

Pietro Giuseppe Corradini a chemist out of his love ... for medicine of the *Antique Book Collection*
P.G. Corradini Library of the Arcispedale S. Maria Nuova XV sec.-1850 by Paola Manzini

Not many people know that Pietro Giuseppe Corradini was not only a doctor, but had studied chemistry as well.¹

Certain that he would be doing something that would be appreciated by his fellow citizens, he studied chemistry in order to analyze the city's water supply from springs and wells so that he would have "a vague idea" of their chemical composition. In other words, he wanted to "make evident the active parts" contained therein and their manner of "functioning inside the human body" so that the water could then be administered to patients and that said "...administration be guided by reason and not only by empiricism and analogy oftentimes poorly adapted".

Corradini did have an *illustrious* precedent to this type of work, several years earlier Giambattista Moreali, native to Sassuolo and a citizen of Reggio of Lombardy and a doctor in Modena², studied the therapeutic properties of the waters of the area around Modena. The results of his studies were published - especially important are those on Serravalle³ and Salvarola⁴ - in volumes found in the Corradini collection. We believe, however, that Corradini's attention was not so much on this section which was added at the last minute but rather on the subject matter of texts on malign and contagious fevers. We know from Venturi that Corradini wrote a "37-page letter dated 17 August 1740 to an unnamed physician against Doctor Gio. Batta. Moreali's new way of treating malign fevers with mercury". We will speak of this again later.

Domenico Vandelli also studied the therapeutic properties of waters in and around Modena⁶, but mainly as a scholar "of versatility in the art of Chemistry" rather than as a doctor, since "Medicine and Physiology weren't ... interesting enough."⁷

Living in the Age of Enlightenment at its height, Corradini could not accept hearsay or grassroots stories attesting to the properties of the water, he had to personally investigate the healthy properties of the water source and better understand its nature even if he knew full well that he didn't have "the appropriate means" to obtain "a precise breakdown of each and every drop of water."

This is not to say that he became a *chemist* overnight. We have found many treatises and scientific essays on the subject in his personal library which, of course, means nothing *per se*. The fact is that his writings quote many authors to support his assumptions and statements; they are also carefully annotated with footnotes.⁸ And there is more: from notes found among Venturi's⁹ papers, we discovered that, at Corradini's death, Dr. Ottavio Ferrarini of Carpineti came to own 16 of his manuscripts among which were found: "*Estratto di tre tomi*" by A. Baumé – Experimental and Logical Chemistry; "Chemistry Lesson Notes on Lectures by Peter Shaw, Macquer, Geoffroy, and a Dictionary of Chemistry"; "*Maniera di esaminare le acque dedotta da più rispettabili Chimici moderni*" - a treatise on the chemical analysis of water.

Unfortunately, these treatises have not been found and we therefore do not have the original material from which to reconstruct a likely history of Corradini's chemistry studies.

We can only make a few assumptions. We can assume from the title of the first manuscript that, although Corradini also owned Baumé's three volumes, he nevertheless took notes on subjects of interest to him. Yet when we read, 'Chemistry Lesson Notes' we realize that he wasn't just recopying parts of interest but was in fact taking real student's notes. The third book listed tells us that Corradini was seriously engaged in studying this subject and that he had read up on the "most respectable of modern Chemists."

In order to do justice to Corradini's work, we must carefully examine the historical period in which he lived, at the divide between the fall of the *phlogiston theory* and the birth of modern chemistry, a transformation that took only a few years to be complete, between the 70's and 80's of the 18th century. Our doctor/chemist performed his analyses at the beginning of the 1770's and must of course have also considered the work and opinions of his contemporaries.

To quote but two of the authors Corradini was familiar with, in 1760, P.G. Macquer and A. Baumé had tried to classify and order the chemistry nomenclature, but had to wait until 1787 for this work to be formally presented.¹⁰ It was not until 1780-1790¹¹ that T.O. Bergman published his works containing analytical chemistry studies on mineral waters.

It is not our intention to delve into the scientific aspects of water analysis, this is currently being done by a 17th century chemistry study group in Scandiano. We will limit our comments to the general layout of the treatise on the waters of Reggio.¹²

The water source that most interested Corradini for its medicinal properties was called "la Raza" near Campegine in the province of Reggio Emilia.¹³ Once having begun his studies of this source, however, his scientific curiosity led him to examine the water found in a few wells around town, one found near "the S. Pietro Gate" and a newly excavated well on "hospital grounds".¹⁴ Corradini probably used the small chamber for "chemical observations" that he had built in the hospital in 1763¹⁵ as a laboratory for the analysis of the water samples he had collected.

A quite impressive chain of chemical reactions led Corradini to make the following conclusions: the water from Raza is lighter than that found in the public wells which contains "much limestone"; they are "crude" and therefore have "no special medicinal virtue". We all know that the water in Reggio is "hard", what we didn't know is that Corradini demonstrated this fact scientifically two hundred years ago.

The water from Raza is full of medicinal properties and reminds one of the "nature of the salt of Glaubero",¹⁶ it is easily filtered by the kidneys and keeps the passageways free of obstructions, it is cleansing and helps the bowels". The water found in the well on hospital property is one of the purest because it is filtered through the bed of sandstone from which it springs, and that found near S. Pietro is the "crudest".

Although, Corradini did not have the "appropriate means" as he himself wrote in the beginning of his work, he was still able to profoundly appreciate a fundamental fact: the existing difference between the chemical composition of water coming from different areas. Perhaps equally if not more importantly, he also left us with a "harvest" of information that has allowed us to verify and assess how the land has changed over the last two hundred years.

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For more information, please refer to the Centro Studi Lazzaro Spallanzani of Scandiano – 18th century Chemistry – "a treatise on the waters of Reggio."