

Heroin: A Hundred-Year Habit

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Ian Scott traces the hundred-year history of heroin, from cough medicine to underworld narcotic.



Bayer's pre-war heroin bottle, originally containing 5 grams of Heroin substance.

In 1898 a German chemical company launched a new medicine called 'Heroin'. A hundred years later, this drug is flooding illegally into Britain in record amounts. The latest Home Office figures show a 40 per cent increase in police seizures of heroin. The National Criminal Intelligence Service believes that up to 80 per cent of the heroin currently entering Britain is controlled by Turkish organised criminals based in London

and the South-East. How, then, did nineteenth-century science come to bequeath this notorious drug of abuse to twentieth-century crime?

In 1863, a dynamic German merchant called Friedrich Bayer (1825-76) set up a factory in Elberfeld to exploit new chemical procedures for making colourful dyes from coal-tar. German coal-tar dye manufacture expanded rapidly, surpassing English or French production six-fold by the mid-1870s. In the mid-1880s, however, price conventions and raw material availability deteriorated in the German dye industry, so the Bayer company invested in scientific research to diversify its product range. In 1888, a new substance synthesised by Bayer chemists became the company's first commercial medicine.

Synthetic chemical medicines were something new. In the early years of the nineteenth century, medicines had been prepared using crude natural materials like opium, the dried milky juice of poppy seed pods. A young German pharmacist called Friedrich Sertürner (1783-1841) had first applied chemical analysis to plant drugs, by purifying in 1805 the main active ingredient of opium. Recalling Morpheus, the Greek god of dreams, Sertürner gave his drug the name 'morphium' which later became morphine. Perhaps appropriately, the discoverer of morphine was in due course nominated for academic honours by the author of 'Faust', Goethe himself.

The possibility of obtaining morphine and other pure drugs from plants brought commercial reward for entrepreneurs such as Georg Merck (1825-73), who turned his family's seventeenth-century pharmacy in Darmstadt into a major supplier of these new

products. Morphine was widely used for pain relief in the American Civil War and the Franco-Prussian War, in combination with the hypodermic syringe, which was invented in 1853. In contrast to the old crude preparations, precisely measured doses of the new purified drugs could be administered. Furthermore, drug action in the body could be more scientifically investigated. Pharmacology therefore developed rapidly not least in Germany.

As part of the Prussianisation of Alsace-Lorraine following the Franco-Prussian War, a well-equipped institute was built in Strasbourg in 1872 for the eminent German pharmacologist Oswald Schmeideberg (1838-1921). One of Schmeideberg's many talented pupils, Heinrich Dreser (1860-1924), ended up as head of the pharmacological laboratory at the product-hungry Bayer Company in Elberfeld.

Now that plant-derived drugs were available in purified form, chemists could modify them to form new molecules that might prove more effective, or perhaps safer to use. In the later 1890s, Dreser and his colleagues adopted this strategy to produce for Bayer two of the most famous drugs in the world today. Heroin, made by adding two acetyl groups to the morphine molecule, was followed a year later by another acetyl derivative of a painkiller from drugs; the second natural drug was salicylic acid and the Bayer derivative was named 'Aspirin'.

Ironically from today's perspective, heroin took its name from the adjective *heroisch* (heroic) sometimes used by nineteenth-century German doctors for a

powerful medicine. Dreser presented his new drug as a cough, chest and lung medicine to the Congress of German Naturalists and Physicians in 1898. Painful respiratory diseases such as pneumonia and tuberculosis ('consumption') were then the leading causes of death, and in the days before antibiotics or the BCG vaccine, doctors could only prescribe narcotics to alleviate the sufferings of patients who otherwise could not sleep. There was, therefore, considerable interest in the highly effective new drug.

Today, heroin is known to be a more potent and faster acting painkiller than morphine because it passes more readily from the bloodstream into the brain. Heroin was praised in a number of early clinical trials, and was rapidly adopted in medical establishments in many countries. Bayer advertised the drug in German, English, Italian, Russian and other languages.

Heroin was prescribed in place of morphine or codeine (another constituent of opium, isolated in 1832). In a typical early report of 1898, G. Strube of the Medical University Clinic of Berlin tested oral doses of 5 and 10 mg of heroin on fifty phthisis patients and found it effective in relieving their coughs and producing sleep. He noted no unpleasant reactions; indeed the patients liked it and continued to take the heroin after he ceased to prescribe. The addictive potential of heroin's parent, morphine, was only too well known, and evidence steadily emerged that the new drug was not the hoped-for improvement in this respect. Horatio C. Wood Jr. reported in 1899 that heroin dosages had to be increased with usage to remain effective. Such was the preoccupation with morphine addiction, however, that some doctors, such as A. Morel-Lavallée in 1902,

even advocated treatment by heroin in 'demorphinisation'. This practice was criticised by J. Jarrige in 1902, who by then had observed that heroin withdrawal symptoms were even worse than those of morphine.

By 1903, the writing was on the wall: in an article in the *Alabama Medical Journal* entitled 'The Heroin Habit Another Curse', G.E. Pettey declared that of the last 150 people he had treated for drug addiction, eight were dependent on heroin.

Nevertheless, other physicians remained reluctant to abandon this highly effective drug. In 1911, J.D. Trawick could still lament in the *Kentucky Medical Journal*: 'I feel that bringing charges against heroin is almost like questioning the fidelity of a good friend. I have used it with good results.'

The United States was the country in which heroin addiction first became a serious problem. By the late nineteenth century, countries such as Britain and Germany had enacted pharmacy laws to control dangerous drugs, but under the US Constitution, individual states were responsible for medical regulation. Late in the century some state laws required morphine or cocaine to be prescribed by physician, but drugs could still be obtained from bordering states with laxer regulation. Moreover, this era was the peak of a craze for over-the-counter 'patent' medicines that were still permitted to contain these drugs. At the turn of the century it is believed that over a quarter of a million Americans (from a population of 76 million) were addicted to opium, morphine or cocaine.

After years of resistance, American patent medicine manufacturers were required by the federal Pure Food and Drug Act of 1906 accurately to label contents of their products. These included 'soothing syrups' for bawling babies, and 'cures' for chronic ills such as consumption or even drug addiction, which previously had not declared (and sometimes denied) their content of opium, cocaine or cannabis. Consumers by this time were becoming fearful of addictive drugs, so the newly labelled medicines either declined in popularity or removed their drug ingredients. (The pre-eminent survival from this era is a tonic beverage from Atlanta called 'Coca-Cola'.) Bayer's 1899 launch of Aspirin, moreover had made available a safe and effective painkiller to replace opium for everyday use.

In 1914 President Woodrow Wilson signed the Harrison Narcotic Act, which exploited the federal government's power to tax as a mechanism for finally enabling federal regulation of medical transactions in opium derivatives or cocaine. The main impetus for national drug laws in the US was diplomatic. As today, China was seen as the greatest emerging market, to which the Americans sought improved access. To help the massive Chinese opium problems, the US had led an international campaign culminating in the Hague Opium Convention of 1912, which required signatories to enact domestic legislation controlling opium trade. After the First World War, the Hague Convention was added to the Treaty of Versailles, requiring the British Dangerous Drugs Act of 1920, despite the absence of a serious drug problem in this country.

The now familiar association of youthful heroin abusers with underworld supplies was first noted in New York, where illicit availability was probably greatest due to the proximity of many of the chemical companies that then distributed heroin. In 1910, New York's Bellevue Hospital made its first ever admission for heroin addiction. In 1915, it admitted 425 heroin addicts, who were, according to the *Psychiatric Bulletin of the New York State Hospitals*, 'in many instances members of gangs who congregate on street corners particularly at night, and make insulting remarks to people who pass.' It was noted that 'in practically every case the drug had been tried by one of the members of the gang who then induced the other members to try it'. These early heroin users were mostly between seventeen and twenty-five years old, and took the drug by sniffing.

New York addiction specialist A. Lambert in 1924 described heroin as a 'vice of the underworld' acquired by the young through 'vicious associations'. American drug abusers were completely dependent on black market sources soon after 1919, when legal interpretation of the Harrison Act outlawed medical prescription of narcotics to maintain addicts. At this stage, heroin increased in popularity among drug dealers, who appreciated its black market qualities as a compact and powerful substance that could easily be adulterated. Another development at this time was the discovery by addicts of the enhanced euphoric effects when heroin was injected with the hypodermic syringe.

During the early 1920s a number of New York addicts supported themselves by collecting scrap metal from industrial dumps, so earning the label 'junkies'. Less savoury

behaviour by heroin addicts was, however, causing concern to the authorities and public. Dr Lambert claimed that 'heroin destroys the sense of responsibility to the herd'. Heroin addiction was blamed for a number of the 260 murders that occurred in 1922 in New York (which compared with seventeen in London). These concerns led the US Congress to ban all domestic manufacture of heroin in 1924.

Two years later, however, US Narcotic Inspector S.L. Rakusin declared that heroin seemed 'more plentiful than it ever was before'. Organised criminals were still obtaining heroin produced by legitimate pharmaceutical manufacturers in Western Europe, and later Turkey and Bulgaria, until restrictive policies of the League of Nations drove heroin manufacture largely underground by the early 1930s. An exception was militarist Japan and its occupied territories, where pharmaceutical firms produced heroin on a massive scale for the Chinese market until the end of the Second World War. Since then heroin has effectively belonged to the realm of international crime.

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