

EXTENSILE EXPOSURE

by

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"'tis not so deep as a well, nor ~~wide as a church door~~;
but . . . 'twill serve."

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EXTENSILE EXPOSURE

TO MY WIFE

PREFACE TO SECOND EDITION

IF, as one keeps on hearing, the sort of anatomy untastefully called 'gross' were really finished, this re-edition would count only as a further impertinence. But while its predecessor was received with unexpected kindness, the not-intolerant climate held just the echo of a salutary feline note: "It's all very interesting," said the Miller's Cat to the Mill-race, "but if you could manage to do your work—whose value I don't in the least dispute—a little more soberly, I for one should be grateful." Meanwhile, however, Time, which finds ways of settling sobriety's worse disorders, has not been idle.

The former edition was written firstly for my friends, and it is by the wish of some of them that I include (or, if you will, thrust in) old and more recent work for convenient access. And since several of these adjuncts go beyond the scope of limbs, the re-edition's title, though still 'Extensile,' is shorter by a tail. Otherwise I have left the text much as it was so that parts of it will 'date'—perhaps respectably like things men excavate which keep about them "glories of their fallen day"; for instance, bipp—in Richard Stoney's hands. But bipp, some find, has strong survival value; and lately, like the coelacanth, it has turned up again.

The present progress in surgery is so rapid that one year now is like a former hundred, and ten can leave us not outstripped but at the post. Even simple straight incisions have been altered, and I am most grateful for the chance of taking my impressions of their modern trends from a variety of patients, with scars long-healed and admirable, put at my disposal by the courtesy of Mr J. C. Sugars of the Adelaide Hospital, Dublin.

Approaching recent art one has at times to wrench oneself towards acceptance. Yet, after all, I should not grumble; these new cuts suit my thesis: their turnings keep incisions long.

Let me revert to the gross anatomy which I have tried to teach for almost ten years in the uniquely happy circumstance of this old College. Some while back a distinguished exponent of my subject told me that his first answer to new students asking what they should read was, "A dictionary." That sound advice gains, I find, with experience. "Light dies before the uncreating word."

Our own terms are Greek or Latin—'Greek' sometimes to ourselves. Yet when an Oriental candidate writes "the pulmonary of the sacrum" or "aleolar tis," we suffer shock. How fortunate for us that Sanscrit or Arabic did not preponderate directly in forming current medical nomenclature!

For good or ill there will always be division between the arts and the bleakness of science. It need not be absolute: like earth and sky they are apart but they communicate at times by flashes. A rare example must serve in lieu of portrait of a friend and colleague whose name and work recurs through the text. Once, after a class on the larynx at which I had to confess that I did not know the meaning of the word 'arytenoid,' I met T. P. Garry on my way out and enquired. "Arytenoid . . . ?" he said; "shaped like a vase: Ruth at the well with her pitcher balanced uneasily on her shoulder like the arytenoid on the shoulder of the cricoid."

The reader who would wish to match that satisfying gleam with competence in practice may note—if he have patience to arrive so far—the explanation of how a finger working blindly deep in the pelvis can with quasi-certainty (the only sort anatomy will grant) find and pick up a hip-joint twig and part it from the main sciatic stem. Yet the talk is that gross anatomy has died. One might imagine it instead decrassified and taking wing.

In a former preface I tried to specify my gratitude to those who helped me with the first edition. Some of them through the past ten years have never ceased in helping me to re-edit—Miss Zita Stead, my artist; Mr Charles Macmillan, Managing Director of Messrs E. & S. Livingstone, my publishers; more recently my indispensable secretary, Miss D. MacDaniel. Repeated

thanks are apt to seem like hollow resonance, so I will only say that patience—tried as theirs—is rare indeed.

My friend, Col. G. M. Irvine, till recently my colleague, has warded off, and even assumed, many distracting burdens on my behalf.

I have attempted to acknowledge other debts in relevant parts of the text: to my former Surgical Demonstrator, Mr W. A. L. Macgowan, and to Mr M. Stranc. Thanks are due in a special degree to my present Lecturer, Dr M. Levine, and to Dr O. Singer for their sketches; also to my Demonstrator, Mr M. S. Matharu, for his clear photography.

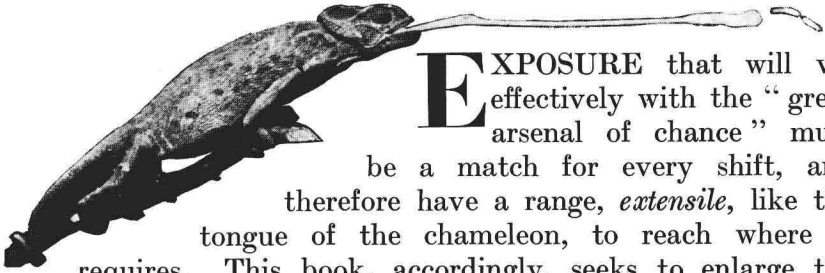
Not least am I grateful for the loyal collaboration of my technical staff in and out of the Dissecting Room: Robert Syms, William White, and that wise and kindly person Harry McCabe, who died recently and whom I knew during most of the forty years of his honourable service to these famous Dublin "Schools of Surgery," thus curiously named since 1789, but in fact the modern school of medicine of this Royal College and a lively source of world-wide education. It is a School unique, I think, in several respects, notably perhaps for quiet friendliness, of which I know its students carry much that matters to their patients.

ARNOLD K. HENRY.

THE ROYAL COLLEGE OF SURGEONS,
DUBLIN.

May, 1957.

PREFACE TO FIRST EDITION



EXPOSURE that will vie effectively with the "great arsenal of chance" must be a match for every shift, and therefore have a range, *extensile*, like the tongue of the chameleon, to reach where it requires. This book, accordingly, seeks to enlarge the scope of certain set and parcelled methods of approach. It deals with means in which my confidence has grown from using them myself and watching others try them. And while a smooth success with first attempts pleased all concerned, mistakes (made as they were by persons of intelligence) proved real auxiliaries: they marked exactly what was ill-conceived or insufficiently described, and gave the chance for second thoughts—a chance these pages strive to seize.

Bone carries our anatomy and forms its central fact, and bone wherever possible is made the core of each exposure. Even the few confined to nerves and vessels bring in a glimpse of skeleton; and some of these (though well rehearsed in other books and easily accessible) are borrowed here again. They form the roots from which exposures spread, and serve—like roots—to bind irrelative surroundings. The presence, too, of things so instantly attractive has let me note where charm may breed a moth-and-lamp effect that makes us "strut to our confusion."

The page who sings in *As You Like It* is correct: "hawking, or spitting, or saying we are hoarse" are only prologues to a bad voice; and books, like songs, should be their own interpreters. But it is rare that one unaided person can write, print, illustrate and publish them. So debts alone may justify a preface; and mine are large. My secretary, Mrs A. Wenham Brown—as quietly concerned for "a mistake in the dust of a butterfly's wing as in the disk of the sun"—has given deft, invaluable help at every

stage, and latterly with indexing. Miss Zita Stead, the artist, adds to her gift the knowledge gained from actual dissection—a rare concurrence, used by her with scrupulous regard. Then, too, I have been fortunate to meet with a collaborator at once so expert, sterling and considerate as Mr Charles Macmillan, of Messrs E. & S. Livingstone Ltd., my publishers; he puts a Scottish heart into his work.

To Professor J. H. Dible and the staff of his department I venture to express my gratitude for opportunities of contact with a welcome, stimulating climate—the evidence and birthright of a university. Dr J. Pritchard, too, at the Department of Anatomy, St. Mary's Hospital, has given me much friendly help.

That excellent technician, Mr J. Robson (now in the R.A.F.), has earned my special thanks, together with his friend, Mr V. Willmott, a very skilled photographer: their cheerful courtesy, and that of Section Commander C. Ward, was aid indeed.

The text in a superlative degree owes weeding and correction to my wife.

Lastly, a debt is due throughout to surgeons from every quarter of the Commonwealth. In friendly groups they formed (unwittingly) a panel whose jurors brought me verdicts; and so these pages print what seemed to win, if not their full, unqualified approval, at least an *imprimatur*. Should I be wrong in that belief, the process of acquiring illusion for once sits smiling to the memory.

ARNOLD K. HENRY.

July, 1945.

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INTRODUCTION

NOMENCLATURE

. . . *d'abord la clarté, puis encore la clarté et enfin la clarté.*

—ANATOLE FRANCE.

Throughout the world in general—and, notably, in that of those who think and write—I find it only in the ratio of the diamond to the mass of the planet.

—PAUL VALÉRY.

A NEW nomenclature has recently appeared amongst anatomists—the third in thirty years; and so, for men of different age, a class to-day in operative surgery is something like a class in Babel: one does not speak to it collectively.¹

I hold no brief for any terminology; the new, the old, the Basle have each their points. The new, for instance, turns from the vague “axillary” nerve of Basle back to the old and graphic circumflex. But change which darkens what was clear is less commendable. The trunk, for instance, that we knew (and still know well) as musculospiral, ended by forking into branches named respectively the “radial” and “posterior interosseous.” This trunk then fell in line with continental usage and became the radial of Basle nomenclature; its terminal divisions, too, were well described as “deep” and “superficial.” The third and new nomenclature confounds the trunk and superficial branch, and *both* are now called “radial.” With that peculiar precedent of lost distinction the internal popliteal nerve (*alias* the tibial, *alias* the medial popliteal) might easily—in mounds of new editions—be called “sciatic.”

An opportunity is ripening; like us, America and the Dominions have now had time to sift the question of nomenclature in English. Is it too much to hope that any joint, definitive agreement will bear convincing signatures which prove

¹ This flux is not peculiar to anatomy. Dons have it too; Hilaire Belloc records the fact: “They have turned the pronunciation of Latin (whereof we might have made a common tongue for general intercourse) quite upside down, consonants and vowels and diphthongs, so that my contemporaries can remember at least three quite different ways of pronouncing the simplest Latin phrase, three different fashions in the short space of a human life. Perhaps a fourth is coming.” For Dons, he adds, are capable of anything.

it acceptable to those who work in *live* anatomy? Till then let criticisms rain, but may there be a truce to efforts at establishing parochial adjustments!

And meanwhile with Herodotus, who cared for clarity and was (like us) unsettled by kaleidoscopic terms, "I shall continue to employ the names which custom sanctions,"—names which I know our surgeons understand. So without fear of puzzling anyone I say "the upper end" of humerus, or, if I wish, its "proximal extremity." Nor shall I waive the right to use "inner" and "outer"; "internal to," "external to"; "inwards" or "outwards." "Medial" and "lateral" are useful words; I shall employ them too, but not *ad nauseam*; the English tongue resents a curb, and answers best when reined discreetly. Perhaps for reasons similar the French (who then had much to lose) refused to bow the knee to 'Basle.'

We recognise¹ at once the inner aspect of the thigh (or arm or leg), so why not speak of it? And though the present fiat of anatomists restricts the term of "inner surface" to linings of the hollow organs, yet, if I write that certain nerves lie to the inner side of arteries, will someone really think they lie within the lumen?

Such things, of course, are trifles weighed against the fact that every terminology has pockets of resistance to surgical approach. And these (within the boundary of my text) I am resolved to liquidate.

ON CERTAIN AIDS DERIVED FROM STRUCTURAL ARRANGEMENT

The operations of our intellect tend to geometry.

—HENRI BERGSON.

Que ferions nous sans le secours de ce qui n'existe pas? . . . Les mythes sont les âmes de nos actions.—PAUL VALÉRY.

Some general considerations.—Few that invade the structure of anatomy are artists; the great majority take care, for the convenience of their memories, to force its details into shapes of Euclid—triangles, quadrilaterals, circles of peculiar form. The few (and they are very few) need no such framework; like painters who from scribbled notes of "green" or "yellow" produce a replica with tone and shade in exquisite gradation,

¹ *Recognise, recognize; mobilise, mobilize, etc.* The *Oxford English Dictionary* is strong for "z." But Pater who was 'Oxford' allows the "s"—like Quiller-Couch of Oxford and of Cambridge. I shall abide by *Kent's* uncompromising verdict (*King Lear*, Act II, Sc. 2).

these few as easily recall the un-Euclidean visage of anatomy and deal with it as though by instinct.

The many (like myself) who fail to share the artist's gift are glad of aids—despised by those who do not need them. And here the targets for their scorn are plentiful: these pages nowhere scruple to include whatever crutch or simile or dodge has proved its worth repeatedly to groups or individuals. I am, indeed, convinced (like Tristram Shandy's father) that there exists "a North-west passage to the intellectual world, and that the soul of man has shorter ways of going to work, in furnishing itself with knowledge and instruction." Things, therefore, such as satellites, loop-holes, half-sleeves, shoulder-straps, cloaks, seams, leashes, bucket-handles, lids, sandwiches, V's, and manual mnemonics—these myths are rife throughout. Let us examine one or two more closely.

The half-sleeve.—By this I do not mean a sleeve cut short across but one divided lengthwise, covering subjacent structures somewhat in the way a cradle covers patients suffering from shock. We come upon such half-sleeve muscular investments behind the shaft of humerus; in front of the femur; at the back of the calf. In each half-sleeve there is a seam to find and rip—giving the latter word precise, housewifely meaning, remote from crime or even butchery.

Loop-holes.—A muscle in the space between attachments must have a portion of its belly 'free,' that is to say continuous with everything surrounding it in such a way as to allow of normal action and harmless instrumental separation. These parts when short and when we separate them out will form the boundary of a loop-hole which may give initial access to a deep and perilous position. A useful fingerbreadth of biceps, for example, close to the distal end of femur, lies free behind the intermuscular septum; a touch will make the belly bound a loop-hole which can then be widened safely.

Satellites.—This term of satellite denotes a state of linked companionship, like that of median nerve with the sublimis belly, or of its ulnar neighbour with profundus; for, coming from behind into the forearm, the latter trunk is fastened to the deeper muscle. A satellite relation thus implies reciprocal divorce from other structures. Specific application of this knowledge—of union as distinct from mere proximity—prevents much futile groping (pp. 100 and 221).

Other aids.—We should contrive to wring the utmost benefit

from details of anatomy; examples of this kind of exploitation are scattered through the text. Contributors in this respect are planes of cleavage, and I try to show how best to find them. Other aids abound. A bursa, for example, may help to make our surgical approach as smooth and easy as the gliding of its own

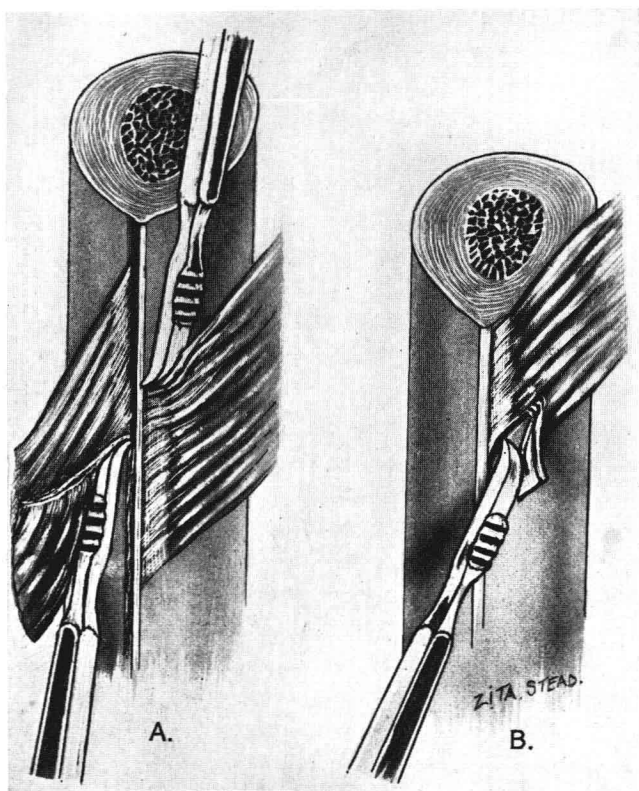


Fig. 1

The stripping angle

Work the rugine into the acute angle which fibres of muscle or interosseous membrane make with bone. (B shows how the rugine tears into a muscle when used in the reverse direction —against the obtuse angle.)

tendon (p. 101). Or fibres from another source may cross and bind the grain, say of the popliteus—a muscle that when split gives only meagre access. The crossing fibres then will mark a line for sectioning the muscle and also stop the creep of sutures through the grain (p. 261). A structure tethered on a single border will move more readily towards its tether, uncovering objectives deep to it; so, to reach them easily, divide the skin

along the border *opposite* the tether (p. 268). Angles of attachment help or impede the separation of fibres from bone. And muscles grasped and moved across their fixed companions provide the surgeon with a kind of tangible mnemonic which helps him for incising skin and separating structures (*The Lancet*, 1940, 1, 125). Allusion to these angles and mobilities are frequent in the text and need some further explanation.

THE ACUTE OR STRIPPING ANGLE.—A shaft is stripped most easily of fibres, whether of muscle or of interosseous membrane, by working the edge of the rugine into the *acute* angle which the fibres make with bone at their attachment.¹ Used in the opposite direction—towards the obtuse angle—the rugine tends to leave the bone and tear into muscle or membrane (Fig. 1). There is a two-way application of this principle when we expose the shaft of femur; here the stripping angle opens proximally for adductors, distally for vasti. Then, too, on the fibula the muscles have a stripping angle opposite to that of interosseous membrane (pp. 294 and 296).

COMPARATIVE MUSCLE MOBILITY.²—We can make use before and during operation of the facility of moving certain muscles across their much more fixed companions. Lines of incision may

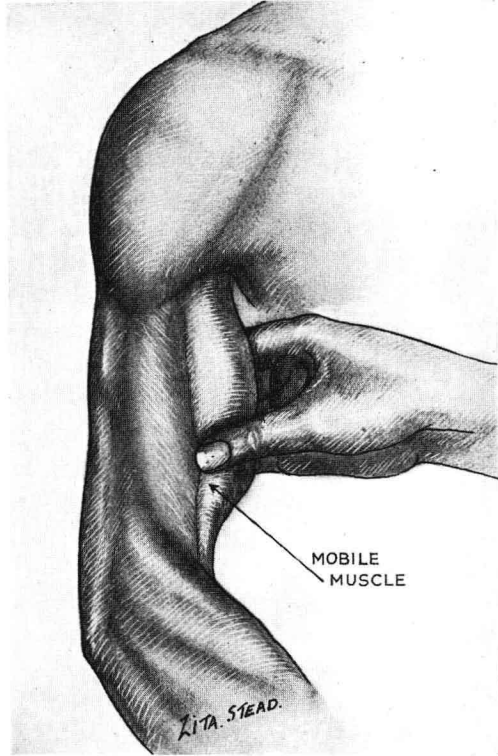


Fig. 2

Comparative muscle mobility

The biceps—fixed at either end—can easily be moved across the widely fastened breadth of brachialis. Thus, for exposure of the front of the humerus, the fingers can discover (in spite of fat or swelling) exactly where we should incise and where to find the part of brachialis that separates shaft from skin.

¹ Rooks, as members of the crow family, rank with "the most intelligent of birds." They use the stripping angle when they pluck twigs for nesting, but with a difference: standing below the upward slant they tug from the obtuse angle. (M. Burton, D.Sc., *Illustrated London News*, October 8, 1955.)

² *The Lancet*, 1940, 1, 125.