

**Historical Vignette**

**HV1 (1-5)**

# Famous physicians from Messina

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## Abstract

The aims of this article are i) to present the characteristics of famous, historical people in the field of Medicine who followed one another at the University of Messina; ii) identification of their peculiarities which allowed them to make scientific discoveries which have remained in the history of Medicine and Science; iii) reflection on the ability of some people to grasp aspects other than merely scientific ones from observation.

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## Giovan Battista Cortesi

It is not surprising that Giovan Battista Cortesi [1552-1643], the first lecturer at the University of Messina Medical School started his career as barber and steam bath attendant at the Santa Maria della Morte Hospital in Bologna (1). At that time, indeed, while passionately studying grammar, philosophy, and medicine he had the opportunity to observe numerous surgical operations. He thus obtained a degree in medicine in April 1583 in Bologna, teaching anatomy with studies in the field of plastic surgery (rhinoplasty) until 1592. Thanks to his fame as a surgeon in 1592 he was invited to spend some months in France. In 1598 he was appointed lecturer at the University of Messina Medical School after he had refused the chair in Bologna that he had held in previous years. Due to lack of technical means and necessary bodies to be dissected, he also devoted himself to teaching botany even if without much interest, as suggested by many imperfections in his writing *Pharmacopea, Seu Antidotarium Messanensa*.

He developed interest in Comparative Anatomy and got great fame in the field of plastic surgery thanks to his facial operations performed on civic authorities and wealthy upper-class patients. His history shows the fluidity of professional and cultural boundaries between learned and empirical knowledge from the perspective of a graduate surgeon who was not supposed to be. When he passed away, University of Messina appointed Pietro Castelli for replacing him to enhance botanic teaching

## Pietro Castelli

Pietro Castelli (2) was born in Rome between 1570 and 1575. He studied botany and medicine at La Sapienza in Rome and began teaching in those fields upon graduating in 1594. He was also the director

of the Hortus Farnesianus, the garden of the simple, that is the area where medicinal plants were grown for the preparation of medicines. In 1634, he moved to Messina, where he was also involved with the cultivation and study of the city botanical gardens. «*When I arrived here, considering how necessary the Horto de' semplici was, I made several requests to the Senate; at last I was heard in the year 1638*». Messina with its botanical garden (*Hortus Messanensis*), the first in Sicily and Southern Italy, became one of the European capitals of botany. Apart from the uniqueness of plant arrangement, systematic for the first time (phylogenetic systemic method), he paid attention to the endemic flora with plants coming from the slopes of Volcano Etna, of which one, *Castellia tuberculosa*, took his name.

He was a prolific author on various topics from zoology to chemistry. His history delineates the relationship and the reciprocal influences between the Botanical science's traditions of Rome and the development of the Botany in Messina thanks to the activity of Pietro Castelli and the establishment of the Messina's botanical gardens as means for biological science.

After his death, in 1661, the botanical garden took his name. He was replaced by Marcello Malpighi.

### **Marcello Malpighi**

Marcello Malpighi [Crevalcore BO 1628 – Rome 1694] was anatomist, physiologist, physician and biologist, professor of logic, theoretical medicine, and practical medicine (3,4). He is one of the most important anatomists and physicians in the history of medicine. He became increasingly passionate about the microscope by which he gave his contributions to the understanding of human anatomy and physiology spanning from the first description of capillary circulation to a thorough analysis of the structure and function of body glands. Malpighi believed that most organs consisted of glandular structures, whose distribution and microscopic features determine each organ-specific function. He moved in 1662 to Messina where, thanks to the help of Borelli, he was offered a professorship in practical medicine. During this brief period (three years), he continued his research, which found its way in part into the *Tetras anatomicarum epistolarum*, which he published with Carlo Fracassati in 1665 and comprised the treatises *De lingua*, *De cerebro* and *De omento, pinguedine, et adiposis ductibus*. But Malpighi found rivals and detractors in Messina, driving him to return to Bologna (1665), where his professorship in practical medicine was confirmed.

*De viscerum structura* came out in 1668, containing the writings begun in Sicily (*De Hepate, De cerebri cortice and De renibus*) and the ones just completed after his return to Bologna (*De liene and De polypo cordis*). The enormous volume was published by the Royal Society of London, which welcomed Malpighi among its members and he took the position of its intellectual guide, which had been until that time occupied by Borelli. He started in 1669 an entomological study that made heavy use of the microscope and was published by the Royal Society in London. The excretory organs of

insects are still called “Malpighian tubules” derived by ectodermal invagination, and are similar to “Malpighian corpuscles”, glomeruli in animal kidneys.

### **Giovanni Alfonso Borelli**

Giovanni Alfonso Borelli [Napoli, 28 gennaio 1608 – Roma, 31 dicembre 1679] was mathematician, philosopher, astronomer, physiologist, applied the mathematical method to biology, and was master and mentor of Malpighi.

He was appointed Mathematician at the University of Messina in 1635 at the suggestion of Pietro Castelli.

In 1647-1648 he wrote his first work as a doctor «Causes of malignant fevers in Sicily in the years 1647-1648» He was appointed mathematician at Pisa University in 1656 and founded the Accademia del Cimento, promulgator of Galilean doctrines.

He was appointed astronomer and physiologist in 1667 at Messina University. He was the founder of iatromechanics, a medical doctrine based on the conception of living beings as composed of a group of distinct, assembled machines (organs). With this respect *De Motu Animalium* from 1680, published posthumously, is the best-known work.

He tried to explain the movement of the animal body based on mechanical principles and extended the method of geometric-mathematical analysis developed by Galileo in the mechanical field to the biological one (5).

### **Ilya Ilyich Mechnikov**

Ilya Ilyich Mechnikov (1845-1916) was awarded in 1908, together with Paul Ehrlich (1854-1915), the Nobel Prize for Physiology or Medicine.

He had a training in research laboratories in Russia and Germany and then was appointed Professor of Zoology and Comparative Anatomy in Odessa.

Due to health problems and depression and in conflict with the czarist authority he was forced to leave Russia. The choice of Messina was due to the presence in this university as a teacher of his friend Nicolaus Kleinenberg, zoologist and evolutionary morphologist. The fascinating story of Mechnikov life and of his stay in Messina at the “Ringo” quarter has been already described in this journal (6).

The tale of the phagocytosis as told by his wife Olga deserves a further remind. She described this event as “*a December day in 1882 in Messina and the dawn of the next day*”. The scientist was left alone at home by his family who went to enjoy the apes’ performances. Observing life in the motile cells of a transparent starfish larva under the microscope, an idea that flashed in his mind took him for a walk on the beach.

On his return he picked up a rose thorn in the home garden (... not from a mandarin tree, as previously told!). In the evening by candlelight, he inserted the thorns under the surface of the larva. He spent a restless night and at dawn he observed under the microscope a large number of mobile cells surrounding the spine. Olga Mechnikova summarized this discovery as follows: *“coincidence of several events and situations contributed to that discovery which was made in Messina on that very December day 1882. Czarist police, a garden with roses (and the inevitable thorn) in December, the seashore and the 'beautiful star fish larvae as transparent as water' along with the absence of the scientist's family who were by now engrossed with the apes' performance. All these conspired to render possible the discovery of phagocytosis at that exact time and in that exact place”*.

The coincidence of several events and situations that contributed to that discovery which was made in Messina on that December day 1882 was previously and brilliantly emphasized thirty years ago by Trimarchi on the Journal of the Royal Society of Medicine (7).

The tale of this discovery seems in accordance with the pervasiveness of multiple discoveries in science suggesting the intuition that they are in some sense inevitable—that one should view them as results that force themselves upon us, so to speak. This theory, despite the intuitive force of such an “insight on inevitability” was rejected by Tambolo and Cevolani (8) who distinguished two facets of the insight and argued that: (a) the profusion of multiple discoveries in scientific practice does not support the inevitability side of the inevitability/contingency of science controversy; and (b) the crucial role of background knowledge in scientific inquiry complicates the attempt to interpret the pervasiveness of multiple discoveries in realist terms.

### **Conclusions**

The observation and holistic adoption of the natural world by people who worked in Messina contributed to the progress of Science and Medicine.

The coincidence of different events and situations that contribute to discoveries are based on the ability of people to observe and grasp their relevance.

The ability of people, like Giuseppe Oreto, *"to analyze an unexplored world with the lens to grasp its secrets"* translates into poetry:

*Reading poetry is, after all, almost like examining an unexplored world with a magnifying lens to capture its secrets.*

*A line of busy ants you thus discover: one carries a heavy burden, while another faintly runs.*

*Pitch black some, shining some like sunbeams hit mirrors; others yet quickly flee: they sparkle, but only an instant does their shimmer last.*

*Each one has their own sound: like dispersed pieces of a mosaic*

*they suddenly gather, bound by a  
n invisible thread, transformed in music  
that enthralls the ear, and the heart disconcerts*

#### **Ethical disclosure**

The Author declares absence of conflict of interest

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