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Chemists in Leeds University Laboratories, 1908 Courtesy National Library of Medicine

> The Story of Aspirin Revisited



NIH National Library of Medicine

The National Library of Medicine produced this exhibition. All images are courtesy of the National Library of Medicine. Guest curator: Anne Rothfeld, PhD Designer: HealyKohler Design

www.nlm.nih.gov/the-story-of-aspirin

**F** or centuries, people used willow bark to relieve pain and treat fevers. However, it wasn't until the late 1800s that scientists developed an analog of the active ingredient in willow bark, creating the essential drug that's now part of everyday life, aspirin.

Modern organic chemistry and technology isolated, then synthesized the properties of willow bark into a medication now common worldwide.

SALIX T Salix e frigide & ficce coplexionis i prio gradu. Virtus foliog & corticu & fructus falicis & fucci ei° é fliptica. Et quado bibutur folia eius cu uino & pipere conferunt colice passioni. Et quando su mit aqua decoctionis eius prohibet ipregnatio nem: Et aqua decoctionis fructus eius confert sputo sanguinis quando bibitur. Et cortex eius si militer hoc facit. Et decoctio eius administrata

CXXXVI

## The Origins of The Story of Aspirin

In 1959. Marie Harvin, reference librarian. developed a display, Acetylsalicylic Acid: The Story of Aspirin. Take Two and Call Me in the Morning revisits this earlier show as the NLM continues to evolve.

Botanists call the white willow tree by its Latin name, "Salix alba." Early physicians and healers used the bark to ease childbirth pains and treat colic, gout, and ear pains.

Herbarius (Herbalist), Arnaldus de Villanova, 1499



In the latter half of the 20th century, scientists began examining aspirin for benefits beyond pain relief and fever reduction.

ASPIRIN, PLATELETS AND STROKE

WILLIAM S. FIELDS M.D.

ILLIAN K. HASS, M.D.

Professor of Neurology New York University School of Medicine

With 79 Contributor

WARREN H. GREEN

Aspirin, Platelets, and Stroke: Background for a Clinical Trial, William S. Fields, MD, and William K. Hass, MD, 1970

"Long-Term Results in Early Cases of Rheumatoid Arthritis Treated with Either Cortisone or Aspirin," British Medical Journal, Joint Committee of the Medical Research Council and Nuffield Foundation on Clinical Trials of Cortisone, 1957

Aspirin in Modern Therapy: A Review, Maurice L. Tainter, MD, and Alice J. Ferric, MD, 1969



Acetylsalicylic Acid: The Story of Aspirin, notes to accompany an exhibit at the National Library of Medicine, Marie Harvin, 1959



The value of aspirin as a therapeutic increased during World War I. The French manufacturer Usines du Rhône used the visual trope of the hospital nurse to assure customers of aspirin's effectiveness.

Postcard from Laboratoire des Produits Usines du Rhône, c. 1900s

## [ 195 ]

XXXII. An Account of the Success of the AMI - Mi Account of the Society of the Bark of the Willow in the Cure of Agues. In a Letter to the Right Honourable George Earl of Macclestickl, Profident of R.S. from the Rev. Mr. Edmund Stone, of Chipping-Norton in Oxford/hire.

My Lord,

Read June ad, 1763. A Mong the many uleful difcoveries, which this age hath made, there are very few which, better deferve the attention of the public than what I am going to lay before your public than what I am going to lay before your Lordthip. There is a bark of an Englith tree, which I have found by experience to be a powerful altringent, and very efficacious in curing agaith and intermitting diforders.

iforders. About fix years ago, I accidentally tafted it, and was furprifed at its extraordinary bitternefs; which im-mediately raifed r properties of the P

in a moift or wet the general maxim ry their cures along lie not far from th this particular cafe. and that this might I must own had for The exceflive me, in my fpecul

XIV. Ueber die Constitution und Basicität der Salicylsáure ; von H. Kolle und E. Lautemann Seitdem Piris gefunden hat, dofs in dem Salicylsäure-

sydrat zwei Atome Wasserstoff durch zwei Atome einer Hetalls ersetzt werden können, gilt die Salicylsäure fast allmein für eine zweibasische Säure, und denjenigen Chemikern elche die Milchsiare und die verwandten Verbindungen urchaus als zweihusische Säuren betrachtet wissen wollen, n andere Beweise fehlen, als Hauptargument für diese Ana andere Beweise teston, als manplargument für diese Au-icht. Da wir es durch die Versuche, welche im hiesigen aboratorium unlängst über die Milchsiure \*) augestellt sind, ür vollkommen erwiesen erachten, daß diese Söure nicht ibasisch, sondern einbasisch ist, so unternahmen wir es such die Frage nach der Ensicität der der Milchssure augen-scheinlich schr ähnlichen Salicylssure einer grundlichen Un-Suchang zu unterworfen.

vaccaning zu unterworten. Diesor Gegenstand erschien uns um so mehr von Wich-gheit, als sich im Verlaufe unserer Versuche ergab, daßs die alleylsäure, wenn sie wirklich zweibasisch wäre, in directen idersprach mit denjenigen Principien treten würde, welche # eine von uns \*\*) kürzlich über die Beziehungen der or-

Kolbs, diese Annalen CIX, 257; CXIII, 220 n. 223; Ulrich, dueller CIX, 258; Lautemann, dueller CXIII, 217. alen CXIII, 293.

Reverend Edward Stone (1702-1768) is recognized as the first person to show willow bark's effectiveness at relieving symptoms associated with ague and rheumatic fever. In 1763, he reported his discoveries to the Royal Society of London.

"An Account of the Success of the Bark of the Willow in the Cure of Agues...," Philosophical Transactions of the Royal Society of London, Edward Stone, 1763

> In 1860, Hermann Kolbe, a German scientist, created a method to synthesize salicylic acid, the building block of aspirin, from smaller molecules instead of willow bark. Kolbe's synthesis made the bulk industrial production of salicylic acid and aspirin possible.

> "Ueber die Constitution und Basictät der Salicylsäure," Annalen der Chemie und Pharmacie ("On the constitution and basicity of salicylic acid," Annals of Chemistry and Pharmacy), Hermann Kolbe and E. Lautemann, 1860

## Untersuchungen aus dem academischen Laboratorium in Marburg.