



REVIEW

From Achille Bertelli onward: more than 100 years of research and production of dietary supplements based on natural molecules typical of the Mediterranean diet

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Summary

Achille Bertelli was an aeronautics pioneer and an innovative entrepreneur of the pharmaceutical industry. After graduating in Chemistry in Italy, he moved to the United States of America where he opened a chemical-pharmaceutical laboratory in San Francisco in 1879, and later moved back to Italy where he opened a chemical and pharmaceutical industry in Milan (1886). The "A. Bertelli" pharmaceutical company developed the famous cough pills "Catramina Bertelli", as well as new cosmetics and perfumes. Apart from his chemical experience, Achille Bertelli was a passionate aeronautics expert. He wrote many essays on this topic and devoted himself to aeronautical experiments by designing the apparatus "Autovol", "Aerocurvo", "Autovol no. 2", "Autovol

no. 3", and "Aerostave", which are considered the prototypes of the helicopter. Achille Bertelli was also the president of the Electric Company of Salò, which installed an electrical system that served the lighting in many cities on Lake Garda (Italy). Finally, Achille Bertelli also participated in the Italian revival after the First World War, especially by supporting the agricultural revival. Throughout his life, Achille Bertelli teamed with several famous people from all over Italy, such as Gabriele D'Annunzio, Cesare Lombroso and Cordero di Montezemolo. Today, Achille Bertelli's interest for natural molecules, his ideas, and his entrepreneurial approach are carried forward by his descendant, Matteo Bertelli.

Achille Bertelli's biography

Achille Bertelli was born in Brescia on January 6th, 1855 [1, 2]. He was a great aeronautics pioneer and an important and innovative entrepreneur. In 1875 he graduated in Chemistry at the University of Pavia and a few years later he decided to move to North America in search of new stimuli for the opening of his own business. This journey led him to open a chemical-pharmaceutical laboratory in San Francisco (1879). This experience gave him the possibility to acquire decisive skills and knowledge that led him to become a point of reference for the other experts in this field.

After his North American experience, in 1884, he decided to return to Italy. He moved to Milan, where he opened a factory of chemical and pharmaceutical products, which he managed to advertise on a large scale thanks to an innovative approach, implemented in collaboration with his friend Gabriele d'Annunzio, one of the most important Italian poets of the 20th Century [3]. Later, in 1898, his factory was transformed into the company of pharmaceutical chemicals "A. Bertelli", of which he was president. Achille Bertelli's success in those years was due to the fact that his products were purely based on natural extracts, for example the catramin-based cough pills called "Catramina Bertelli", which were much appreciated by the elite of the contemporary society, including scientists and intellectuals [3].

More specifically, the product "Catramina Bertelli" was presented also with the help of University professors, such as Cesare Lombroso, a Sephardi Jewish scholar and a dear friend of Achille Bertelli [3].

But the activities of an entrepreneur were not enough for Bertelli's active mind: he was also very interested in the aeronautical field [3]. He wrote many essays on this topic and devoted himself to aeronautical experiments by designing a first apparatus called "Autovol", patented in 1902. Two years later, in Paris, he set up and tested the "Aerocurvo", followed by "Autovol no. 2" (which remained at the project stage) and by "Autovol no. 3", considered the prototype of the helicopter [2, 4].

Dissatisfied with the results of these previous experiments, between 1905 and 1906 Achille Bertelli teamed with Cordero di Montezemolo to design and build a sort of helicopter "with mixed support, static and dynamic, called 'aerostave' (Fig. 1) [2, 4, 5]. In the same period, he patented an emulsion pump for extracting water from deep veins, which was widely employed by the army [2, 6].

Among the countless sectors in which Achille Bertelli worked, it is important to mention the electrical branch: when he was president of the Electric Company of Salò, together with its friend Senator Giuseppe Zanardelli, he installed an electrical system that served the lighting in the towns of Toscolano, Maderno, Salò, and Desenzano, thus bringing countless benefits to the population of that area on the shores of Lake Garda [3, 8].

Fig. 1. Bertelli's "aerostave" [7].



Dr. Achille Bertelli did not stop even during and after the First World War: he organized several welfare initiatives to relieve the Italian population from the economic problems derived from the war, especially in the field of agricultural revival, of which he was a very competent and passionate supporter. His intense and profound life came to an end on July 24th, 1925 [2, 9].

Pharmaceutical factory

In 1886, after his experience in North America, Achille Bertelli decided to return to Italy to open his innovative Chemical Pharmaceutical Laboratory Achille Bertelli & C., which was founded in Milan, near the church of San Babila [1].

What brought Achille Bertelli to establish his own chemical-pharmaceutical company were cough pills. These tablets were called "Catramina Bertelli" and for some decades this product was widely advertised, especially in newspapers and magazines (Fig. 2). The success of "Catramina Bertelli" at the end of the Nineteenth century led the company (which in the meantime had become a joint stock company, with a capital of 1,250,000 lire) to move to a larger factory in via Paolo Frisi, 26 (section of the road now called "via Maiocchi"), which was

completely destroyed by the bombings that struck Milan during the Second World War [1].

In addition to pharmaceutical specialties, Dr. Bertelli also dealt with cosmetics: his company also produced a line of creams, mouthwashes and perfumes [1].

In order to promote these products, he commissioned the production of beautiful, scented calendars, which also attracted refined collectors. Such innovative marketing campaign, which had never been carried out before, led to a great success of these pills. Indeed, Dr. Bertelli proved to be a forerunner of modern advertising techniques.

A century later - From Achille to Matteo Bertelli

More than a hundred years have passed from Achille Bertelli to his descendant Matteo Bertelli, but history has not changed: just like the man who inspired him, Dr Matteo Bertelli brought innovations to the medical-scientific field.

Matteo Bertelli was born in Desenzano del Garda on November 16, 1973. He graduated in Medicine in 1998 at the University of Brescia, specialized in Medical Genetics in 2002 and completed a PhD in Medical Biotechnology in Siena in 2008.

In 2020 Matteo relaunched the logo of A. Bertelli's company, which made the history of Italy in the field of chemical-pharmaceutical production. Like his ancestor Achille, Matteo is interested in natural molecules and set up a biotechnology company to create products especially aimed at the well-being of the respiratory tract and oral cavity.

Matteo intends to follow in his ancestor's footsteps, carrying forward the ideas and entrepreneurial approach of Achille Bertelli, in the broader context of a new Rinascimento, where Italian science and business regain the world stage.

As Achille Bertelli did, Matteo intends to go beyond the Italian borders, reaching the United States of America. His primary goal is to bring to the USA a series of dietary supplements based on plant extracts that originate from typical ingredients of the Mediterranean diet. Moreover, he plans to develop research laboratories in which DNA and RNA analysis can be carried out, as he is doing in Italy, as well as employ mass spectrometry to improve the discovery of active molecules in natural products.

Fig. 2. Advertisement for "Catramina Bertelli" pills [10].

BERTELLI'S CATRAMIN PILLS. FROM AN ANTISPASMODIC SPECIAL TAR OIL.

GLOBULAR PASTILLES OF PLEASANT TASTE

CURE with ease, promptly, and without any disturbance

COLDS, COUGHS, (Head, Chest, Nerves, Arteries, Capillaries)
ASTHMA AND CATARRH, (Nervous, Chronic, Catarrh)
SORE AND RELAXED THROAT, (Chronic, Catarrh, or Inflammation)
BRONCHITIS, (Acute, Chronic, Catarrh, Capillary)
TUBERCULOSIS (In the early stages)
CONSUMPTION (In the early stages, mild, and mild degrees)
INFLUENZA and all complications, in the most dangerous cases.
DYSPEPSIA. This remedy helps digestion.
LOSS OF VOICE (Inflammation of the Vocal Chords, or Catarrh of the Larynx)

Ask your doctor, DRUGGIST, or your Friends the CATRAMIN about them.
 Apply for the **STICKING and Unobscured TESTIMONIALS.**

We do not claim to sell more of popular pills, but to return for the money paid for them we give the public a quantity worth more than ten times the price charged.

STOP YOUR COUGH AT ONCE! IN A MINUTE.

A PERFECT NATURAL ANTISPASMODIC INHALER.

DR. BERTELLI'S CATRAMIN PILLS (GLOBULAR PASTILLES OF PLEASANT TASTE) are sold in all the principal Pharmacies, Chemists, and Druggists of Italy and abroad. For the name of the nearest dealer apply to the BERTELLI'S LABORATORIES, MILAN, ITALY.

CLERGYMEN, TEACHERS, ACTORS, DOCTORS, SINGERS, CLUBMEN, OFFICIALS, SEAMEN, MERCHANTS, OUTDOOR WORKERS, MAGISTRATES, LAWYERS, &c.

You can't buy a Cough with the Price of a Century!

To conclude, the interest on natural molecules and on the Mediterranean diet guided Achille Bertelli's research and enterprise, and his efforts inspired generations of scientists, including Matteo Bertelli.

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Conflicts of interest statement

Authors declare no conflict of interest.

Author's contributions

MB: study conception, editing and critical revision of the manuscript; VM, KD, SG, GB: literature search, editing and critical revision of the manuscript. All authors have read and approved the final manuscript.

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