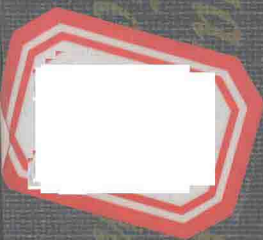


WHITE
and
SWEET

PAIN

*Its Mechanism
Neurosurgery*



THOMAS

P A I N

Its Mechanisms and Neurosurgical Control

By

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This book is dedicated to
SIR GEOFFREY JEFFERSON
and
WILDER PENFIELD

*two neurosurgeons from whom
we have learned so much that
we hold of value in the science
and art of neurosurgery*

FOREWORD

By

SIR GEOFFREY JEFFERSON, C.B.E., F.R.S., F.R.C.S., F.A.C.S. (HON.)
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IT IS NOT DIFFICULT to think of the names of diseases which are unaccompanied by pain, but there are few indeed which do not cause at least discomfort which is, in a way, a diffuse or local but minor form of pain so thin that the sufferer does not use the word "pain" to describe it. On the other hand there are few affections which do not have painful phases or give rise to pain by means of secondary and local pathological alterations. In many pain is a characteristic without which the diagnosis can scarcely be made and without which the clinician feels that he has been cheated or misled. This book written by two men whose previous publications have held our attention by their close observation, by their critical analyses and by their accurate recordings is directed to those conditions in which pain has got out of hand and cannot be relieved by more moderate means than surgery in one form or another. We have long passed the stage when we believed (if many ever consistently did) that pain is a scourge directed to the purging of man's sinful existence, or a test likely to improve his character, for too often it has the reverse effect.

Sensation in general, with pain as a part buried as it were in it, remained for a long time a difficult subject for practising doctor and for physiologist. Until it had been broken down, until its components had been identified in much the same sense as that in which the chemists broke down seemingly homogeneous substances into several different ones in combination, confusion reigned. But once order had been found perhaps we got too simple an idea of what pain is, neglecting its differences in different sites, "what it feels like" here or there. How few of us have given the subject the concentrated attention that it deserves!

We should I fancy be very wrong if we thought that some modalities of sensation were in themselves of a higher order than others. Man with his relatively hairless skin and his power of describing roughly what he feels is obviously a better subject for sensory tests than is a furry animal or a fish. Man is higher in the scale because of his brain, not because of his skin. We do not know what animals feel and we are more likely to be wrong than right if we credit them with too little. I mention these reflec-

tions because I was myself taught under Sir Henry Head's influence at a period when pain was regarded as a low or primitive type of feeling, more suitable for lower creatures than for man. Yet one does not need to be widely informed in biology to know that a light touch can be not only a vitally important defensive attribute but also be of acquisitive use to very primitive life forms for the prehension of food. Many animals if they have neither smelled, seen, nor heard an approach move with startling suddenness at a touch. If the intruder is an enemy they will already have waited too long, but if they stayed until they felt pain they would indeed have delayed fatally.

It will not do then to regard pain as a debased sort of sensation. It can be elicited, as all the world knows, in many different ways and to have shadings and overtones which are beyond the powers of our vocabularies to describe. This may be partly because pain itself is a compound or, to change the metaphor, has a spectrum, being mixed with other sorts of feelings that are unpleasant without ranking as pain in the sufferer's mind—if he can be got to analyse his discomfort and describe it — a rare event.

However that may be, this book is concerned with pain not as a warning signal but with pain as an enemy that can be defeated. Medicinally unrelievable pain works to such a degree on man's emotions, so reduces his usefulness to himself and others, so saps his morale that we must rehabilitate him if we can. An authoritative book like this on the means by which to do it is invaluable. Its virtue is that it has been written out of rich experience. This is no "scissors and paste" affair. On the contrary, the writers only give their approval to such operative steps as they have themselves treated and have found to fit the case. I am happy indeed to write a few words of introduction for a work by two men whose friendship I value and whose intellectual integrity is well known to all. Their opinions will be welcomed wherever surgeons, and in fact any medical men, are faced with the difficult problems brought up by unrelievable pain. And in what country are there not such cases and their consequent conundrums?

GEOFFREY JEFFERSON

Manchester, England

PREFACE

IN THE PREPARATION of a monograph on the surgical control of pain, as in reaching an understanding of the emotional factors which beset its victims, the surgeon must have the help and advice of a wise psychiatrist. We have been particularly fortunate in both these respects in having the collaboration of Dr. Stanley Cobb, former Chief of the Psychiatric Service, and his associate, Dr. Frances J. Bonner. During the six-year preparation of this manuscript they have advised us on many of our more difficult patients, they have studied all individuals before and after resort to surgery on the frontal lobes, and they have written the principal portion of the two chapters dealing with the psychological aspects of pain and its modification by psychosurgery. We feel that, without such help, any book written from a purely surgical viewpoint would lack an all important fundamental perspective.

Preparation of this manuscript was started in 1946 at the end of the war. It has proceeded slowly, thanks to the patience of Mr. Charles C Thomas, because on numerous occasions, when the work seemed nearly complete, it was held up in order to obtain further data and then submitted to repeated revisions.

The 420 patients suffering from persistent severe pain whose case histories are recorded in this volume were mostly operated upon in the 15-year period from 1935 through 1949. A number of patients with cardiac pain are included from before 1935, in fact, as far back as 1927, when the senior author was a member of the general surgical staff. Few case histories of 1944 are used, as both of us were away on military service during that year. As a general rule we have not utilized our clinical material from 1950 on, as we have wished to have a longer period of follow-up. A few patients operated upon during the last two years have been included if of special interest or needed to make up an adequate series of cases, but only when the end results have been clear cut. The need for long periods of post-operative observation was borne home forcefully to one of us after an article he wrote (Sweet, 1947). Out of three individual case reports therein related to non-fatal disorders there was recurrence of pain in two of the patients shortly after the article was published; yet both of these patients had been relieved for over a year postoperatively.

While a large proportion of this case material is made of our own patients there are also included a considerable number treated by Drs. William Jason Mixter, John S. Hodgson, Jost J. Michelsen, Hannibal Hamlin,

H. Thomas Ballantine, Bertram Selverstone and Reginald H. Smithwick. Others have been operated upon by our residents. We wish to express our great indebtedness to all these past and present members of the Massachusetts General Hospital staff for their kindness in giving us complete access to their records. We are also grateful to G. Hurford, Esq., house governor of the Queen Elizabeth Hospital in Birmingham, England, and to the medical services of the U. S. Navy and Veterans Administration for permission to include many of the cases reported below.

We are likewise indebted to many other individuals for assistance in the preparation of this manuscript, particularly to our secretaries, Miss Lucy Allen, Mrs. Valerie Riddell and Mrs. Julia W. Stickley; to Mrs. Muriel McLatchie Miller and her associates, Mrs. Edith Tagrin, Miss Wilma Riley and Mrs. Janet Desley for their excellent drawings; and to the Photographic Department of the hospital for reproducing the other figures. Drs. Ralph Hawkins and Richard G. Nilges spent many hours of extra duty during their residencies in the detailed examination of patients after cordotomy and Mr. Elias C. Dow spent a summer vacation while in Tufts Medical School obtaining follow-up information on these patients.

Further acknowledgments are due to numerous medical journals and society transactions that have permitted us to utilize data which we had previously reported in their publications. In this respect we are especially indebted to the Macmillan Company, the Association for Research in Nervous and Mental Disease, and to the editors of *Medicine*, *Annals of Surgery*, the *American Journal of Surgery* and *Brain*.

Last but not least, we desire particularly to thank the trustees of a certain foundation for medical research that wishes to remain anonymous. Their generous grants have defrayed the entire expense incurred in the preparation of this book.

JAMES C. WHITE, M. D.
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