

Mysterious Waters to Guard

Essays and Addresses on Anaesthesia

BY

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MYSTERIOUS WATERS TO GUARD

To

SARA BEATRICE McGILLIS

My Wife

"O stream!

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Whose source is inaccessiblely profound,
Whither do thy mysterious waters tend?
Thou imagest my life. Thy darksome stillness,
Thy dazzling waves, thy loud and hollow gulfs,
Thy searchless fountain, and invisible course
Have each their type in me: And the wide sky,
And measureless ocean may declare as soon
What oozy cavern or what wandering cloud
Contains thy waters, as the universe
Tell where these living thoughts reside, when stretched
Upon thy flowers my bloodless limbs shall waste
I the passing wind!"

Alastor; or, the Spirit of Solitude.

Percy Bysshe Shelley.

FOREWORD

I am especially honoured and glad to be invited by my good friend Wesley Bourne to write a "Foreword" for his book "Mysterious Waters to Guard". Dr Wesley Bourne is indeed one of the most eminent pioneers of modern anaesthesia. He has devoted his life and activities to this most important branch of applied pharmacology, without which the spectacular advances of surgery would have been impossible. Until the pioneering work of Wesley Bourne, little was known about the physiology and pharmacology of modern anaesthesia.

This book presents a most interesting survey of the major developments and advances of anaesthesia as a science during the last decades.

In collecting his essays and addresses, and pointing out the pharmacological and clinical properties and aspects of anaesthetics, Wesley Bourne covers, indeed, a large field of anaesthesia. The reader will also be very much impressed by the trends in the philosophy of life and pain upon which the understanding of anaesthesia rests in this book.

Hence, quite apart from satisfying his scientific curiosity about anaesthesia, the reader can take satisfaction from the fact that the work (and presentation) of Dr Wesley Bourne has largely contributed to the well-being of man.

C. HEYMANS

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PREFACE

Nor saint nor sage could fix immutably
The fluent image of the unstable Best,
Still changing in their very hands that wrought:
To-day's eternal truth To-morrow proved 430
Frail as frost-landscapes on a window-pane.

The Cathedral.

James Russell Lowell.

In our philosophy of life, no longer ignoring the ceaseless operation of environment and realizing that the ways of the universe are difficult of interpretation, well may we be sure that the wonders continually occurring in and around the living cell will not soon be entirely solved. Within and around the cell the mysterious waters tell their ineffable tale but slowly. Although many of the activities in these waters have been explained by the biochemist, yet other innumerable activities remain obscure and, as all of them undoubtedly are of vital importance, it seems wise that these waters be guarded, so perhaps to influence their ripple or even surging sea, not only in health but also when drugs that are given inevitably ruffle the harmony. May this be an explanation of the title chosen for this book of collected essays and addresses.

Archaeologists, contributing to the history of history, have told us that in the fourth millennium B.C., the scribes of the "Sumerians", a strange Asiatic people, made wedge-shaped scratches in little lumps of clay and baked, setting forth their laws and transactions, helping to hold the Mesopotamian world together (515). Not less than they may we make record of events and their significance through current devices in literacy. Let us be wary lest our inscriptions last not so long as those in cuneiform of Babylonia. Let us be wary too that not less human interest attaches to our writings. Even in these early times mention was made sufficiently to suggest that man has ever sought relief from pain.

All through the essays of this book runs the theme of alleviating suffering, and it may be seen that, in the realm of anaesthesia, there is an evolutionary development not unlike that which is so clear in "the continuity between inorganic, biological, and social order"; and "similar in nature to the transition from lifeless proteins to the living cell." (421) Evolution from the non-living to the living. Indeed, it may be seen that narcosis has evolved from the simple dropping of ether on to a gauze mask held over the patient's face even up to a consideration of the influence of anaesthetics upon enzyme activity. Further

similitude may be found in the words of Herbert Spencer (525); "In all evolution, inorganic, organic and super-organic (Language, Science, Art and Literature), change in the arrangement of Matter is accompanied by a parallel change in the arrangement of contained Motion; every increase in structural complexity involving a corresponding increase in functional complexity." We may be sure of increasing knowledge as the *Regnum Dei* gains ground on earth.

While science, as it is ordinarily understood, did not appear as an entity until toward the end of the seventeenth century; while "its birth and major development took place, as the eminent Spanish philosopher, Jose Ortega y Gasset, has brilliantly noted, in a small quadrilateral bounded by London, Berlin, Vienna, and Paris, under special circumstances;" (530) it was near the middle of the nineteenth century before that small part which has to do with anaesthesia became manifest. Even now science continued to make great strides despite the times of marred general understanding. But anaesthesia advanced slowly during the following sixty years, although there were sporadic important additions to our knowledge of the subject, some of which are recounted in the essay, *Wise Indifference of the Wise*. Increasingly, ever since the first decade of this century, interest in anaesthesia has grown, and has borne such fruit that laboratory investigation has improved immeasurably and the field of surgery has become enormously enlarged. Throughout, notwithstanding the many veritable evidences of growth and stability in the structure of anaesthesia, change has been constant and one sees the *fluent image* appearing frequently.

Here and there in these essays thought, the *ultima Thule* in the problems of function, is eulogized and, just now, it is not inapposite to point out that Emerson (384) developed "the sentence from Parmenides that he copied into his journal in 1830 - 'Thought and the object of thought are but one.' " Earlier in the same chapter, Matthiessen states that "the epitome of Emerson's belief is that 'in good writing, words become one with things.' " He also states; "Coleridge has declared, 'I would endeavour to destroy the old antithesis of Words and Things: elevating, as it were Words into Things and living things too.' " Again, Wordsworth "could tell De Quincey that this language 'should not be 'the dress of thoughts', but 'the incarnation of thoughts,' the thought itself made concrete.' " Yet again, Carlyle enunciated; "Poetic creation, what is this but *seeing* the thing sufficiently? The *word* that will describe the thing, follows of itself from such clear intense sight of the thing." Matthiessen further relates that Ellery Channing, irritated that Thoreau jotted down notes on their walks, said petulantly, 'I am universal; I have nothing to do with the particular and definite.' But Thoreau's answer was that he also wanted to record something beside details; 'Facts which the mind perceived, thoughts which the body

thought, – with these I deal.’ There could hardly be a better definition of the way whereby he spanned the gap between the idea and the object.” *Thought alone is eternal*, and one is reminded of Shelley’s lines;

. . . Thought 795

Alone, and its quick elements, Will, Passion,
Reason, Imagination, cannot die;
They are what that which they regard appears,
The stuff whence mutability can weave
All that it hath dominion o’er, – worlds, worms,
Empires, and superstitions. What has thought
To do with time, or place, or circumstance?

Hellas; A Lyrical Drama.

Thus it is that the physician – even the physician-anaesthetist – ought not to allow himself to become too fond of any one drug, or too enamoured of a particular appliance. He should eschew the routine, and, being familiar with all of the agents and all of the methods, he should, with *thought* of the patient’s condition and of the surgical procedure; with careful thought of these, he should make percipient choice from among the drugs and, as well, from among the methods of their employment.

Furthermore, the anaesthetist should be able to change momentarily from one drug, or method, to another; and he should be able to combine drugs, or methods, as he sees fit, in the interest of the patient. He will do well to remember what Alfred North Whitehead (611) said; “Now it is the beginning of wisdom to understand that social life is founded upon routine. Unless society is permeated, through and through, with routine, civilization vanishes. So many sociological doctrines, the products of acute intellects, are wrecked by obliviousness to this fundamental sociological truth. Society requires stability, foresight itself presupposes stability, and stability is the product of routine. But there are limits to routine, and it is for the discernment of these limits, and for the provision of the consequent action, that foresight is required.” John Dewey (190) has written that, “Even to-day to speak of a physician as an empiricist is to imply that he lacks scientific training, and that he is proceeding simply on the basis of what he happens to have got out or the chance medley of his past practice. Just because of the lack of science or reason in ‘experience’ it is hard to keep it at its poor best. The empiric easily degenerates into the quack. He does not know where his knowledge begins or leaves off, and so when he gets beyond routine conditions he begins to pretend – to make claims for which there is no justification, and to trust to luck and to ability to impose upon others – to ‘bluff’. Moreover, he assumes that because he has learned one thing, he knows others – as the history of Athens showed that the common craftsmen

thought they could manage household affairs, education, and politics, because they had learned to do the specific things of their trades. Experience is always hovering, then, on the edge of pretence, of sham, of seeming, and appearance, in distinction from the reality upon which reason lays hold." Continually medical men generally must fight against the dangers of empiricism. More specifically, "It is true for Anaesthesiology as for any other profession that *service* must be leavened with progressive thought." This is the opinion of William T. Salter (496), Professor of Pharmacology of Yale University.

Like a running stream, change goes on and on. Change is universal in time and place. One may fully appreciate *The fluent image of the unstable Best*. Even of the human mind, Sir Charles Sherrington (512) says, it "is part of a tide of change which, in its instance, has been latterly and, we may think, still is, running like a mill-race. Living things are all the time busy becoming something other than what they are. And this, our mind, with the rest. It is being made along with our planet's making. We do not know that it ever will be finished. We see it as a provisional *ad hoc* arrangement of the present. Often will it be reminded of this when prosecuting its latest task of establishing the 'values'." It may be sufficient to say that *time; the refreshing river*, has brought us such change that, were Lucretius alive, he would revel in the atomic concepts of to-day. It seems fitting to conclude, therefore, with his words from the *de rerum natura*, as they may be found not ponderously impertinent to the theme of the epigraph from Lowell;

. . . : omnia migrant,
omnia commutat natura et vetere cogit.
namque aliut putrescit et aevo debile languet,
porro aliut succrescit et e contemptibus exit.
V, 830

(All things depart;
For Nature changes all, and forces all
To transmutation; lo, this moulders down,
Aslack with weary eld, and that, again,
Prosper in glory, issuing from contempt.) (421)

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SOME RECENT ADVANCES IN ANAESTHESIA: PRESIDENTIAL
ADDRESS, ASSOCIATED ANAESTHETISTS OF THE
UNITED STATES AND CANADA, 1925 ^{1, 2}

Although this address possesses a somewhat definite title yet I am bound to perform a duty, which as it accounts for, so it justifies the happy necessity of momentary diversion from our subject. The first part of this duty is to return you my thanks for the great honour which you have conferred on me. I can assure you that it was wholly unexpected. I gratefully accept the office to which

¹ Read during the Fourth Annual Congress of Anaesthetists, The Associated Anaesthetists of the United States & Canada and the International Anaesthesia Research Society in Joint Meeting. The Breakers, Atlantic City, May 25–28, 1925 ³.

² Appeared in *Anaesthesia and Analgesia* October, 1925.

³ At the time the author was honoured and the following is taken from *Anaesthesia and Analgesia*, June, 1925, Vol. 4, p. 130:

A BUILDER OF BRIDGES

At the Annual Dinner during the Congress of Anaesthetists a silver cup was presented to Wesley Bourne, M. Sc., M.D., Organization Secretary of the Canadian Society of Anaesthetists (1920–1923) and President of the Associated Anaesthetists of the United States and Canada (1925–1926) in Appreciative Recognition of Meritorious Research in the Science and Practice of Anaesthesia and Splendid Service in Advancing the Organization of the Specialty. In presenting the loving cup Dr. F. H. McMechan, Secretary General, alluded to Dr. Bourne as a Builder of Bridges and quoted the following from one of the poets;

"A traveller, going a lone highway,
Came at the evening, cold and grey,
To a chasm vast and deep and wide.
The traveller crossed in the twilight dim,
The sullen stream had no fear for him;
But he turned when safe on the other side
And built a bridge to span the tide.
'My friend,' said a fellow pilgrim near,
'You are wasting your strength with building here;
Your journey will end with the ending day,
You never again will pass this way;
You've crossed the chasm deep and wide;
Why build you this bridge at eventide?'
'Good friend, in the path I have come,' he said,
'There followeth after me today,
A youth whose feet must pass this way,
This chasm that has been as nought to me
To that fair-haired youth may a pitfall be:
He too must cross in the twilight dim –
Good friend, I am building this bridge for him!'"

Nothing could be finer for all of us than, like Dr. Bourne, to be builders of bridges to the coming generation of anaesthetists.

I have been called and I fully purpose to do all in my power to the welfare and credit of The Associated Anaesthetists. You have done more than confer an honour on me, for with your customary generosity you have given preference to an associate of McGill University and a member of the Canadian Society of Anaesthetists, in other words, to a Canadian. It is by no means the first occasion on which you have bestowed your best decorations on others than those of your own great country.

THE ASSOCIATED ANAESTHETISTS

The *second* part of my duty, is to make mention of our parent society – The Associated Anaesthetists of the United States and Canada. It has not been long that the anaesthetists of this continent have held any sort of communion. But once the fire of the sharing of knowledge did break out it seems as though nothing could have stopped its spread. There is no one but will admit that with the formation of each of our societies those institutions that had previously existed were strengthened and stimulated; there is no one but will admit that, as short time went on, our members became more and more abundantly imbued with enthusiasm, that meetings took place more frequently, and that the fruits of our associations became apparent. It was, at this juncture, that our parent society had its inception, an inception some four years old now taking concrete form. With a vague conception of the advantages of unification we are today made consummate, and a new association is extant, to which all the other component societies of our specialty bear tribute. We have lived through many vicissitudes and are confident that we shall have to do with many more. These will be met with the same fortitude as has exemplified our successful efforts of the past. Some questions of great moment are still before us; our constitution is not as yet clearly defined; and it must be our duty in convention to discover and to supply defects in our policy.

Before passing it is very presently opportune for me to say a few words of encomium of him whose efforts have been paramount in the joining together of our societies of anaesthetists. It is hardly necessary to name him. He could be none but McMechan. I shall say no more than that I would that all men in office would follow the example of my friend, our illustriously distinguished Secretary General.

ENVIRONMENTAL INFLUENCES

With the accumulation of the rapidly increasing knowledge and beneficent results which have recently attended our united efforts, considerable research