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The History of Local Anaesthesia

William Harrop-Griffiths

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Honorary Clinical Senior Lecturer, Imperial College, London

Competing interests

- Elected Council Member, Royal College of Anaesthetists (RCoA)
- Past President, Association of Anaesthetists of Great Britain & Ireland (AAGBI)
- Member
 - Regional Anaesthesia UK
 - European Society of Regional Anaesthesia
 - American Society of Regional Anesthesia
 - Irish Society of Regional Anaesthesia

25
YEARS

RCoA

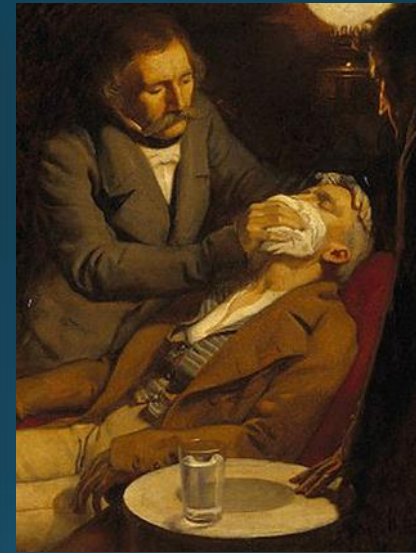
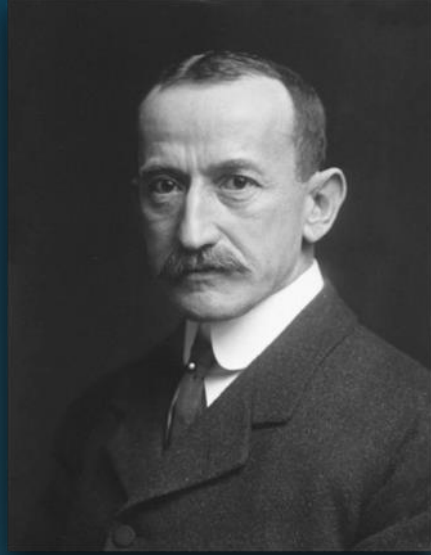
Royal College of Anaesthetists

1992–2017

Important dates

- 16th October 1846
- 11th September 1884
- 10th May 1958
- 23rd November 1963
- 21st July 1969

Important dates



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Important dates

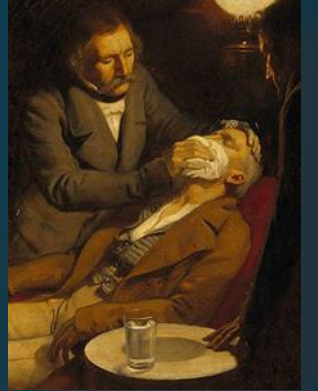
- 16th October 1846

- 11th September 1884

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16th October 1846

World Anaesthesia Day



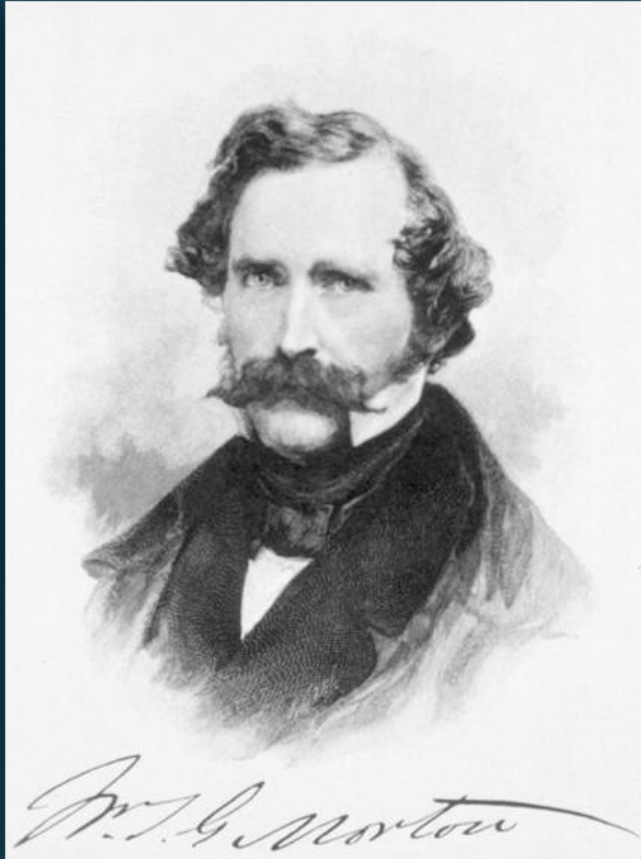
RCOA
Royal College of Anaesthetists

@RCoANews

I love **#anaesthesia** because

#RCoAWorldAnaesthesiaDay

16th October 1846



W T G Morton

John Collins
Warren

Edward Gilbert Abbott

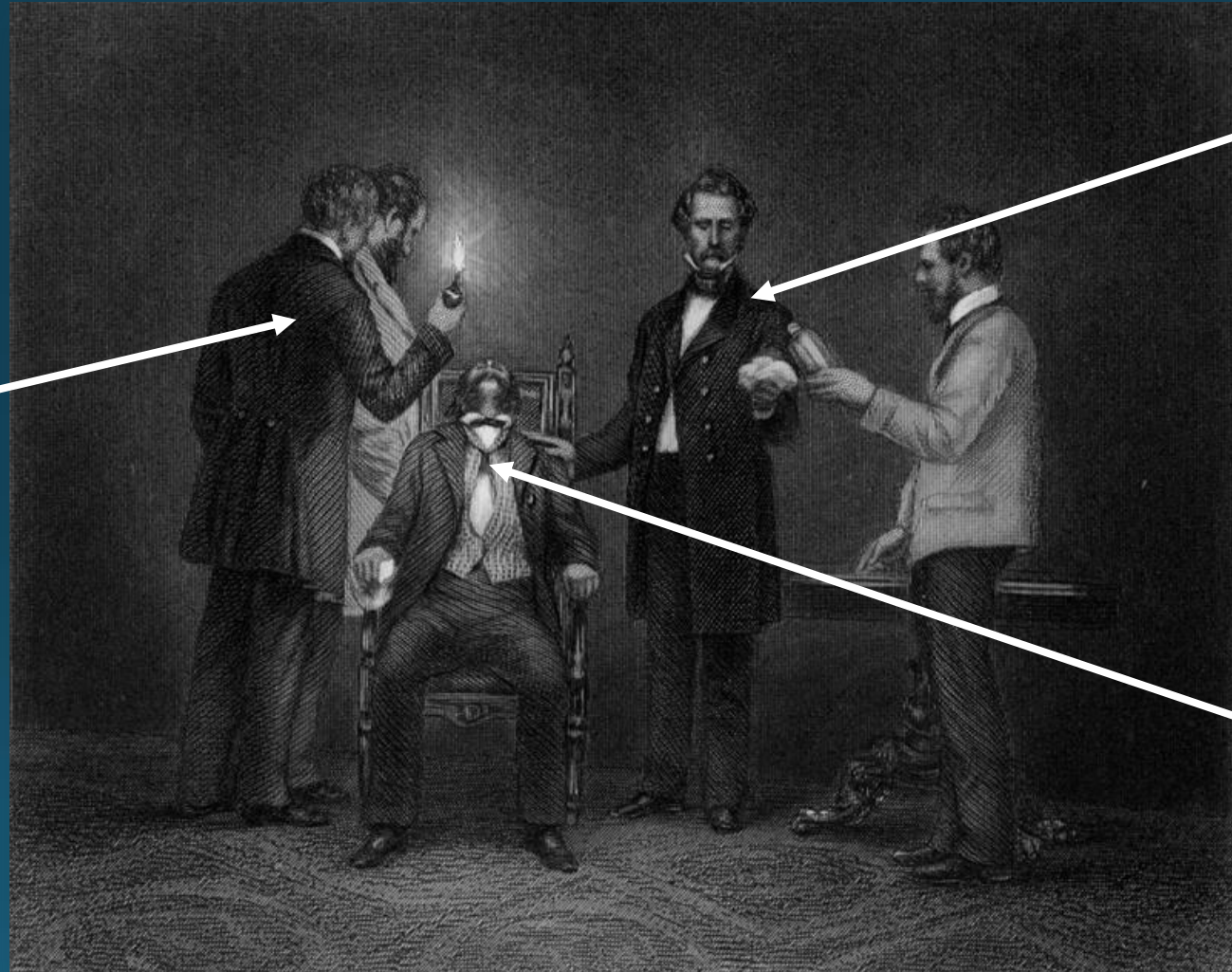
16th October 1846



“Gentlemen –
this is no
humbug!”

30th September 1846

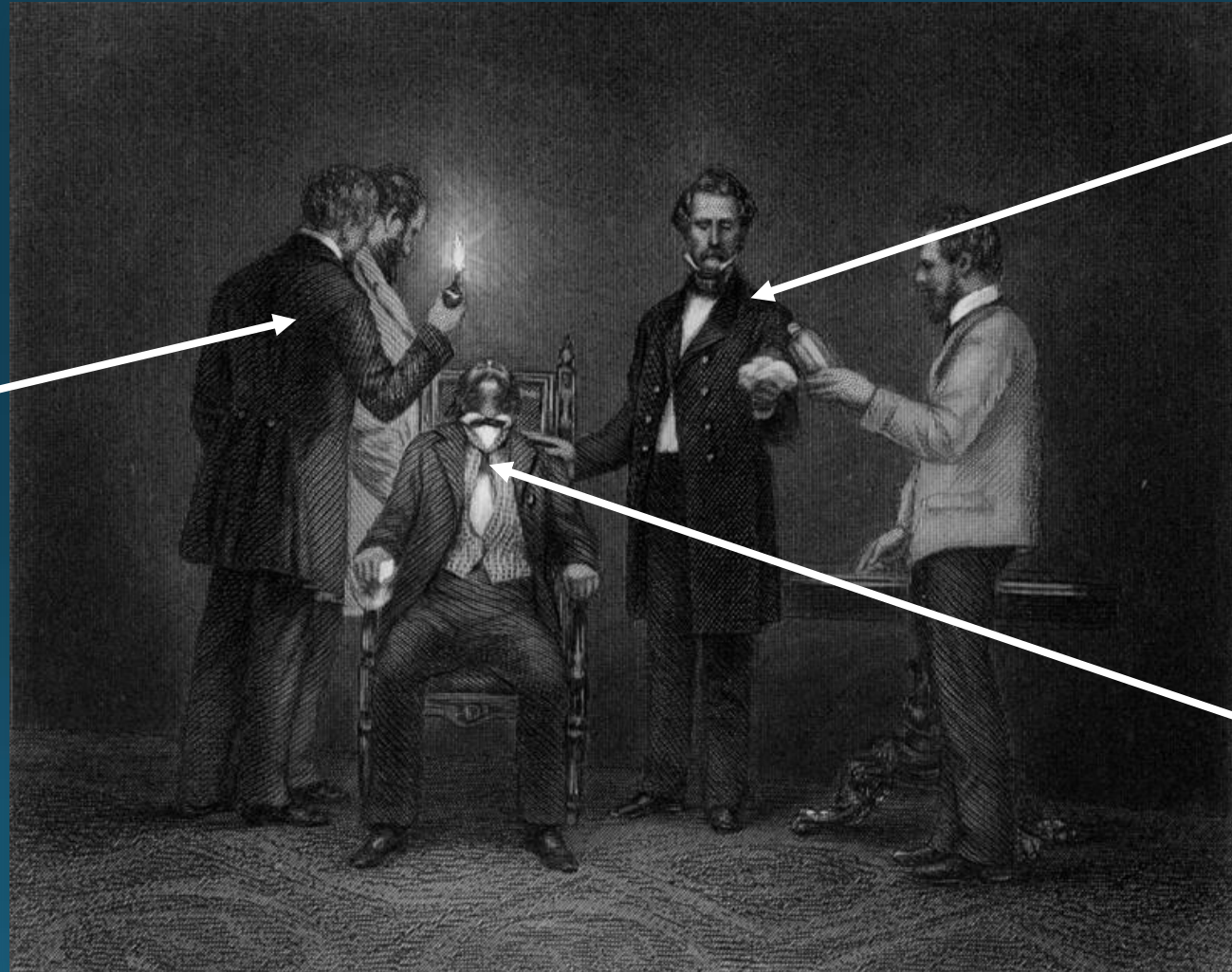
Grenville G
Hayden



W T G Morton

Ebenezer
Hopkins Frost

30th September 1846

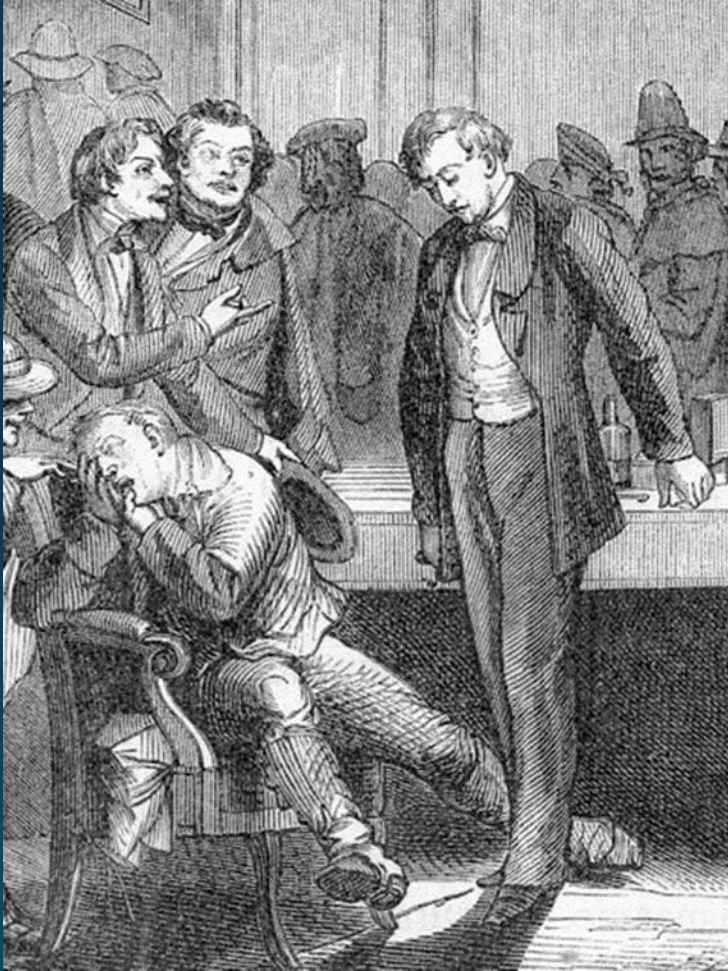


W T G Morton

Ebenezer
Hopkins Frost

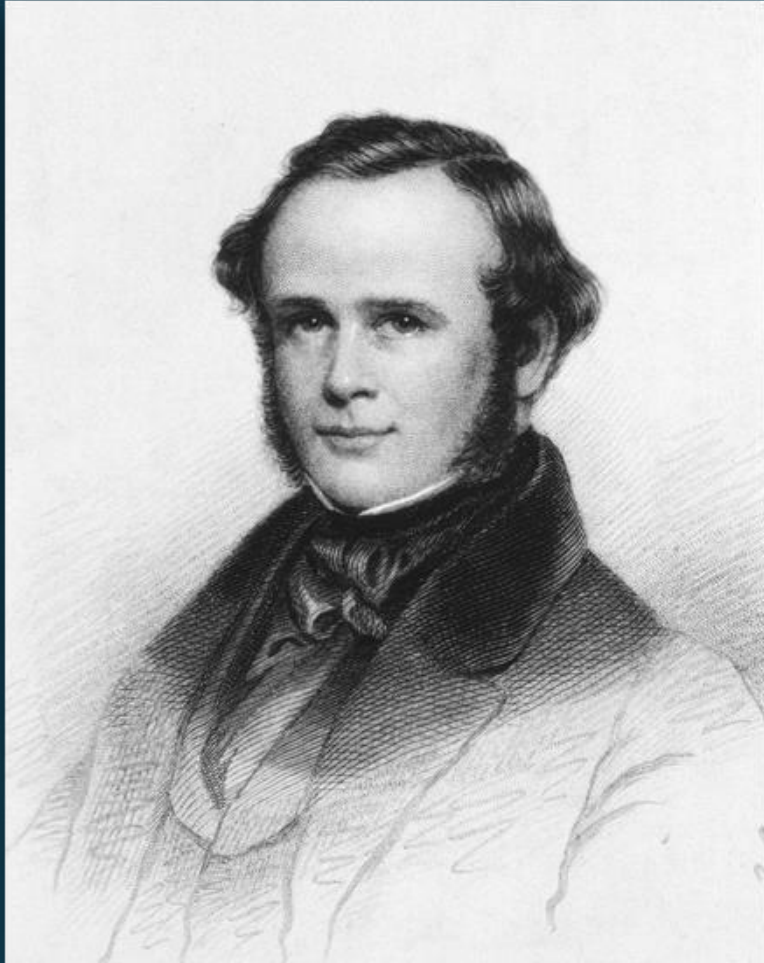
Lunatic with a
naked flame

20th January 1845



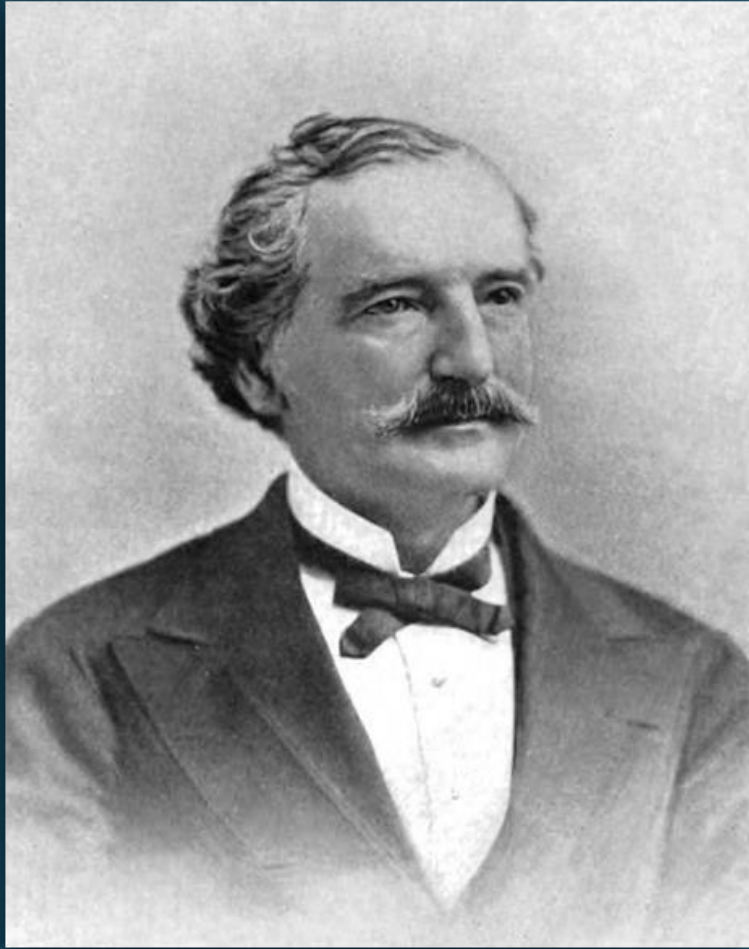
- Horace Wells
- Nitrous oxide
- Dental extraction
- Did not go well
- “Humbug moment”

20th January 1845



- Discredited by incident
- Became a travelling canary salesman
- And addicted to chloroform
- Committed suicide after being incarcerated for throwing sulphuric acid at two prostitutes

10th December 1844



- Gardner Quincy Colton
- Showman and former medical student
- Nitrous oxide performances
- Horace Wells in the audience

30th March 1842



- Crawford W Long
- Leg amputation
- Ether anaesthesia

Ether was far from being a new drug...

Raymond Lully (1232 – 1315)



- Licentious, Spanish *bon vivant* who later became a monk



“My light is the Lord himself”

Raymond Lully (1232 – 1315)



- Licentious, Spanish bon vivant who later became a monk
- Invented ether (Sweet Oil of Vitriol) by adding sulphuric acid to wine (1275)
- Did not spot its anaesthetic effects

Valerius Cordus (1515 – 1544)



- German physician and botanist
- Rediscovered the sulphuric acid and wine trick
- Did not spot ether's anaesthetic properties

Paracelsus (1493 – 1541)



- Philippus Aureolus Theophrastus Bombastus von Hohenheim
- German polymath and founder of toxicology
- “Ether has associated with it such a sweetness that it is taken even by chickens...
- ...and they fall asleep from it for a while but awaken later without harm”



Eureka!

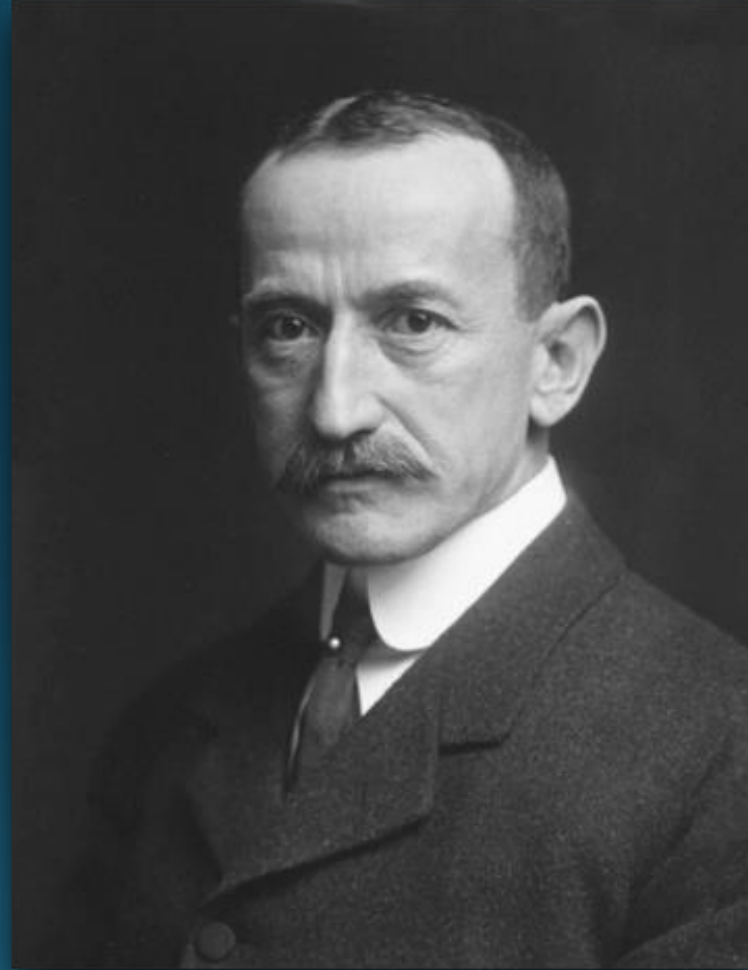
The History of Local Anaesthesia

William Harrop-Griffiths

Consultant Anaesthetist

Imperial College Healthcare NHS Trust, London

11th September 1884











Coca



- An ancient practice
- Increased energy
- Decreased appetite
- Numb lips?



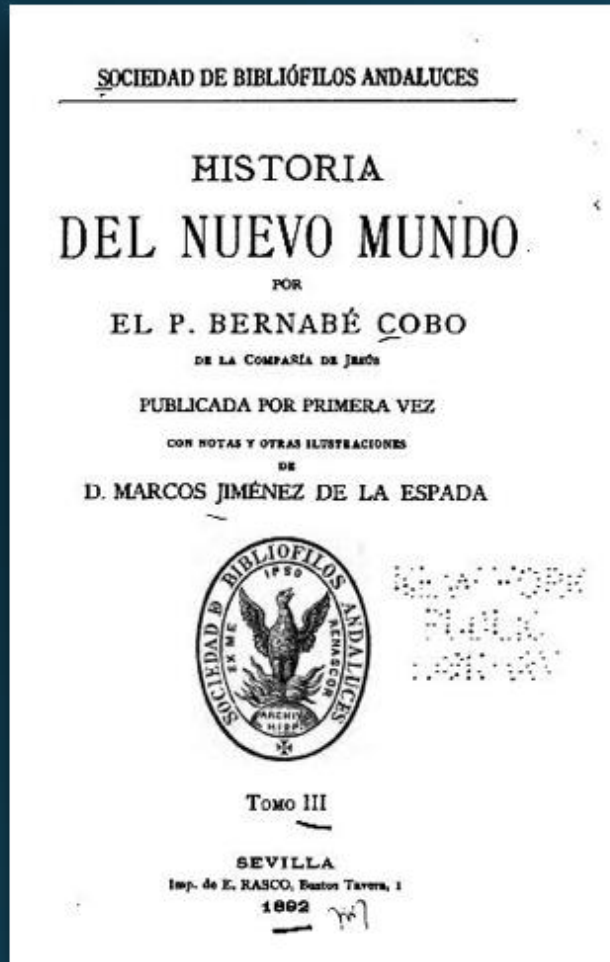
“Folk neurosurgeons
chewed cocaine while
performing the procedure...
...allowing their saliva to
dribble into the wound to
produce anaesthesia”

Francisco Pizarro (1475 – 1541)

- Conquest of the Inca Empire
- Native use noted
- Euphoric and energising effects
- But not painkilling effects

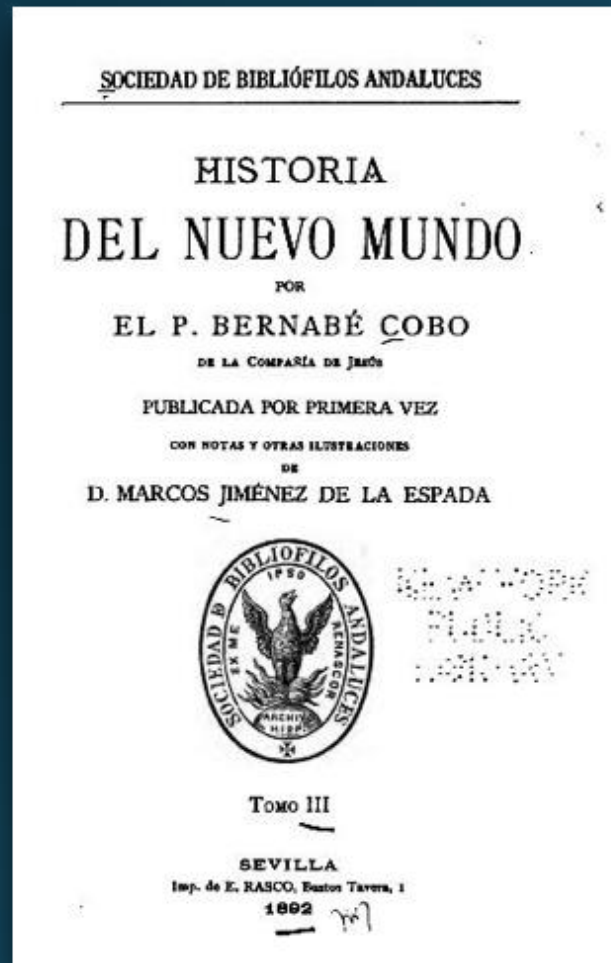


Father Bernabe Cobo (1475 – 1541)



“And this happened to me once, that I repaired to a barber to have a tooth pulled, that had worked loose and ached, and the barber told me how he would be sorry to pull it because it was sound and healthy”

Father Bernabe Cobo (1475 – 1541)



“A monk friend of mine who happened to be there and overhearing, advised me to chew for a few days on coca. As I did, indeed, soon to find my toothache gone”

After this... nothing happened

- For some considerable time
- Europeans well aware of its use and abuse
- And even that it made your lips go numb
- But the “Mental Leap” was lacking
- Next stage in the story was some 350 years later

SMS Novara



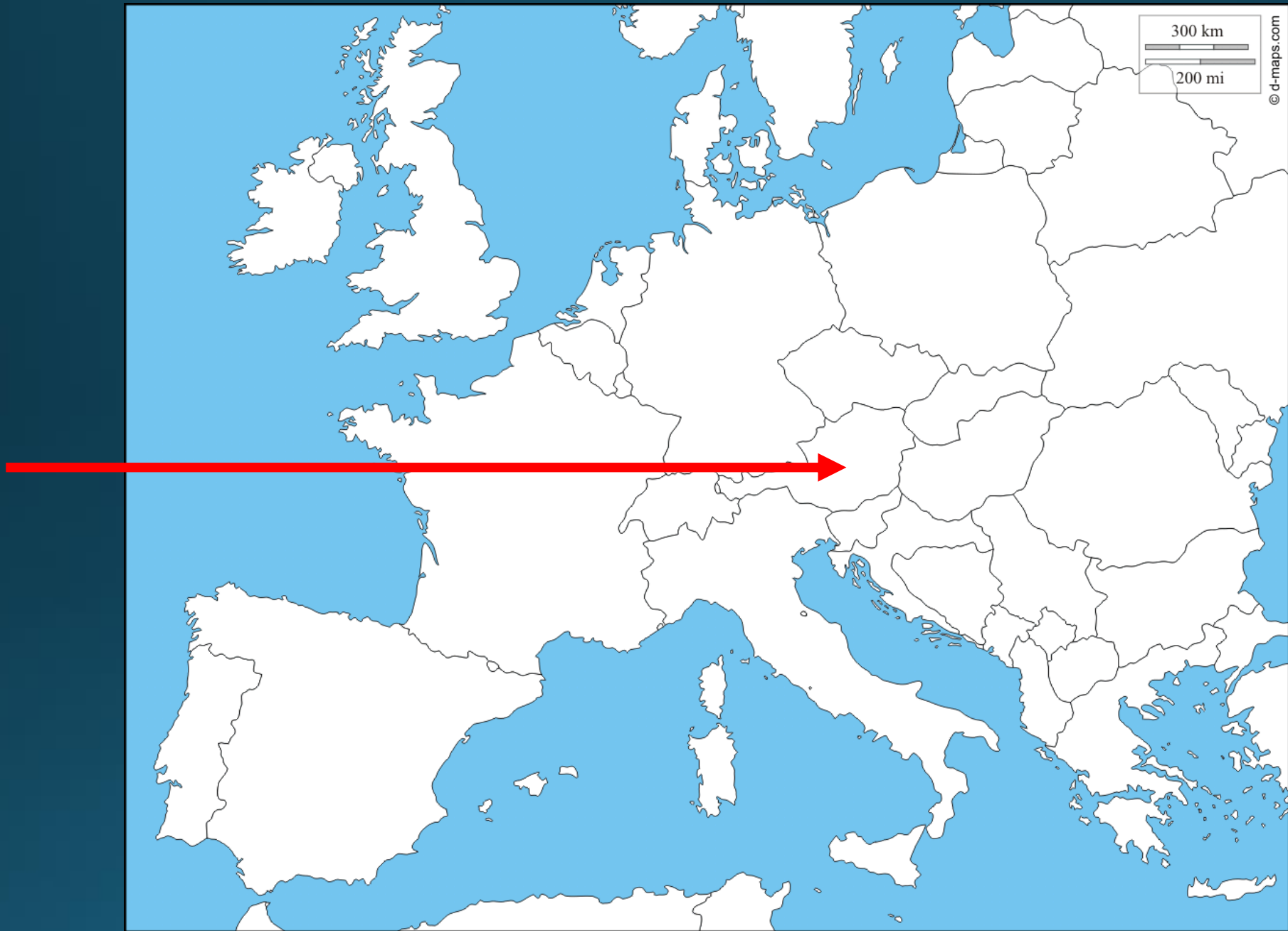
Circumnavigation 1857 - 1859





Archduke Maximilian

Kommodore Bernhard von Wullerstorf-Urbair





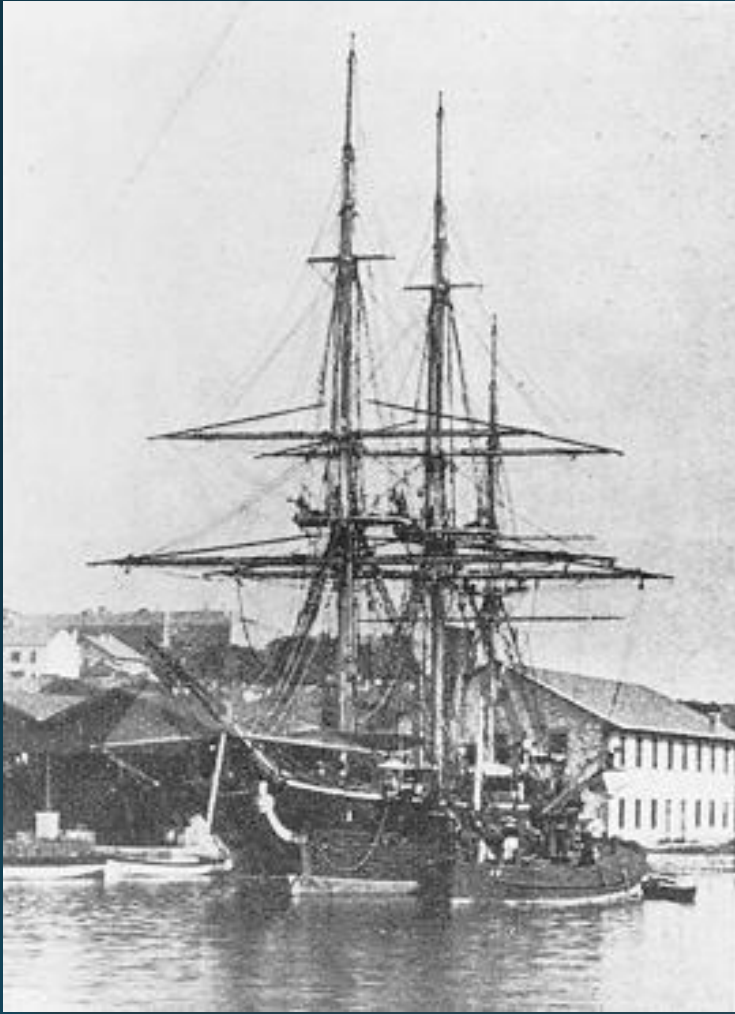
The Austrian Navy's most famous officer



- Georg Ritter von Trapp
- Obsessed with submarines
- First wife: Agathe Whitehead
- Second wife: Maria, a novice nun

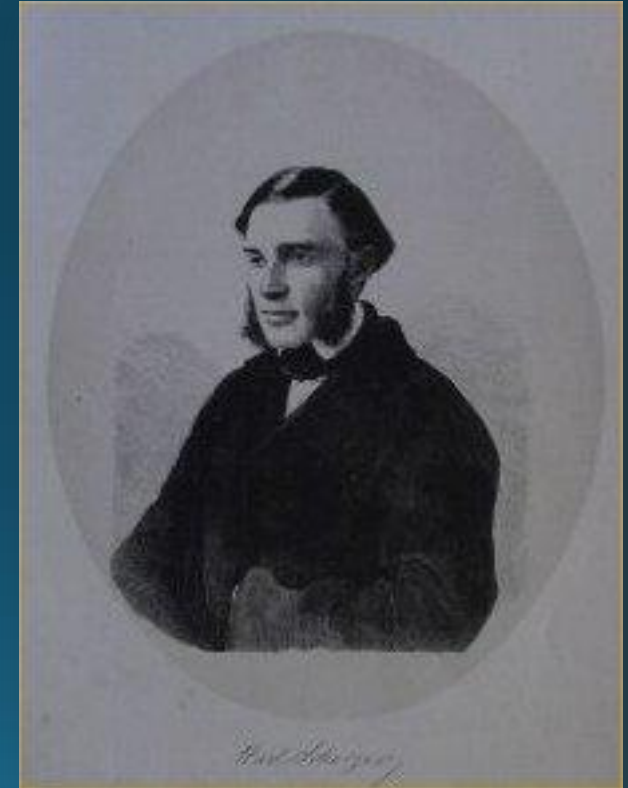


Nothing whatsoever to do with the History of Local Anaesthesia

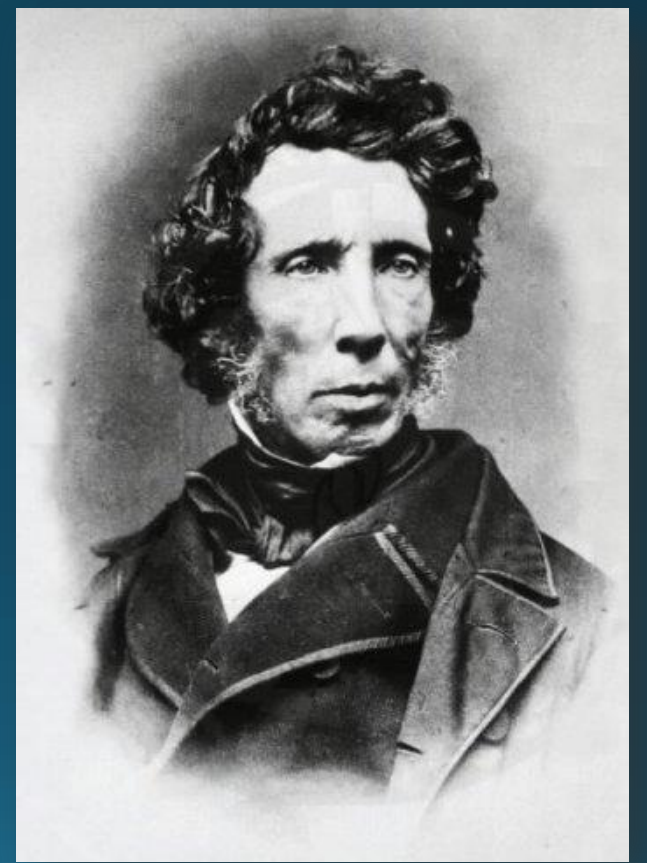
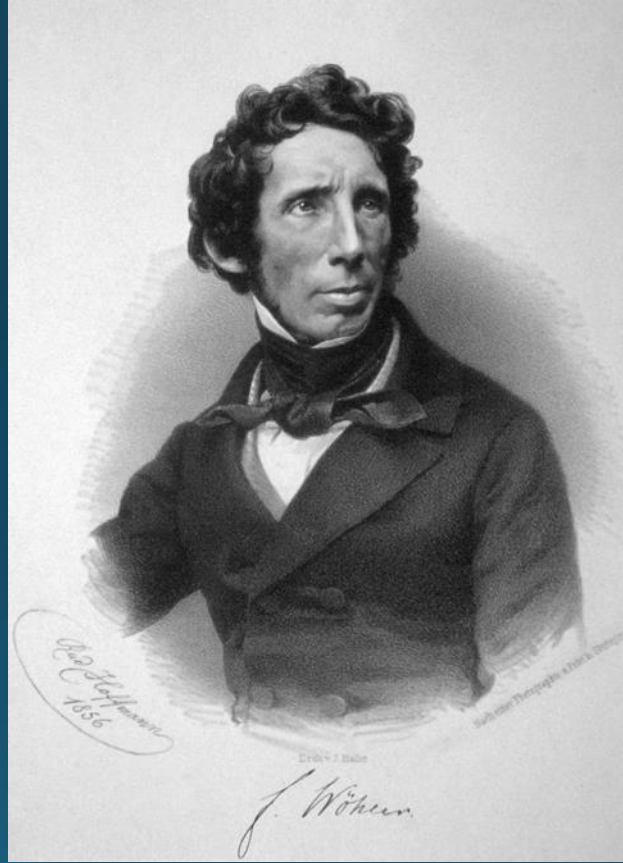
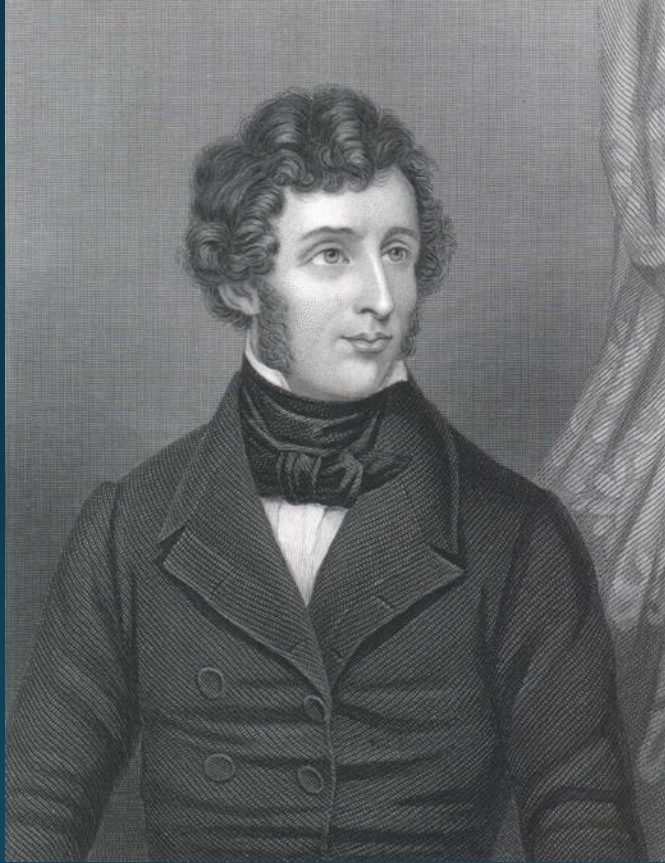


Back to the SMS Novara

Carl Scherzer (1821 – 1903)

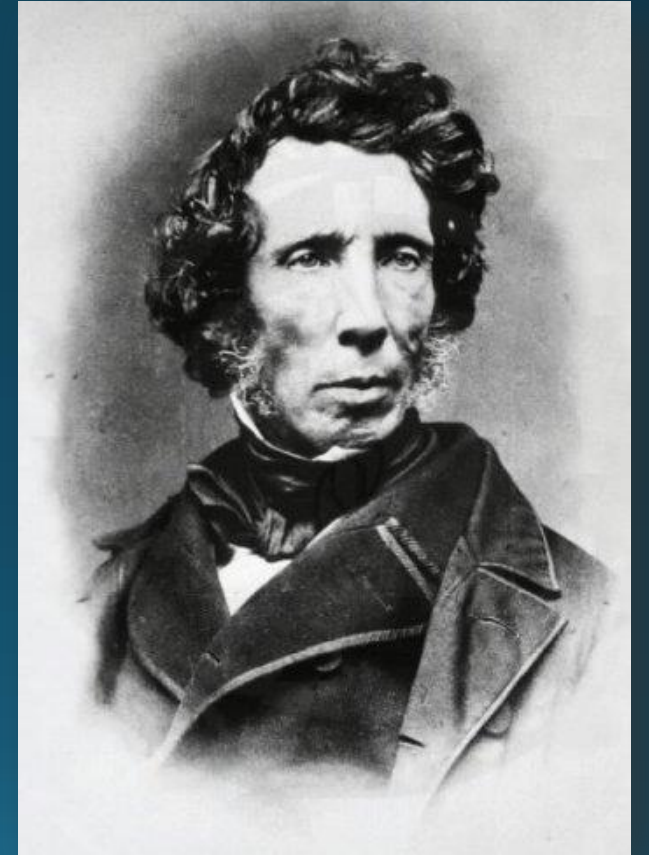


Friedrich Wohler (1800 – 1882)



Friedrich Wohler (1880 – 1882)

- Professor of Chemistry, University of Göttingen
- Urea and calcium carbide
- Aluminium, silicon, yttrium, beryllium and titanium!
- Asked Scherzer to pick up some coca leaves in South America
- Coca leaves given to Albert Niemann



ALBERT NEIMANN (1840-1921)

- **Albert Friedrich Emil Niemann** (May 20, 1834 – January 19, 1861) was a German chemist.
- In 1859 - he isolated cocaine, and he published his finding in 1860.
- He published his finding in 1860 in his dissertation titled *Über eine neue organische Base in den Cocablättern* (*On a New Organic Base in the Coca Leaves*). This dissertation earned him his Ph.D. and was published in 1860 in the journal *Archiv der Pharmazie*.



Albert Niemann (1831 – 1917)



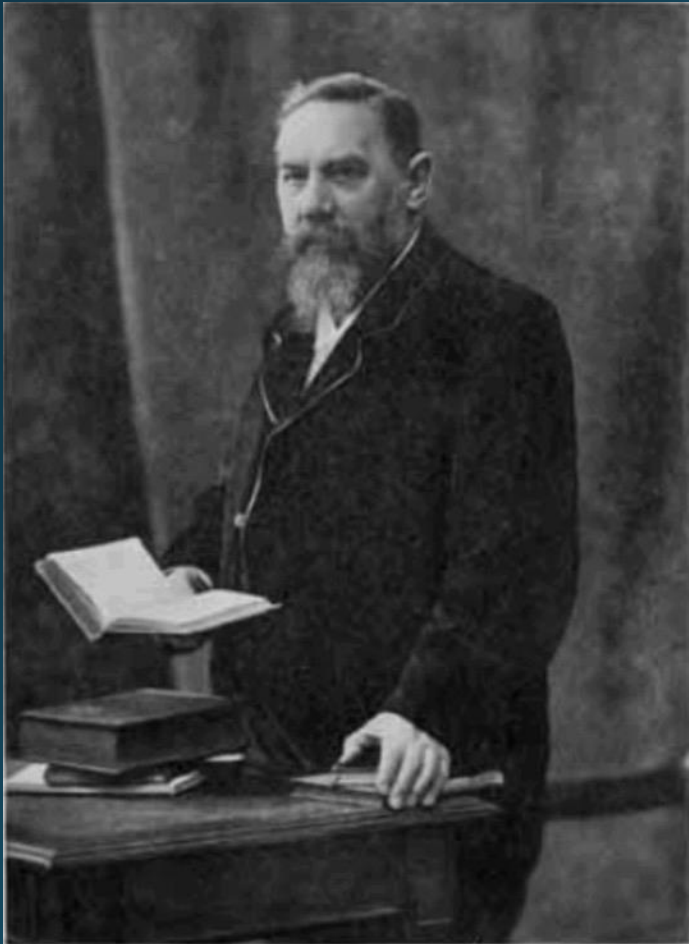
Albert Niemann (1834 – 1861)



Goslar, Germany

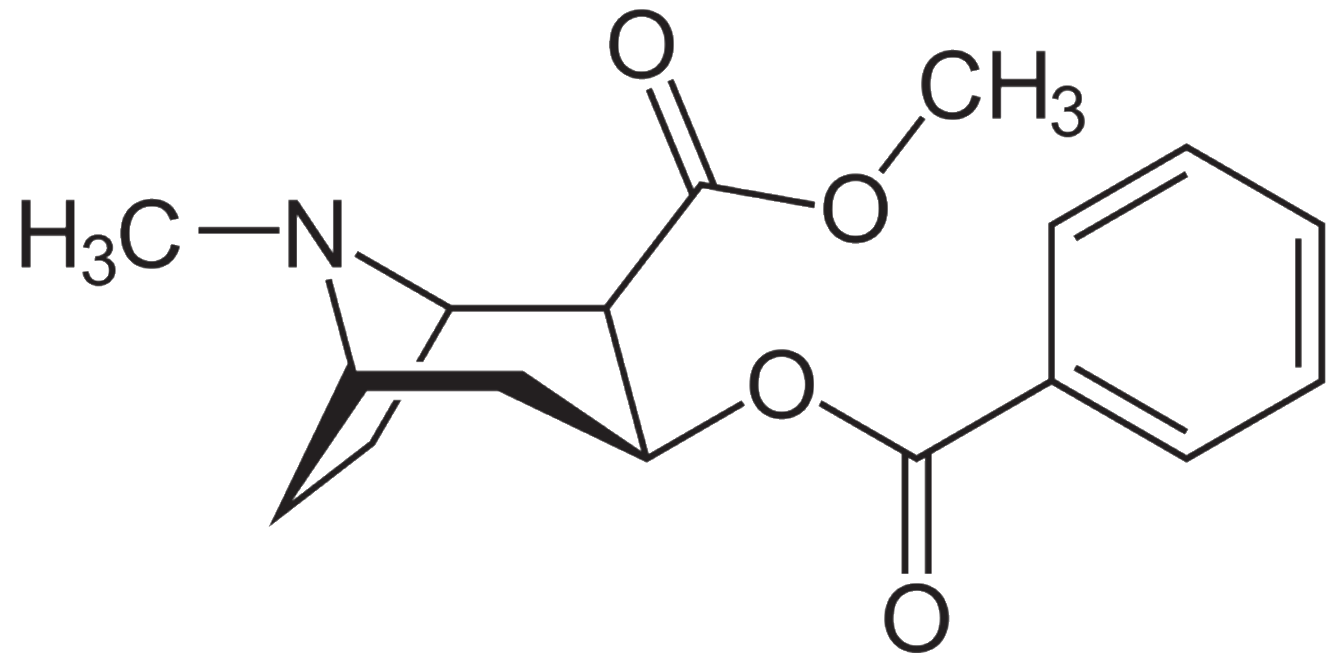
- Isolated the active principle
- Called it cocaine
- Published findings in 1860
- Even reported that it made his lips go numb
- Did not have a Eureka Moment
- Died shortly thereafter

Wilhelm Lossen (1838 – 1906)

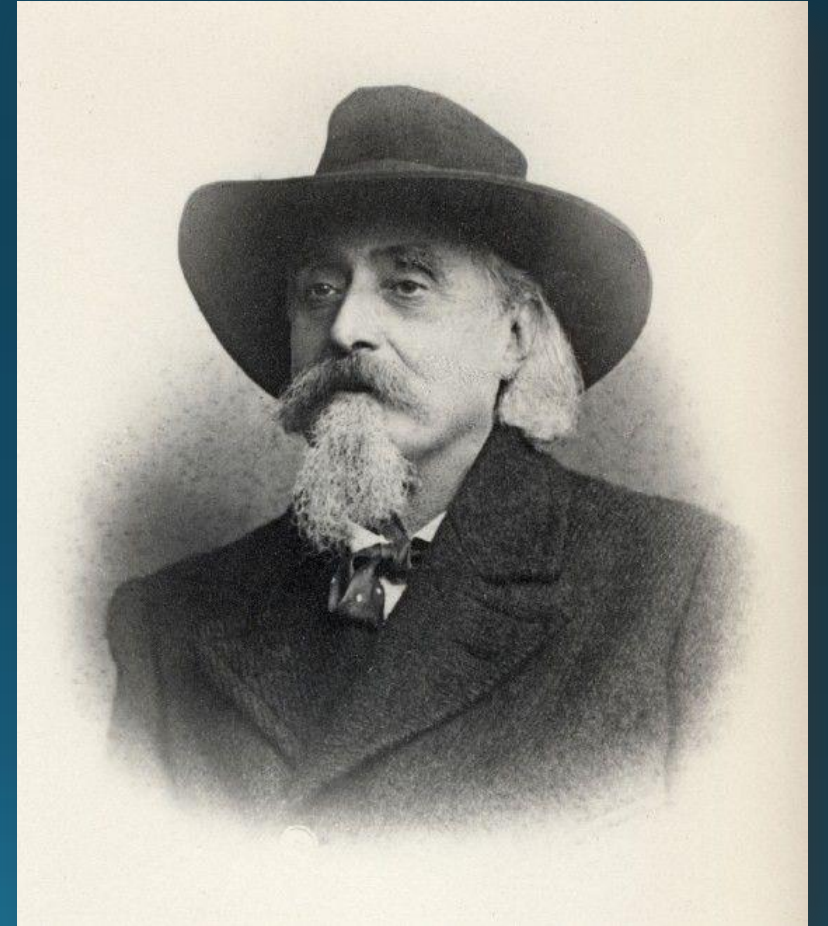
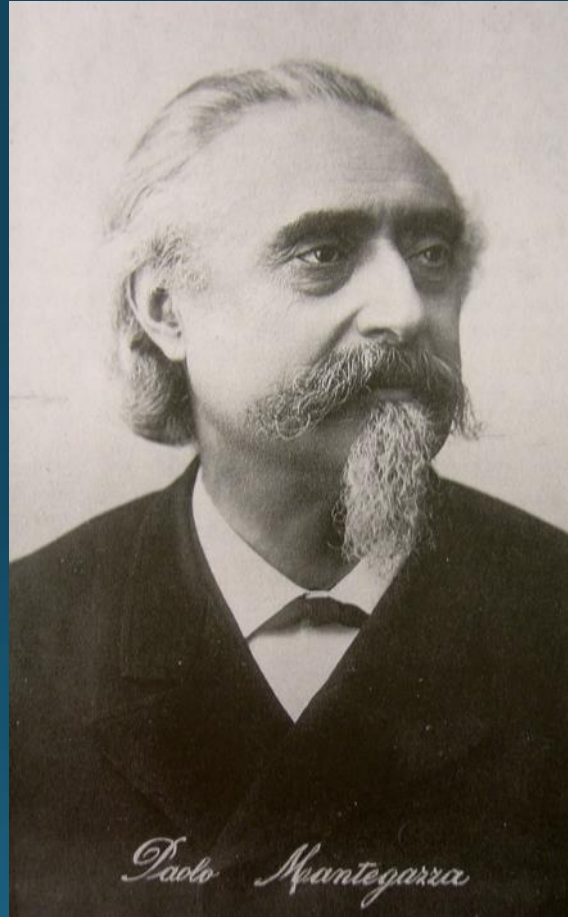
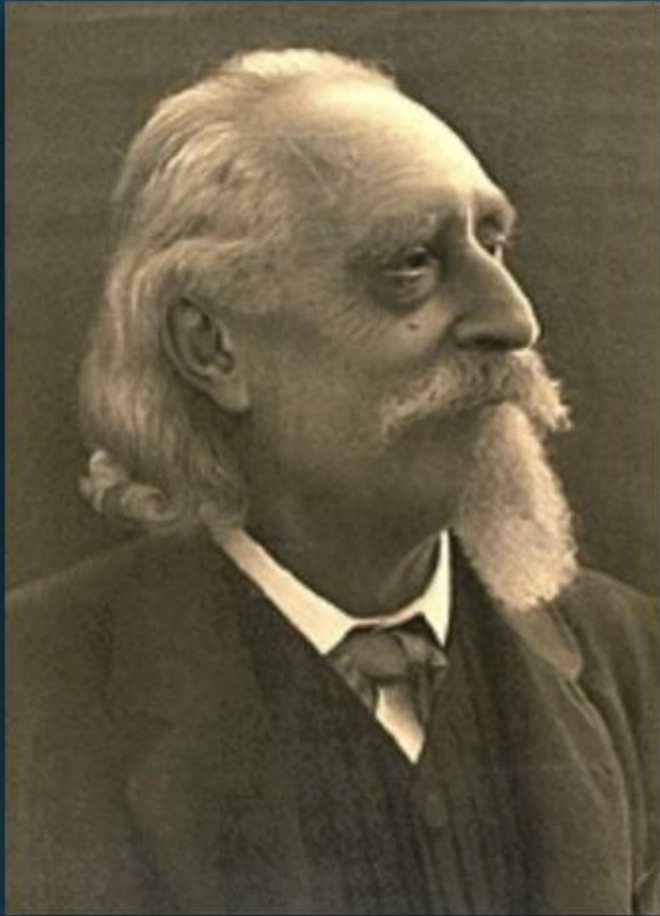


- Continued Niemann's work
- Determined the formula of cocaine
- $C_{17}H_{21}NO_4$
- Even reported it made his lips go numb
- Did not have a Eureka Moment

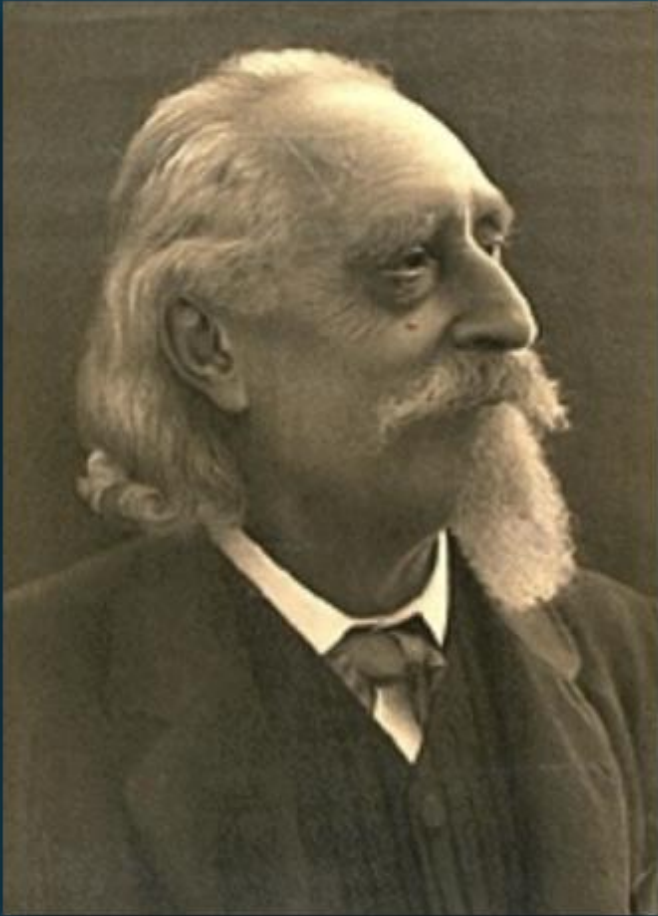
Richard Willstatter (1872 – 1942)



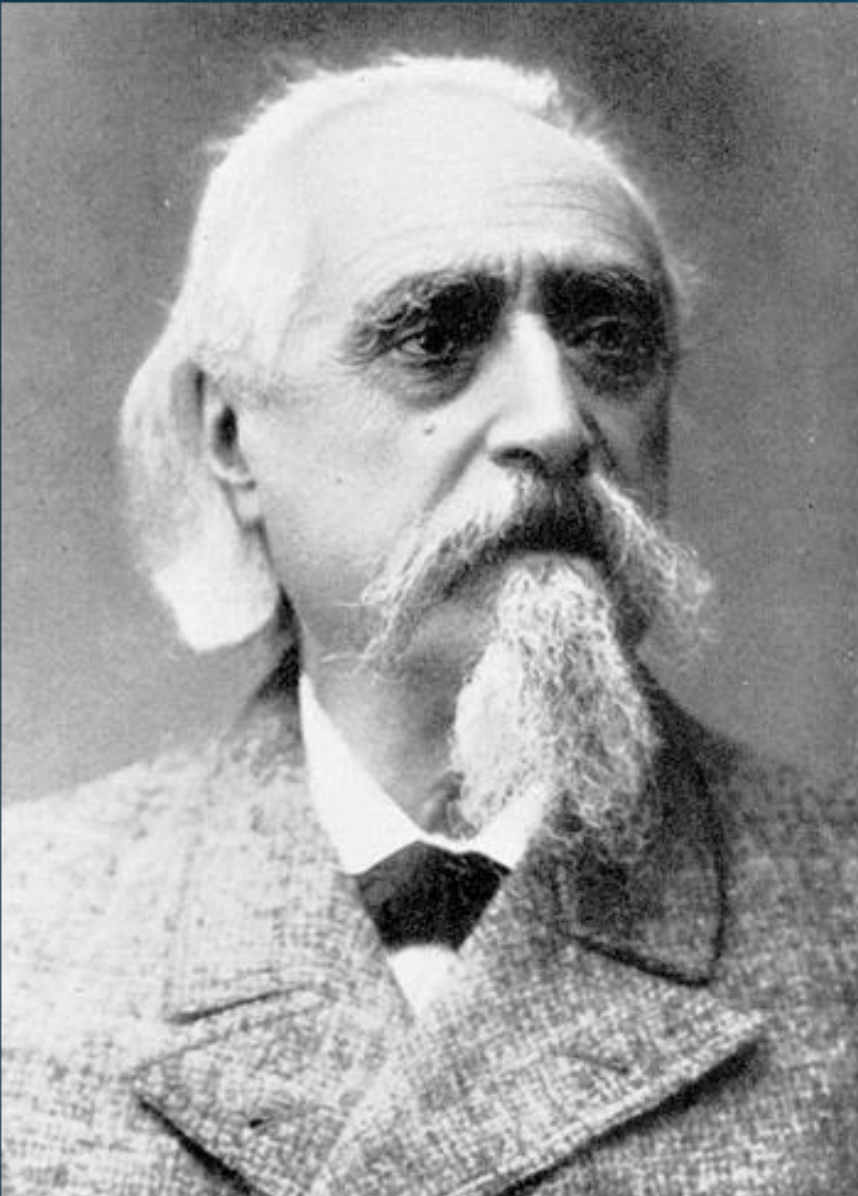
Paolo Mantegazza (1832 – 1910)



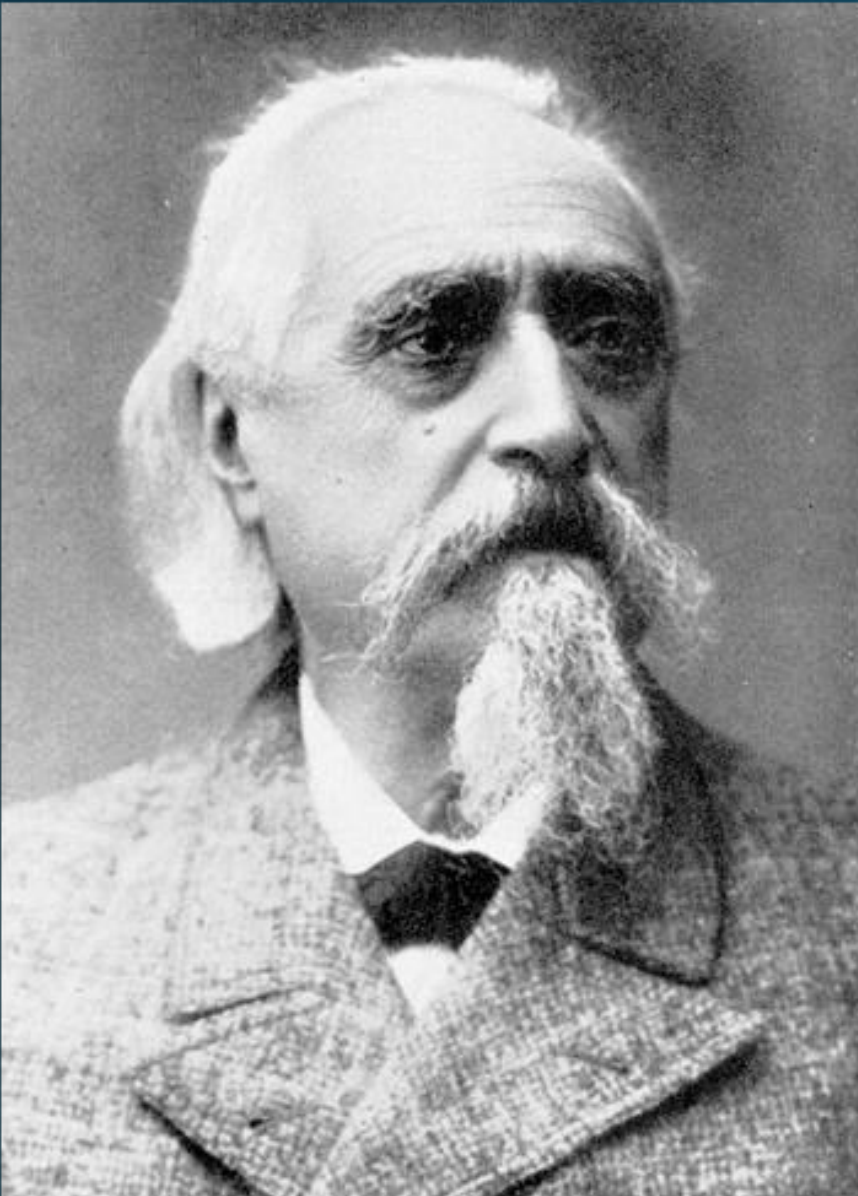
Paolo Mantegazza (1832 – 1910)



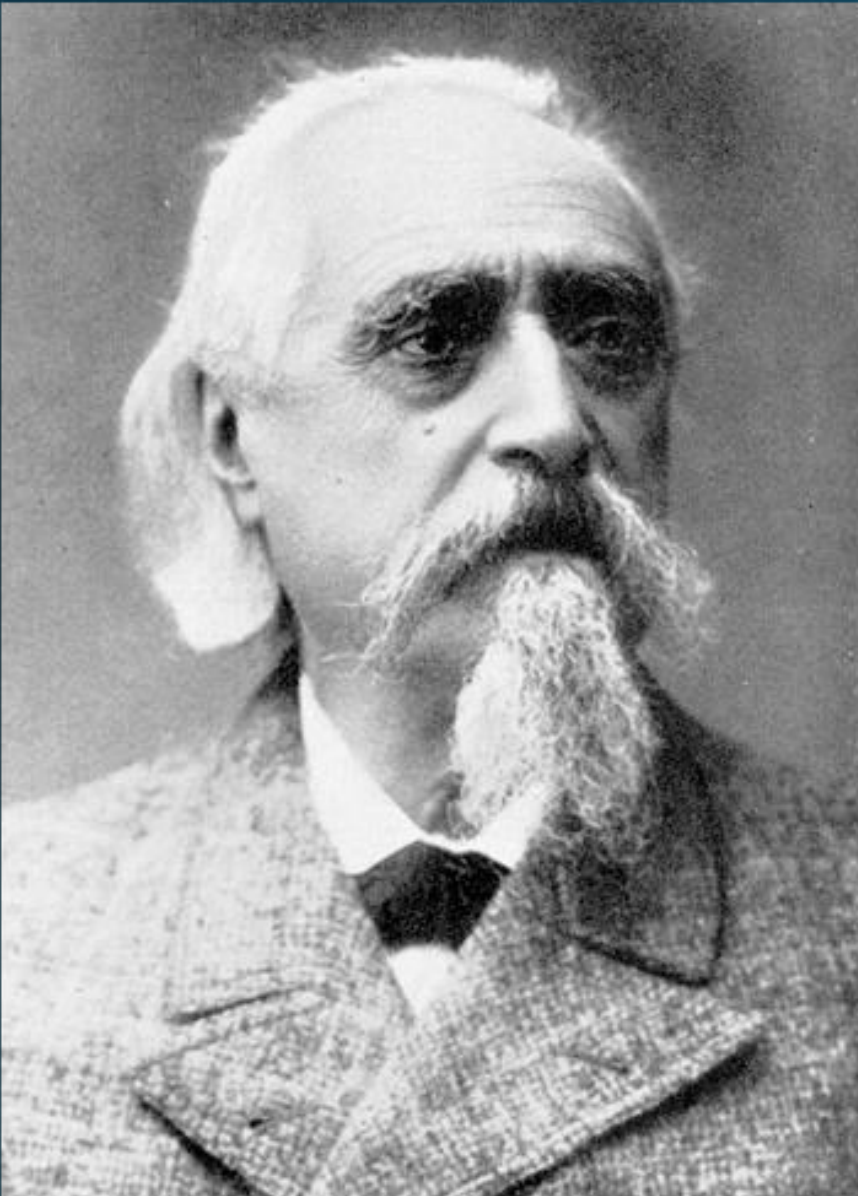
- Italian chemist
- Devised his own purification process
- Tested cocaine on animals
- And himself
- Particularly on himself



“I sneered at the poor mortals condemned to live in this valley of tears while I, carried on the wings of two leaves of coca, went flying through the spaces of 77,438 words, each more splendid than the one before...”



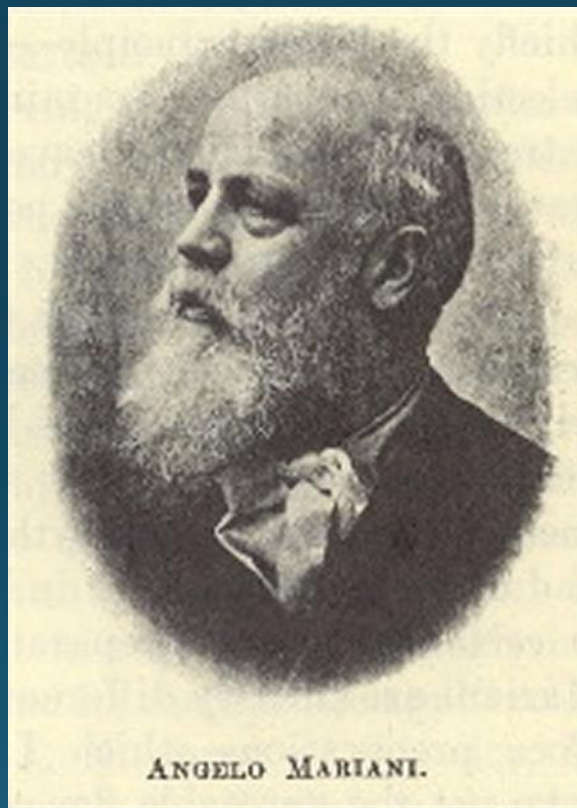
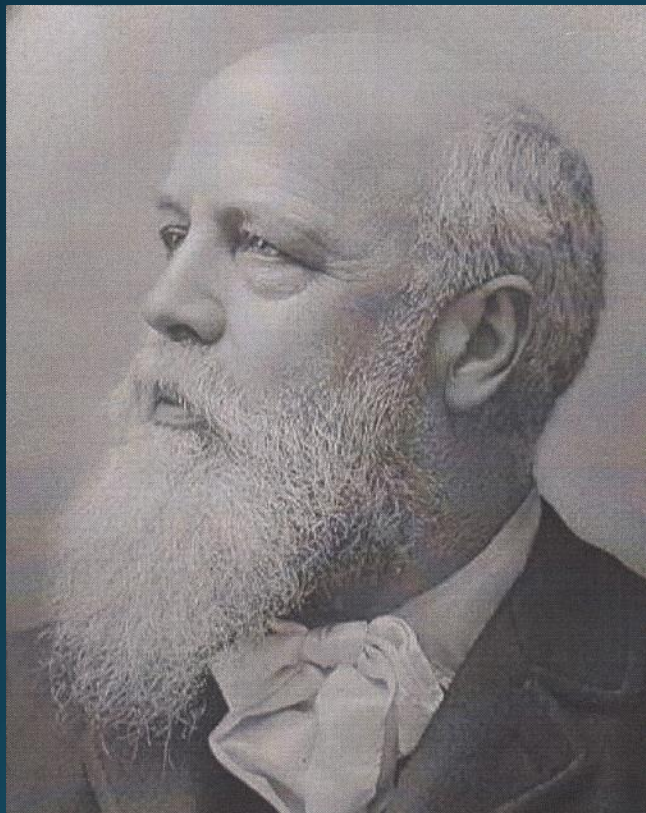
“An hour later, I was sufficiently calm to write these words in a steady hand: God is unjust because he made man incapable of sustaining the effect of coca all life long...”



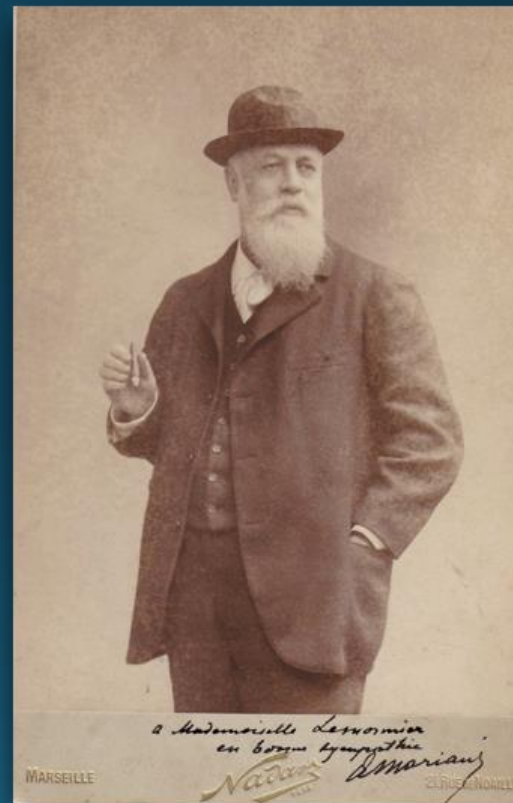
“I would rather have a life span
of ten years with coca...

...than one of
10,000,000,000,000,000,000,000
centuries without coca”

Angelo Mariani (1838 – 1914)



ANGELO MARIANI.

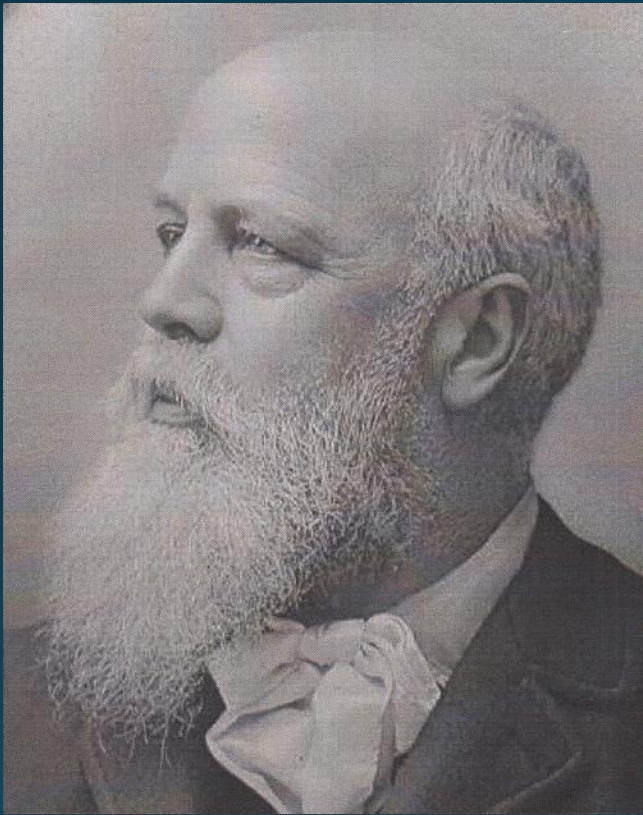


*a Mademoiselle Desormier
en bonne sympathie
Mariani*

MARSEILLE

CLUSENONNES

Angelo Mariani (1838 – 1914)



- Corsican chemist
- Shrewd businessman
- Grew coca in his greenhouse
- Macerated the leaves with wine
- To produce a “delicious and invigorating beverage”
- Vin Mariani (1863)



VIN TONIQUE MARIANI

ALA
COCA DU PEROU

LE PLUS AGREABLE ET LE PLUS EFFICACE DES TONIQUES ET DES STIMULANTS
PARIS, 41 B. Haussmann.

LE
VIN MARIANI
à la COCA
est garanti que par la
CAPSULE

ce contre
faux et pour la signature
de M. MARIANI

DOSE:

à prendre à Bordeaux avant
les repas principaux.
pour les enfants
une cuillerée est suffisante



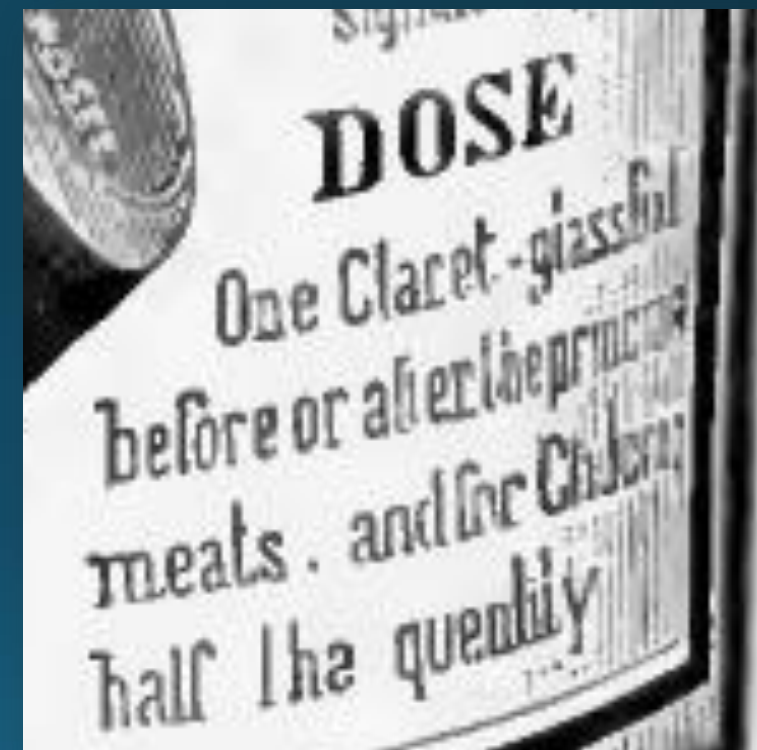
MARIANI'S
TONIC
COCA WINE
is only guaranteed
CAPSULED

as per
fac-simile hereon
Mons. MARIANI'S
signature

DOSE

One Claret-glassful
before or after long
meals, and for Children
half the quantity

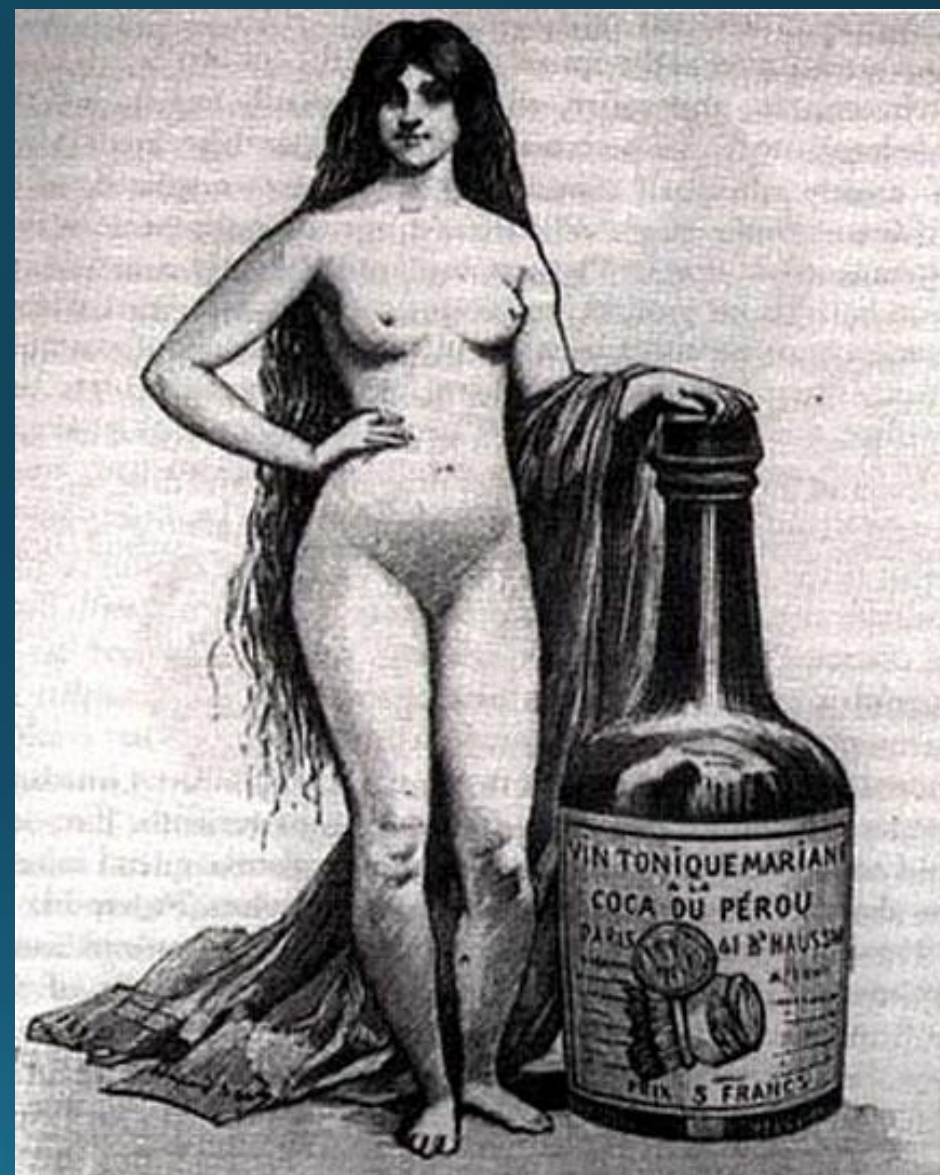
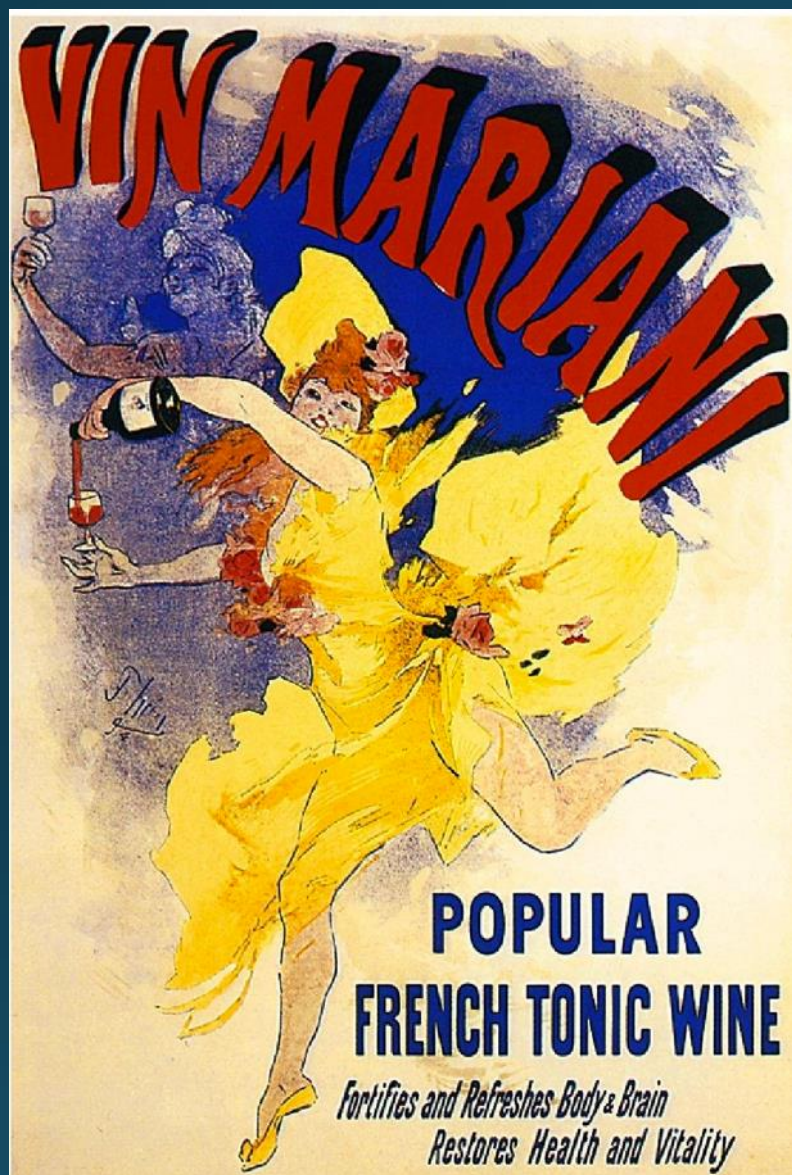
Prix: 5 Francs.



Dessin de M. P. FRANC-LAMY,
Artiste peintre,
pour l'Album *Mariani*.



Première Rencontre avec une bouteille de Vin Mariani!





Vin Mariani prolongs life, it is wonderful.

Jules Verne.



Honor to Vin Mariani, it restored my health.

Charles Gounod.



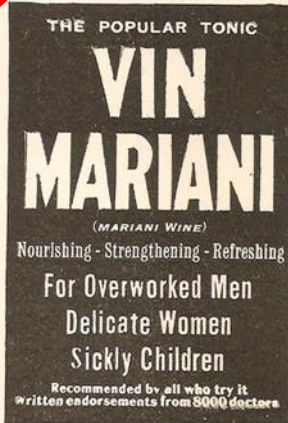
Vin Mariani is perfect, it drives away the blues.

Victorien Sardou.



Vin Mariani completely reformed my constitution, you should offer some to the French Government.

Henri Rochefort.



Vin Mariani is a fountain of youth, gives life and vigor.

Emile Zola.



Vin Mariani made a new man of me.

Max O'Rell.



Vin Mariani brightens our faculties, it is precious.

Bartholdi.



Vin Mariani, exquisite in taste, is health, and life.

Alexandre Dumas.

Send for Album of Portraits, with endorsements from Emperors, Empress, Princes, Cardinals, Archbishops and other distinguished personages. Write for book, mention this magazine.

Vin Mariani sold at all reliable druggists.
PARIS: 41 Bd. Haussmann.

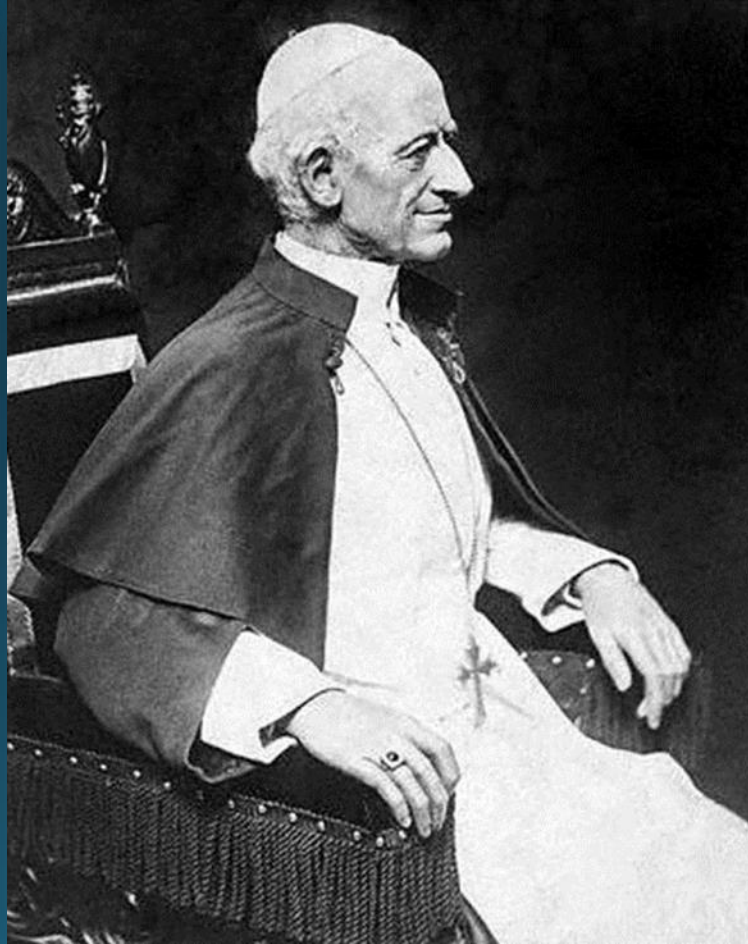
MARIANI & CO., 52 West 15th St., New York.

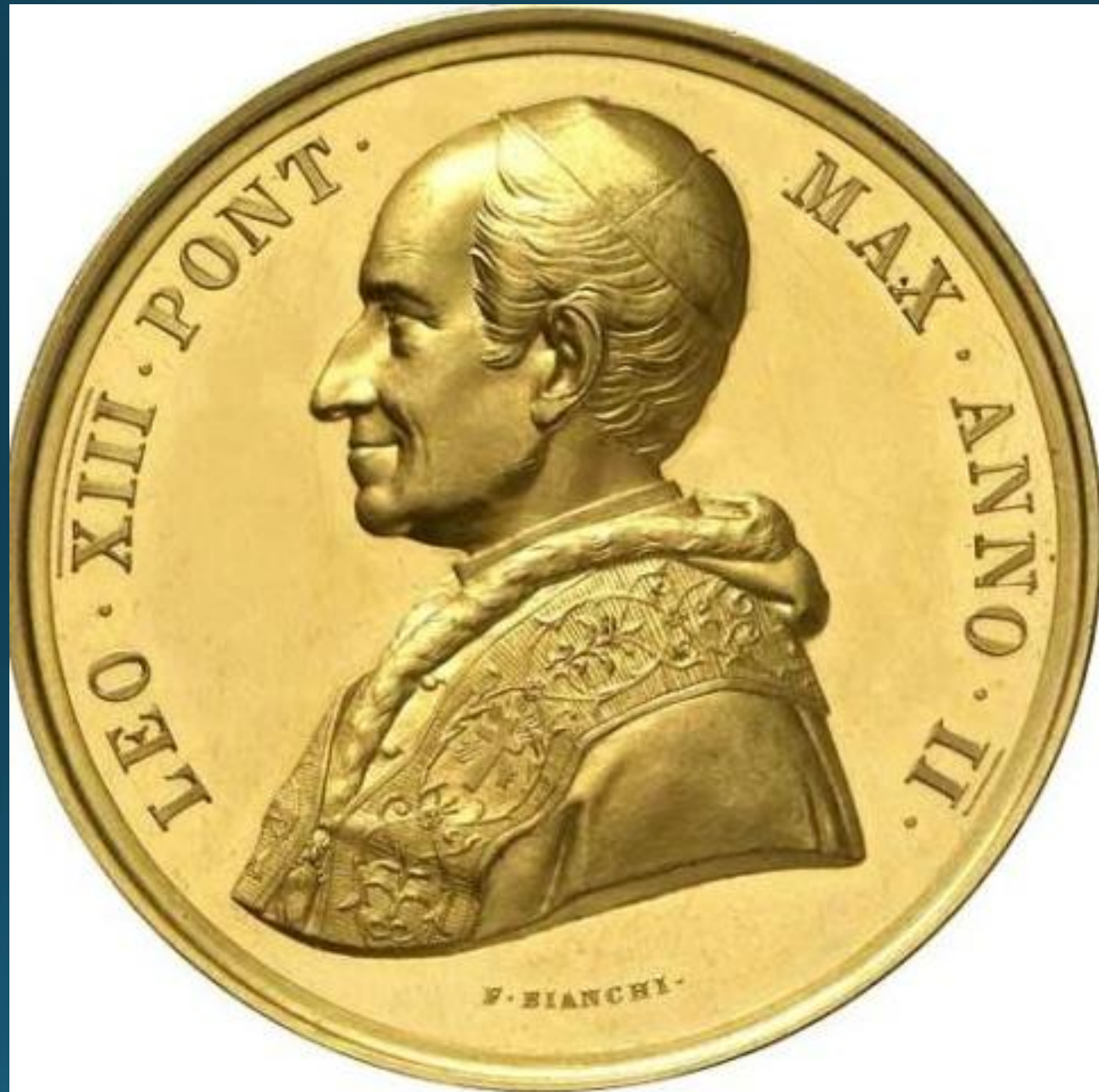
LONDON: 83 Mortimer Street.

MONTREAL: 28-30 Hospital Street.

- Henri Rochefort
- Journalist, playwright and politician
- "Vin Mariani completely reformed my constitution...
- ...you should offer some to the French Government"

Pope Leo XIII (1810 – 1903)





HIS HOLINESS POPE LEO XIII AWARDS GOLD MEDAL

In Recognition of Benefits Received from



VIN MARIANI

MARIANI WINE TONIC

FOR BODY, BRAIN AND NERVES

SPECIAL OFFER - To all who write us mentioning this paper, we send a book containing portraits and endorsements of EMPERORS, EMPRESS, PRINCES, CARDINALS, ARCHBISHOPS, and other distinguished personages.

MARIANI & Co., 52 WEST 15TH ST. NEW YORK.

FOR SALE AT ALL DRUGGISTS EVERYWHERE. AVOID SUBSTITUTES. BEWARE OF IMITATIONS.
PARIS-41 Boulevard Haussmann, LONDON-83 Mortimer St. Montreal-87 St. James St.

MARIANI WINE

MARIANI WINE Quickly restores

HEALTH, STRENGTH,
ENERGY & VITALITY.

MARIANI WINE

FORTIFIES, STRENGTHENS,
STIMULATES & REPAIRS
THE BODY & BRAIN

HASTENS
CONVALESCENCE

especially after

INFLUENZA.

His Holiness
THE POPE

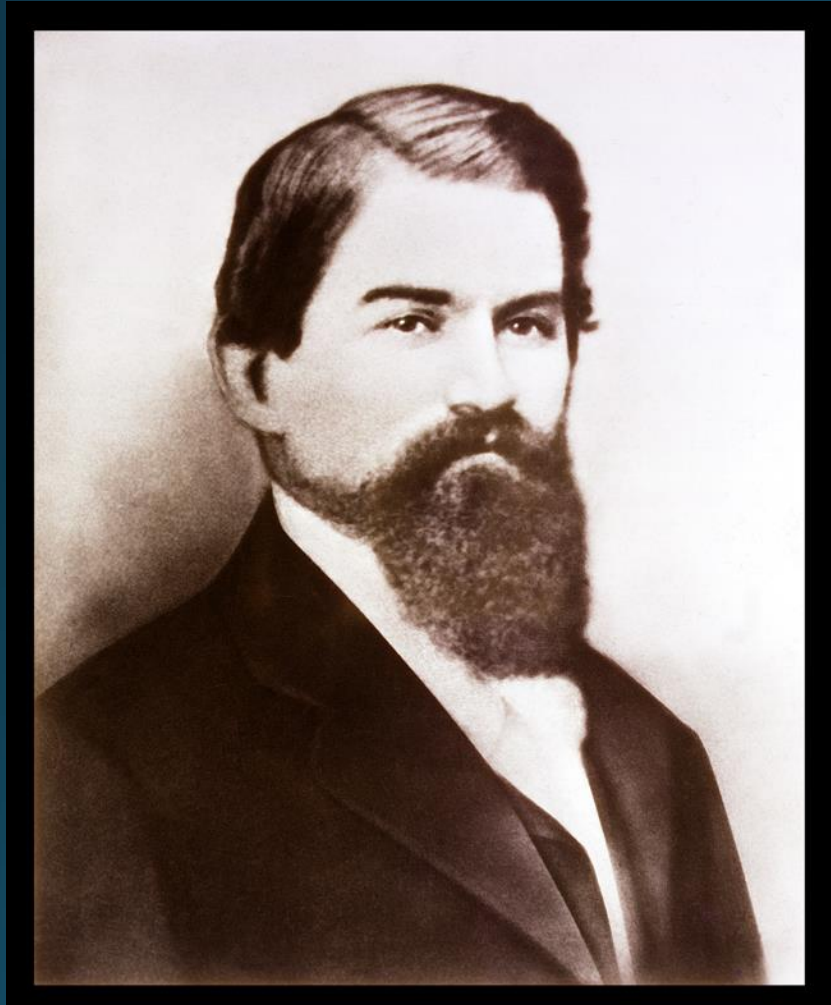
writes that he has fully appreciated the beneficial effects of this Tonic Wine and has forwarded to Mr. Mariani as a token of his gratitude a gold medal bearing his august effigy.



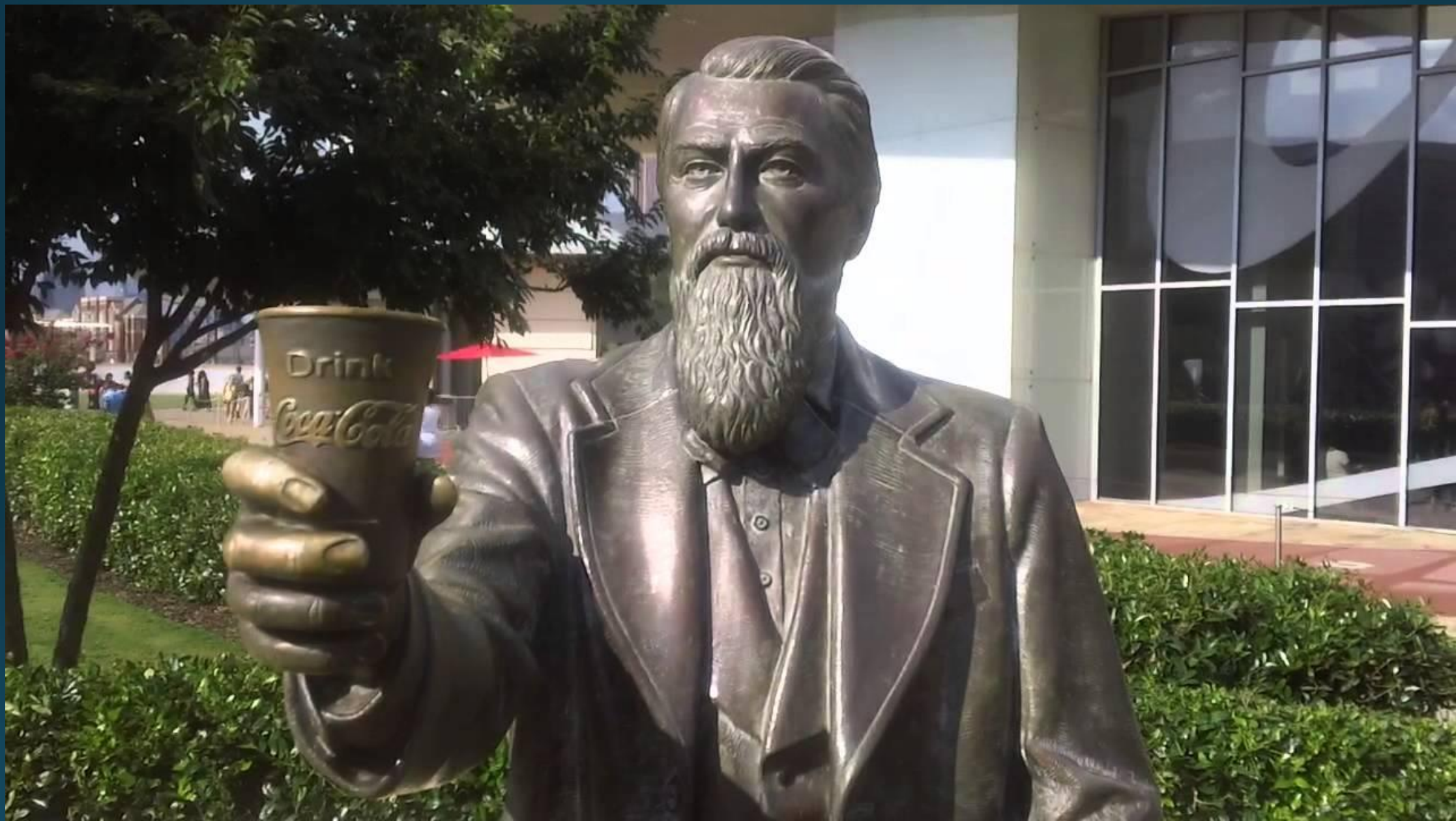
MARIANI WINE

Is delivered free to all parts of the United Kingdom by WHILCOX & CO., 83, Mortimer Street, London, W., price 4/- per Single Bottle, 22/- half-dozen, 43/- dozen, and is sold by Chemists and Stores.

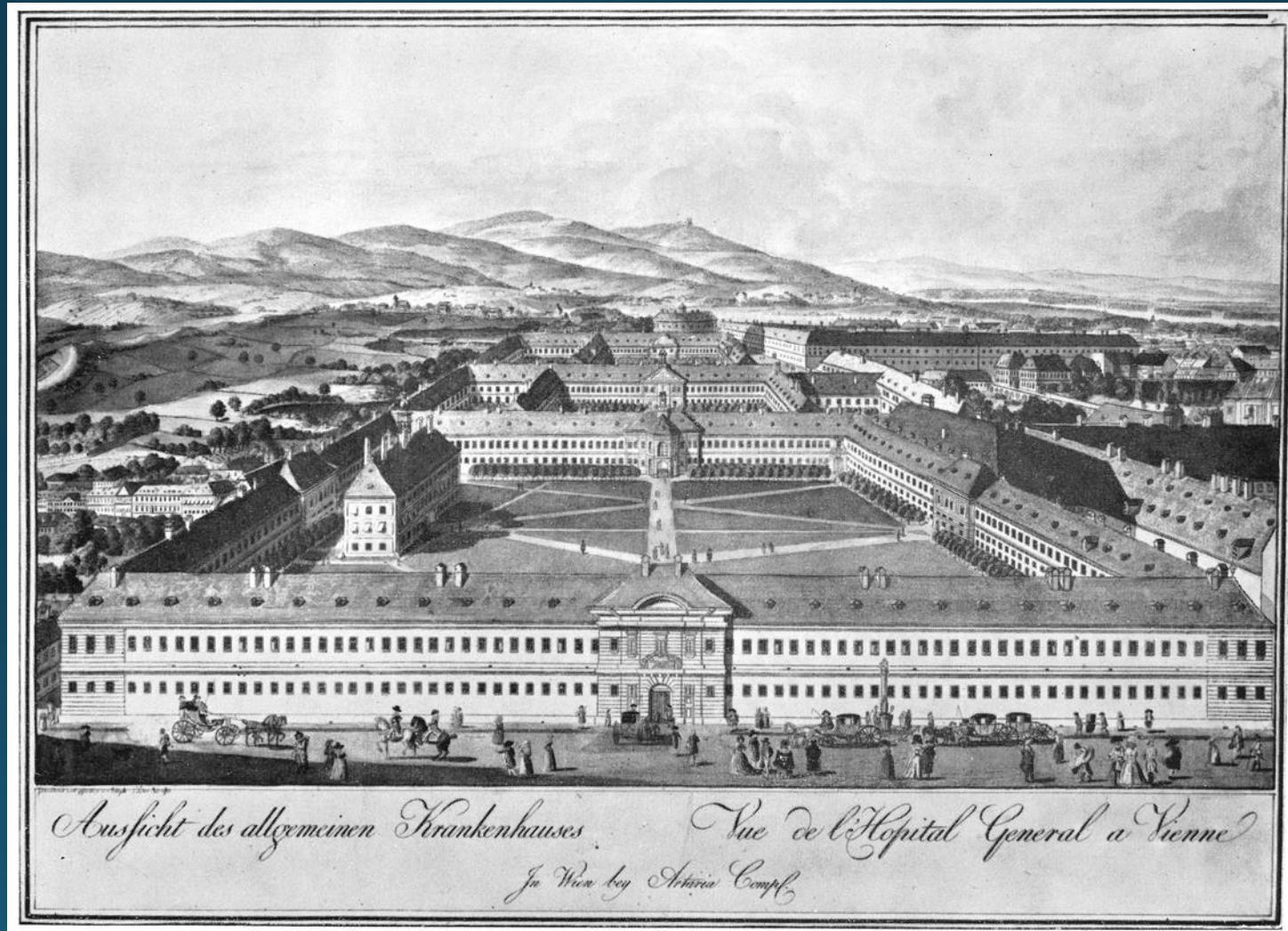
John Pemberton (1831 – 1888)



- US Civil War veteran, pharmacist and morphine addict
- “French Wine of Coca”
- Local prohibition banned alcohol
- Flavoured with cola nuts
- Coca Cola (1886)



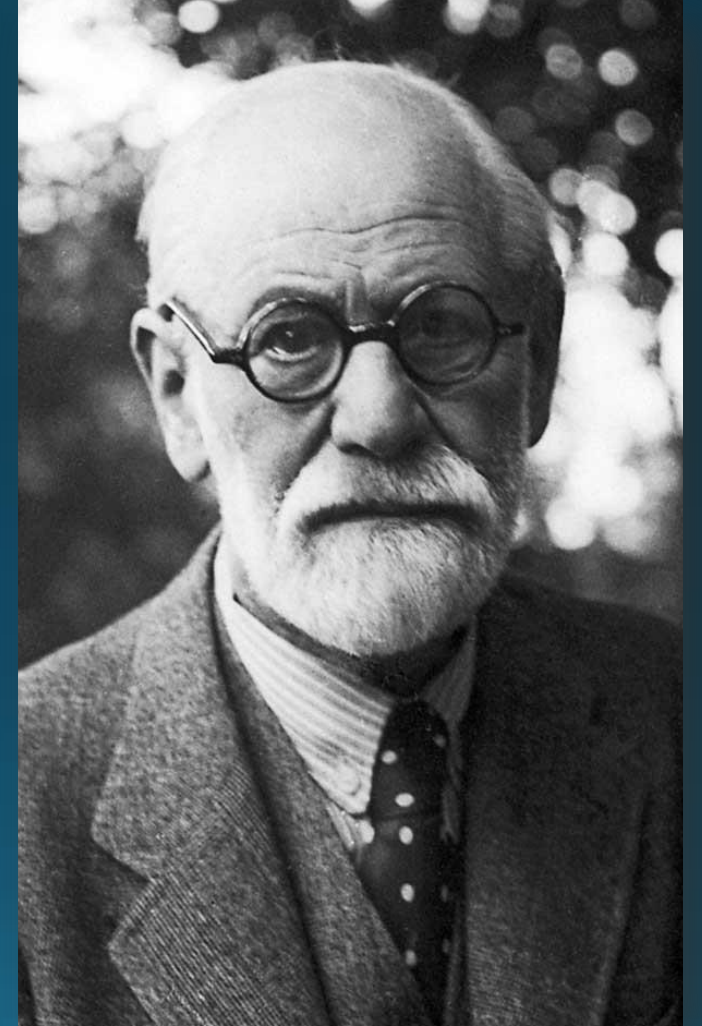
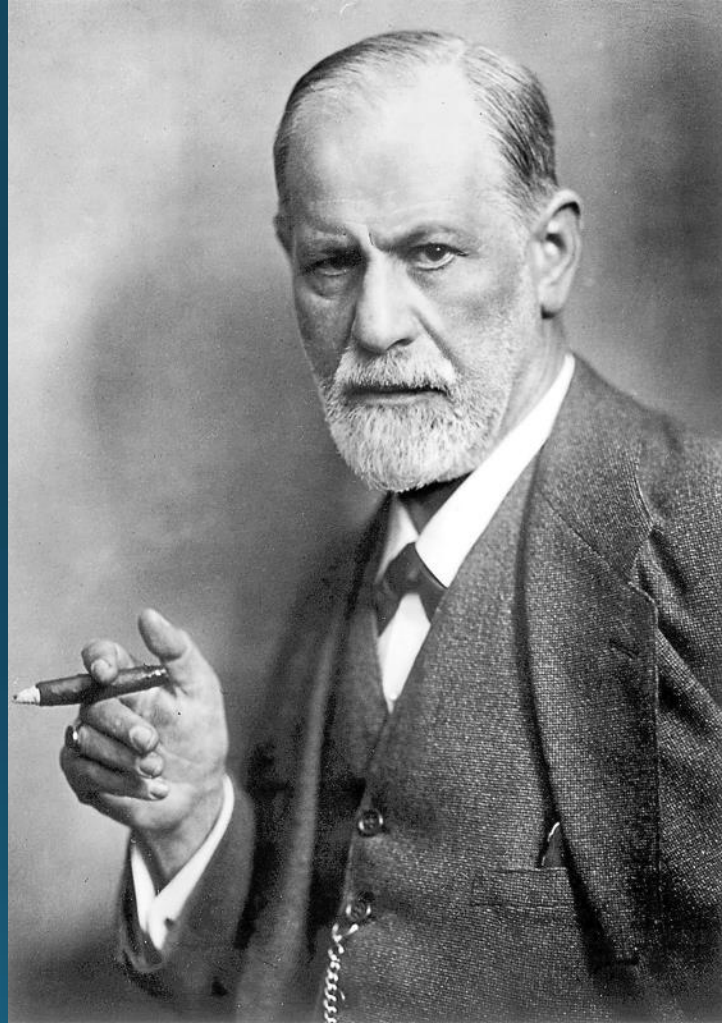
Wiener Allgemeines Krankenhaus (1884)



Two young doctors



Copyrighted image



Sigmund Freud (1856 – 1939)

- Studying morphine addiction
- Trying to find something to help wean patients off morphine
- Was trying cocaine

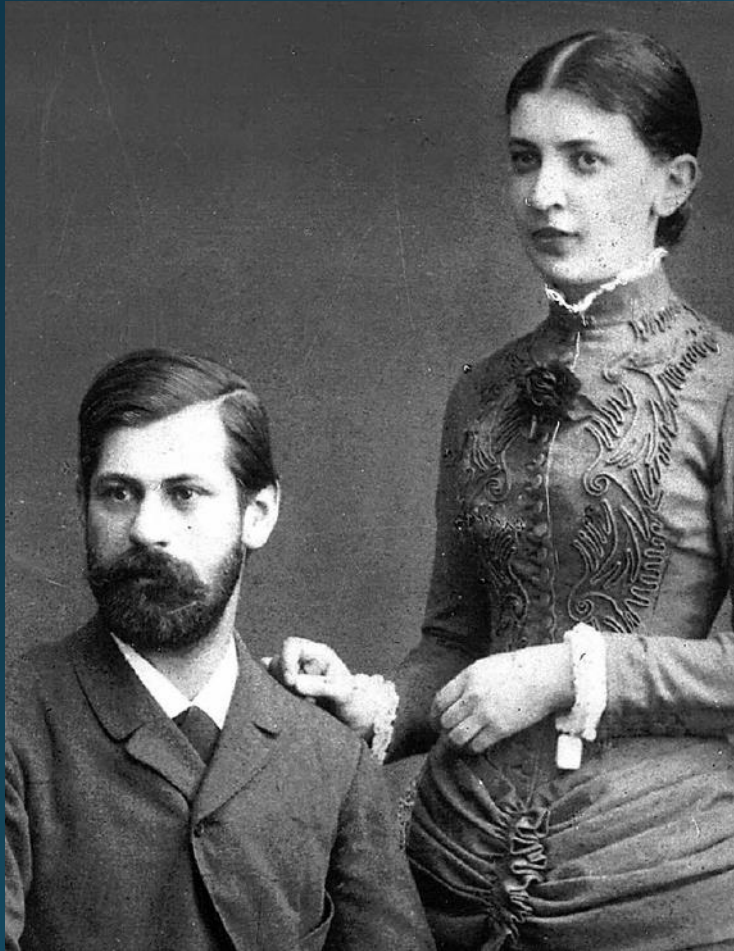


Sigmund Freud (1856 – 1939)



- Wrote a review in 1884 called “Uber Coca”
- Noted anaesthetic effects on lips
- About to do some more experiments with Koller...

Martha Bernays (later Martha Freud)



Carl Koller (1857 – 1944)



- Young Czech ophthalmologist
- Obsessed with placing substances in animals' eye to see if they would make them insensible
- Had tried chloral hydrate, bromide and morphine
- But none had worked

While Freud was away...



“A colleague, Dr Engel, placed some cocaine in his mouth from the point of his penknife”

“My, how that numbs the lips” Engel remarked”

While Freud was away...



Koller replied: "Yes, that has been noticed by everyone who has eaten it."

"And then he realised in a flash that he was carrying in his pocket the local anaesthetic for which everyone had been searching"

While Freud was away...



Eureka!

While Freud was away...



- Tried it on a nearby frog
- On a rabbit
- On a dog
- And then on himself

11th September 1884

- The first operation under local anaesthesia
- German Ophthalmological Society Congress in Heidelberg on 15th September 1884
- Sent a colleague to read his paper



Josef Brettauer (1835 – 1905)

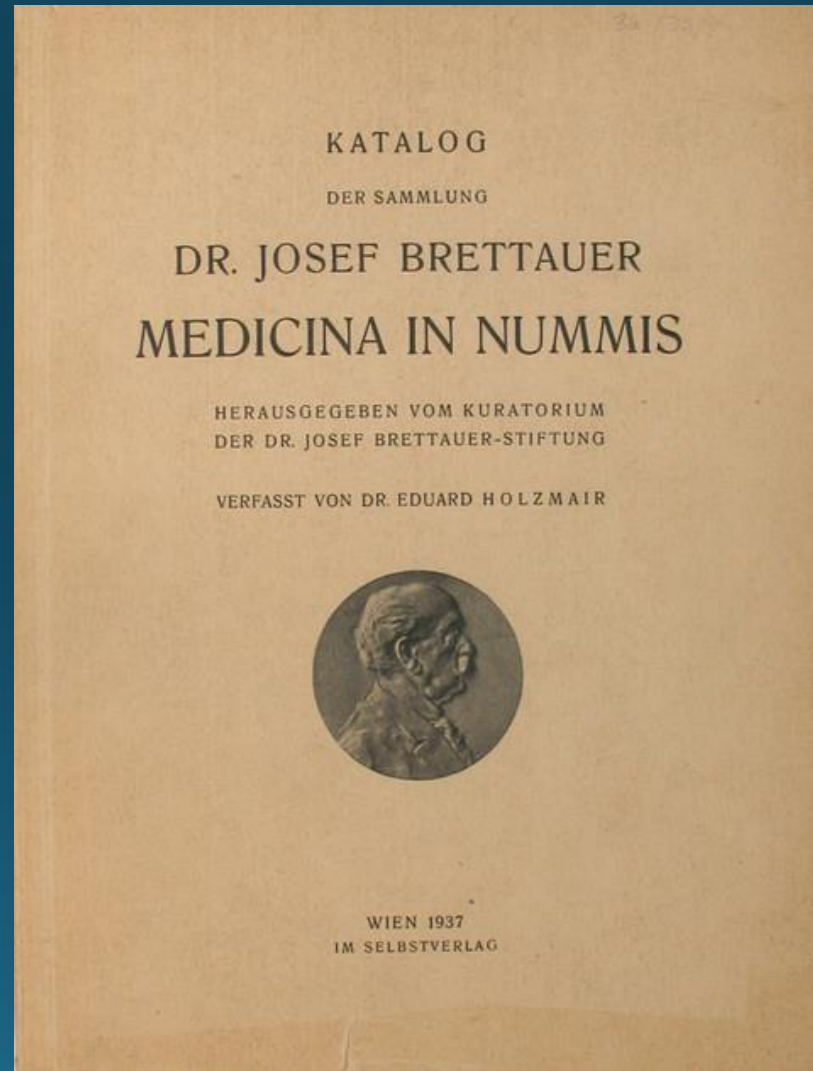


- Became one of Italy's best known ophthalmologists and numismatists



Thanks to Dr M Geurig for the image

Josef Brettauer (1835 – 1905)



17th October 1884

Medical Society of Vienna



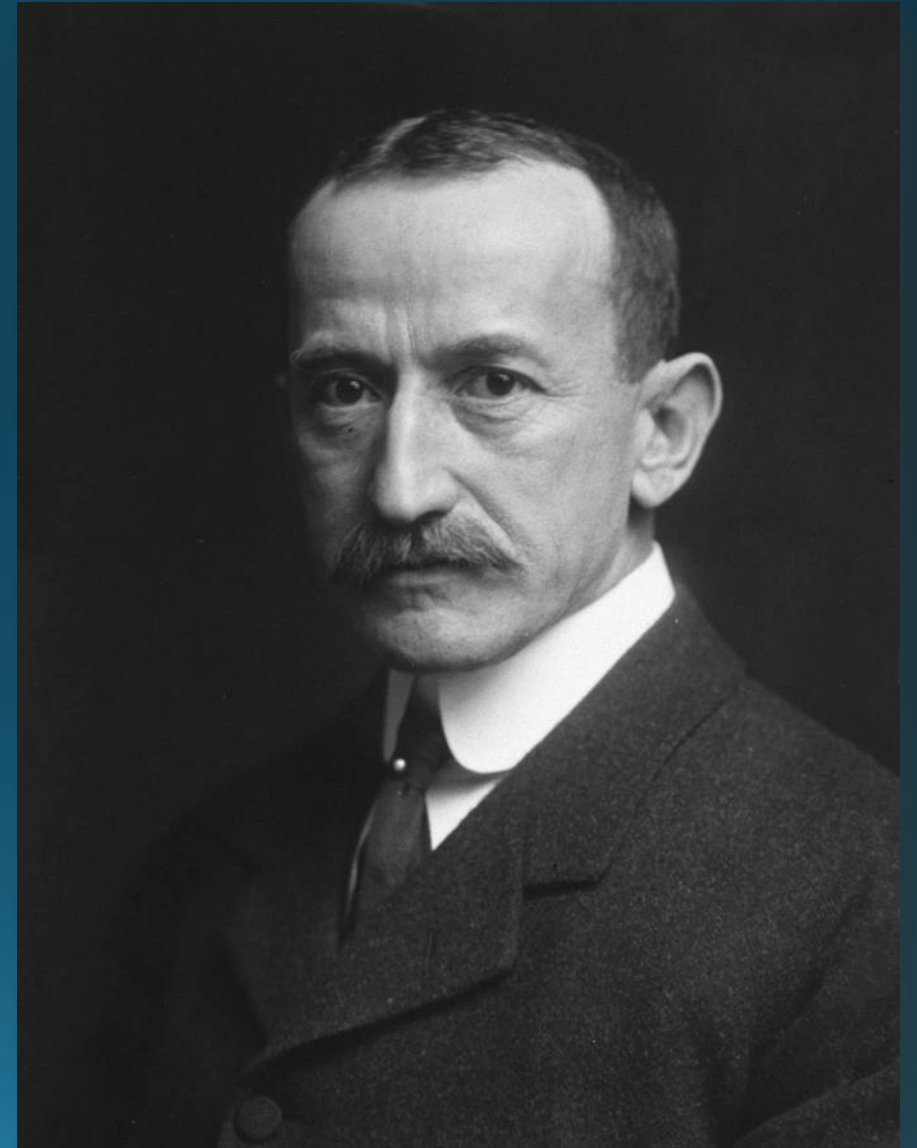
Carl Koller



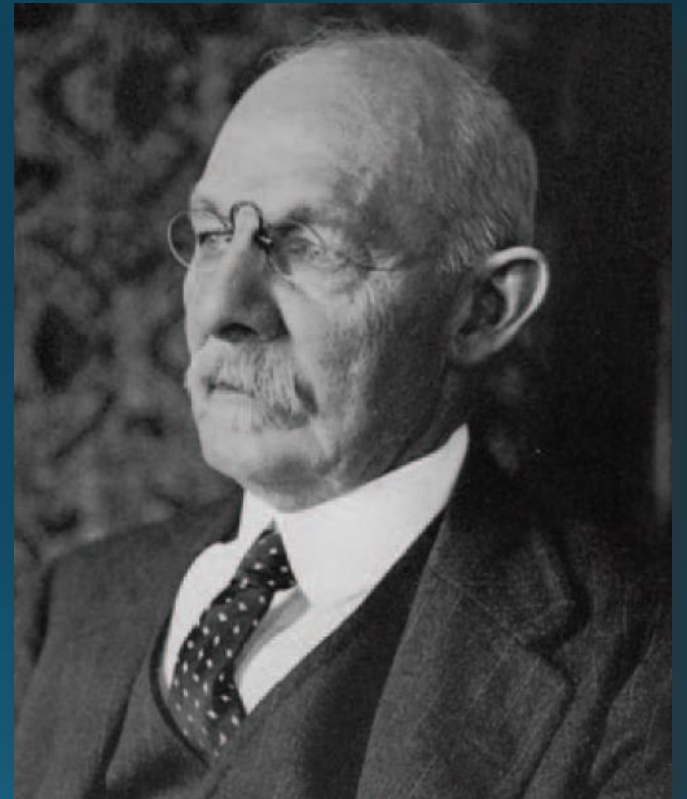
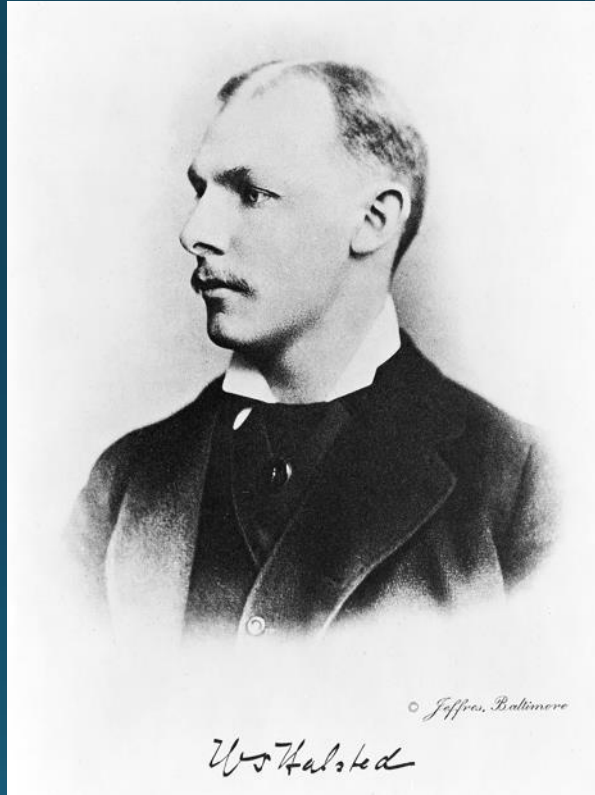
- Forced to leave Vienna in 1885
- Insulted by a colleague
- Challenged him to a duel with heavy sabres
- Which Koller won
- Failed to get appointed to a post as a Consultant Ophthalmologist
- And moved to the USA

Local anaesthesia

- Usage spread like wildfire
- Free from current ethical constraints on human experimentation
- Within months cocaine was in use throughout the world
- Four main uses
 - Local anaesthesia
 - Nerve blocks
 - Spinal anaesthesia
 - Epidural anaesthesia



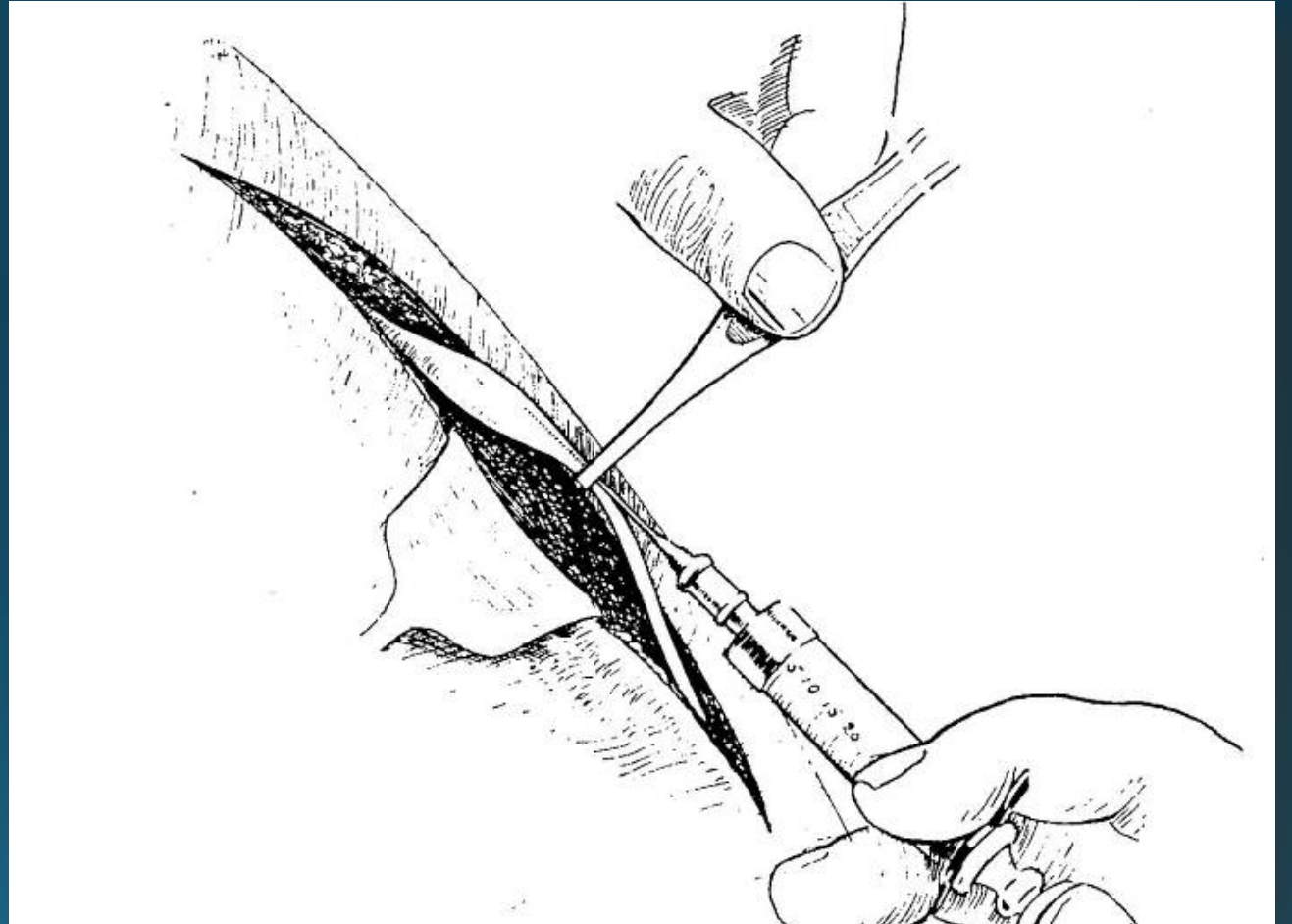
William Stuart Halsted (1852 – 1922)



William Stuart Halsted (1852 – 1922)



Image copyright Johns Hopkins
University School of Medicine



New York Medical Journal September 1885



PRACTICAL COMMENTS ON THE USE AND ABUSE OF COCAINE;

SUGGESTED BY ITS INVARIABLY SUCCESSFUL EMPLOY-
MENT IN MORE THAN A THOUSAND MINOR
SURGICAL OPERATIONS.

By WILLIAM S. HALSTED, M. D.

NEITHER indifferent as to which of how many possibili-
ties may best explain, nor yet at a loss to comprehend, why
surgeons have, and that so many, quite without discredit,
could have exhibited scarcely any interest in what, as a
local anæsthetic, had been supposed, if not declared, by
most so very sure to prove, especially to them, attractive,
still I do not think that this circumstance, or some sense
of obligation to rescue fragmentary reputation for surgeons
rather than the belief that an opportunity existed for assist-
ing others to an appreciable extent, induced me, several
months ago, to write on the subject in hand the greater
part of a somewhat comprehensive paper, which poor health
disinclined me to complete.

William Stuart Halsted (1852 – 1922)



- In 1886, he attempted to wean himself off cocaine with...
- Morphine
- He became doubly addicted
- Chief Surgeon at Johns Hopkins Hospital 1889
- Professor Surgery in 1892

William Stuart Halsted (1852 – 1922)



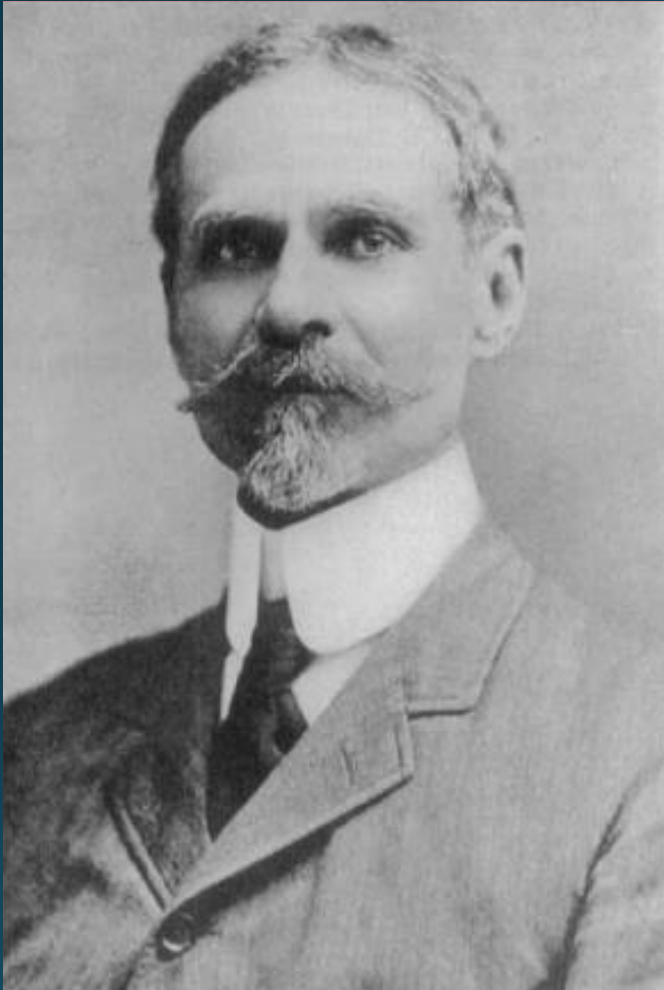
- "Moody, elusive, sarcastic and prone to leaving operations half way through"
- Ate coddled guinea hen eggs for breakfast
- Passionate dahlia grower
- Had all his laundry sent to Paris

James Leonard Corning (1855 – 1923)



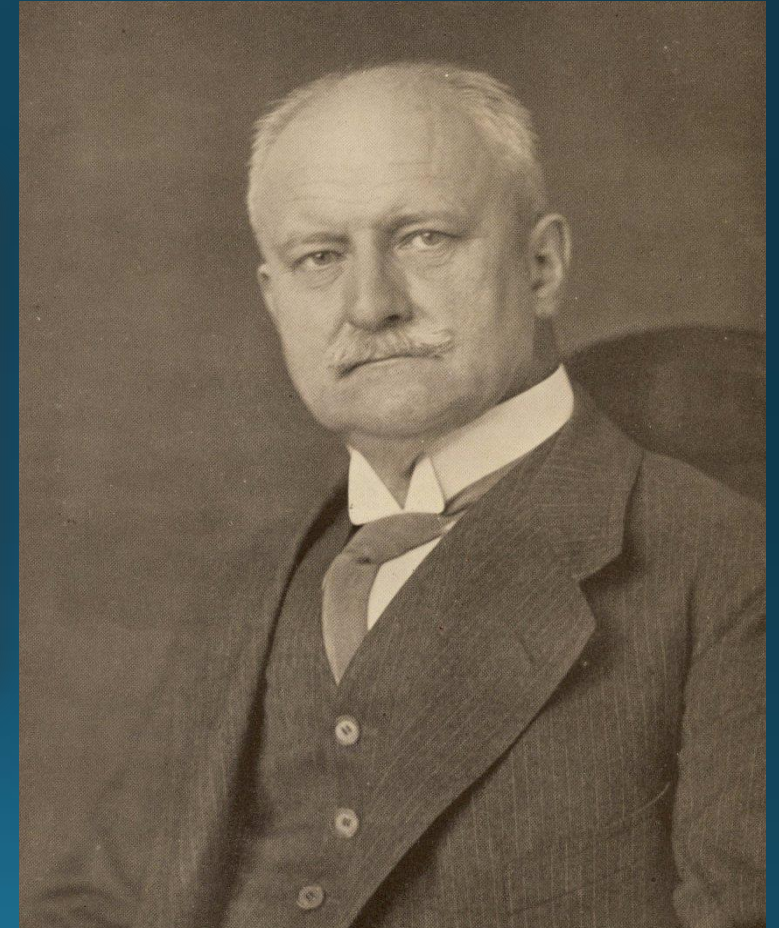
- New York neurologist
- 1885: armed with a pioneering spirit and a syringe of cocaine
- Performed a spinal injection on one dog
- Before attempting it on a patient
- Suffering from “spinal weakness and seminal incontinence”

James Leonard Corning (1855 – 1923)

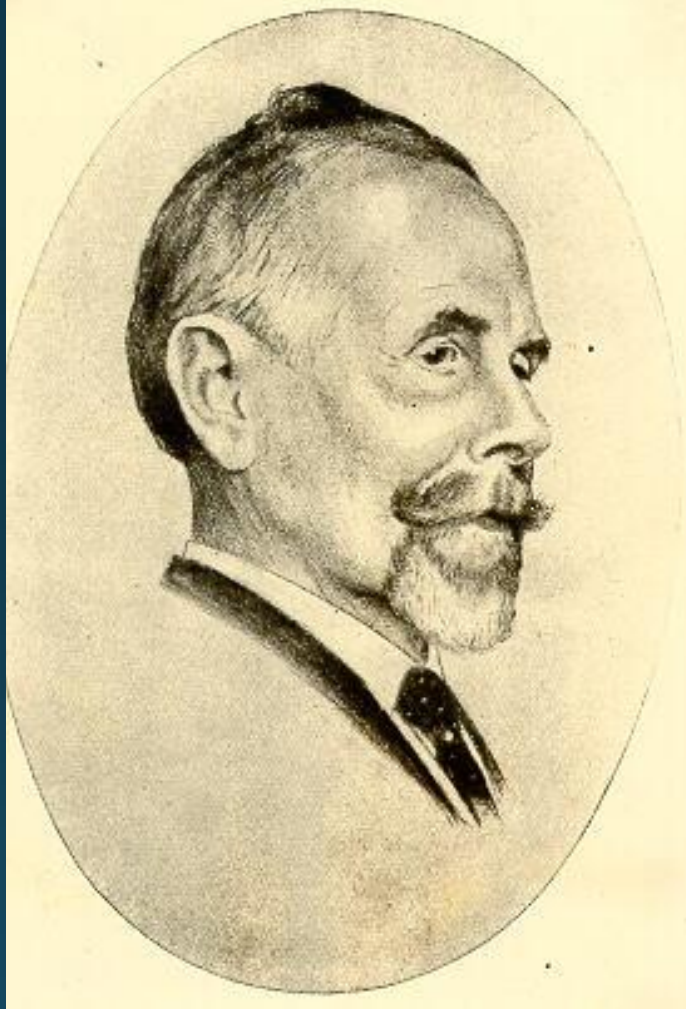


- Injected him with a large amount of cocaine
- Did not achieve a spinal injection – probably epidural
- Assessed sensation with a wire brush
- “After 20 minutes, application of the brush to the penis and scrotum caused neither pain nor reflex contraction”

Karl August Gustav Bier (1861 – 1949)



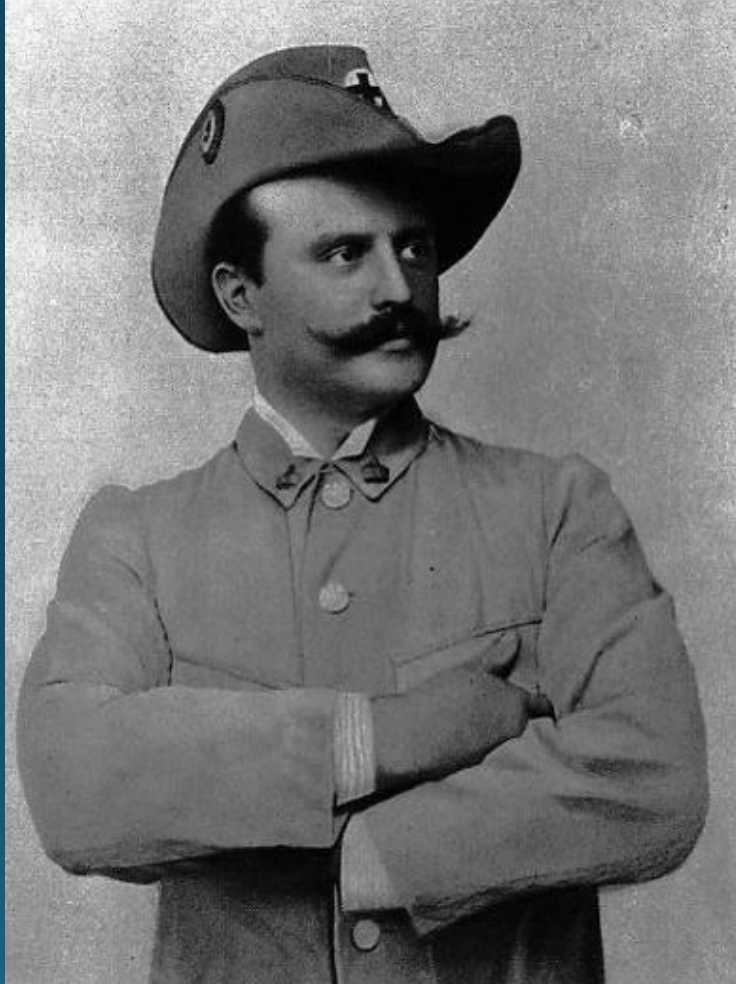
Heinrich Quincke (1842 – 1922)



- Introduced lumbar puncture for diagnosis and treatment
- “Spinal tap”
- Bier put two and two together

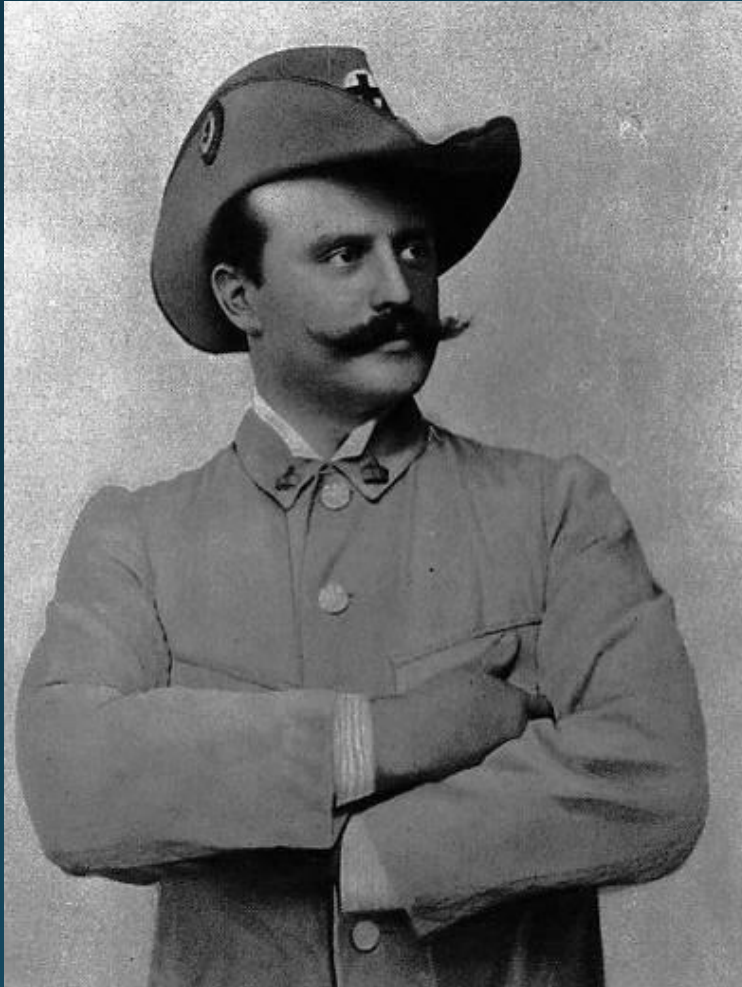


Bier and Hildebrandt – 24th August 1898



Thanks to Dr M Geurig for the image

Bier and Hildebrandt – 24th August 1898



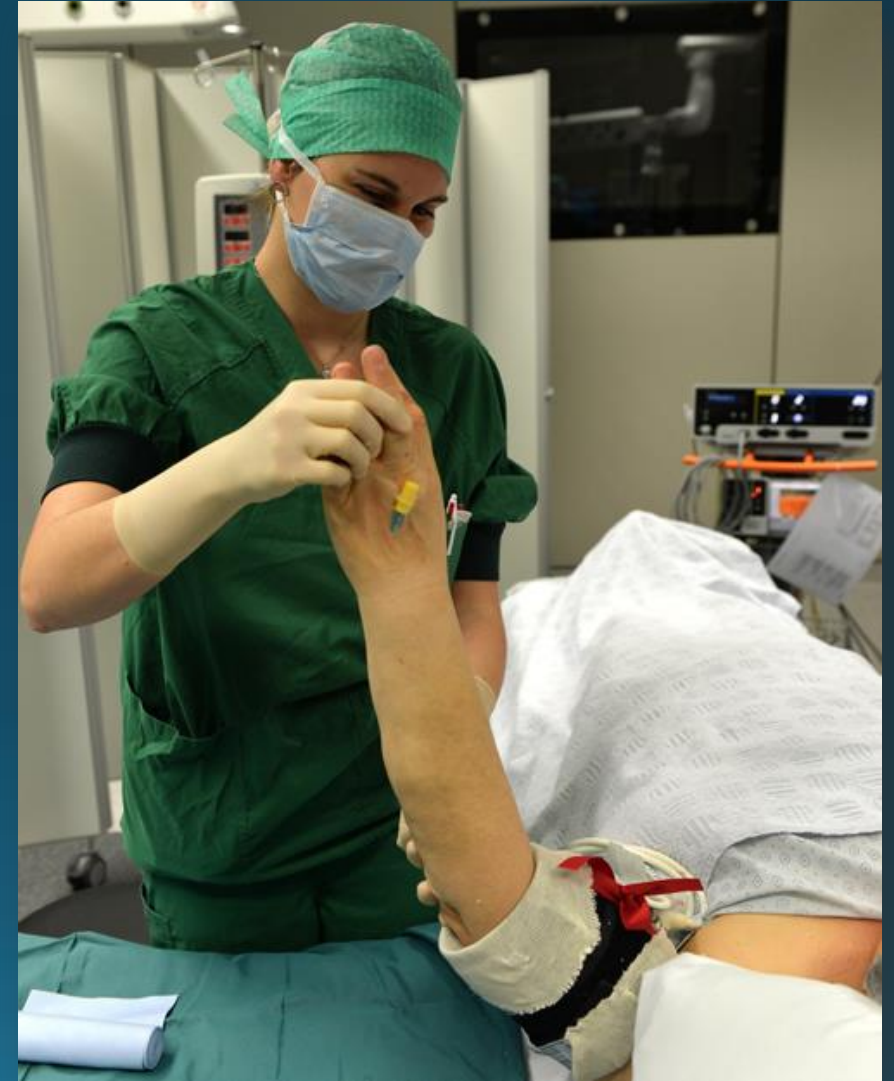
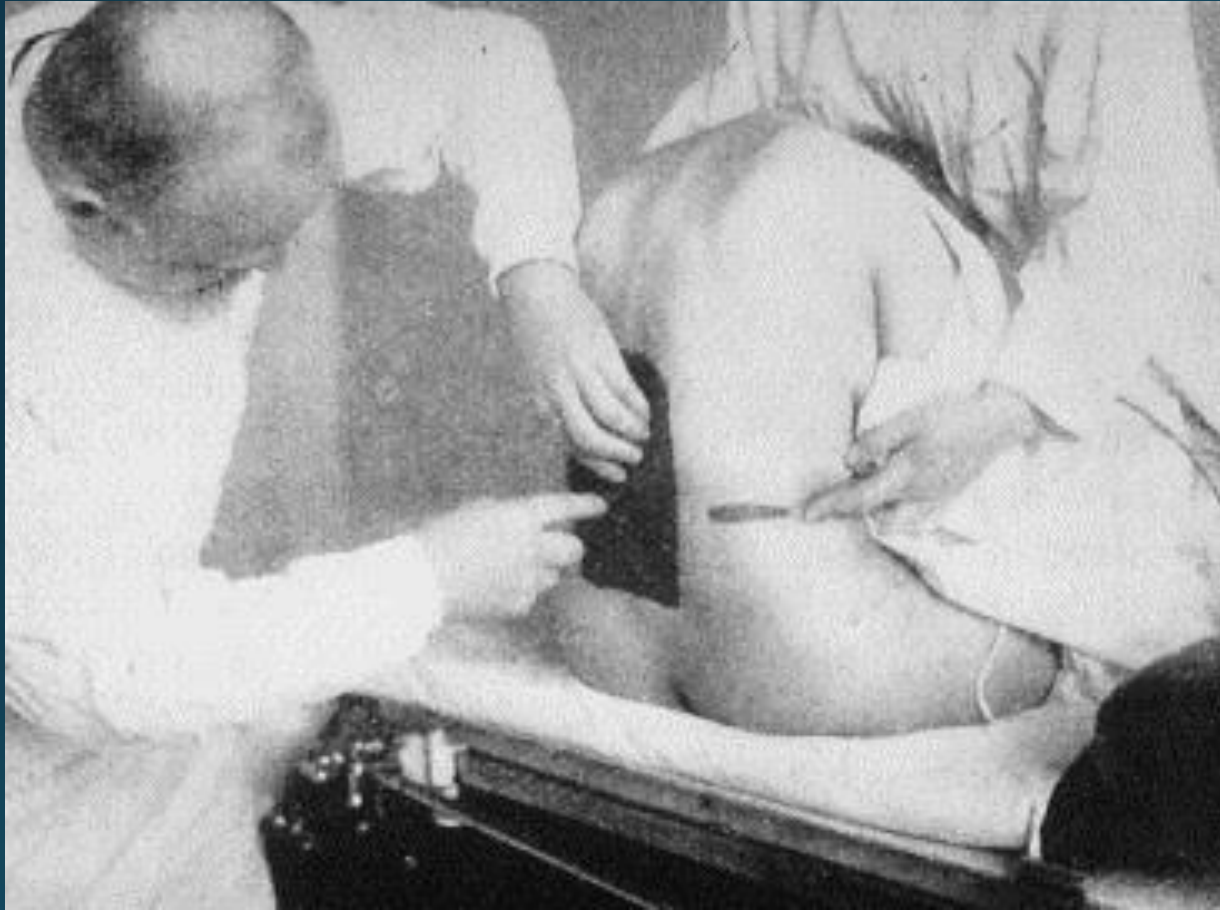
- Hildebrandt attempted to give Bier a spinal anaesthetic
- The large needle was painful...
- And did not fit well with the syringe
- CSF leakage
- Some cocaine injected
- No anaesthesia
- Significant headache

Bier and Hildebrandt – 24th August 1898



- Bier's turn
- After 5 minutes, it was time to test:
 - Pinching with fingernails
 - Blows with a hammer
 - A burning cigar on the leg
 - Avulsing a pubic hair
 - A firm squeeze of the testicles
- Celebration with wine and cigars
- And thumping headaches

Spinal anaesthesia

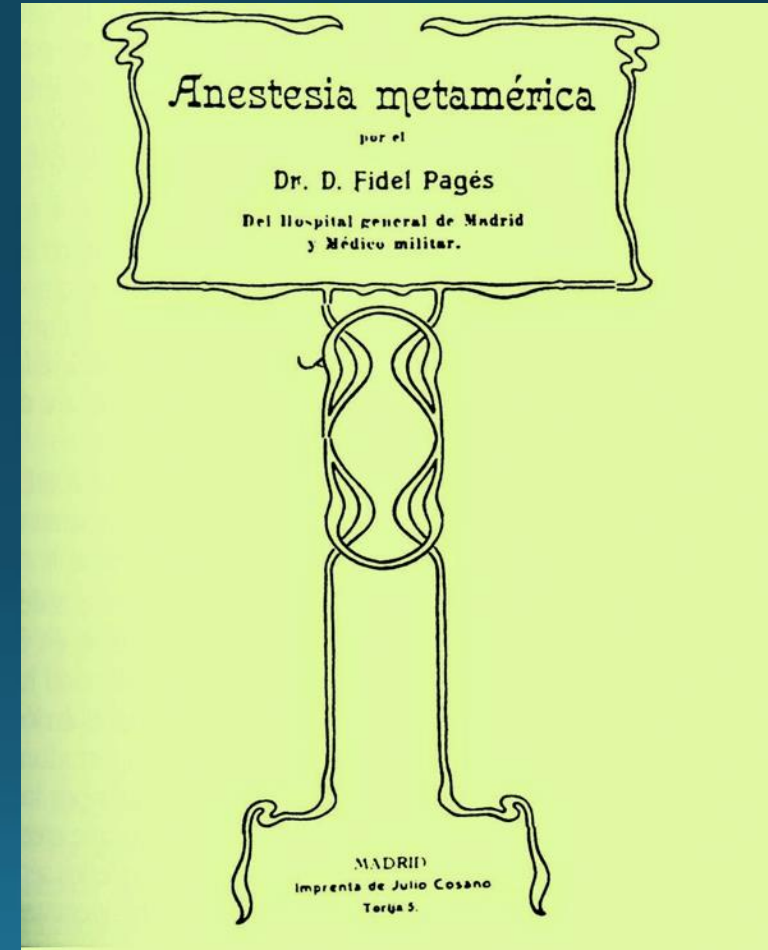
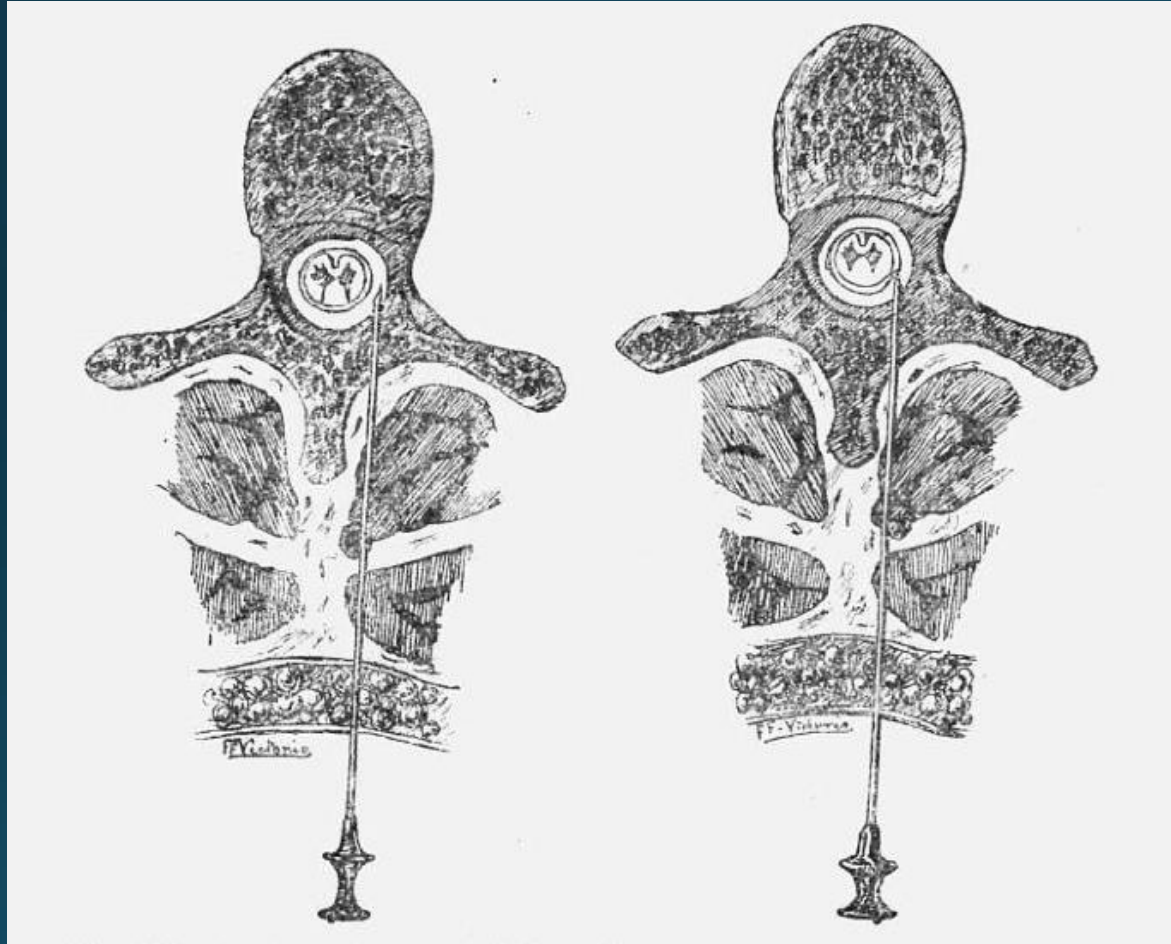




Fidel Pages (1886 – 1923)



Anestesia Metamerica (1921)



Gaston Labat (1876 – 1934)



- Born in the Seychelles
- Worked with Victor Pauchet in France
- Co-author of *L'Anesthésie Régionale* (1921)
- Moved to the USA in 1920
- Published *Regional Anesthesia* in 1922

L'ANESTHÉSIE RÉGIONALE

PAR

VICTOR PAUCHET,
Professeur à l'École de Médecine d'Amiens,
Chirurgien de l'Hôpital Saint-Michel de Paris.

PAUL SOURDAT,
Ancien Interne des Hôpitaux de Paris,
Chirurgien des Hôpitaux d'Amiens.

ET

GASTON LABAT,
Docteur en Médecine de Paris,
Lauréat de la Faculté des Sciences de Montpellier.

TROISIÈME ÉDITION REFONDUE

Avec 308 figures dans le texte.

PARIS
LIBRAIRIE OCTAVE DOIN
GASTON DOIN, ÉDITEUR

8, PLACE DE L'ODÉON, 8

1921

Tous droits réservés.

Regional Anesthesia

Its Technic and Clinical Application

By

Gaston Labat, M. D.

Lecturer on Regional Anesthesia at The New York University; Laureate of the
Faculty of Sciences, University of Montpellier; Laureate of the Faculty of
Medicine, University of Paris; Formerly Special Lecturer on Regional
Anesthesia, The Mayo Foundation, University of Minnesota

With a Foreword by

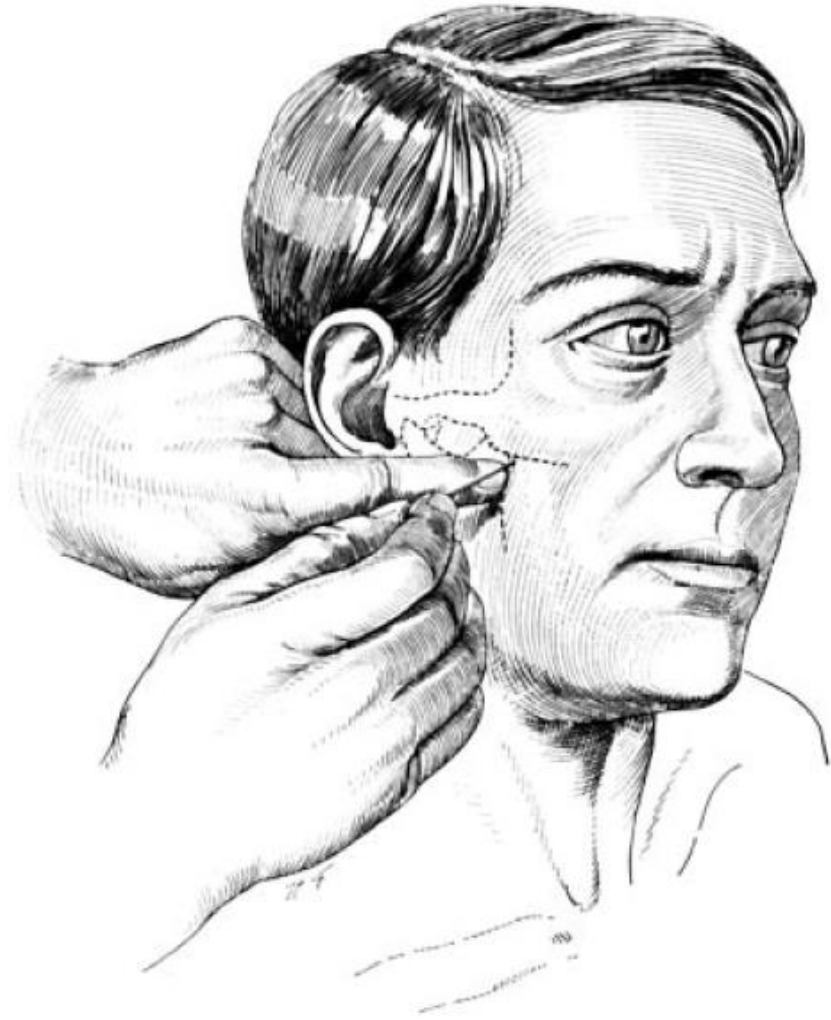
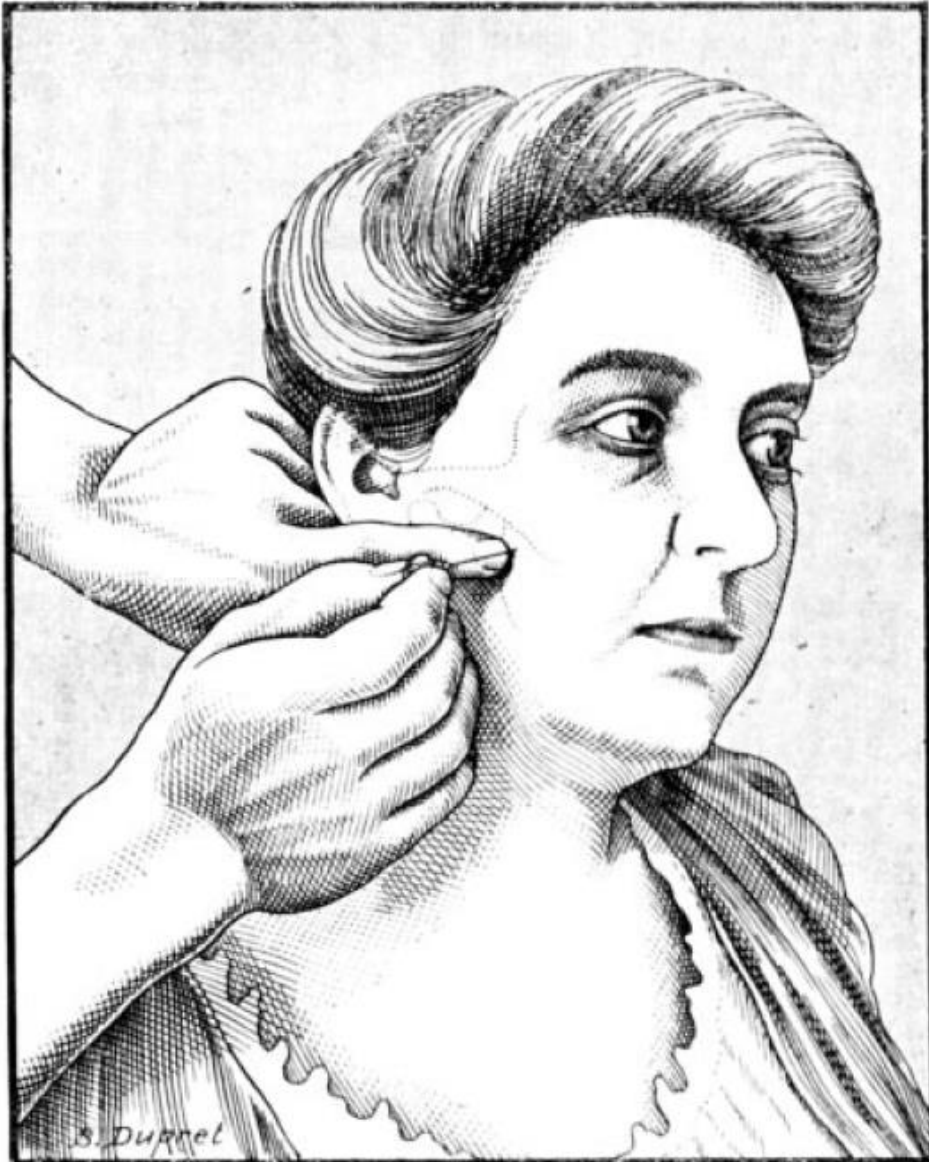
William J. Mayo, M. D.

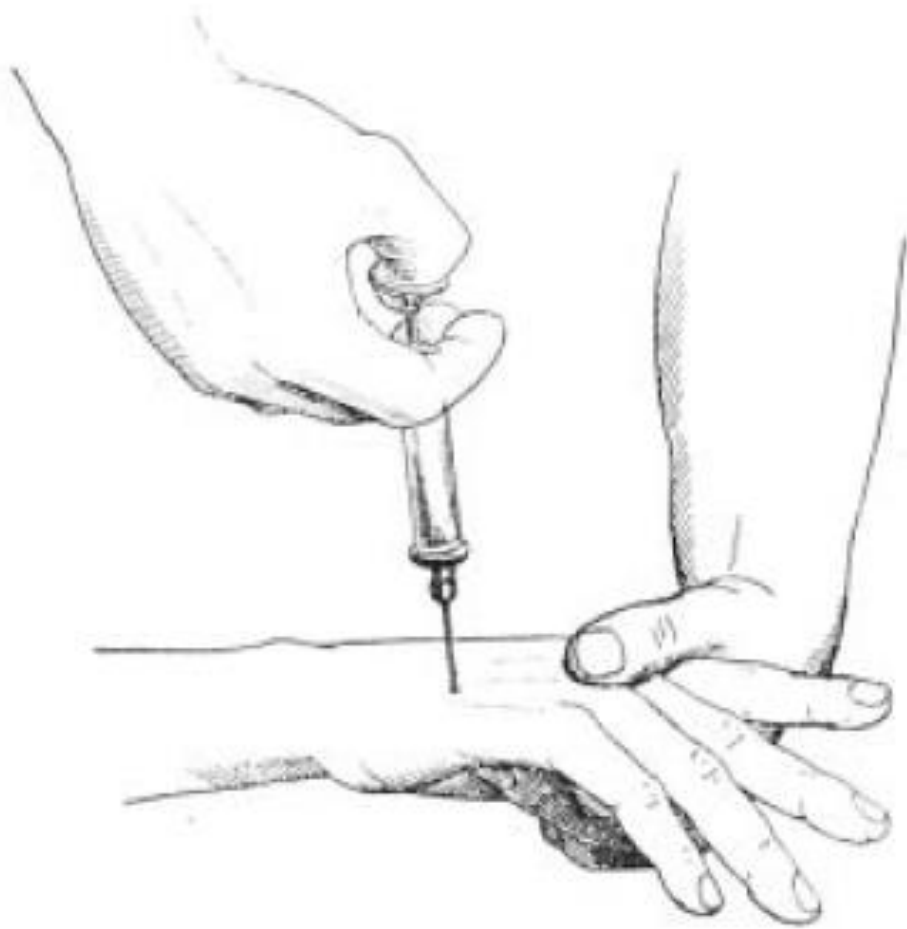
*With 315
Original Illustrations*

PHILADELPHIA AND LONDON

W. B. SAUNDERS COMPANY

1922





Gaston Labat (1876 – 1934)

*The
Genuine
Original* **LABAT
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**FOR LOCAL, REGIONAL AND
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The Method of the Future

"The young surgeon should perfect himself in the use of regional anesthesia, which increases in value with the increase in the skill with which it is administered."—William J. Mayo (Labat Regional Anesthesia, W. B. Saunders Company of Philadelphia, 1922.)

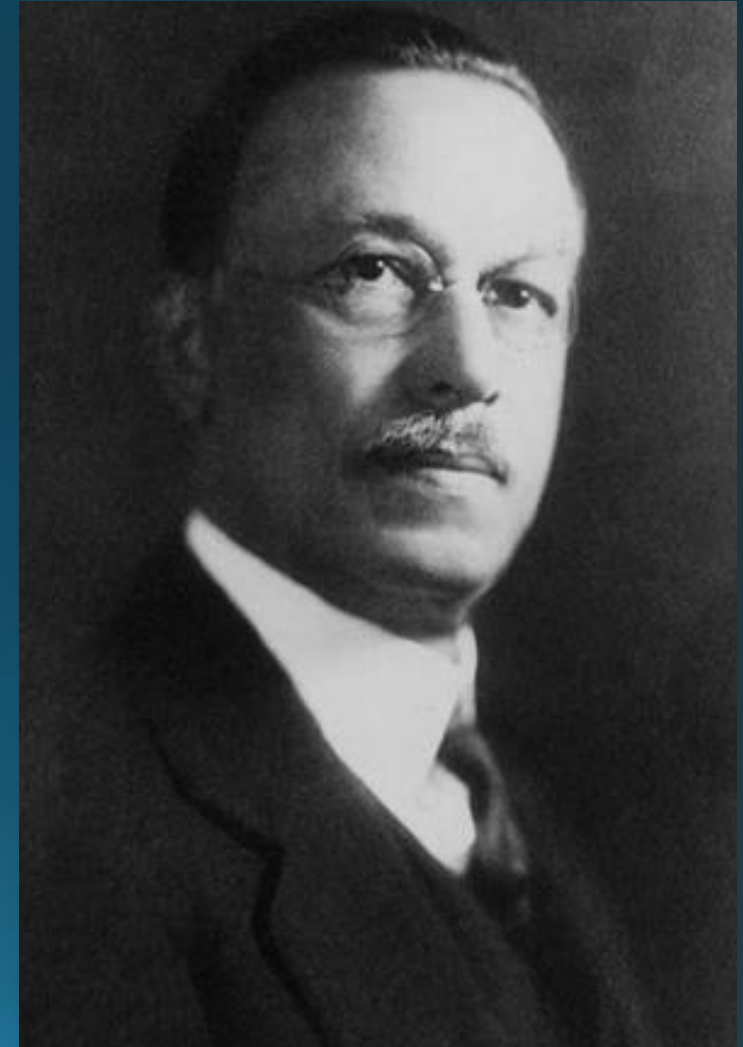
*Price of Complete
Labat Outfit, \$25.00*

Two finest intradermal
wheat needles (No. 1)
Two 10mm. needles (No. 2)
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One 100mm. needle (No. 4)
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*P. S. My dear Surgeon:—Do not be
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Genuine Original Labat Outfit as used and
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The Anglo-French Drug Company
1270 BROADWAY, NEW YORK
SURGICAL INSTRUMENT DEPT.

- Founding father of the American Society of Regional Anaesthesia (1923)
- His colleagues wished to call it the "Labat Society"



Local Anaesthesia in 1923

- Local anaesthesia well established
- Comprehensive set of nerve blocks
- Spinal anaesthesia
- Epidural anaesthesia
- A society for local anaesthesia
- All within 40 years of the date of the first local anaesthetic
- 18th September 1884
- Or was it...

Vassily von Anrep (1852 – 1927)



- Russian physician and politician
- Published a paper in 1880 suggesting medical uses for cocaine
- Probably used it as a local anaesthetic before Koller in 1884
- But not for surgery
- And he didn't publicise it
- Until after Koller had done so

[illegible]

ВРАЧЪ

Подписка принимается у издателя Е. В. Риндера (Иркутск), против М-ростки, д. Бодякина, 14). Цена за год с пересылкой доставкой из Петербурга 9 р.; за полгода с пересылкой 4 и доставкой 6 р. 80 к. Относительно приемки объявлений, уплаты вознаграждения и вообще всяких хозяйственных вопросов просить обращаться только по адресу издателя. В последнюю неделю, присланную на имя редактора, будет сделано бесплатное объявление из ближайшего № газеты. Рекламы в объявлениях о тайных средствах не принимаются ни в каком случае. Цена за объявление 10 к. за строку текста (3 столбца по 10 строк).

ЖЕНЕЛЬНАЯ МЕДИЦИНСКАЯ ГАЗЕТА, ПОСВЯЩЕННАЯ ВСЕМЪ ОТРАСЛЯМЪ ВЪННЧЕСКОЙ МЕДИЦИНЫ,
ОБЩЕСТВЕННОЙ И ЧАСТНОЙ ГИГЬЕНЪ И ВСЕМЪ ВОПРОСАМЪ ВРАЧЕБНАГО БЫТА.

Подъ редакціей профессора В. А. ЯНУСОВИЧА.

Содержание: 1. В. И. Туряев, Кованка. Изъ средство кѣтно анестезирующее; 2. Д. О. Крайфедова. Къ вопросу общаго анализа; 3. М. А. Мухомоловскій. О переходѣ твердыхъ веществъ изъ крови матери въ кровь плода; 4. А. Певестъ. Изъ Горьковскаго дѣтскаго больницы—Случай острого парехивагознаго воспаления почечъ, развившагося послѣ вѣтрянной оспы; 5. В. Е. Никольскій. Изъ Обуховскаго больницы—Случай смерти отъ дифтерита; 6) Д. П. Вильковскій. Ожигленіе нижнотвердшихъ новорожденныхъ по способу Л. Вонъ; 7) Въ тѣлѣхъ писемъ; 8) Корреспонденція: П. Урманъ, а) Изъ С.-Петербургскаго Медицинскаго Общества; б) Изъ Общества Русскихъ Врачей; 9) Хроника и нѣкоторыя извѣстія; 10) Отъ редакціи и 11) Объявленія (на обертѣ).

**СЛХІ. КОКАИНЪ. КАКЪ СРЕДСТВО МЪСТНО АН-
ЗТЕЗИРУЮЩЕЕ.**

В. Б. Андреев.

Сколько жив существ, я первый указал на живую анестезирующую способность коканва. В моей работе о физиологических свойствах коканва, напечатанной еще в 1879 г., в числе показаний к терапевтическому применению этого вещества, я поставил на первом месте живую анестезию ¹⁾. До самого последнего времени, однако, не было ни одной попытки подобного применения коканва; тем не менее было жив восторженное подтверждение основательности моего предложения воспользоваться этим свойством коканва с терапевтическими целями. Почти одновременно Koller, Jellinek и Ш. Ш. Кацауров заявляют об анестезирующей способности коканва. Наблюдения последнего свидетельствуют, что вызываемая при живом употреблении коканва, анестезия настолько полная, что позволяет производить безболезненно такие операции, как вышущение глазного яблока.

Впрыскивание под кожу таких незначительных количеств кокаина, как 1 — 5 мг/мл, вызывает полную потерю чувствительности кожи вокруг места инъекции: прокол кожи булавкой не ощущается, прижатие тлющей спичкой не вызывает боли.

Смазываюіе слизистых оболочек раствороіъ кокаина или же и внутреннее употребленіе его, въ пріемахъ средней величины, обуславливаетъ сухость этихъ оболочекъ, равно уменьшая ихъ отііленіе. Точно также уменьшается отііленіе желудочнаго сока, слюны и слезъ; кажется замѣтно уменьшается и отііленіе пота (у чаііоточныхъ).

Надо заметить, что анестезирующее влияние ваннны всегда лишь кратковременно, т. е., смотря по приему, продолжается не долее 10—20 минут, но оно может быть произвольно продолжено, если впрыскивания, смазывания и т. д. будут повторяться.

Что касается до мистваго употребленія кокаина у больных, то я могъ убѣдиться въ полезности его въ слѣдующихъ случаяхъ:

При острых уретритах, сопровождавшихся сильной болью при мочеиспускании. Высыивания в уретру 8—10,0 гр. 0.4%—0.9% водного раствора стрептоциклического ванна вполне устраняет болевые ощущения при

Celebrations in 2017

- General anaesthesia: 171st Anniversary (sort of)
- Local anaesthesia: 133rd Anniversary (sort of)



Conclusions

- That history more often rewards the person who appears to do something for the first time and tells everyone else about it than the person who actually does it for the first time but does not publicise it
- That Local Anaesthesia and General Anaesthesia were more discoveries than inventions

Conclusions

- That on 16th October every year we celebrate the first successful public demonstration of general anaesthesia with ether
- That on 11th September every year we SHOULD celebrate the first local anaesthetic given for the performance of a surgical procedure

The End

harropg@gmail.com

