

1886 Frank reported on the possibility of temporarily paralyzing the ganglia by means of cocaine.

1886 The German homeopath, Weihe, discovered, without any knowledge of acupuncture, that different diseases were accompanied by 195 constantly recurring painful skin areas and he assigned to each of these its specifically indicated homeopathic medicine. In fact, 135 of these points lie on Chinese acupuncture channels, and 105 of them coincide both as regards position and symptoms with traditional acupuncture points.

1892 Schleich propounded his "infiltration anesthesia" to a surgical congress, based on using a 0.1 % to 0.2 % cocaine solution. He ended by stating: "I therefore consider, with this harmless means available to us, that from any idealistic, moral, or penal point of view, it is no longer permissible to make use of general anesthesia with all its risks, where this means will in fact suffice." This produced a storm of indignation, no discussion was allowed. Instead, a vote was taken to determine who amongst the 800 surgeons present was convinced of the truth of Schleich's report. Not one of them voted in favor! Only 10 years later, Mikulicz obtained recognition for his method. Schleich infiltrated his solutions also for lumbago, rheumatic shoulder, and intercostal neuralgia, and was convinced "that multiple injections of my infiltration solutions are the best antineuralgic method that is available to us." But he was unable to convince the doctors of his time.

1898 Head published his *Sensory Disturbances of the Skin in Visceral Disease*.

1902 Spiess published *The Therapeutic Effect of Anesthetics* (*Die Heilwirkung der Anaesthetika*).

1903 Cathelin reported on epidural anesthesia with cocaine solutions.

1905 Einhorn discovered Novocaine (procaine).

1906 Spiess discovered that wounds and inflammatory processes subside more quickly and with fewer complications after anesthesia. From this he concluded that pain acts as a cause in enabling an inflammation to be-

come established. Despite the fact that his observations are of great therapeutic importance and that they are repeatable, his work failed to receive the recognition it deserved. As a result, Spiess became resigned in the face of the then current theories, which refused to recognize any neural influence on the inflammatory reaction. In Germany his work was forgotten, although it continued to exert its influence on Russian medicine (Speransky, Vishnevski).

1906 Vishnevski confirmed the effect of locally applied Novocaine in reducing inflammation.

1909 Sellheim and Laeven introduced paravertebral anesthesia.

1909 Cornelius published his *Massage of Nerve Points* (*Nervenpunkt-Massage*).

1910 Braun recommended procaine injections into the nerve-exit points in trigeminal neuralgia.

1912 Haertel described the techniques for injections to the Gasserian ganglion and into the sciatic nerve.

1913 Leriche first removed the stellate ganglion from a patient suffering from Raynaud disease.

1913 Paessler introduced the term "focal disorder." Gutzeit and Parade later defined a focus as a "seat of an inflammatory reaction containing bacteria and filled with toxic products, whose contents are more or less shut off by a living and thus reactive wall from the normal environment and which, as a result, sometimes have no connection with the organism and at other times are capable of passing out into the tissue planes." An attempt was made to explain the pathogenic action of such a sealed-off focus by the spread of living bacteria and the emission of toxins via the bloodstream causing an antigen–antibody reaction.

1917 Mackenzie reported on hypertonus and hyperalgesia in subcutaneous tissue and muscles in visceral disease.

1920 Leriche for the first time successfully treated migraine by Novocaine irrigation of the temporal artery.

1924 Ricker published *Pathology as a Science; Pathology of Related Structures* (*Pathologie als Naturwissenschaft. Relationspathologie*).

1925 The brothers Ferdinand and Walter Huneke rediscovered the therapeutic effect of local anesthetics, without any knowledge of the work of Schleich, Spiess, and Leriche. They introduced intra- and paravenous procaine therapy and investigated what conditions this new form of therapy could be applied to in conjunction with intracutaneous, subcutaneous, and intramuscular procaine infiltration.

1925 Leriche for the first time injected Novocaine into the stellate ganglion for therapeutic purposes and recognized the advantages of injection compared with surgery of the sympathetic chain. He described the injection of Novocaine as "the surgeon's bloodless knife."

1928 F. and W. Huneke reported on *Unfamiliar Remote Effects of Local Anesthetics* (*Unbekannte Fernwirkungen der Lokalanaesthesie*). In this work they already pointed out the importance of the injection site, since previously unknown reflexlike remote reactions could be produced in this way via Head's zones. They first called their therapy "therapeutic anesthesia" (*Heilanaesthesie*) and recommended it for the treatment of a wide variety of painful conditions and of trophic disturbances in the segmental area of the ailment. Kibler suggested the term "segmental therapy." Also in 1928, Bayer Leverkusen put on the market a procaine-caffeine preparation developed by the Huneke brothers for their new therapy, under the trade name Impletol.

1928 Leriche and Fontaine observed that fractures healed better and more quickly after procaine injections into the fracture line.

1934 Leriche observed that extensive post-operative pain disappeared "immediately" after procaine infiltration of the surgical scars. Unfortunately he failed to recognize the significance of this observation or he would doubtless have drawn therapeutic conclusions from it.

1935 Vishnevski published his method of injections to the sympathetic chain at the upper renal poles.

1936 Speransky published *A Basis for the Theory of Medicine* in New York.

1936 F. Huneke published *Disease and Cure: Another View* (*Krankheit und Heilung anders gesehen*).

1936 Bayer cured gastric ulcers by using a 0.25 % solution of the local anesthetic Larocain given per os and explained its effect "in the elimination of all kinds of dystrophic effects upon organs and tissues."

1937 Kulenkampff reported on "miraculous results" in the treatment of epididymitis with local anesthetics.

1938 Fenz and Falta published *On the Therapeutic Value of Novocaine Infiltration in Internal Medicine*

(*Ueber den therapeutischen Wert der Novocaininfiltration in der inneren Medizin*).

1938 Fenz reported on "remarkable results obtained with Novocaine injections in 143 cases of sciatica."

1938 Hansen and von Staa published *Reflectory and Algesic Disease Symptoms of Inner Organs* (*Reflektorische und algetische Krankheitszeichen innerer Organe*).

1938 Von Roques translated A. D. Speransky's *A Basis for the Theory of Medicine* into German.

1940 Ferdinand Huneke observed the first "lightning reaction" and immediately recognized its therapeutic importance. With remarkable vision he concluded from this that there are states of neural irritation (interference fields), which can set off and sustain a wide range of disease processes outside any segmental order. He found a way to eliminate these interference fields and thus to cure disorders that had previously proved resistant to therapy.

At the suggestion of von Roques, segmental therapy and the elimination of interference fields were combined under the term "neural therapy according to Huneke," the former being based on selective injections of procaine or some other suitable local anesthetic, the latter on the induction of the Huneke phenomenon (lightning reaction).

We regard Schleich, Spiess, and Leriche as predecessors of the Huneke brothers. Little attention was paid at the time to their separate observations and they were soon forgotten, so that a specific form of therapy would never have been developed from them. It is the historical achievement of the brothers Huneke that they made the same observations independently and, what is far more important, that they recognized their therapeutic significance. They spent their lives in continuing to explore and research the possibilities of using Impletol in many types of illnesses.

They demonstrated a number of new injection techniques and developed appropriate routes for the administration of local anesthetics in their therapy. They worked out dosage guidelines that differed from those laid down by surgeons. In addition to a number of astonishing therapeutic possibilities, their studies also led them to the discovery of certain laws, which they then published. In a stubborn battle they made certain that their teachings should not again be lost to mankind, as had happened to their precursors. Following in the footsteps of the Huneke brothers and encouraged by their example, a number of doctors have rendered a great service to basic research and to extending the use of neural therapy, amongst them such names as Braeucker, Dittmar, Gross, Kibler, and Siegen.

1942 Veil and Sturm published *Pathology of the Brain Stem* (*Pathologie des Stammhirns*). The authors regarded the diencephalon as the determinant point for all pathological processes.

1943 Kohlrausch published *The Massage of Hypertonic Muscular Zones* (*Massage muskulaerer hypertonischer Zonen*).

1944 Ognew first injected procaine into the internal carotid artery.

1944 Bykow published *The Cerebral Cortex and Inner Organs* (*Grosshirnrinde und innere Organe*).

1946 Stoehr discovered the terminal reticulum as the termination of the neurovegetative system, which divides ever more widely and more finely until the terminal network of fibrils finally surrounds every single cell with a neuroplasmatic reticulum. With this discovery he supplied a secure anatomical foundation for the empirical and experimentally based findings of F. Huneke, Ricker, and Speransky. All the fibers of the unimaginably fine syncytium would, if placed end to end, make up three times the distance from the Earth to the moon. Stoehr's discovery was later extended by studies under the electron microscope, which showed that the nerve terminals do not in fact end directly in the cell membrane but lie free in the intercellular fluid. Pischinger demonstrated how stimuli are further transmitted via the cell-environment system. "Every part of the body's internal organization forms a circle. Thus every part is both at the beginning and at the end" (Hippocrates).

1947 W. Scheidt published *The Autonomic System* (*Das vegetative System*). Scheidt took the view that the nerve fibrils do not form a rigid network of conduits, but are a mobile system of molecules that continues to form new pathways as required. These pathways he called conductive fiber rings. Differential electrical voltages resulting from any stimulus are compensated by means of these. He suspected that these conductive fiber rings do not decompose completely after they have restored the balance in such differential voltages. The total quantity of the remnants of these forms an "old-strata picture," which, as a matter of course, has a different appearance for every individual. This old-strata picture would thus form the material manifestation of the stimulus memory. It considerably influences the development of new conductive fiber rings, which it facilitates, impedes or guides in certain directions.

This theory explains why a first insult may only appear to fade away whilst in fact it remains in the background, ready to act as a predisposition to illness. The observation that an illness may persist even though its

focus has been eradicated prompted Scheidt to make a distinction between the terms "focus due to bacterial action" and "neural interference field."

The term "interference field" as used by Scheidt applies to all primarily and secondarily disturbed autonomic tissues. It can thus mean that the field is disturbed or that it causes a disturbance. The term "irritation center" introduced by D. Gross also has this double meaning with regard to an irritation, meaning both the center from which a stimulus emanates and one that is irritated. For the sake of greater clarity, Kibler no longer referred merely to hyperalgetic zones (HAZ) but drew a distinction between an active (i.e., disturbing) and a passive (disturbed) interference field. To put an end to this confusion, W. Huneke suggested that in future, reference should be made exclusively to an "interference field" (*Stoerfeld*), whenever we mean a disturbed region of tissues that is itself producing interference, i.e., is causing a remote disturbance elsewhere or is at least capable of doing so.

1948 Vishnevski published *The Novocaine Block as a Method of Influencing Tissue Trophism* (*Der Novocainblock als eine Methode der Einwirkung auf die Gewebetrophik*).

1948 Wiener founded a new interdisciplinary science with his book *Cybernetics or the Control and Transmission of Information in Living Organisms and Machines* (*Kybernetik oder die Regelung und Nachrichtenuebertragung in Lebewesen und Maschinen*). This provided a new approach in practically every branch of science (e. g., medicine, biology, bionics, philosophy, psychology, sociology, education, economics, mechanical engineering, machine technology) and served as the synthesis of all knowledge. Biocybernetics also furthered our understanding of the effects of a therapy that makes use of local anesthetics.

1949 Fleckenstein and Hardt published *The Mechanism of the Effects of Local Anesthesia* (*Der Wirkungsmechanismus der Lokalanaesthesie*).

1949 Nonnenbruch published *Bilateral Kidney Disease. Neuralpathological Considerations* (*Die doppelseitigen Nierenkrankheiten. Eine neuralpathologische Betrachtung*).

1949 Pendl described the presacral infiltration technique.

1950 Kibler published *Segmental Therapy* (*Segment-Therapie*).

1951 Selye's work on stress showed that the body always reacts to various stimuli, to damage and to stress, both physiological and psychological, in the same unspecific way, by means of the "adaptation syndrome" (alarm reaction, resistance phase, exhaustion phase). However, he saw this reaction merely as a response of the adreno-pituitary system. Although his research work has been fruitful enough, we find that Selye observed only a portion of the overall morbid processes and that he did so in too isolated and one-sided a manner.

1951 Ratschow tested neural therapy in 1011 cases. He obtained 441 cures, 427 substantial improvements and had only 143 failures, despite the fact that neither he nor any of his 12 assistants had any training or experience in the method. Fifty percent of the most varied types of painful conditions could be favorably influenced by means of the "usual therapeutic anesthesia" (segmental therapy). "When the injection was made into an ascertained Head's zone, the rate of enduring success was increased to 70 %." "There is such a thing as the rapid and lasting disappearance of remote symptoms, especially those of a polyarthritic type, by injection into an accidentally discovered interference field!" "The existence of the lightning reaction can thus be regarded as proven fact, a matter of which we were by no means convinced when we began our investigations." Over a period of 12 months, Ratschow witnessed 72 lightning reactions. "This is a sufficient number to underline the great importance of F. Huneke's observations."

1951 Siegen: *The Theory and Practice of Neural Therapy using Impletol* (*Theorie und Praxis der Neuraltherapie mit Impletol*).

1951 Dicke and Leube published *Massage of Reflex Zones in Connective Tissue* (*Massage reflektorischer Zonen im Bindegewebe*).

1952 W. Huneke: *Impletol Therapy and other Neuraltherapeutic Methods* (*Impletoltherapie und andere neuraltherapeutische Verfahren*).

1953 Vogler and Krauss published *Treatment of the Periosteum* (*Periostbehandlung*).

1953 E. Schwamm introduced bolometer thermography. Areas that are non-responsive can be discovered through viscerocutaneous projection areas of foci or interference fields by measuring the skin temperature once before and once after sending a stress stimulus (cold, Impletol). Triggering the Huneke phenomenon produces a balance between the regional thermical asymmetries of the body halves. They objectively demonstrate the connection between the interference field (focus) and the circulatory disorder.

1955 Glaeser and Dalichow published *Segmental Massage* (*Segmentmassage*).

1961 F. Huneke: *The Lightning Reaction. A Physician's Testament* (*Das Sekundenphaenomen. Testament eines Arztes*).

1961 Pischinger succeeded in providing objective evidence on the lightning reaction by comparative hematological analysis and by the use of iodometry. His "environmental theory" (*Milieu-Theorie*) is based on the observation that there are no classic synapses for the special organ (parenchymatous) cells in the neurovegetative periphery, but that the entire basic autonomic system acts practically as "ubiquitous synapse." The omnipresent extracellular fluid (matrix) provides the transmission medium between the capillaries as well as the nerve endings and the cell membranes. This is a means to nourish and cleanse the cells and to transmit intercellular information. Only the unimpeded functioning of this interaction, which is based on a continuous successful response to all forms of environmental stimuli, allows the maintenance of health and internal balance (with tissue potential and cell respiration at the center). The interstitial fluid has to provide the optimal environment for the cell. Persisting disturbances in this peripheral regulating mechanism, the "cell-environment system," lead to instability, inflammation, interference fields, and ultimately chronic diseases.

It is the mission of the physician, through the use of biological means, to activate the body's defense system of the basic vital functions and this creates homeostasis. In a convincing and scientific way, Pischinger and his scholar and successor Kellner, proved that neural therapy according to Huneke could accomplish this mission. They discovered the function of the "nonspecific connective tissue." First, they had to create the foundation, the ability to measure the function and regulation of the body's defense mechanism. As a result, they discovered substance complexes that are the foundation of humoral regulation. The results of their efforts form the solid base for the understanding of neural-therapeutic phenomena, including the Huneke phenomenon, as well as other biological healing methods.

1987 H. Heine discovered the tissue substrate of acupuncture points in cutaneous neurovascular bundles that perforate the superficial fascia. They correlate with myofascial trigger points that Travell and Simons described in 1983; also with Head's pressure points described in 1893. The stimulation of these neural structures can produce a therapeutic effect. We address them through quaddle therapy.

1991 The German cellular physiologists Professor E. Neher and Dr. B. Sakmann received the Nobel Prize for medicine. They made the interstitial fluid (matrix) and the ion channels between cells visible. In addition, they were able to measure the ion flow, which provides exchange of information and regulating impulses. Thus, they provided new insights about the effects of neural therapy and local anesthesia.

2 Theoretical Principles

As regards a revision of pathology, the time has come for a revolution; it is ripe and ready, it has to start, all the more so since in this revolution we have nothing to lose but our chains.
A. D. Speransky

It is the particular aim of this book to provide the practitioner with the basis for using modern neural therapy and to show him or her what its possibilities are. Despite this objective, which is more oriented toward practical aspects, we shall not be able to dispense altogether with theory. All too often, we come across names in the literature on this subject, which occur again and again and with which one ought therefore to be familiar. We shall limit ourselves to the essentials and not take sides in the battles of the experts on the question of the extent to which the experiments quoted and the theories that have been based on these discoveries are founded on genuine knowledge or merely rely on interpretations. We, including our patients, cannot wait for the day when all the contradictory voices will sing in unison. Nor is it very likely that this will ever happen, for life will never surrender its last secrets.

The many illnesses with which we have to deal day by day are a form of the vital element that is reversible if one addresses oneself early enough to its characteristic signs or if one changes the reaction of the organism to it, for example, by reversing polarity. By this means it becomes possible to bring the pathologically modified living organism back to normality, i.e., to health, provided that it is still capable of repair. The practitioner who, in a manner of speaking, is fighting in the front line, is doubtless best served by a solidly based textbook or work of reference that does not make the complex relationships even more incomprehensible, but which shows him or her the common denominator(s) by which he or she can see the large number of symptoms in some semblance of order.

We rely upon what is known as neural (Ricker, Speransky, H. Heine), humoral (H. Heine, G. Keller, A. Pischinger), and regulating (Bergsmann, Perger) pathology as well as on biocybernetics (Wiener), which have become an important influence in modern medico-scientific attitudes. One might even say that they have conquered them. They have completely confirmed and provided the theoretical foundations for all the empirical findings made by the Huneke brothers, for they prove that the term we often use of a "disturbance in the autonomic equilibrium" is no mere invention in order to provide a working hypothesis, but is solidly based on clearly definable changes in the finest of innervated blood vessels and in nerve tissue, from the ganglia down to the last fibril acting on the cell environment of the individual cell.

For us, the teachings of Ricker, Pavlov, Speransky, Bykow, and Pischinger are only steps on the way to the recognition that there is a constant interchange of information from the periphery to the center and vice versa, which takes place along the pathways of the neurovegetative system that is present everywhere in the human body, down to the last cell. They help to confirm to us that the autonomic regulating mechanisms that control the automatic functions of breathing, circulation, metabolism, of hormonal, temperature, and fluid balance and a great deal more besides, all act along the same ramified pathways of this "vital nerve"; thus it is these these that—acting together with all the cells and organs as a whole—actually make life possible.

The brothers Huneke have made it clear to us that the healing action of physiotherapy, balneotherapy, and of other peripherally acting therapies such as acupuncture, Ponndorf vaccinations, massage, and all dermal stimulation and tonal therapy, including Kneipp's, shortwave, ultrasonic, and radiographic therapy, and even the effects of chirotherapy, are all ultimately based on a single common principle. They all make use of the reflex pathways of the neurovegetative system by setting up a therapeutic stimulus in the nervous system, whose response to this stimulus then releases the healing reaction. Seen in this light, all these therapies can also be considered to be "neural therapy" in the wider sense. It is the goal of this therapy to decrease and eliminate the formation and dissemination of pathological irritation through the use of local anesthesia.

With the application of the Huneke phenomenon, this takes place directly at the place of origin, and with segmental therapy it takes place in the peripheral dissemination segments. We disable the nociceptors and thus, prevent the increase of pain or the worsening of the disease. A great number of nociceptors (mechano, thermo, chemo etc. receptors) can be found in the skin,

joints, periosteum, the joint capsules, tendon insertions, pleura, peritoneum, vessels etc. With our injections, we are able to reach and disable these receptors at every level of depth allowing us to regulate effectively the disease-producing condition, to affect positively the cell environment, and to strengthen the defense mechanisms.

Seen in this light, neural therapy is a form of regulating therapy. We are able to understand regulating therapy in connection with local anesthesia only if we understand and recognize the cybernetic relationships and principles involved. For this reason, before taking a brief look at the historical background, we shall first concern ourselves with biocybernetics as seen from the currently accepted point of view. After this, our attempts to deal by means of a single local anesthetic with such a large number and variety of disorders presenting such apparently different symptoms will perhaps no longer seem like a form of magic, occultism, or simply the blinkered act of monomaniac outsiders.

3 Biocybernetics and Neural Therapy

Cybernetics constitutes the science of control and information, irrespective of whether we are dealing with living organisms or machines.
N. Wiener

In recent years cybernetics has conquered and fertilized almost every field of scientific research as a kind of "bridge between the sciences." It makes use of mathematical methods to study problems of regulation and control, and of information transmission and processing. The principles governing cybernetics apply both to machines and to living organisms. The far-reaching importance of feedback control circuits and of the cybernetic interaction of intermeshed networks of control circuits was recognized in 1948 by N. Wiener and published in his book *Kybernetik oder die Regelung und Nachrichtenuebertragung in Lebewesen und Maschinen* (*Cybernetics or the Control and Transmission of Information in Living Organisms and Machines*). He thus provided a name, a definition and a theory for this new science.

The physiologist R. Wagner, Munich, stated that "the first life existed when the first control circuit existed." The neurologist G. Walter used different words for the same idea: "Life began when in the primeval sea the first molecule was formed with the capacity for feedback." In the course of their development, living organisms have evolved a mass of techniques to ensure survival. These include temperature control, growth, procreation, and heredity. Humankind has studied these mechanisms and has to some extent copied them mechanically. In this (limited) sense, for example, aircraft imitate the flight of birds, the computer imitates the nervous system. The physiological regulating processes have been known for a long time in medicine and biology. But it was not until 1941 that H. Schmidt recognized regulation and control as a common principle both in technology and in the living organism, when he wrote: "In addition to finding regulating processes in technology, we find control mechanisms also in plants, in animals and in Humankind. The fundamental stability of body temperature, blood pressure and pulse rate in the human being, his ability to maintain his upright posture while standing or walking, and a large number of other constants all result from regulating processes."

However, the human being is not a simple energy-consuming machine with rigid mechanisms. Humans could rather be compared with modern computers that transform information rather than energy. The human organism has the advantage that it can work with a dynamic neural material, which is able to regenerate itself and form new connections based on information that benefits the whole. This puts it way ahead of the rigid connections of the most advanced computer system. A number of adaptable functional systems are always active in the human organism. They exchange information and, based on the feedback system, they locate, organize, store, and compare data, and are able to respond to their findings. The impulses have to be as short and clear as possible. The human nervous system has been able to find a way of solving the problem of coding, transmitting, and decoding that modern technology cannot copy completely. According to Vester, cybernetics is "the control and automatic regulation of interlinked and intermeshed processes at a minimum cost in terms of the amount of energy used," without which life would not be possible. Since medicine must concern itself like no other discipline with the biological control circuits in the living organism, it ought not to be unreasonable to expect it to be forced to concern itself more intensively than other disciplines with this higher-order science. Yet, this new line of thought is only beginning to make a little headway in medicine, and painfully slowly at that.

Medicine today prides itself on being based on strictly scientific principles. And yet, diagnosis, which forms its most important basis, seems intent only to look at symptoms and the superficial aspects, instead of concerning itself rather more with the human being as a cybernetically functioning systems complex, systems that respond to and affect his or her internal and external environment. For a symptom is simply the expression of a regulatory change or of a faulty control mechanism. Apparently, in its preoccupation with the study of inert building blocks, medicine seems to have almost forgotten that there is something beyond these that makes up life. To date, medicine has taken the oldest and most important functional basis provided by nature too little into account, namely the fact that organic structures work by means of control circuits that have evolved and proved themselves over millions of years.

Our specialized knowledge has become vast. There is no lack of facts. But there is a lack of synthesis of all this knowledge, a dearth of interconnected thinking that takes the natural laws of cybernetics more effectively into account. We can make progress only if we are able to turn away from analysis and the theorizing of the ivory-towered specialist toward a synthesis, by making the effort to think in more cybernetic terms about the laws on which the facts and events in and about us are based.

Cybernetics regards the human being as the most highly developed of all self-regulating dynamic systems in existence. In the human being, the principle of linear causality (i.e., the straight-line relationship between cause and effect), which is the basis of a purely mechanistic philosophy, no longer applies. Instead, the principle applicable to the human being is that of an intermeshed interactive causality. In any cybernetic system, every subsystem is continually linked to every other subsystem in a network of reciprocal relationships. Seen in this light, disease is a cybernetic problem, since it is the result of a disturbance of the regulating functions within the interacting structure of the self-regulating dynamic system that is the human being, and is due to malfunctions in the transmission and processing of information between individual control circuits within the overall system. Thus, it ought to be the physician's task to act upon these disturbed or faulty control systems in order to restore control and put the disturbed biological functions back into order.

Orthodox medicine insists stubbornly on the so-called "nature"-scientific, linear causality, and its effort to prove itself through randomized double-blind studies. Today, this effort compares with a retreat into old dilapidated bastions. Really, the double is a triple-blind study, where the researchers close their eyes to the reality of network processes in a live system. Biologic systems are not linear but connected in all directions and are subject to a steady state. Hence, there is a balance in which physical quantities do not change after adding energy. The systems are energetically open and able to exchange energy and matter with their environment.

The monocausal reasoning of Galilei, in which cause and effect are directly connected, does not suffice any longer. Thomas declared in 1984 that "it can no longer be considered a scientific effort when one-dimensional causal chains are applied to network systems." Progress cannot be denied. In 1935, Speransky finished his book *A Basis for the Theory of Medicine* with the statement that the time has come for a revolution in pathology where nothing can be lost but chains!

In our daily practice, the majority of patients come to us with a multiplicity of often vague symptoms that fit into no precise diagnostic pigeonhole. We neural therapists know from experience that many of these disturbances are set off by interference fields and foci. According to Kellner, an interference field is like chronic inflammatory material that cannot be removed or metabolized and that consists of the infiltration of lymphocytes and plasmocytes and of a disaggregation of the base substance. In the case of a focus, bacteria and their metabolic products are additionally involved in the pathological process. Both are sources of irritative stimuli, even if locally they produce only minor symptoms or none at all, and are therefore difficult to recognize for what they are. They continually emit interference signals, albeit only on a subliminal level, which produce stress on the control circuits. These signals are stored particularly by the cells of the ganglia and cause them to be irritated subliminally to such an extent that, when they receive any additional stimuli, they transmit excessive signals. Since the nervous system, whenever the next higher level becomes involved, excites (on the divergence principle) a number of neurons with every new signal, it becomes possible to understand how a minute interference field that, to all external appearances, is totally inactive, can have a negative effect on the whole of the organism and make it unstable. The response of the control circuits to a normal stimulus in such cases is already excessive. The organism works uneconomically and is therefore less efficient and less able to defend itself (Bergsmann, Kalcher). Superficially, the patient seems healthy. But when he or she comes under additional stress, symptoms appear. The stimulus threshold is lowered the longer the regulatory disturbances persist. Additional stress can trigger disorders in pathosensitive regions.

Many of the successes achieved by neural therapy, especially by the lightning reaction, become more readily understandable and can be explained only if they are seen in a cybernetic context. This obliges us to become familiar with the basis, principles, ideas, and definitions of this new branch of science.

a) The Organism as Homeostat

The living organism endeavors to keep certain body functions constant, such as metabolism, temperature, blood pressure, blood pH etc., i.e., the internal environment. Various specific receptors signal any departure from the required values and inform the control center, and this will normally correct such deviations. If the regulating system is overloaded, provision is available for switching over to other intact regulating systems or to bypass them until one is found capable of restoring the function in question to its ideal range. The neurovegetative system and the hormonal system connected to it regulate and control this homeostatic state and ensure that it is maintained. However, the compensating capacity is not unlimited and is lost if the organism is

subjected to an excessive influx of stimuli. It is our task to prevent an irreversible condition by interfering with pathogenic mechanisms that weaken the system through continuous stimuli. The intervention should take place at the primary site of stimulation (for example, the interference field) to restore homeostasis quickly and thoroughly.

b) The Economic Principle

Homeostasis can be maintained only if the organism is working economically. The task of the regulating and control systems is to adapt all the metabolic processes in accordance with economic principles to the demand at any given time, by the shortest route, in the shortest time, using a minimum of energy. The time taken by a system to change from one state of inertia to another is known in cybernetics as a "settling process." Any stimulus that produces a response in a control circuit thus also sets off a settling process. An intact control circuit reacting normally (in a "muted" manner) and functioning at optimum "control quality" with "negative feedback" is able to cope with this additional demand quickly and economically.

When there is a dysfunction in the control circuits, which may be due to any one of a number of causes, "periodic or aperiodic deviations" will occur in the control quality. These may be of several degrees of severity. In the case of labile (periodic) deviation, any stimulus will produce an excessive response. A short-period stimulus will produce a deviation from the initial energy at a steeper gradient and to a higher value. Similarly, the return to the initial value will also be excessive and require longer to settle down. In such a case any permanent stimulus will also produce an excessive response and the required value will be attained only after a longer settling time. This is known as regulatory lability in the patient.

In the case of a slow, sluggish (aperiodic) deviation any stimulus is delayed and the response to it is slow. Clinically, we then have regulatory sluggishness or paralysis. The initial value is reached slowly or not at all in the case of short-period stimuli, and an adequate value in response to permanent stimuli is not reached at all or only very late. In both these types of deviation of control systems, time and energy are wasted in responding to stimuli, and thus the principle of economy and of homeostasis is upset.

The consequence of all this is that under stress or as a result of the effect of noxious stimuli, ever more energy is required. Only a well-functioning regulating system can cover this additional demand quickly and economically. A disturbed system works more slowly and wastes more energy, and the effort required of it for work or defense is therefore produced less economically. The available spare capacity is correspondingly reduced.

c) The Control-Circuit Principle

Of the three basic principles of cybernetics, i.e., information, automation, and control, the last is of particular interest to us. In the living organism, all regulatory processes that serve the maintenance of the biological equilibrium take place automatically. This occurs via control circuits that have the purpose of providing stability for the dynamic system. We are all familiar with the reflex arc. The control circuit takes us one step further: it closes at the periphery, which forms a closed information circuit. "Feedback" is considered the ability to compare continuously the status quo with the (variable) goal. The continuation of a process depends on the evaluation of the status quo. This requires the incessant activity of control systems that compare the effective value with the required value. They adapt to the individual situation through corrections that correspond with the goal. Let us take a closer look at a control circuit in Figure 1.**1**.

A control circuit (1) is a self-regulating closed circuit. It owes its automatic capability to a feedback system. Its function is to keep the regulating value (2) or range (e. g., hormonal balance, body temperature) within permissible limits and following a disturbance to bring the system back to this range. It is helped in this by a regulator (3), which compares the effective measured value with the required or nominal value and thus acts as control center. A higher-order transmitter for the required control values (4) specifies the values the regulator has to maintain. These values

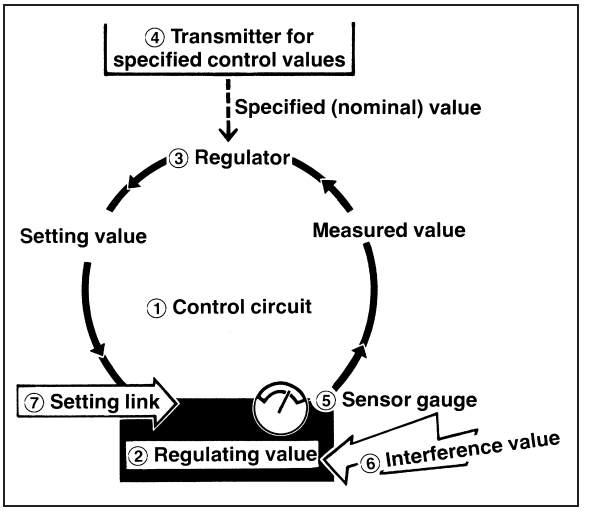

Fig. 1.**1 Simple control circuit with the principal standard components.**

can be variable, for example, if they happen to be the control values for other circuits. A control circuit never works in isolation, it always forms part of one or more interacting systems of several mutually interlinked control circuits whose required values are interdependent. They are thus able to maintain homeostasis and uphold the principle of economy. They are linked to one another for the continual exchange of information.

If the regulator becomes aware via its sensor gauge (5) of any departure from the specified value, a state that arises if an interference factor having a given interference value (6) alters the normal state from outside, the regulator has to take over to return the effective value to that specified. It makes this correction by transmitting control signals (setting value) to the setting link (7) in order to effect the necessary changes. If the sensor gauge measures too high a value, this is reduced by means of the setting value, if it is too low, the setting is increased. This system, which inverts the "mathematical sign" for the relative values of input (sensor gauge) and output (setting link), is known as negative feedback, since every change at the output end acts inversely on the input. Success and failure of any countermeasures taken are recorded by the sensor gauge and this information is then again fed into the control circuit. The system thus always couples back on itself. If the mathematical inversion is missing, the system works by "positive feedback." In that case it acts not as a regulator but as an amplifier circuit.

A practical example of negative feedback as used in technology is familiar to everyone and will help to illustrate this. The outside temperature is low (interference value) and the sitting room is too cold (thermometer = sensor gauge). The thermostat (regulator) closes the circuit, the burner heats the boiler (setting link). The room is heated to the preset temperature (required value). When this temperature has been reached, the sensor gauge signals this to the regulator (thermostat), which switches off the setting link (burner) by breaking the circuit. When the temperature drops again, the whole process is repeated automatically.

Another example from biology: the blood, a regulating value that must be kept constant, contains too much carbon dioxide (interference value). The receptors of the sensor gauge become aware of this and signal the fact to the respiratory center (regulator). This activates the respiratory muscles (setting link), which reduce the carbon dioxide content by increasing their activity. Once the required value has been reached, the signals of the sensors are switched off and breathing is reduced. Every biological control circuit has a large number of sensor gauges that, on the one hand, monitor the physiological processes by acting as proprioceptors and, on the other, signal any threatened or actual damage by acting as nociceptors or pain receptors.

Our entire nervous system forms an unbelievably complicated control circuit. Information travels constantly through the afferent pathways to the center. Corrective orders with the purpose of maintaining homeostasis travel back on the efferent pathways. The returning information will show if the corrective stimuli were adequate. It is hard enough to imagine what takes place (Pischinger) in the interstitial fluid, the cell membrane, and inside the cell during the basic autonomic regulation, to imagine the responses to stimuli that take place to ensure vital functionality. The effort of 40 trillion nerve cells handling the information and regulation exchange in the human organism is beyond our imagination. What a dynamic information service that must be established to enable life! Information has to be gathered, tested, and processed. Virtually every cell sends information that is amplified or inhibited on its pathway to the brain where an impression of the current overall situation is formed. At special receptor sites, information is also gathered about internal and external noxious stimuli, as a consequence, instructions are immediately sent to inhibit these stimuli, to deflect them into harmless channels, or to limit the damage. It is a miracle that we usually take for granted instead of wondering about it.

d) Biocybernetics and its Theoretical and Practical Applications in Medicine

To summarize briefly: cybernetics has evolved a method that proves that despite specific differences, all physical, physiological, and psychic processes are subject to uniform laws. These laws apply to both living and inanimate matter. Living organisms and self-regulating robot equipment such as the computer are based on identical principles of control, coordination, and regulation. They also make use of the same kind of economical feedback mechanisms in which a part of the output energy is returned with inversed polarity to the input side. This also applies to the physiology of the highly complex nervous system, in which there is likewise a continual process of checking and correction of the organs at the end of the line. This is achieved by continual reciprocal action between center and periphery.

Disease symptoms, with very few exceptions, can be regarded as regulatory disturbances and can thus be seen to be a biocybernetic problem. Obviously, as has been stated, these mechanisms play as important a part in restoring disturbed functions to normal as they have in the pathogenic process. In other words: disease is the consequence of a persistent disturbance of the information and feedback mechanisms. It calls for methods of treatment that will be most successful if they can attack the disease that has come into being, at

the point of the disturbance itself, i.e., if they can act directly on the cause. A number of the methods of empirical medicine nowadays explain the way in which they act, by reference to the basic autonomic regulating system (Pischinger) and to cybernetics. By this means, Bayr attempted to interpret homeopathy as a corrective signal effect on the regulating system.

e) Neural Therapy as Regulating Therapy

In the context of neural therapy we are primarily interested in any disturbance affecting the control circuits and control complexes, and in any deterioration in the quality of control and regulation resulting from the influence of outside energy. Seen cybernetically, a focus or interference field is a point of disturbance from which subliminal signals are constantly being emitted at different intensities and frequencies. These signals are stored in the control circuits and put into a pre-excited state. In the first phase this produces periodic deterioration from the "standard" quality of control and regulation, accompanied by an excessive response to stimuli and, if it continues over a lengthy period, exhaustion of the control and regulating systems by aperiodic deterioration and sluggishness of the regulating processes, which may end up in a state of total regulatory paralysis. By means of neural therapy or surgery such interference fields (points of disturbance) can be eliminated and normal conditions of regulation restored.

We owe to Bergsmann the objective evidence on neural therapy according to Huneke, obtained by means of regulatory physiology. As a pulmonologist, Bergsmann collaborated with the manipulative therapist Eder in the study from a cybernetic viewpoint of the effects of neural therapy, acupuncture, and manipulative therapy on functional disorders of the thorax. The various forms of treatment investigated were shown to be different in degree but similar in their ultimate effect. Bergsmann was also the first to prove that the organism's economic balance is restored after successful neural therapy. He wrote that:

> Regulatory instability interferes with the economic principle and requires a disproportionate amount of effort for every task to be performed, due to overreaction by the organism. This results in overstrain, premature tiredness and delayed recovery. Our investigations showed that any correctly used form of regulating therapy, such as the eradication of foci, neural therapy, acupuncture and chirotherapy will increase ergometric performance and reduce recovery time.

Bergsmann's studies showed that focus and interference field form a permanent source of irritation, which places a strain on the regulating system and thus forces the organism to continual compensation. The latent regulatory disturbances do not yet manifest themselves clinically. But the system is unstable and tends to overreact in its countermeasures. The defensive capacity drops to the point where infections of all kinds can become established more easily. Any additional, often banal endogenous or exogenous stimulus (additive stress) may set off an inappropriate regulatory response that can then appear as an illness once the tolerance threshold is passed. This illness will break out sooner or later, depending on the intensity and the degree of instability (time factor). Bergsmann showed how susceptible a system sensitized by an interference field can be and how excessively it can then react. The blood supply can become unstable to such an extent that the slightest contact of a cottonwool wisp on the skin can be enough to set off a circulatory disturbance, which will show on a rheograph (vasal quadrant reaction). Once the interference field is eliminated, this abnormal reaction will cease immediately and become normal again.

Foci and interference fields can also influence any therapy by regulatory disturbances. In other words, a specific therapy can be used successfully only once this cause is eliminated. Similarly, the course of an illness can also be changed by the presence of interference fields. Chronic illness, on the other hand, can in turn favor the development of foci or interference fields. It was also shown that tuberculosis will occur with 87 % probability on the side already subjected to stress by a unilateral interference field. Depending on the magnitude of the stimulus and of acquired or hereditary instability of the control circuits, the segment, the quadrant, the whole side, or a region completely outside any apparent relationship will be affected by the illness.

Neural therapy using local anesthetics has a direct effect on the regulating system, which can be adequately explaned and demonstrated, and therefore confidently regarded as an important part of the medicine of the future. In segmental therapy, we achieve the temporary interruption of pain by means of a local anesthetic at the site of the disturbance. The local anesthetic acts on the cell membranes and also repolarizes cell membranes depolarized by the irritative stimuli. As a result, the feedback between pain and blood supply is broken and the response to the stimulus ceases to be excessive. Further, the hypersensitive, unstable systems working uneconomically are restabilized and their functions normalized. Circuits that have previously been out of tune with one another are again able to work together harmoniously and no longer disturb each other. In this way, not only is pain eradicated well beyond the period that the anesthetic remains active, but inflammatory and degenerative processes can also be healed by this means. With the improved reactive state a new starting position is created.

In the lightning reaction, the laws governing the mutually intermeshed control circuits can be seen even more clearly. According to Pischinger, the first interference-field reactions occur in the cell-environment system. In this, too, the processes run within a closed circuit with feedback. The interference-field effect changes the cell environment in such a way that higher-order neural, hormonal, humoral, psychological, and cellular control systems can also become involved. This explains the diffusion over such large areas of the body of interference signals from what seem to be insignificantly small scars, foreign bodies etc., often to organs in remote locations and finally over the entire organism. In the lightning reaction, these interference signals are extinguished. The additional stimuli again acquire only their normal, ordinary importance and lose their pathogenic powers and effect. In a flash, a chain reaction takes place throughout every single control circuit involved and this immediately readjusts all the required values to one another. There is no better explanation for the sudden, deep-seated change that occurs and that enables the self-healing powers of the organism to become effective again.

4 Ricker's Pathology of Related Structures

Pathology deals with the area where the strongest stimuli take effect.
Ricker

As early as 1905, Ricker's animal experiments led him to the conclusion that the influence of the nervous system on the finest blood vessels, on the capillary bed, must stand at the beginning of every physiological and pathological event. He called his teachings "relative pathology," since he wanted to prove by his theory how every cell is in a dependent relationship to the whole of the organism, that these relationships follow the time sequence nerve→blood vessel (tissue, and that these three components are constantly influencing one another. Neural reactions are faster than physiochemical reactions, but they act on the latter as triggers and as a determinant influence. It is remarkable that he discovered these relationships without having access to the anatomical discoveries made later (P. Stoehr, Jr.) of the extent and ramifications of the autonomic nervous system.

According to Ricker, any change in the capillary bed and the changes in the tissues, fluids, and cells, which in turn depend on these, are more dependent on the magnitude of the chemical, physical, or other type of stimulus than on its quality. The capillary bed consists of arteriole, capillary, and venule and, as we know from Stoehr, is innervated by the terminal neuroreticulum, which thus controls vasoconstriction and dilatation.

Ricker's "three-stage law" states that there is an identical mandatory mechanism of disturbed vascular activity that forms the basis of any local circulatory disturbance, but that this mechanism acts in several gradually escalating stages:

1. Weak stimuli produce vasodilation and acceleration of the circulation (hyperemia).
2. Medium-strength stimuli lead to vasoconstriction to the point of ischemia, and finally, by paralysis of the constrictors, to capillary dilatation and a slowing down of the circulation (prestasis).
3. Strong stimuli cause red stasis, with the formation of inflammatory exudate and the extrusion of red and white blood cells, in most cases leading to necrosis or abscess formation.

In Ricker's view, every pathological bacterial colonization must be preceded by an alteration in the blood flow, accompanied by neurocirculatory tissue changes that must first prepare the substrate for the bacteria. According to this, it is never the bacteria that initiate an illness, but first of all there must be a corresponding disturbance in the autonomic system. When we get cold, get wet feet, start to sneeze, get a sore throat, and then due to the "cold" we get catarrh, angina, earache, bronchitis, or cystopyelitis, we usually hold bacteria and viruses responsible and fight them with the proper medication. And yet, pathogenic agents are always in and around us. They only make us sick if our reactive ability has changed and the tissue is damaged by the environment and, thus, its defensive abilities are weakened.

Ricker dissociated himself quite specifically from Virchow's then generally current and accepted cellular pathology, as he also did from humoral pathology. He rejected any attempt to make the cell, the tissue fluids, or even the nervous system the central consideration in isolation. For him, all decisive physiological and pathological processes occur in the innervated terminal reticulum interposed in the circuit between nerve and cell:

> Against the principle of the cellular theory, according to which the cell receiving a stimulus functions automatically, feeds itself automatically and multiplies automatically, a principle which has resulted in neglecting the behavior of the blood and of the nervous system, we set the view based on observation but which needs to be further developed, namely that all the manifold cell and tissue processes are in a causal relationship with the blood, the reticular system and the rest of the nervous system, of which the neural processes are the first—in time, not in importance—running their course in a variety of ways which depend on the type of cellular or tissue processes involved, and also producing macro- and micro-anatomical changes. (Ricker)

The idea of a "local" disorder thus cannot continue to be upheld. Even a pinprick influences the central nervous system and thus the entire organism. By a summation of subliminal stimuli, a general effect on the vasculature can be induced. Ricker also found that local circulatory disturbances can be set off by reflex action from any other part of the body. Even though he concentrated his investigations primarily on the effects of

neural stimuli upon the periphery, he in no way overlooked the influence of the central nervous system on any trophic and dystrophic processes occurring in the organism in accordance with his three-stage law. For him, as also for Speransky, the part played by the neurovegetative system was a decisive one.

Any unphysiological stimulus that acts long enough and strongly enough will always set off identical initial reactions that depend on its quantitative character. This stimulus is transmitted via the perivascular network and the terminal reticulum (Stoehr, Jr.) directly to the circulation. Moderate stimuli produce a spastic ischemia that still remains within the physiological limits. Strong alarm stimuli and stimuli of long duration can lead to hypostatic hyperemia within a few minutes. This is already a pathological state characterized by the elimination of any response to vasoconstrictor stimuli. This "red stasis" initiates damage to the walls of the fine vessels. They become friable and permeable, so that red and white corpuscles can escape. Finally, it leads to necrotic tissue disintegration or abscess formation. This "neurocirculatory" syndrome naturally also affects the blood picture, serum level, temperature regulation, the acid-base exchange, water metabolism, and other physiochemical constants.

H. Siegen, one of the earliest notable followers of F. Huneke, deserves our special gratitude for his studies, in collaboration with other scientists, on the action of well-positioned procaine injections on the initial reaction in response to a strong stimulus as described by Ricker. In animal experiments he was able to prove:

a. The infiltrated procaine shields the tissues from the alarm stimulus and substantially improves the vasomotor stability of the small vessels, thus clearly raising the tissue resistance. The damaging phase of "red stasis," which regularly occurred in untreated animals could be reliably prevented under the protection of procaine (Plester).
b. If the phase of stasis had already been reached, i.e., if the condition had advanced to a stage that is usually irreversible for the organism, the innervation of the vessels could be re-established with procaine. The usual effects of damage to the vascular walls, including necrosis, could be suppressed (Gross, Schneider).
c. In the Shwartzman–Sanarelli phenomenon, the classic allergy model, it was possible to prevent necrosis, the "damaging allergic tissue shock," if before the intravenous second injection procaine was infiltrated in the area of the intracutaneous first injection. In animal experiments, procaine is thus able to erase the first insult so thoroughly from the stimulus memory that the second insult or trigger factor (Speransky), which would otherwise become pathogenic, remains ineffective. This proves that the "antigen–antibody reaction" cannot be solely the result of humoral sensitization, but that these processes are also neurally controlled and that it is possible to inhibit them with procaine injections at the site of the primary stimulus via the autonomic nervous system (Hirsch, Keil, Muschaweck). We shall return to this point elsewhere.

5 The Russian School: Pavlov, Speransky, Vishnevski, Bykow, etc.

Quidquit fit nervaliter fit (Whatever is done, it is done via the nerves).
Lange

a) I. P. Pavlov

Around 1883, the brilliant physiologist, I. P. Pavlov, further developed the teachings of Setchenov and Botkin. He stated that the nervous system plays a leading part in all physiological processes. In recommending that physiologists should in future concentrate on "extending the influence of the nervous system to as many functions of the organism as possible" he pointed the way in a new and promising direction. Before him, physiologists had regarded the organism as being separate from the conditions of its environment and the whole psychological aspect was similarly kept distinct from the field of physiological observations. Pavlov proved that only the nervous system holds together the many parts of the organism as a viable whole and creates the organism's oneness with its environment. To do so, sensory nerves supply it with impressions of the environment. The purposeful regulation of all vital processes is produced by reflexes via the cerebral cortex and the subcortical ganglia, and beyond these via the whole autonomic nervous system. Every biological process can be disturbed, modified, or inhibited by this system. It is therefore due to Pavlov that we have obtained new insights into the way the living organism functions, beginning with the elementary functions of stimuli, the excitability of living tissue and its ability to act as a conductor, extending to the highest of all the vital expressions of the organism, its psychological functions.

In 1904, Pavlov received the Nobel Prize for his work on the physiology of the digestive glands. His method of studying physiological functions over lengthy periods by observing largely intact and healthy animals led him to understand the internal mechanism of the neural control of digestive activity. His teachings on conditioned reflexes show that conditioned-reflex activity is an adaptation of the whole organism to constantly changing environmental conditions. These experiments finally led Pavlov and his followers into new areas of research, to the study of the physiology of the cerebral cortex and thus to the theory of cerebral activity, which has become one of the foundations of modern medicine:

> I. P. Pavlov observed cerebral activity in its constant movement and development and assumed that the basic processes in the cerebral cortex (excitation and inhibition) are constantly influencing each other. This led to his ideas on the dynamic reciprocal relationships between the cerebral cortex and the nearest subcortical centers, on the reciprocal relations between the first and second signal systems in the human being, on the analytical and synthesizing activity of the cerebral cortex, on the diffusion and concentration of excitatory and inhibitory processes, on the processes of reciprocal induction, and on the movement and development of the basic nervous processes, which are constantly influencing and conditioning each other. (Bykow and Kurzin)

Pavlov himself stated that "the theory of reflex action is founded on the three basic principles of exact scientific research":

a. the principle of determinism, i.e., that there is an initial impetus or cause for any given effect;
b. the principle of analysis and synthesis, i.e., the primary separation of the whole into its component parts or units, and thence the progressive fitting together again of the whole from these units or elements; and finally
c. the principle of structural form, i.e., of arranging the effective forces in space and linking together the dynamic elements within the structure.

Thus, every function, including those of the brain, is brought about by stimuli. The cerebral cortex is the paramount organ for regulating these functions. It constantly analyzes and synthesizes all stimuli impinging on the receptor-nerve equipment of the internal and external receptor. This process occurs in a uniform manner, in a continual and reciprocal relationship, and is mutually conditioned. Cerebral activity thus takes place as a reflex and is tied to the cells of the cerebral cortex. The continual reciprocal relationship of the organism with its environment ensures that brain function is being continually further developed.

b) Speransky's Neural Pathology

Speransky succeeded in elucidating the most complex problems in pathology by accurate experimental analysis. Based on the results of extremely wide-ranging animal experiments he established a number of important theses on the part played by the nervous system in the initiation, development, and course taken by pathological processes. These made it possible for the ideas of nervosism to be taken up by and penetrate into pathology and clinical medicine. According to Speransky, the nervous system controls all the processes that determine the metabolic reactions in every cell and in every organ throughout the organism. Every disturbance of the normal functioning of the nervous system must thus result in the development of disturbances of trophic processes in the cells and organs and hence produce neural dystrophies.

According to Speransky, the nervous system is where, as a matter of course, any stimulus must always attack. This harbors no processes that can occur in isolation from one another. For him the whole of the nervous system is an absolutely closed entity that always reacts to any stimulus as an entity. Any deviation in the nervous system is essentially irreversible. In every case it remains effective for a much longer period and much more extensively than had been previously believed. Every part of the nervous system influences the state of all the cells in the organism and, in doing so, largely determines the intensity of the biochemical reactions that occur in them. His main thesis stated that "stimulation of any portion of the peripheral or central nervous system can become the starting point for processes having a neurotrophic character and induce functional and organic changes."

He considered the spread of stimuli in the nervous system to be a general principle in the pathological process: "disease is the response of the organism to stimuli under the primary influence of the nervous system." All local pathological reactions occur only as a consequence of a general reaction of the entire nervous system. In this, there is first of all the reaction of the organism to the most varied stimuli, and this is identical even in the remotest areas of the body.

The quantitative aspect of the stimulus is always far more important in this than its quality. In other words, it is essentially irrelevant whether such stimuli are chemical, mechanical, thermal, or bacterial. In the original sense of the word, bacteria also act as purely causative elements, i.e., like a starter motor that sets the nervous system in motion. In the beginning, the bacteria initiate the morbid process; later they merely act as indicators.

The best-known of Speransky's animal experiments were those made to produce convulsions, by freezing limited areas of the cerebrum and producing stimuli by pressure on the hypothalamus by means of glass rings, and the reaction to croton-oil dental fillings and other peripheral stimuli. In these, he made a number of observations of considerable significance for us:

a. The stimulus that sets off an illness can start at any point. At that point it may become a "focus," which, after a certain time, can produce a reversal of the entire autonomic nervous system. The autonomic tonus can ultimately be changed to such an extent that it can make it possible for "neurodystrophic processes" completely different from one another to become established, e. g., peptic ulcer, pulmonary hemorrhage, dental decay, corneal ulcer, loss of hair, appendicitis, sinusitis, or gingival changes typical of scurvy or periodontosis. The stronger the stimulus, the greater and more superficial the destruction; the weaker the stimulus, the deeper the pathogenic effect.
   Incidentally, Speransky regarded the term "dystrophic" as meaning more than merely "nutritive," namely as signifying the sum of all regulating impulses. He showed that stimuli determined from central control points can also play a decisive part. The whole autonomic process is thus purposefully coordinated in the diencephalon, more precisely in the hypothalamus, as much in times of illness as of health. All stimuli are fed through this central relay station before passing via the sympathetic nervous system back to the periphery. There they produce tissue reactions, first within the segment of the peripheral stimulus and later also in the corresponding contralateral or other more remote segments of the body.
b. During the initial period the stimulus can be extinguished at its starting point. When this is done, the secondary symptoms will also disappear.
c. However, if a certain stimulus threshold has been exceeded and the pathological process is under way, it can become "autonomous" and proceed independently from the initial "focus," automatically and in constantly repeating cycles. From that time onward, it is no longer possible to separate the initial impetus from the process itself. Even the surgical removal of the focus, which would have helped up to this point, will no longer help now. From now on, the nervous system alone organizes the illness.
   Before Speransky's publications, the importance of the time factor had never been so clearly brought out. After the hypothalamus had been stimulated with a glass ring, the neurodystrophic reactions occurred within hours or a few days at most. He obtained similarly deep-seated changes in the nervous system by the injection of croton oil into the cervical ganglia and with dental fillings containing croton oil. The more peripherally the stimulus was applied, the greater was the interval between

excitation and the appearance of illness (alveolar pyorrhea, keratitis, red infarction of the lung, of the stomach, or large intestine, etc.). The "neurodystrophic standard syndrome" then occurred after a period of latency without apparent symptoms, 1 to 3 months later. If one disregards the time factor, one could easily overlook the causal relationship between croton-oil dental fillings and intestinal bleeding several months afterward. This can certainly be accepted as applying also to human beings and demonstrates to us the often serious late sequelae of the devitalization of a dental nerve in conservative dental treatment. Here, too, the causal relationship with disorders occurring much later and due to an interference field or focus formed by this treatment is only very rarely recognized.

d. The reactions of the animals to the noxious stimuli were totally different from one individual to another: some died, others recovered completely, and some remained completely free from any reaction. Speransky concluded from this that "the stimulus threshold is not a constant value, but is variable according to the individual and the time in question. It depends on the individual's initial autonomic state."

e. The "sensitization," as the change in the excitability of the autonomic nervous system is called, which starts from a "focus" (we now make a clearer distinction between a bacterial, disseminating focus and a neural interference field), can stay quietly lodged for months or even years in the stimulus memory of the autonomic system. Any new stimulus can then act as "second insult" or trigger factor and thus allow a previously latent disease entity to manifest itself. Thus, the relapse mechanism can also be explained by this means: a relapse can be set off by stimuli to various central and peripheral nerve zones if the stimulus memory has retained traces of an earlier pathological process. In such a case the trigger factor, by a summation of the noxious stimuli stemming from the imprints or residues of these past pathological processes, can set off a reaction, the form of which corresponds to the primary stimulus.

   The following is an example of this: an injection of a small quantity of tetanus toxin produces local tetanus symptoms in the homolateral extremity. Approximately 20–25 days after all pathological symptoms have disappeared, a glass sphere is implanted in the animal, in the region of the sella turcica. The irritation this produces in the hypothalamus will normally produce a complex of dystrophic processes in a number of different organs. But in this case, 24 hours after the operation, tetanus symptoms appear, which increase in intensity and finally lead to the animal's death. In other words, it dies of "tetanus" although there has not been any new bacterial infection. What is of importance here is not therefore the pathogenic agent but the stimulus, the reaction of the nervous system to the specific stimulus.

f. Speransky has also become famous for the results he obtained with his → (T) CSF pump. By means of this mechanical, unspecific brain stimulus, he was able to impose a far-reaching central nervous change in the organism. With this it is possible to eliminate either temporarily or permanently certain pathological processes that have already begun. If the body has lost its ability to react normally to the stimulus of certain therapeutic products (e. g., quinine in malaria, Salvarsan in syphilis, salicylic acid in rheumatic conditions), this ability is restored by means of the additional counter-irritant stimulus produced by the CSF pump. The medicament remains the same but the reactivity of the object on which the healing stimulus acts is so altered that it regains its ability to react normally to proven medicines. The CSF pump breaks through the blood–brain barrier, which normally prevents drugs from reaching the cerebrospinal fluid from the general circulation. The German, Reid, found a way for procaine to overcome the blood–brain barrier by injection directly into the cerebral → (T) cistern.

   Whether or not the cerebral massage provided by the CSF pump represents a substantial additional curative stimulus can only be determined by large-scale clinical investigations. It may well be that a disorder that has become autonomous will again prove amenable to procaine at the original site of the interference field after one or more treatments with the CSF pump and that this powerful jolt to the neurovegetative system will make possible a more deep-seated reorientation of the organism than Ponndorf's vaccination, fever therapy, hot baths, shortwave therapy, and all the other reversant methods.

The results, conclusions and teachings of Ricker and Speransky agree in the most important points. The theses they set up and that provide a substantial part of the theoretical basis of neural therapy have not remained uncontested. What teachings in medicine can boast that they have been accepted without contradiction? After Speransky had left the Soviet Union, he published his book, *A Basis for the Theory of Medicine* in 1936 in the United States. For a long time, his work was severely criticized and attacked, not only in Russia. Ritter and Reitter have repeated Speransky's experiments on dogs, but on a very much smaller scale. They also observed the neurodystonic processes that he had reported, but interpreted them as the result of an infection with *Leptospira canicola*. Meanwhile, Reilly and Tardieu have repeated Speransky's experiments on

guinea pigs and cats and have fully confirmed his observations. A work published in the Soviet Union in 1960 by the Pavlov disciples Bykow and Kurzin, on "corticovisceral pathology" again gives full credit and recognition to Speransky's work as the scientific basis for their own work. These two authors merely complain that Speransky did not take Pavlov's work sufficiently into account and reject the conclusion that the nervous system organizes the pathological process. After all that had happened before, this is equivalent to his rehabilitation in Soviet science.

But even if the theories of Ricker and Speransky, which are based on scientific and experimental evidence, and if every hypothesis on which we rely are all denied, there is one glaring fact that cannot be contested: millions of cures that can no longer be denied and that are all the reason that neural therapy needs to justify its existence, for with Nietzsche we can say that "facts are also a form of interpretation!"

Incidentally, Speransky also knew of the work done by Spiess, although this was quickly forgotten again in Germany. From him he also adopted Novocaine as the product for use in his "therapeutic anesthesia." In this, the therapeutic result was, in his eyes, not merely the effect of the elimination of pain. He regarded anesthesia as only one of many neural stimuli capable of facilitating the reharmonization of intraneural relationships. He also discovered that the effect of this stimulus was greater, the weaker the dose.

In his investigations on the importance of neural receptivity in pathology, Speransky proved that the site of administering the tetanus toxin plays an important part in the course that tetanus will take. Its effects are at their most toxic when it acts directly on the receptor organs. Also of interest to us is his statement that tetanus does not occur if the toxin is injected together with Novocaine. He concluded from this that Novocaine (procaine) is able to reduce the sensitivity of the receptors. I am more inclined to the view that the toxin creates a massive interference field by its strong local effect, in allowing the tissue potential to collapse unphysiologically, severely, and for a prolonged period. With the changes that occur in the membrane potential of the nerve fibers, rhythmic discharges of current take place and strong neural disturbance impulses are thus emitted with a destructive alarm-code message. What creates the dangerous reaction is simply the response to this strong neural stimulus and the faulty information it carries. If procaine is injected at the same time, the normal potential is maintained or immediately re-established if any depolarization has occurred. Thus, no interference transmitter for false stimulus messages can be formed and the tetanus cannot manifest itself. At the end of his book, Speransky writes: "In conclusion, I consider it mandatory for the medical profession to adjust the common attitude toward the method of Novocaine block." This statement holds true to this day.

c) A. W. Vishnevski

Vishnevski, in his animal experiments, severed the sciatic nerve and infected its proximal end with pus or produced some other irritative stimulus on the nerve. Here again, surprisingly, the weakest stimuli proved to be the most effective! About 2 months later, independently of the surgical lesion, ulceration appeared on the same leg, and subsequently also on the other. Here, too, removal of the primarily irritated nerve ending was able to stop the process only at the initial stage. Once the process had become autonomous, it proved no longer possible to influence it from there. Even if one ought not to generalize unselectively from separate observations, there are nevertheless some striking parallels here with the appearance of eczema, furunculosis, psoriasis, and a number of other skin diseases. We are indebted to Vishnevski for the technique published in 1948 for the injection to the → (T) sympathetic chain at the level of the upper kidney poles. He proved the regulating influence of this anesthetic technique on tissue trophism, since he was able to use it to cure a large number of different pathological conditions, from otitis media to gangrene of the lung.

d) K. M. Bykow

Bykow set himself the task of investigating "higher cerebral functions" in the human being. For this he began from Pavlov's teachings on conditioned reflexes, but he included in his neuropathological observations all autonomic and organic changes that can be produced by the psyche via the emotions. Thus, he went a step further than Ricker and Speransky and entered the field that we define by the collective term of "psychosomatic" (soul and body) problems.

Bykow was able to show that it is not possible to distinguish between neurotrophic impulses and other regulating and driving impulses. In his view the decisive neurotrophic impulses originate in the cerebral cortex, whilst the diencephalon is only of subordinate importance. This is to say that the cerebral cortex processes all the impulses coming from within and from without the organism and then switches the individual organs and organ systems on and off as required, and coordinates their activities in a balanced fashion. According to Bykow, the reflexes emanating from the diencephalon to regulate these processes are also subject to cortical control.

The Russian school found independently that Novocaine (procaine) has a favorable effect on the relations

between the cortex and the sub-cortex and that it is able to promote the re-establishment of the disturbed corticovisceral dynamics. According to the view of these Russian researchers, the nature of the procaine effect is connected with two physiological moments, "namely with the inactivation of the nerves and with the stimulus. The first moment is effected by interrupting the impulses during anesthesia, the second by the effect on the general trophic regulatory activity of the nervous system, which reacts to the Novocaine treatment of the nerve as to an active process, i.e., as 'irritative stimulus'" (Wedenski). Thus, these Russian researchers fully confirmed the observations by the Huneke brothers that a correctly sited anesthetic is able to guide pathological reflexes and hence pathogenic disturbances in the neurovegetative system into desirable channels.

Soviet medicine has made practical use of these theoretical discoveries by its scientists. With their local procaine injections and with their injections to the sympathetic chain they are practicing neural therapy in our sense of the term. Thus, amongst other things, they draw attention to their clear achievements in the prophylaxis and treatment of → shock during World War II. For the forces that become effective in shock they assume a complicated neurodystrophic complex, which it would be difficult to explain fully. But this has not prevented them from treating shock successfully with procaine. They believe that they can prove by impressive statistics that compulsory procaine shock prophylaxis prescribed in the Red Army has alone been responsible for saving the lives of very large numbers of soldiers.

Further, the work of the Romanian school around Professor Aslan, who is known to use procaine successfully in geriatrics, is based largely on the work of Pavlov's pupils. They are a valuable extension of the basic research on the subject. However, we cannot always accept Professor Aslan's conclusions. We shall deal with this subject more fully in the chapter on "Rejuvenation through Procaine?"

6 Of Pain, Inflammation, and the Axon Reflex

The pains it is I call to aid. For they are friends, sound their advice.
Goethe (*Iphigenia*)

Pain is in many cases a friend and a warning that points out dysfunctions to us. But, in addition it can also further the pathological processes or even become an illness in itself. In such a case its elimination acquires etiological importance. Leriche even described pain as a "superfluous plague of mankind." Considered from a cybernetic standpoint, pain points to a functional impairment or a threatening functional disturbance, where a discrepancy has appeared between effective and required values, which then acts as a disturbance to orderly vital processes. The pain process is a chain of physiological reactions. Pain is produced when specialized receptors, so-called nociceptors or their afferent fibers are excited by specific stimuli or by the summation of unspecific stimuli. At the periphery, pain produces vascular and tissue reactions, which may progress to inflammation. The irritation is relayed by the A-delta and C fibers via the synapsis to the posterior-horn neurones of the spinal cord. This has spinobulbar relay centers for protective and defensive reflexes ("fight or flight" reactions), such as defensive movements or the corneal reflex. The pain stimuli transmit this information further to the midbrain. In the thalamus all reflexes of the neurovegetative internal system and of the peripheral sensory animal environmental system are collected and modified individually.

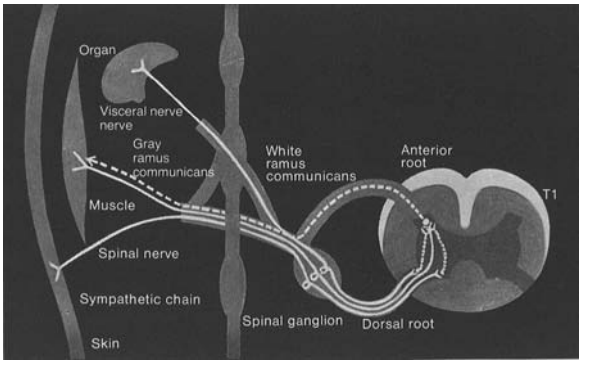

Fig. 1.**2** The pain pathways in the skin, the deeper layers and the viscera (according to Hansen and von Staa).

The reticular formation is a relay center that coordinates the afferent stimuli to purposive efferent motor and autonomic action and adapts them to extra-reticular processes. In the hypothalamus there are autonomic control centers that also regulate hormone production (e. g., ACTH and endorphines). The information is ultimately transmitted to the cerebral cortex, where the pain becomes a conscious, affective experience. The pain tolerance may be lowered by fear, depression, grief, loneliness, and sleep deprivation. Where as autosuggestion, affection, hope, and sleep may increase it. Depending on the anatomical circumstances, there are two genetically different types of pain origin:

a. Pain due to outside factors, produced when the receptors available (as in the case of wounds, heat, cold, chemical irritants etc.) are directly stimulated. It generally manifests itself as a continuous pain.
b. Pain due to internal causes tends to have a more variable character and to come in surges. The stimulus travels from its point of origin in the internal organ to its respective paravertebral ganglion of the sympathetic chain and then via the rami communicantes together with the segmental nerve to the posterior horn of the spinal cord. Now the transmission to the thalamus, as described above, takes place. It is accompanied by information from skin and muscle areas that are supplied by the same spinal cord segment, which allows for the projection of internal organ pain onto these skin and muscle areas (see Fig. 1.**2**). In addition, a transmission to the intermediate zone of the spinal cord takes place. From there, efferent fibers travel via the rami communicantes to the ganglion of the sympathetic chain. After being relayed, the fibers end in these skin and muscle areas and initiate reflex responses in the relevant vessels (see Fig. 1.**12**, p. 64). If a sensory autonomic nerve fiber is irritated, a reflex is set off that modifies the blood supply. With moderate stimuli, there is a vascular spasm (as in ischemic muscular pains), whilst stronger stimuli cause dilatation (inflammation). When the tolerance threshold of the circulatory-sympathetic system is exceeded, pain is produced. Kulenkampff stated that "there is only one system that can be regarded as the carrier of what we call pain: the sympathetic system."

Pain can excite the motor and autonomic nerve fibers to such an extent that they respond with the contraction of the adjacent musculature and with vascular spasm. The reduction in the blood supply then continues to lower the irritation threshold of the sensitized nerves and receptors even further until pain, muscle contractions, inadequate blood supply and hence metabolic disturbances in the tissues, and increased pain, combined with reduced defensive capability interact in a vicious circle, which prevents or at least delays the autogenous healing process.

As long ago as 1906, Spiess drew attention to the fact that inflammation of all kinds can be arrested and healing accelerated by local anesthesia. Bruce proved that the inflammatory reflex set off after excitation of the sensitized nerve endings is not dependent either on the central or the spinal channels but that it must originate in the peripheral nerve itself. He concluded that the sensitized nerve fiber divides distally from the ganglion and that one branch then leads to the skin, the other to the blood vessels. In an inflammatory reaction, the pain stimulus thus directly sets off vascular dilatation, permeability of the capillary walls, and all the other processes that then produce the classic signs of inflammation. Since the inflammation in its turn brings with it additional pain, the process escalates continually. This reflex, which leads to the vicious circle already referred to, is known as the short-circuit or axon reflex.

It is now generally assumed that the sympathetic system plays a leading part in the origin and conduction of pain, and in its elimination as an experienced phenomenon. According to Pischinger, there is a direct synaptic link only in the case of the muscle cell. Elsewhere, the stimulus is transferred from the physical to the chemical medium and can pass into the basic autonomic system only by this means. In doing so it can be modified. Thus, the cell is not an isolated, independent structure, as Virchow regarded it, it is non-autonomous and is viable only in conjunction with other cells. Since every part of our organism is inseparably connected with every other and is dependent on all the others, any disturbance in one part of it inevitably produces disturbances also in the whole autonomic structure. The unimaginably complex unifying and guiding principle that connects all the cells in the human body and that comprises body and psyche uses the neurovegetative (including the basic autonomic) system as the instrument by which alone the miracle of life is made possible. But the living organism is subject to laws that can never be fully comprehended and measured by science. Pain and illness are modifications of this living organism.

If, by involvement of the psyche, pain is then moved unconsciously and unintentionally into the center of the stage, it can only be augmented and fixed in the psychic component. Finally, the fear of pain can no longer be separated from the pain itself. Pain is always something very relative. I once told a woman patient under hypnosis that she no longer had any feeling in her body. She believed this and the surgeon was able, without any additional anesthetic, to remove her appendix painlessly. A toothache at night can drive us insane. In the dentist's waiting room early next morning it diminishes to the point where we are almost ashamed to have made such a fuss. During the night, the pain held the center of the stage and this enabled it to assume gigantic proportions. Distraction and the prospect of early relief reduce it to its proper, bearable magnitude.

One of the physician's finest and noblest tasks is to relieve and eliminate pain. Someone who can do this well is a good doctor! For the neural therapist it is not too difficult to break the pathogenic chain attached to pain and thus to induce the healing process. This is also true of the numerous cases where pain sets off reactions that go beyond its function as warning signal, as, for example, in trigeminal neuralgia or in the painful immobilization of extremities after injury beyond the necessary healing period. In all these cases an accurately placed anesthetic at the point where there is a loss of function is an important component of this therapy and, with regard to psychological processes, it is also psychoprophylaxis and psychotherapy, without the need to resort to the term "suggestion" for this. It is a fact that the neural-therapeutic effect is one of normalization that re-establishes the autonomic equilibrium, that this effect lasts considerably longer than the temporary numbness caused by the local anesthetic, and that it manifests a curative action that cannot be explained from a purely pharmacological standpoint alone.

The relief of pain is often in the forefront of our efforts, but it is by no means the main purpose of neural therapy. It would be to underestimate its importance if one were to assume that our therapeutic scope is exhausted merely in relieving pain. Pain is only one of a number of means whereby a disturbed bodily function can express itself, even if it is a frequent and an impressive one. To us, pain is a good indicator, for it proves to us by its disappearance that our efforts have been correctly applied and provides us with the opportunity to intervene in a truly regulatory manner in the disturbed neurovegetative system.

7 Theories on Pain and the Effects of Anesthesia

The vital processes undoubtedly run their course according to certain laws, but the means available to us are incapable of recognizing these laws.
Much

The nerve cell consists essentially of a cytosome with its nucleus and of fibrous processes (one axon and several dendrites). In the past it was assumed that the cell was supplied only from without and that the nerve fibers merely had the function of electrical leads. Modern neurobiology has revised this picture. We now know that the nerve cell is a minute but very powerful computer, which not only transmits information but also coordinates all bodily functions. In doing so, it gathers intelligence in the form of experiences, which is then stored in its stimulus memory. The nerve cell is an active building block that can produce and transport materials and that, in an emergency, can even repair itself. From all the materials available it carefully selects only those that it needs for its own requirements. From these it continually produces in the body of the cell the material it needs for its own maintenance and function. This material has about three to four times the volume of the cell itself. From this it is possible to conclude that the process of excitation uses energy and is subjected to attrition losses that must be constantly replaced. A continuous stream of neural material moves the nerve-fiber membrane and the whole of the neuroplasma column with all the organelles it contains (mitochondriae, tubuli, filaments) at a speed of 1–3 mm per day from the cell itself out to the fiber-end zones. But apart from this there is also a much faster supply stream for particle-specific neuroplasma components, which moves at 40–70 mm per day, including transmitter substances and phospholipids.

These two supply systems moving at different speeds ensure that all the chemical building blocks arrive at their destinations at the right time. The same also applies to the transmitter substances (e. g., noradrenalin) that are given off during the excitation process into the cell's environmental system or into the synaptic gap. The electrical excitation can be transmitted by one cell to another only by means of chemical processes. Thus, the nerve cell is not a stable structure, but rather subjected to constant change. Its metabolism can also be influenced from without. We know that the antibiotic Actidion can cause the slower of the two supply systems to stop, whilst the alkaloid colchicine halts the faster of the two. Amongst local anesthetics, procaine does not interfere with this important transport of building blocks in the axons, whilst lidocaine (Xylocaine, Xyloneural), like the hallucinogenic drug mescaline, acts as inhibitor to these supplies. This doubtless also has a negative effect on the functional activity at the synapses (G. W. Kreutzberg).

M. Zimmermann states that long-term disturbances of the neural and humoral regulation will also cause disturbances of the axoplasmatic transport. This will lead to relay changes in the synapses of the posterior horn and can become the origin of faulty motor and synaptic reflexes. Vasoactive substances, for example the polypeptide Substance P, are released from sensory nerve endings in the skin, internal organs, and the teeth. Some of the sensory nerve fibers transport the substance from the spinal ganglion to the periphery where it is secreted. At this point, it presumably regulates the microcirculation and the vasopermeability. An adaptive regulation through Substance P has to occur if a nerve lesion interrupts the substance transport. The axoplasmatic transport includes substances that the nerve fibers absorb from the outside, including toxins (tetanus), viruses (herpes), as well as medication.

The peripheral autonomic fibrils in the human organism are unimaginably fine, having a thickness of only 0.002–0.01 mm. What happens in these extremely fine conductors is still only vaguely known, but we do know that within they have a negative electrical charge and outside they are positively charged. In between lies a surface membrane that normally provides perfect insulation. It is thought probable that the limiting surfaces of the nerve fibers at rest are impermeable and that the sodium, potassium, and hydrogen ions are in equilibrium. When this is the case, the electrical potential of the cell membrane is very high. The concentration of potassium ions within the cell is about 20 to 40 times greater than in the extracellular space. This concentration differential is the reason for the high electrical potential of the membrane, amounting to about –40mV to –90mV in the case of nerve and muscle fibers.

Seen in this light, the cell is a kind of potassium battery, which can function only if it is continually able to take up potassium ions. Oxygen metabolism, glycolysis