

The Principles and Art of **PLASTIC SURGERY**

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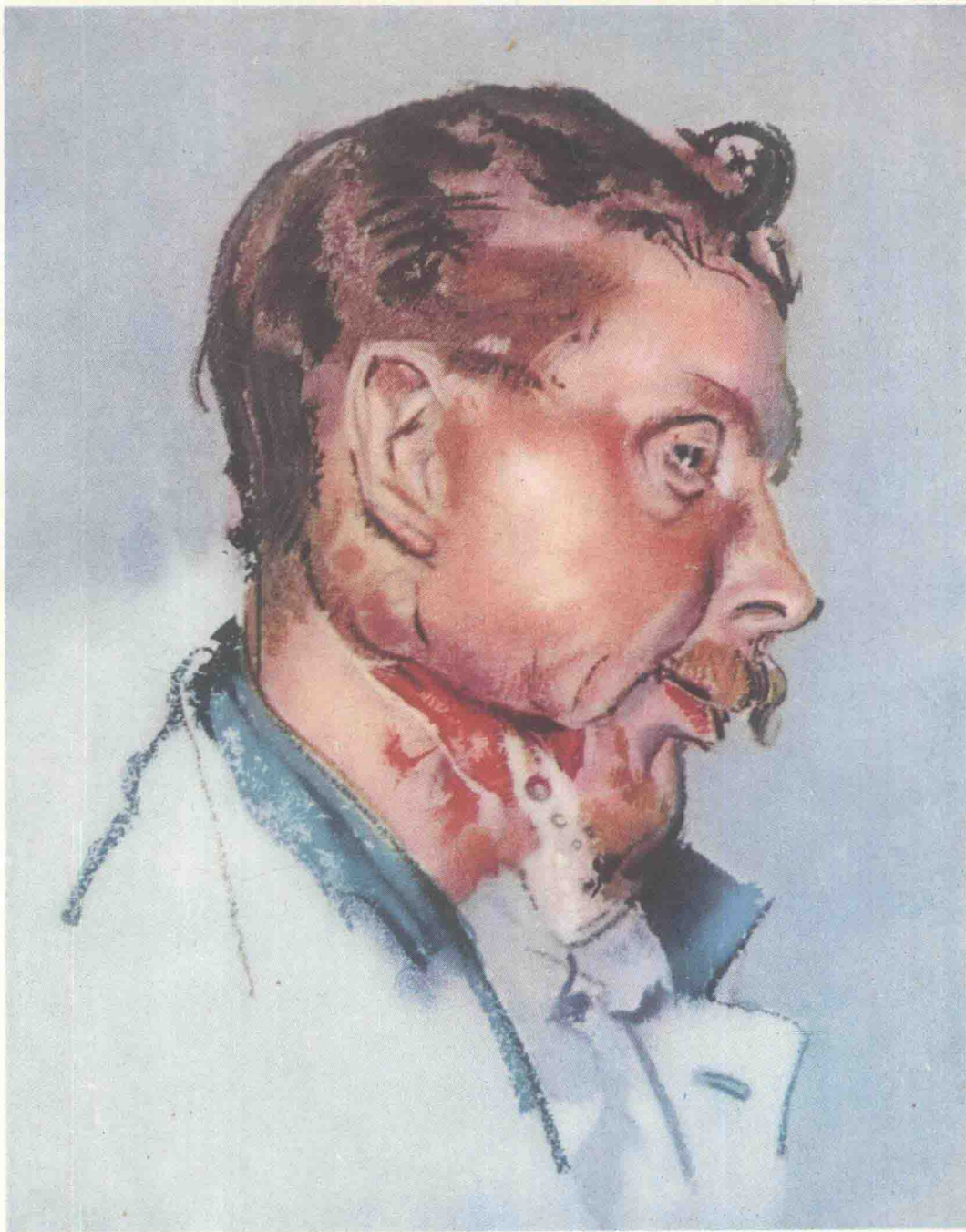
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Pastel by Henry Tonks

ONE OF THE MANY
1916

Foreword

by Jerome Pierce Webster, M.D.

In his work *On the Parts of Animals* Aristotle says, "Art, indeed, consists in the conception of the result to be produced before its realization in the material." An artist, therefore, must not only be able to conceive the end result to be produced, but he must also be able to visualize all the necessary steps leading to that end, and he must have the imagination, the intelligence and the dexterity to bring about that result. Is not, then, plastic surgery an art and the plastic surgeon an artist? The plastic surgeon works with living flesh as his clay, and his work of art is the attempted achievement of normalcy in appearance and function.

He starts with a deformity, whether discovered at birth or acquired from disease, injury, or from an operation performed by the surgeon himself to overcome infection or malignancy. He uses skin, fat, bone, cartilage, muscle, fascia and tendon in building up the parts. He must exert his imagination in order to see what can be used and in what way. He must know and be able to modify the mechanisms and technics that will bring this material in to build up the part, and yet keep the tissue alive. The principles of handling living tissues must be known and observed. Living parts have a superabundance of vitality, but if too great a burden is put upon them, they cannot survive or be used. Death of tissue may be a temporary setback or even a final defeat. Imagination must be tempered by the limitations of practicality, for care must be exercised to avoid making the original deformity worse or creating a new unjustifiable deformity elsewhere in the attempt at reconstruction.

Beyond the physical side of the artistry of plastic surgery lies the frequently even more important delicate handling of the patient's mental attitude. This must be taken into consideration and the individual patient must be treated by the surgeon in such a way that he is willing to go through the various anxieties and long periods of

waiting, as well as the actual discomforts attendant upon operations. His morale must be upheld and he must be given confidence and hope. The patient must share with the plastic surgeon the desire to attain the best possible result and must be willing to co-operate and to make various sacrifices in order to achieve that end.

Harold Delf Gillies embodies to an extraordinary degree the qualities of such an artist. At Aldershot and Sidcup in World War I, at Basingstoke in World War II, and through all the years of civilian practice in London, he has exercised his unique creative talents in restoring disfigured parts to normalcy.

His initial work in otolaryngology led him to a particular interest and effectiveness in maxillo-facial surgery, and he saw the advantages of enlisting the aid of an expert anesthetist and dental assistants. In both world wars he attracted to his centers talented men from his own and many other countries, who not only learned from this master but contributed to the success of the work done under his supervision. Later many of these men returned to civilian life to become outstanding plastic surgeons. "A dynamic if unorthodox teacher," in Sir Archibald McIndoe's words, "he impresses by paradox, invective, cajolery and teasing raillery." The host of men who have come under his spell remember him with gratitude and deep affection.

Gillies' first book, *Plastic Surgery of the Face* (1920), based on his work on World War I casualties, was a landmark in the history of plastic surgery that reaches back for many centuries. This book, together with John Staige Davis's *Plastic Surgery: Its Principles and Practice* (1919), and Vilray Papin Blair's *The Surgery and Diseases of the Mouth and Jaws* (1912), were the foundation stones upon which the structure of twentieth-century plastic surgery was built.

Independently of Filatov, who preceded him, Gillies devised the tube pedicle flap, and can rightly be credited with the universally popular use of that valuable procedure. He conceived the idea of the epithelial onlay for constructing eyelids and for lining the mouth, a mechanism which is widely used. These are telling examples, which could be multiplied endlessly, of his remarkable ingenuity. I recall, for instance, his showing me at the Prince of Wales Hospital in 1926 a soldier he had reconstructed, whose entire lower jaw and mouth, including the mucous membrane, had been shot away. This was eight years after the end of hostilities in World War I, and the patient was still undergoing treatment. I was astonished

to see the vermilion-colored lower lip and asked Gillies where that tissue came from. The soldier was requested to undo his tunic and show his surprisingly bright red suprasternal skin, which had been noted by Gillies and utilized so effectively in this unusual position. Again, it was breath-taking to sit with him, as I did, and to realize that, when confronted with an adult patient with a "dish-face," a lack of full development of the facial bones, he would have the audacity and the skill to free all of those bones and to bring them forward and devise means of holding them in normal position.

How can one adequately evaluate such an ebullient spirit, a fountain bubbling with ideas, such a fresh and paradoxical personality, as "Giles"? A remarkably versatile person, an artist with his brush as well as his scalpel—at one time tenth-ranking amateur golfer in the British Isles, an avid and expert fly fisherman, an enthusiastic motorist—an imp in his humor and practical jokes, a daring innovationist who succeeds in his bold procedures, an actor with varied talents, he commands the stage and loves the plaudits of his admiring constituents, who recognize his prerogative to rule, his lovable sweetness, his exasperating unpredictability, and his superlative artistry.

In D. Ralph Millard, who came to work with him, Gillies recognized a kindred spirit, another Puck. Perhaps it was this similarity of personality that caused Gillies to ask Millard to return to help produce this book. It has been a felicitous collaboration, undoubtedly stimulating to both authors. The task of bringing together thousands of cases, photographs, drawings and details of operations, such as appear in this two-volume work, is a formidable labor which might well have disheartened and deterred many a writer. Yet it must have been a very great pleasure for the senior author, and a valuable experience for the junior author, to look back, often from twenty to forty years, over the innumerable histories of patients who had been marvelously transformed from horribly deformed individuals to comparatively normal human beings. It must also have given real pleasure to the senior author to recall the various surgeons who assisted him through the years and to whom he gives much credit throughout the text.

A plastic surgeon reading this fascinatingly vivid work feels himself in the presence of a master, sitting at his side, and almost hearing his voice review the stories, clinical and personal, of myriads of patients. All that goes into making the surgeon's profession a book of life is here in abundance: a compilation of hundreds of cases

gathered over the years, with their thousands of hours of patient work at the operating table, on the wards, and in the consulting room, and with their human touches of drama, both comedy and tragedy. Technics are described, results of a wide gamut of procedures are shown, the pros and cons of controversial points are debated, but above all this work has color, life and freshness. Pedantry is absent, and creative teaching stimulates the reader to new and wider vistas.

The interest of this book to plastic surgeons is threefold. It is a textbook of plastic surgery unique in its humanness; it covers to a large extent the development of plastic surgery during the twentieth century, when the greatest advances in this specialty have been made and the largest number of patients have been restored; and it is an autobiography of the outstanding plastic surgeon of the century, whose influence has been felt throughout the world and will continue to be felt for years to come. These are volumes which every man who attempts to do plastic surgery should own.

Acknowledgments

In the period 1920–1930, one outstanding personality helped to put plastic surgery on a sound basis—T. P. Kilner. Tommy helped me and taught me many things, cut grafts for me, liked my flaps or curbed my more enthusiastic plans. At Dollis Hill and Treloar's Hospital at Alton we shared new appointments for which we had worked hard. Such for eight years was my happy lot, and the happiness was by no means one-sided. One of his most spectacular cases adorns these pages. In 1931 I teamed up with A. H. McIndoe and R. M. Mowlem. These two also slaved away, cutting grafts, sewing up pedicles and taking on all the hard-luck cases while I went fishing or golfing.

Perhaps, looking back and assessing their positions to-day, these three don't resent those years too much.

During the twenty years between the wars, the United States had established plastic units all over their country, but in Great Britain at the beginning of the Second World War there were only five or six full-time plastic surgeons. However, the authorities had "got the idea," and with centres dotted round the big towns to take the Services and air raid casualties, enthusiastic young plastic surgeons sprang up everywhere. Of these, James Cuthbert was my very special "buddy" and to him I owe very much, not only in loyalty but in the development of many new techniques. I don't apologise that many of the best case records in these pages are labelled J. B. C.

Other colleagues come to mind — a veritable host of grafters and stitchers. Battle was the first to serve at the front as head of a plastic unit. Champion followed Battle into battle. Michael Oldfield came to us for months, and all who saw his work had much to learn from him. Heanley, Clarkson, FitzGibbon and Hynes came to Rooksdown and later took on Army units. Pat Clarkson has given much of his overwhelming energy to come back to Rooksdown and demonstrate many exciting methods. Tom Gibson also has added to the solidity of our work and continues very valuable research. All these friends and colleagues are only a few of the many who stimulated

me and pushed on the work. Their influence, the punch and urge that such a group exhibits towards any colleagues, is self-evident. May I here say how much I appreciate what they have done for me.

What proved a labour of love were my visits to Scotland to work with such experts and enthusiasts as Tough, Crombie, MacLennan, Buchan and above all, Wallace. It was no mean satisfaction to receive with Wallace the blessing of Professor Learmonth and have my leg pulled by him. I cannot deny that there was a good salmon beat very near Stracathro Hospital, and visits there often had a double delight.

Special surgical discussions and arguments surrounded visits to Wardill, Cowell and Potter at Shotley Bridge.

Lewis came and stimulated our group and then went to develop his own unit for Wales.

As well as in other centres, at East Grinstead the Air Force were specially catered for and on visits there I learned much, drank a little, and got many a friendly kick from Jayes, Eckhoff, McLaughlin and Moore, and of course from the chief skinner, Archie himself.

Many years before the war the people of Stoke and the Five Towns of Arnold Bennett had given a lead to the country by sponsoring a plastic unit at the North Stafford Royal Infirmary. To Eric Young and all patrons of our art there, much credit must go for their far-seeing counsels and help.

Mowlem's St. Albans-Northwood group have always been very close and friendly.

So it goes on until the original few have now become a drop in the plastic ocean. There are 60 full members of the British Association of Plastic Surgeons, all duly qualified in our art.

In 1939 it was found impractical to repeat the 1916 experience of having the Dominion units linked with us once more. However, to our joy, we had the full Canadian unit housed at Rookdown for many months of pleasant and profitable rivalry. Stu Gordon above all came back to teach his old master, and Doc Farmer went to the Canadian Air Force. Bob Langston joined up permanently with us, and with Kay, his anaesthetist lady, added good comradeship to a lot of hard and brilliant work.

Jackie Converse came with the American Hospital and did much research with us, helping and pioneering the two-pin method. Many other American surgeons came later in the war, all of whom were a charm and a stimulus.

From South Africa there came old friends—N. Petersen from the

Cape, and the ever welcome Jack Penn from Johannesburg. They showed us where to look for honey.

But special warm corners wait for my Australian kings of plastic surgery. There was Benny Rank, a pre-war disciple and critic, David Officer Brown and the illustrious Kenneth Starr. What battles we had! New Zealanders Brownlee, Manchester, Roy and Hutter honoured us with short periods.

After hostilities were over, Holdsworth left the R.A.F. and settled down to some brilliant work at Rooksdawn.

John Barron came to take over but found his development might have more scope in the new unit of Odstock, but not before shedding much valuable knowledge. And then my registrars and house surgeons; how much don't I owe them for help, encouragement and consolidation of our work. To one and all of these, particularly to M. Roberts and W. Sladen, both of Antarctic fame; to Douglas Reid and Jim Evans of great surgical achievements, I pay homage and greet with affection for the surgery we have learned together.

This seems a pretty big list of thank yous, but the column just begins. How far back do we go to our surgical forbears?

There is little that can be called original since a sharp flint opened an abscess and some horsehair threaded through the first thorn needle sewed up a wound. Yet it all goes on, bit by bit, and the wheel of progress turns just a little in any man's lifetime.

Before leaving the many surgical colleagues who have helped me along, none had greater personal kindness or influence on my work than my American colleagues Eastman Sheehan and Ferris Smith in the early days at Sidcup. Later, practically every U.S. expert gave a helping hand.

Here is the time to remember my teachers — D'Arcy Power, Harmer, Drysdale, Horder, Rawling, Gask and all those surgeons and physicians at Bart's who, by referring cases and lending beds, affirmed their belief in our new surgery. Literally, we got beds if we produced good results. Could anything be better than that our progress depended on the clinical results and not on the administrative allotment of beds?

If my cutting colleagues have helped, what about the dopers and moppers? Maggie's (I. W. Magill) influence on surgery is now world-wide, but in those early days in 1918 we plugged through our own difficulties by cursing the other fellow and learned by the hard way a system of anaesthesia that is standard to-day. Don't teach

your anaesthetist to fish for trout; he'll beat you to it — he's got all the answers. This pioneer, Ivan Magill, was closely followed by other rebreathers and charming long-suffering colleagues such as John Hunter, Shackleton, Hale Enderby, Norman James, George Ennis, Gilchrist and Rowbotham.

These are only a few of the numerous stuffists who have anaesthetised many of the cases in this book. It must be stressed that without the expert development of their craft within the sphere of plastic surgery, that specialty, and indeed others, especially thoracic, would have been seriously hampered.

And now for "les girls" — those poor, trembling Amazons who masquerade as scrub-sisters — beware! Bless their hearts, how quick their wits, how neat their knots! No surgery or medicine could exist without them. The female of the species has just that quality — "Don't you worry, sonny" — which pervades the medical scene and kids the patient along through strenuous days and anxious tiresome positions. The expert plastic sister is not only a master of technique and a guide and philosopher in the theatre, but in the ward her meticulous care in control of haematoma and grafts is often the deciding factor in success. The brilliant G. T. bore the brunt of the early private work, followed by the late C. R., who married the Swedish plastic surgeon A. Ragnell, by Jill M., and chief of all by the incomparable (M. C.) Sam. No less tribute must willingly be given to all the hospital darlings and Dorothys who have slaved to help our patients and to make our work worth while.

No record, such as it is the purport of this book to be, would be complete without a full description of the penetrating influence of the dental and oral surgeon on our work. Whenever there was or is a lesion of the facial skeleton, then the dental colleague with all his meticulous techniques and flair for fracture fixations must be called in to help. As a champion of teamwork between plastic and dentally trained surgeons it has been particularly gratifying to see that all Service units as well as all civilian units now have this dual staff. No one could have been more critically co-operative than Kelsey Fry in the early days, and his wisdom and charm in guiding us to adapt our work to fit the dental problem always stimulated progress. The appliances for buccal inlays for bone graft cases, the sculpture and fixation of retaining moulds for bird-chins, flat faces and depressed noses were his special contribution.

Historically, one must go back to those early days at Aldershot

when we were first starting to make a clinic. First of all, there was that beloved friend of mine Dr. C. W. Roberts, commonly called Bobs, who had enthused me by his own work in Paris with the American Ambulance and who had sent me, among other things, publications from Germany on the dental control of fractures. The first books I read of war work were those French and German publications, which were mostly written by jaw surgeons, and therefore jaw fracture fixation was much stressed. On arrival at Aldershot, I was allotted a young dental surgeon named A. L. Fraser, who very soon proved his worth and has remained a staunch supporter of the plastic cult to this day. He was followed by Captain King, with whom I spent a very happy year, but when we moved to Sidcup, King left and his place was taken by the now famous dental surgeon Sir William Kelsey Fry. He became my very closest dental colleague and remains so to this day. The combination of his mind and my surgery made for very considerable progress.

Of many other dental colleagues, Fred Walker and Ernest Hardy filled most of the gap between the First and Second World Wars. And then when 1939 came, Martin Rushton became our chief dental surgeon and took over at Rooksdown. In the hands of these men the prognosis and treatment of facial fractures have been truly remarkable, and it is just a little difficult nowadays to say when a dental surgeon of this character should handle a case and when the plastic surgeon. Particularly is this true of Norman Rowe, our present chief, to whose teaching and technique the subject owes much. His kindness and courtesy have allowed me to use many superb models and photographic records of his work. Each has, however, a lot to give the other; co-operation is the best method and will in the long run produce further results.

To the late Sir Frank Colyer and to many other senior dental surgeons do I owe great technical and moral support.

It was also certain that in a young subject such as this new X-ray techniques would be developed to show the fracture from different angles, and in this respect I should like to pay tribute to the pioneering work of Dudley Stone and also of Sir H. Graham Hodgson. Both of these men have collaborated with the surgeon in connection with these fractures and standardised new positions.

On the radiotherapy side, my first association was with Finzi, whose picture you will see in the book. This association has lasted until the present, and it has been mainly concerned with the implantation of radium into the substance of cavernous naevi or in

connection with the plastic trimming and tidying up of a case after the radium had its full effect. There is another useful aspect of radiotherapy in the treatment of keloid, both as a preventive and a curative, and in this connection the full work of Walter Levitt has been very much appreciated.

Many speech therapists have added practical contributions to the concentrated effort of helping a child to speak well. In injuries of the tongue and pharynx, their training and encouragement of the patient will often lift him out of the despondency of not being understood to a stage of easy conversation.

A most important ancillary to a Plastic Unit is that of Physiotherapy. Massage to flaps and pedicles, short wave, diathermy, and radiant heat all chase a little more circulation into the flaps and speed away the fibrotic remains of haematoma. Electrical stimulation and testing has to be carried out in paralysis cases. Some of the physiotherapists who have charmed our patients with their searching little fingers recur to mind. Above all, the early development lay in the hands of C. Brehmer Heald and his array of experts from the Royal Free Hospital. Among many other stalwarts were Lamm, Morris, and latterly Mrs. Dorf. To them all greetings for their help.

Anatomists from time to time are called in to provide new ideas with which to work out a problem and suggest new routes of approach. Here I should like to mention the late Professor Woollard and his young colleague Gray, who between them detailed much of the anatomy of the lymphatics. A new route was mapped out to reach the postpharyngeal space behind the soft palate using an incision just above the clavicle. Another anatomist who has helped me considerably is Professor Richard Harrison of the London, who has dissected many a new path for plastic procedures in the perineum.

Of the artists who have recorded the wounds and the results of operations, both in colour and in diagram, there is a noble array of people I should like to thank. First and foremost is the late Professor Henry Tonks of the Slade Art School, who was responsible for many of the colour prints in this book. And then there is a very distinguished modern artist, Bernard Adams, whose drawings adorn some of the chapters. Then our regular friends at the hospital have done diagrams working out tedious problems, such as Miss Spencer, Miss Tydeman, Miss Farmer, S. Hornswick and Captain Sibson Drury. To all of these we owe a great deal.

A special tribute should here be paid to Ham Millard for his

delightful and imaginative drawings. Thanks indeed also to Tom Webster and the *Daily Mail* for his golfing cartoons and to George Belcher, Owen Seaman, and *Punch* for the surgical lampoon.

One cannot leave the artists without a very honorable mention of the senior author's great-great-uncle—the immortal Edward Lear, one of whose drawings lends a “nosey” pointer to our work. On the very back page you will find an example of the gallant work of Mervyn Suart in Italy.

The other method of recording — and much the more common — is that of photography, and here we have the late Mr. Sidney Wallbridge, who did most of the work for the first book, some of which is reproduced here; and Mr. Potter, Mr. Ferrill and Mr. Burns, who have ably borne the brunt of the photographs for this book. In addition, we have been privileged to enjoy the prints of that famous colour artist Mr. Percy Hennell, of the Metal Box Company. I wish to record my thanks to all these kind friends who have done so much to make the recordings satisfactory. To Mr. Hennell himself we owe the very beautiful book cover which adorns the outside. Further than that, no trouble was too great for him to take in advising me about the colour blocks. He and his colleague did special prints to hand to my new friend Mr. Dennis Holt, of Messrs. Swain. Dennis has not only done a magnificent job in reproduction of these colour blocks but endeared himself by the infinite trouble and patience with which he tried to get the very best colour results. I hope the book will remain a tribute to all these recorders.

There rises the thought that although much has been given to patients in man hours of anxious thought and meticulous labour, they, the victims, with their wisecracks and cheerful optimism have often given sound advice and great encouragement, spurring on the surgeon to doughtier deeds. When a long-term case is wilting and the flaps all shrinking, then is a time when mutual trust stands as a bulwark against disaster.

So, reader, you will find and perhaps be shocked at reading that Tom Smith came in to show his new nose, Joyce Eccles to demonstrate her tubed pedicle voice. Often the names are the real names, and this familiarity must be pardoned on the score of the mutual battle surgeon and patient have waged—maybe lasting years. As a human document the book would be ruined by calling Mary Chapman by some fictitious sobriquet. In such cases, the Marys of the book have all signed permissions. Indeed, there would be a row if their names did not appear, and, mark you, they are going to have

their copy to read. Many old patients will, alas, be hurt that, after being chosen "possibles" for the team they have finally had to be omitted from the book. Where necessary, substitute names and changed professions give a pseudo-authenticity without spoiling the clinical and human record of the case. A grand attempt was made to reach every patient in the book, and to seek permission to publish. Some were not traced, a few refused and were thereby eliminated, others were deliberately disguised, but the vast majority have signed on the dotted line.

Although I have striven carefully to note the surgeon by name or initial, when any part of an operative repair has been undertaken by him, it must in fairness be realised that the work, the planning, the over-all guidance has been very personal.

Without my holding any official position as Director of Clinic, there nevertheless has been a mutual trust, a unity of thought and action, such as to constitute a very closely cemented group. I trust indeed that no one of the many great surgeons who have assisted me with private or clinic cases, or taken over such cases from me, will allow the inclusion of their brilliant work, illustrating the surgery in this book, to ruffle their smallest goat.

A book like this cannot be written without secretaries, and it is a very great pleasure to record the continued loyal and efficient work of my old friend and patient, R. W. D. Seymour. The secretaries at the hospitals have all been most efficient and co-operative, but the special people working on the book can be named as Miss Taylor in a general way, Miss Paget, who worked with Dr. Millard throughout the early stages of the book, and Miss Meehan and Miss Clayton, who have carried on towards the finishing of the colossal task.

There will be many omissions from this long list of acknowledgments, but they will be omissions of the mind and not of the heart. I trust the omits will forgive me. It is impossible also to write a book unless somebody is going to be good enough to publish it. Messrs. Little, Brown and Company were chosen after much flirting elsewhere, and it has been a great experience to meet Mr. Ted Phillips, manager of their medical book department, backed by his three most efficient aides, Miss Truesdell of the editorial, Miss Farr of the production staff, and the head copy editor Mrs. Rackliffe. Perhaps Ted has been a Little too Phlipant and his staff occasionally Too True or Too Farr, but on the whole we have had a grand time together, battling correspondence across the Atlantic. Having my co-author boxed up in Korea and unable to get at the manuscript was

no help. We insisted on trying to get away from the usual system of textbook layouts, in which pages must often be turned to find an illustration discussed in the text. The plan was that every illustration should have its own words alongside it. The layout was therefore extremely difficult and unusual; we hope it may prove quite a success. At any rate, no one could have been more co-operative than the staff in Boston, not forgetting the magnificent work of their printers and bookmakers.

Nor could the book have been completed without the labours of the unsung hero of the index, Barbara Millard.

The colour blocks have been made possible by a generous presentation by the Australian Red Cross to me at the end of the Second World War, the sum of £1500 to be used in the field of plastic surgery. It was considered that provision of these matchless colour blocks would be a very suitable method of expending this money. Judging from the quality of the colour, the money has been well spent. Should this capital be repaid in the form of royalties at any date, then it is to be put back into a plastic fund, probably for use as a travelling scholarship for Antipodean plastic pupils.

A large proportion of the first chapter of this book has been collected from *Plastic Surgery of the Face*, published by the Oxford Medical Publications. For their gracious permission to republish many of the photographs we are grateful. There are also many important articles published in the *British Medical Journal* and the *Lancet*, whose permission has kindly been given for reproduction.

Some of the illustrations have also appeared in *Surgery, Gynecology and Obstetrics*, and to them also we extend our thanks.

Several palate illustrations have been borrowed from the *British Journal of Surgery*, to whom we express acknowledgment with thanks. Several articles have also been published in the *British Journal of Plastic Surgery*, and we should like to thank the publishers for their permission to use these articles again. I think it would also be appropriate to thank Messrs. Livingstone for their gracious acknowledgment of the use of many illustrations that were to appear in this book and have already appeared in their recent publication *Fractures of the Facial Skeleton*, by Messrs. Rowe and Killey.

And finally, greetings to one without whose faith and vision this book would never even have started: long, lithe, lanky Yankee blessed with a happy pen, a love of plastic surgery and an unfailing, blind belief in his co-author. Perhaps you might like to read the book. . . .

H. D. G