



BAPRAS British Association of Plastic
Reconstructive and Aesthetic Surgeons

'A STRANGE NEW ART'

PLASTIC SURGERY & THE FIRST WORLD WAR

An exhibition from the Antony Wallace Archive of BAPRAS





FOREWORD

The meeting of the European plastic and reconstructive surgeons so close to the outbreak of the First World War set BAPRAS and its Antony Wallace Archive to thinking about the development of the specialty brought about by the conflict. There is ample information available from Sir Harold Gillies' papers and the clinical notes rescued from the Queens Hospital at Sidcup on the early days of plastic surgery in Britain. However our knowledge of the situation across the Channel is deficient. This exhibition A Strange New Art is intended to display what we know, stimulate discussion and collect information, particularly from the Continent about this important time for plastic and reconstructive surgery.

Brian Morgan
Honorary Archivist, Antony Wallace Archive (BAPRAS)

Exhibition curated by Kristin Hussey (Assistant Curator)
and Brian Morgan (Honorary Archivist)

Written by Kristin Hussey

INTRODUCTION

This was a strange new art, and unlike the student today, who is weaned on small scar excisions and gradually graduated to a single harelip, we were suddenly asked to produce half a face.

Harold Gillies, *The Principles and Art of Plastic Surgery* (1957)

Plastic surgery techniques have been in use for over 2,000 years, however it was not until the First World War (1914–1918) that these practices were brought together as a distinct specialty. Mechanised conflict on a global scale resulted in traumatic facial injuries never before encountered by surgeons. Peering over the trenches with only tin helmets for protection, maxillofacial injuries were rife amongst soldiers on all sides. It has been estimated that 60,500 British soldiers suffered head and eye injuries and over 460,000 French soldiers received facial injuries. Jaws torn apart by shrapnel and rifle bullets tested the skills of clinicians from frontline medics to dental surgeons.



Portrait of Private Edward Moss by Professor Henry Tonks (1862–1937). Courtesy of the Hunterian Museum at the Royal College of Surgeons of England, RCSSC/P 569.29

To tackle these injuries, a new generation of surgeons rose to the challenge of reconstructing disfigured faces. Sir Harold D. Gillies (1882–1960), remembered as the founder of British plastic surgery, recalled this era as the time when ‘a strange new art’ known as plastic surgery was born. However Gillies was not alone in his pioneering work. He was particularly influenced by the work of European surgeons such as Hippolyte Morestin (1869–1919), Charles Auguste Valadier (1873–1931), and JF Esser (1877–1946). From Berlin to Lyon, Sidcup to Paris, facilities were established to tackle the influx of facial and jaw injuries. This exhibition draws on the collections of the Antony Wallace Archive at the British Association of Plastic,

Two Canadian wounded, heavily bandaged, being removed by motor ambulance from the Battle of Passchendaele, 1917. Courtesy of the Imperial War Museums (IWM), IWM: CO 1636



Reconstructive and Aesthetic Surgeons (BAPRAS) to examine the development of plastic surgery during this era in the United Kingdom and Europe. By considering the contributions and experiences of clinicians, patients, and technicians, *A Strange New Art* seeks to explore the historical and human context surrounding the birth of plastic surgery.

The exhibition is divided into five central themes: Patients, Clinicians, Technicians, Britain and Europe. The Patients display considers the experiences of soldiers with facial injuries during the war and displays reproduction documents from Gillies case files alongside instruments which would have been used to carry out reconstructions in this era. This case is complemented by reproductions of the famous pastel portraits by Professor Henry Tonks housed in the Royal College of Surgeons of England. The Clinicians case explores the role of individuals in the development of the specialty, particularly Harold Gillies, Jacques Joseph and dental surgeon William Kelsey Fry. The Technicians section acknowledges the important contributions of the non-surgical staff that supported plastic surgeons in their work. From dental technicians to radiologists and artists, this display focuses on the wider contributions of the medical community. The theme of Britain examines the development of plastic surgery in the UK from the Cambridge Military Hospital in Aldershot to the famous Queen’s Hospital at Froggnal House in Sidcup. Finally the Europe display seeks to highlight the important contributions of European surgeons and reconstructive units in the development of plastic surgery internationally.

PATIENTS

Men without half their faces; men burned and maimed to the condition of animals. Day after day, the tragic, grotesque procession disembarked from the hospital ship and made its way towards us.

Harold Gillies, *The Principles and Art of Plastic Surgery* (1957)

On 1 July 1916, one of the bloodiest battles in history began on the banks of the Somme River in France. In what came to be known as the Somme Offensive, over 1,000,000 men were wounded or killed between the opening day and 18 November. On the first day of the Offensive, Private Walter Ashworth, a 23-year-old in the 18th West Yorkshire Regiment, received a gunshot wound which destroyed much of the soft and bony tissues of his face. That same day, elsewhere at the Front, Private Charles Deeks suffered an explosive wound to his right cheek that also deformed both his upper and lower lips. Two days later, Deeks arrived at the Cambridge Military Hospital in Aldershot for treatment under Captain Harold Gillies and his new plastic unit. Ashworth followed on 5 July.



The Queen's Hospital Football Club, 1921-1922. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)

Gillies recorded that the Somme Offensive sent his unit approximately 2,000 patients; it had been expecting 200. However, it was only the fortunate who made it as far as Aldershot. Sudden haemorrhage and airway obstructions from travel conditions could kill a soldier with a facial injury instantly. Gangrene and infections caused by the bacteria rich dirt of the trenches were a battle against which surgeons of the time had almost no defence. Yet even the patients who survived their operations still had cope with the emotional trauma of disfigurement.

Gillies was keen that soldiers with facial injuries were rehabilitated. Part of the motive for the unit's relocation to Froggnal House in Sidcup was to provide room for patients to recuperate in between procedures. Sidcup offered training to its patients so they could return to civilian life with skills such as toy-making, cinema operating and watch repairing. However, some trades taught were intended to ensure that the disfigured soldiers could be hidden from society. Mirrors were forbidden from the wards to keep patients from seeing the extent of their injuries. Although the staff worked to keep up spirits, facial disfigurement could lead to despair: patients often refused to see their families and loved ones. Set away from the general populace, Sidcup served to heal the wounded but also to protect the public from the sight of the facially wounded.

Arriving within days of each other at Gillies' plastic unit at Aldershot, did Ashworth and Deeks meet? Did they strike up a friendship on the ward? Deeks was the first to be discharged on 19 April 1917 while Ashworth would need to wait until 26 September. Though Deeks would have been discharged too early, Ashworth moved to the new Queen's Hospital at Sidcup in August 1917. Only a few accounts survive of the experience of patients in the plastic wards of the First World War. Ashworth went on to work as a tailor although he later recalled facing prejudice as a result of his disfigurement. After his discharge he was left by his fiancée however he later married her best friend and emigrated to Australia.



Private Charles Deeks on admission to the Cambridge Military Hospital, Aldershot, 1916. From the Archives of the Royal College of Surgeons of England, MS0513/1/1/553

CLINICIANS

It being a rather informal war, the enemy did not seem to mind our learning of the good work they were doing on jaw fractures and wounds of the mouth.

Harold Gillies, *The Principles and Art of Plastic Surgery* (1957)

The year is 1915 and Hippolyte Morestin is leaning over a patient in the operating theatre of the Val-de-Grâce Hospital in Paris. He is eagerly watched by a young surgeon from New Zealand, Harold Gillies. In a swift movement, Morestin deftly moves a flap from the neck to cover the deficiency created by the cancerous tumour he has just removed. Gillies was fascinated by Morestin's skilled work of rebuilding the face with an artistic touch. Although he is remembered as the founder of British plastic surgery, Harold Gillies drew extensively on the work of his fellow clinicians. In 1916, Gillies was granted a war permit to travel around France and study the work being done with reconstructions. While such procedures were new to the United Kingdom, Europe had a more established generation of practitioners, including Jacques Joseph (1865–1934), a pioneer in cosmetic rhinoplasty, working at the Charité Hospital in Berlin. Just as Britain worked to open its first plastic unit, German surgeon August Lindemann (1880–1970) was already attempting to improve the front line care received by soldiers with facial injuries through his publications.

Without any established training in plastic surgery, practitioners came from a variety of backgrounds. Gillies himself trained as an otolaryngologist and was introduced to facial reconstruction by French-American dentist Charles Valadier. Perhaps due to a shared focus on the facial region, many early clinicians working in reconstruction were dentists or dental surgeons. Indeed much of the pioneering work done early in the war was by dental specialists at the jaw hospital in Düsseldorf. In the time before maxillofacial surgery was established, dental and plastic surgeons worked closely together to repair hard and soft tissues. As Gillies' collaborator William Kelsey Fry wrote in 1917, 'Neither the dental aspect is neglected by Major Gillies, nor the surgical aspect by myself, and the reconnaissance into the other man's territory has led to the closest cooperation between us working as a team and we believe with satisfactory results.'

Gillies is perhaps most remarkable for his enthusiasm and ability to bring together new ideas and talented clinicians to create a centre for the new discipline at Sidcup.

The centralization of plastic surgery procedures in Britain at the Queen's Hospital had the added benefit of establishing a hub for training under Gillies and his team. Surgeons from America, Canada, Australia and New Zealand came together at Sidcup to experience the new specialty. Throughout this enterprise, Gillies was supported by his commanding officer, Sir William Arbuthnot Lane (1956–1943), who was instrumental in the organisation of the hospital. With the space to focus on facial reconstructions, Gillies and his colleagues soon developed their own unique styles and approaches. Innovation spread even to the instruments used in the new operations. Gillies himself invented the combined needle holders and scissors which bear his name today. Working closely with dental surgeons and technicians, plastic specialists required creativity and patience to treat each distinct case.



Portrait of Harold Gillies (1882–1960) as a medical officer, c.1915. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)



THE OFFICERS, THE QUEEN'S HOSPITAL, "FROGNAL," SIDCUP, KENT, NOVEMBER, 1917.

CAPT. I. G. ROBERTSON, LT. R. WADE, MR. HENRY TONKS, CAPT. E. W. LOWE, CAPT. A. L. FRASER, MR. T. POPE, CAPT. ANDREW JUPP, LT. H. C. MALLESON, CAPT. W. KELSEY FRY, M.C.
 CAPT. T. C. CLAYTON, CAPT. J. L. AYMARD, MAJOR H. D. GILLIES, LT.-COL. J. COLVIN, MAJOR J. C. DUFF, CAPT. C. F. RUMSEY, LT. G. SECCOMBE HETT,
 (Chief Medical Officer) (Commandant) (Quartermaster)
 LT. R. MONTGOMERY. LT. H. M. JOHNSTON.

Photo by
 Sydney S. Walbridge

The Officers of the Queen's Hospital, Sidcup, 1917. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)

TECHNICIANS

My cases are generally extreme cases that plastic surgery has, perforce, had to abandon; but, as in plastic surgery, the psychological effect is the same.

The patient acquires his old self-respect, self-assurance, self-reliance.

Francis Derwent Wood, *The Lancet* (1917)

Plastic surgeons were not alone in their battle to rebuild the shattered faces of war. Nurses, orderlies, stretcher bearers, and anaesthetists all played a crucial role along the line of evacuation. Faced with traumatic injuries, plastic surgeons relied closely on the ingenuity of technicians to produce creative solutions for massive tissue loss. The dental laboratory became a site of innovation as surgeons and technicians worked together to create custom splints and prostheses to repair or replace lost bony tissue. Traditional techniques such as plaster casting were used alongside the latest technological innovations in the plastic and jaw units. The relatively recent invention of radiography was employed to identify fractures and foreign bodies. Although x-rays had only been discovered in 1895, by the First World War imaging technology was already an essential part of treatment. Gillies used the images produced in Sidcup's x-ray department to illustrate his 1920 book *Plastic Surgery of the Face*.

Mandibular fractures and missing bony tissue required dental wires, splints and rods to create a solid structure onto which the surgeons could rebuild soft tissue. Dental technicians were called upon to make prostheses to fix fractures, re-align teeth, or in some instances recreate an entire maxilla. At Sidcup, Chief Dental Surgeon Kelsey Fry worked closely with the technician Archie Lane to produce creative and unique prosthetic



The X-ray Department of the Queen's Hospital in Sidcup, 1917-1921. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)

devices. From this experience, Lane went on to exhibit his work internationally as well as branching out into the metal face masks which have become ubiquitous with First World War facial injuries.



An Australian patient at the Queen's Hospital, Sidcup, wearing a facial prosthesis by Archibald (Archie) Lane, 1919. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)

Where surgery could not rebuild the extent of loss, or when a soldier was not willing to submit to the necessary operations, facial prostheses offered an alternative solution. At the 3rd London General Hospital in Wandsworth, sculptor Francis Derwent Wood RA (1871-1926) crafted metal masks in what became known as the 'Tin Noses Shop'. Wood's light metallic prostheses were custom designed from pre-war portraits of the patients. Inspired by Wood, American sculptor Anna Coleman Ladd (1878-1939) founded the Studio for Portrait Masks in Paris which provided the same service for injured French and American soldiers. Masks served the purpose of providing disfigured serviceman with a temporary face between operations often lasting many months. The popularity of the masks has been disputed; some argue patients almost always opted for surgery rather than wearing a lifeless mask. Others have maintained the lightweight and artistically crafted prostheses could produce more aesthetic results than the surgery of the era. Ladd recalled the letters she received from her patients provided insight into the trauma of facial injury and the appreciation soldiers had for the technicians who helped them. 'Thanks to you, I will have a home,' one patient wrote. 'The woman I love no longer finds me repulsive, as she has a right to do.'

BRITAIN

Upon my return I was so bursting with enthusiasm about plastic surgery that by the end of 1915 it was decided I should go back to England to start a plastic unit in the Cambridge Hospital at Aldershot.

Harold Gillies, *Principles and Art of Plastic Surgery* (1957)

There is not very much that is British about the foundation of plastic surgery in Britain. The art of reconstructive surgery was brought to the UK by a New Zealander, developed by a group of dentists and surgeons from across the Dominions and influenced by techniques from the Continent. However, in Britain plastic surgery found a home and space to develop, first at the Cambridge Military Hospital in Aldershot and eventually at the Queen's Hospital in Sidcup.

Cambridge University educated surgeon Harold Gillies volunteered for the British Red Cross in January 1915 and was sent to Europe with an ambulance unit. Over the course of the year, Gillies worked with and observed the reconstructive work of Charles Valadier and Hippolyte Morestin amongst others. He began to lobby for the British authorities to establish a dedicated plastic surgery unit, and in January 1916 was ordered to report to Aldershot 'for special duty in connection to plastic surgery'. Unsure of how facial injury cases would find their way to his new unit, Gillies purchased tags from a stationery store which he provided to the Chief Medical Officer for distribution: it wasn't long before labelled men were arriving at the Cambridge Hospital.

By the summer of 1916, Aldershot was already overwhelmed with cases, largely as a result of the Battle of the Somme. Plans were made to allocate a larger institution for the plastic and jaw unit. In June 1917, the work of moving Gillies' patients began to a large historic home named Frognal House near Sidcup in Kent. The new Queen's Hospital officially opened on 18 August 1917. Over the following year, patients and staff flowed into the hospital, which was Britain's first dedicated plastic surgery institution. During 1918, small jaw units from the Dominions were transferred to the hospital. With six operating theatres and an enormous surgical staff, both dental and plastic, Sidcup became a hub for the treatment of facial injuries and the training of plastic surgeons. Over 5,000 patients were treated. As William Arbuthnot Lane wrote to Gillies in September 1917, 'I want to make Sidcup

the biggest and most important hospital for jaws and plastic work in the world and you consequently a leader in this form of surgery.'

Once the war was over, the Queen's Hospital continued to treat soldiers with facial injuries until 1925 when the remaining eight patients were moved to Queen Mary's Hospital in Roehampton. Gillies collected the lessons he had learned and published them in his 1920 work *Plastic Surgery of the Face*. Many have argued that this volume established the techniques and procedures which characterise modern plastic surgery. Once he had been decommissioned, Gillies carried on his plastic work, going into private practice with another Sidcup-based surgeon, Thomas Pomfret Kilner (1890–1964). The two would play an important role in the organisation of plastic surgery in the Second World War.



Dental surgeon's chart and notes from the Cambridge Military Hospital, Aldershot, 1916. From the Antony Wallace Archive of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS)



Harold Gillies in the plastic surgery theatre of the Queen's Hospital, Sidcup, 1917–1921. Courtesy of Dr Andrew Bamji

EUROPE

I went to Austria to help to repair and undo a little part of the cruel mangling that millions of men have produced all over Europe

JF Esser, *Annals of Surgery* (1917)

Reverdin, Thiersch-Ollier, Wolfe-Krause: the names of the skin grafts in use prior to the First World War are a testament to the influence of European surgeons on the development of plastic surgery. While Harold Gillies was the first to practice reconstructive techniques in the UK, there was already an established tradition of plastic repair in Europe dating to the mid-nineteenth century. The Balkan Wars (1912–1913) had afforded an experience of facial injury to European surgeons that arguably rendered them better prepared for the horrific wounds of the First World War.

Continental surgeons of this era, like their British counterparts, came to reconstructive surgery from a variety of backgrounds.

Many of these early specialists were called upon to establish plastic facilities in their respective countries at the outbreak of war. Fedor Krause, who developed his eponymous full thickness graft, was a German neurosurgeon who also served as a consulting surgeon in head wounds during the war. In Lyon, stomatologist Dr Albéric Pont founded the centre for maxillofacial surgery. Jacques Joseph was a surgeon noted for his advances in cosmetic rhinoplasty who in 1916 founded the Section for Facial Plastic Surgery at the Royal Ear and Nose Clinic of the Charité Hospital in Berlin. Like the Charité, the Düsseldorf Hospital for the Facially Injured (Die Düsseldorfer Lazarette für Kieferverletzte) established itself early in the war as a centre for reconstructive surgery. In 1916, Professor Christian Brühn edited a book based on the experiences of the hospital, including an essay by August Lindemann on the importance of correct bandaging and splints to avoiding severe deformity in facial injury cases.

Harold Gillies arrived in France in 1915 and had several opportunities to observe the work of practitioners on the Continent. Gillies later recalled that he was given



Portrait of Professor Jacques Joseph (1865–1934), c.1900. Wikicommons

Lindemann's essay by an American friend and was inspired by the Germans' work with reconstructive techniques. His appreciation for the technical advances developed by European surgeons would continue throughout the war. In 1917, Dutch surgeon JF Esser's publication of his reconstructive work using his epithelial inlay technique would prove particularly useful to Gillies. Esser himself had offered his services to the British, who declined and he subsequently moved on to posts in Austria and Germany.



The Salle de Moulages (Plaster Cast Studio) of Dr Albéric Pont, Lyon, 1915–1919. Courtesy of the Bibliothèque Interuniversitaire de Santé, Paris

Much of what we know of plastic surgery in Europe in this period comes from Gillies' own recollections. While the foundation of the specialty in the UK can be traced fairly directly to Gillies' unit at Aldershot and the Queen's Hospital in Sidcup, he was the first to acknowledge the contributions of his colleagues in the development of his techniques. The number of specialist institutions and reconstructive surgeons working elsewhere in Europe is considerable; however these units were often small and isolated. What can be said with certainty is that the birth of plastic surgery is much more than the work of one man. Surgeons from different backgrounds and nationalities came together with technicians, artists, nurses and patients to create a new way of treating facial injuries necessitated by war.

ACKNOWLEDGEMENTS

One looks forward with confidence to a plastic millennium when, given a healthy patient and no time restrictions, it will be possible to cope surgically with any reasonable facial loss.

Harold Gillies, *Plastic Surgery of the Face* (1920)

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Kristin Hussey
Assistant Curator
June 2014



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of men have produced all over Europe

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