



## **Wellcome Film Project**

### **The Story of the Wellcome Foundation Limited**

**Wellcome Film Unit, London, 1955.**

**This film was made in London with the co-operation of the staffs of the London Units of the Wellcome Foundation Limited.**

**Written and directed by Florence Anthony.**

**Assistant direction, photography and editing: Douglas Fisher.**

**Animated diagrams: Ronald Goodliffe.**

**Artists: Joan Goodliffe; John Michieli.**

**Commentary spoken by David Lloyd James.**

**Colour**

**Duration: 00:28:26:05**

**00:00:00:00**

**<Opening credits>**

**<David Lloyd James narrates over shots of the outside of the Wellcome building, Euston Road, London; then shots from the rooftop across Bloomsbury to Big Ben>**

In Euston Road in North West London stands the Wellcome building. It was built originally as a research institution and its founder was Henry Solomon Wellcome who was born in America in the days when the white man was still fighting the red Indians. He came to London in 1880, a young man with no money but a great ambition and 50 years later he erected this building to house some of the research laboratories, the medical museums and libraries which he had founded.

Euston Road runs East and West across the Northern boundary of Bloomsbury, a district which contains many of London's colleges and museums. Looking south from



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the roof of the Wellcome building you can see the tall white tower of London University itself and University College with the dome of its library in the foreground. Away in the distance are other famous London landmarks – the towers of Westminster, the Houses of Parliament and Big Ben.

The Wellcome building is today the headquarters of the Wellcome Foundation Limited, the private company embracing all Henry Wellcome's interests, commercial as well as academic, at home as well as overseas, and the story of this organisation is also largely the story of its founder.

<Intertitle>

### **The Early Life of Henry S. Wellcome**

It all began just over a hundred years ago.

<James narrates over shots of the early life of Sir Henry Wellcome, using stop-frame animation to track his movements across the States>

Henry Solomon Wellcome was born on August 21<sup>st</sup> 1853, in Wisconsin, in a log cabin in a tiny frontier settlement called Almond. Six years later, his family migrated westwards to the plains of Minnesota where they settled in a place called Garden City, a little town of wooden houses; here's the one the family lived in, where the children learned their lessons in a simple log house school. Here young Henry spent his boyhood amidst poverty and hardship with his elder brother and his mother, to whom he was devoted, and his father who was almost fanatically religious, and his uncle, a doctor who he always much admired. But at the age of 17 he decided what he wanted and went away and left them all to start his career.

First he went to a nearby town to work for a firm of druggists, making up prescriptions. Then he went to Chicago to spend a year in studying pharmacy and other subjects, after which he travelled eastwards for a final year in work and study in Philadelphia and graduated from the College of Pharmacy there in 1873. Three

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months later he was 21 and then in a rather solemn letter home he told his parents his ambition to attain wealth and to live a life devoted to the true God and mankind.

So off he went to New York where he shortly got a post with a firm of wholesale druggists. Soon he'd shown himself to be a first class salesman and was sent out travelling for his firm, introducing new medicines to doctors and to pharmacists. In this way he came to visit many places in the States and also gained much valuable experience of different marketing conditions. Finally he made a journey down the Western Coast to visit Mexico and all the leading cities of the Central American Republics. He continued on to South America and while in Ecuador he went inland to see the Cinchona Forests and gather specimens of the bark and leaves to take back with him – for quinine preparations were important products of his firm.

Then when he was 27 there came an offer of a business partnership in England, so in April 1880 he left New York, sailing in the SS City of Berlin. Thus he came to England and he travelled up to London to join Silas Mainville Burroughs, another young American, and with a starting capital of £2000 they opened an office in the city.

### <James over illustrations of Wellcome and Burroughs' offices, early products and factory premises>

In this late Victorian London, with its streets lit by gas lamps, and its horse-drawn buses, they furnished their offices with plush and with walnut, with chairs and settees in alligator hide, but they also had it fitted with what was then the very new Edison electric light. From the start the business prospered for the times were most propitious and they had new goods to offer. Those marked 'Hazeline' they made themselves and they had the sole rights for Kepler malted products. But in addition they were agents for two American firms and sold new compressed goods, accurately weighed and measured; machine-made pills and gelatine-coated capsules, but these soon proved too costly to import and so they opened a factory in London and made their own. And in the first five years the capital increased seven-fold.

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Then they bought an old paper mill at Dartford, 20 miles or so away from London, and moved the factory there. And with a party and a grand display of fireworks they opened it in the summer of 1889. By then their foreign trade was starting: in 1886 an Australian depot had been opened and a dozen others for the sale of goods elsewhere had been established by 1895, by which year too their capital had grown to something like a quarter of a million. But in that very year the picture changed, for in December Silas Burroughs died quite suddenly. So Henry Wellcome thus became sole owner of the firm and at last he had his great chance to achieve the whole of his ambition.

<Intertitle>

### **Business**

<James over various shots relating to Wellcome's business including many shots of early Burroughs Wellcome products>

So first he concentrated on the business – this in the following years expanded greatly – just compare the size of the catalogue for 1897 with that for 1910. Overseas new branches were opened in Cape Town, New York, Montreal, Milan and Shanghai, and 16 new depots in various places.

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The different trademarks give an indication of the range of goods. All these had been registered by 1910; some are still in use today such as Hazeline, Saxin and Kepler, and the familiar tabloid which was registered in 1884 – this somehow caught the public fancy and even got into the dictionary though it could only legally be applied to Burroughs Wellcome products. By 1910 too the elegant unicorn had been registered all over the world as the general trademark of the firm.

Of all the goods they issued, this had quite the prettiest pack, a special rose-tinted skin cream that sold very well in the Far East. Its modern counterpart is still in

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demand there today. In those old packs, Henry Wellcome made great use of stuffers as they are called, folded bits of paper printed with advertising matter in half a dozen different languages.

The Wellcome medical diary was another of his ideas – it was first issued in its present form in 1897 and it has appeared every year since then. Now, any doctor who cares to ask for it, receives a copy of one of the available additions.

Henry Wellcome set his standards high: Fine Products he called his goods and he also coined various other complimentary slogans – prepared with materials of exceptional purity, he added, but he saw to it that these things were true. So when the factory was enlarged in the early 1900s, he built an analytical laboratory for testing all raw materials. He kept it up to date in other ways too – motor vans began to replace the horse-drawn ones in 1902, and when electricity was installed about the same time, he had travelling belts put into the packing departments; an innovation in those days, but to the girls of today working with modern machines, working with moving belts are just a part of the accepted order of things.

**<James over various shots of drug production in the Wellcome factory, accompanied by bright upbeat music>**

Here they are filling and packing bottles of a new synthetic drug designed to relieve nasal catarrh. In another part of the works, compressed products are made. The pure drugs are first mixed with binding agents, they are dried and sifted and then compressed into different kinds of tablets and the total output amounts to millions every day.

These are vials of insulin which is one of the firm's most important products since 1923 when the first commercial batches were produced. Other machines are filling tubes, these contain a cream for the treatment of sunburn and insect bites. And yet others are filling ampoules; all these processes are just a small part of the work of a modern factory turning out pharmaceutical products.

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The employees are mostly people from the town of Dartford and thereby; many come when they are young and some stay until they retire. So their association with the firm plays a bit part in their lives which is the greater because there is also a flourishing social club whose biggest annual event [...]

### <James over shots of staff dancing at a garden party and of other staff leisure facilities>

[...] is the summer garden party. This is undoubtedly one of the oldest works clubs in the country for it was founded by Henry Wellcome in 1889. He acquired for it this house and its grounds in Dartford itself and here are some of the first members.

Year by year the staff and their families come to the garden party to enjoy themselves and sooner or later everyone turns up here, from the youngest new trainee to the Chairman and Managing Directors. The mayor of Dartford is also present for there is by now a close link with the town which is acknowledged by including the symbol of a tablet in its coat of arms.

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### <Intertitle>

#### **Research**

But to Henry Wellcome mere commercial success was not enough. He coupled it with something else – an enlightened encouragement of research.

### <James over various shots showing research facilities and activities funded by Wellcome>

In the 19th century, the work of Jenner, Pasteur and many others led to the rapid development of bacteriology from about 1870 onwards. And thence to an entirely new approach to the problem of disease – the concept of acquired immunity.

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Serum was first used experimentally in England in the summer and autumn of 1894 and later in that year the production of anti-diphtheric serum began on a large scale at the Wellcome Physiological Research Laboratories, which had just been opened for that purpose. These laboratories were also intended for fundamental research in bacteriology and other sciences. Over the years, many famous men have worked there. Here's the staff in 1914 when Sir Henry Dale was the director. Such men stayed because Henry Wellcome gave them freedom to do original work, unhampered by commercial considerations.

In 1922, the laboratories were moved to Langley Court, a beautiful estate at Beckenham in Kent, with grounds large enough to allow room for expansion. Today in the old mansion house are the Directors office and the reference library, part of the biochemistry department and the pharmacology department. Here the action of drugs on the living tissues is studied, essential work before any drug, new or old, can be issued for clinical use.

With this apparatus, effects on breathing are observed – in this particular case it's the effects of an antidote to morphine which is being studied. The completed record shows first normal breathing, then the diminution following the dose of morphine and finally the equally rapid and complete recovery produced by the antidote. Frequently the results of this type of research have to be assessed statistically; this itself is a job for experts.

The serological laboratories occupy a considerable area, for the number of different vaccines and sera is now very large and research in this sphere has become increasingly important. Most of the serum is obtained from horses and therefore extensive stables are required. Altogether more than 350 serological products are issued by these laboratories; many of them are for veterinary use. Amongst these are the lamb dysentery preparations which were developed here a few years ago. Other veterinary research is carried out at a field station at Frant about 30 miles away, a 300-acre estate on the rich farming land of the Kent Sussex border. Here special attention is paid to problems of infertility in horses and cattle; the stallion used

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in this work ran in the Derby. And here are the brood mares which are also used in the breeding investigations.

In experimental plots of grass, the effects of different soil fertilisers on the yield and mineral content is studied, for these affect both the health and productivity of grazing animals. And here is the fine herd of a tested pedigree Ayrshire cattle. These two are kept for breeding experiments and for the production of tubercle-free milk.

**00:15:50:24**

<Intertitle>

### **Wellcome Chemical Research Laboratories, founded 1896.**

Research in chemistry began in 1896 in a laboratory in the North of London

<James over various shots of research in Wellcome chemistry laboratories>

And here, too, the work was primarily academic, the investigation of the active drugs in medicinal plants. For example, in Strophanthus, a tropical plant whose seeds contain a drug of value in heart disease; in ergot, a parasite of rye from which several valuable alkaloids are extracted; in ipecacuanha root; in Digitalis, both the purple English foxglove and the paler Hungarian one which both contain drugs used in certain heart diseases; in Cascara Bark and nutmegs and Calabar beans. These were but a few of the important investigations in the following years.

Today, chemical research is carried out on a large scale at Langley Court in a fine new laboratory. Some of the work is still plant chemistry, for many naturally occurring drugs are still used in therapeutics and continual work is necessary to improve the methods of extraction. But the emphasis today is rather more on the preparation of synthetic drugs; compounds whose chemical structure is specially designed to give them certain required properties.





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Not long ago, for instance, a study of the morphine molecule suggested that this grouping of atoms might be a promising start for the preparation of a new analgesic. So, first this compound was made. It wasn't very active so a molecule of water was removed to give this one. And then by changing various parts of both of these, hundreds of other compounds were prepared. Finally, out of them all, two active ones emerged from each series, four in all, similar in structure but with different properties. One suitable for the treatment of Parkinson's disease, another for peptic ulcer, a third was an antihistamine and the fourth an analgesic; and all of them are now available for professional use.

The laboratories at Langley Court are today collectively known as the Wellcome Research Laboratories and the staff there number several hundreds. They all appear to enjoy their pleasant surroundings and make the fullest use of them at lunchtime and after working hours.

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**<Intertitle>**

**Wellcome Laboratories of Tropical Medicine, founded 1901.**

**<James over various shots relating to Wellcome's research in Tropical Medicine within their laboratories>**

Research in tropical medicine began in 1901 when Henry Wellcome equipped and staffed laboratories at the Gordon Memorial College in Khartoum. Here he is with some of the staff. On his right sits the Director, Dr Andrew Balfour, who afterwards became his first Director in Chief of research in London.

Part of the equipment was a floating laboratory which proved invaluable for field work in the upper reaches of the Nile. These laboratories were the forerunners of the Wellcome Bureau of Scientific Research which was opened in London in 1913 as a centre of information in London on tropical medicine, with facilities both for research and instruction. This made way in 1932 for what is now the Wellcome building and on



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the top three floors of which are the Wellcome Laboratories of Tropical Medicine. Here, both academic and applied research proceeds side by side. This is part of a special investigation of certain leptospiral diseases. Another department is devoted to protozoal diseases, such as sleeping sickness and malaria. And yet another to virus diseases.

Here are some of the specimens of parasitic worms in the helminthology department, and these are living examples of one of the species of the human blood flukes in which there is particular interest at present. For experimental purposes, laboratory infections of these are maintained and for this it is also necessary to keep large numbers of tropical freshwater snails.

Insects are an important study because many tropical diseases are transmitted by blood-sucking species and a knowledge of their biology and structure is therefore of fundamental importance. Some insects, too, are bred here – tsetse flies, transmitters of sleeping sickness; anopheline mosquitoes, carriers of the malaria parasite; and this is a South American bug which transmits Chagas disease so common in Brazil.

The work of the chemists is mainly to synthesise new drugs and these are later tested in the chemotherapy laboratories against the different diseases.

### **<James over shots of the Wellcome Museum of Medical Science>**

On the ground floor of the Wellcome building is the Wellcome Museum of Medical Science which is devoted to tropical medicine. This is an educational institution, planned at post-graduate level. In it, the different diseases are grouped according to cause. The museum is used by students from all over the world and many thousands of doctors visit it each year.

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### **<Intertitle>**

#### **History of Medicine**



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**<James over various shots relating to Wellcome's passion for the history of medicine, particularly his collection>**

But perhaps the greatest of Henry Wellcome's interests was the history of medicine and he used to say it dated from the day when as a child he found a flint arrowhead and was told it was a prehistoric weapon. Certainly, when he became wealthier, collecting became a passion with him and many is the journey he made across Europe in this car in his search for specimens.

His collection became available to students in 1913 when the Wellcome Historical Medical Museum was opened. Like all his projects, he planned it on a lavish scale, to cover the whole of the history of medicine and allied sciences and it thus includes a vast number of different objects, such as figures of ancient Gods of healing – this is the Egyptian Imhotep of 4000 years ago; Asclepius the same God in Greek culture some 2000 years later; figures of primitive medicine like this one from Central Africa or this shaman from the North American Indians. There are shrunken human heads from Ecuador, the equipment of old alchemists and drug jars of all periods – these are 17th century Italian ones. There are surgical instruments of all kinds like this 18th century amputation saw, cupping sets such as this vicious little mini-bladed instrument for scarifying the flesh; trepanning sets and all the other equipment of physicians and surgeons through the ages, as well as objects of more personal interest like the collection of Lord Lister's instruments from which this antiseptic spray comes. Anything was included which either directly or indirectly affected the health of mankind.

His collection of medical books formed the basis of the Wellcome Historical Medical Library which is now one of the largest medical libraries in the world, containing over 200,000 volumes as well as many thousands of manuscripts and autographed letters. This is an old anatomy book published in the year of the accession of the first Elizabeth. It contains the first copper plate engravings ever made in England. Here's one of the manuscripts, a beautiful Persian one, a 17th century copy of the writings of Avicenna, a famous Arabian physician of the 10th century. And this is one of



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Madame Curie's notebooks containing some of the details of that first laborious extraction of radium in 1902.

These are examples picked at random, but there's hardly a single important happening in medicine or science that's not represented in this library by an original manuscript or book.

<Intertitle>

### **Excavations at Jebel Moya, 1910-1914.**

<James over shots of Wellcome's excavations at Jebel Moya, including c.1912 film footage of excavations by native labourers and of Wellcome himself>

Archeology was another of Henry Wellcome's interests. In 1910 at Jebel Moya on the Blue Nile, a site chosen by himself, he set to work to excavate the remains of some of the primitive Ethiopian tribes which once lived there. For this he employed about 1000 native labourers, primitive fighting people quite unused to working. But with firmness and patience he persuaded them that there were advantages in regular work and pay. He even introduced English field sports in which they enthusiastically took part and over which he presided benignly.

This is the only film record we have of Henry Wellcome, taken in 1912 by the camp photographer. Here's the whole company at the pay parade. This work finished with the start of the First World War but it was more than 30 years later before all the results were finally assessed and published, together with the account of a similar expedition to Lachish in Palestine in 1933, in which, however, Wellcome himself never took part.

**00:25:14:17**

<Intertitle>

### **The Later Life of Henry Wellcome**



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### <James over shots of the structure of Wellcome's empire and events in his later life>

In 1910 Henry Wellcome had become a naturalised British subject and 14 years later he took another big step to consolidate all his scientific and business interests. On 1<sup>st</sup> January 1924, the Wellcome Foundation Limited was registered as a private company with a capital of £1,000,000. He himself was the Permanent Chairman and Governing Director and the principle overseas branches were registered as separate companies owned by the Wellcome Foundation Limited. The scientific institutions continued to operate under separate direction.

Public honours came late to Henry Wellcome. When he was 75 he received the honorary degree of Doctor of Laws of Edinburgh University, four years later he was knighted and also elected an Honorary Fellow of the Royal College of Surgeons and a Fellow of The Royal Society. In the coat of arms he now chose, he symbolised his interests and included a Cinchona tree, the Rod of Aesculapius and the Torch of Learning. And he put his aim in his motto.

Two years later, within a month of his 83rd birthday he died and the funeral notices went out from the Wellcome Research Institution, the building in Euston Road of which he'd been so proud.

Then, while the Board of Directors continued the day to day working of the Foundation, the company's shares were transferred to the Wellcome Trust – five distinguished men previously selected by Henry Wellcome, who now had the task of applying the distributed profits as he himself had been doing for the support of research and teaching in medicine and allied sciences, under which terms the trustees have already distributed more than half a million pounds to universities and learned bodies in different parts of the world.

Today, the Wellcome Foundation Limited has a capital of £3,000,000. It has nine associated houses overseas and agents or distributors in nearly every country in the



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world. The largest of the associated houses is in New York, with its own research laboratories and factory, employing close on 1000 people.

Both at home and abroad, the industry is continually expanding to keep pace with modern needs and therapeutics. Single addition of recent years will be when it's completed, a new building next door to the works at Dartford where the most advanced techniques can be employed for the manufacture and packaging of pharmaceutical products.

### **<James over shots of Dartford and the Wellcome building>**

And so, Henry Wellcome's ideal of an industry based on research, and in its turn supporting research to an extent far beyond its immediate needs, is being realised. An ideal conceived by him in its broadest outlines more than 50 years ago and now perpetuated in this organisation – The Wellcome Foundation Limited.

### **<End credits>**