

C O N F E R E N C E R E P O R T

“Bernardino Ramazzini, three hundred years after his death”, Padua (Italy), October 18th, 2014

The year 2014 has marked the tercentenary from the death of Bernardino Ramazzini (1633-1714), universally credited as the founder of Occupational Health (5, 9, 10, 11). Indeed, the renowned physician died on November 5th 1714 in Padua, where he had been appointed as Professor of Practical Medicine at the local prestigious University from the year 1700. To commemorate this anniversary, the professors of Occupational Health of the University of Padua, the Italian Society of Occupational Health and Industrial Hygiene (*Società Italiana di Medicina del Lavoro e Igiene Industriale*, SIMLII), the International Commission on Occupational Health (ICOH) and the University of Padua organized a conference in the wonderful location of Palazzo Bo (Main Hall) under the patronage of the Padua Municipality, the Workers' Compensation Authority (INAIL), the Venetian Region and the *Societas Internationalis Historiae Medicinae*. The conference welcome was addressed by Marcello Lotti, full professor of Occupational Health at the University of Padua, who reported that the day was devoted not only to occupational physicians but also to the University and the town of Padua, Bernardino Ramazzini being the father of a discipline having a strong social impact. Hence the importance of Occupational Health history for comprehension of its present role. A welcome addresses by Gaetano Thiene, full professor of Anatomical pathology in Padua, conveyed the Rector's greetings and recalled that the University of Padua, founded in 1222, was at the top specially under the rule of the Venetian Republic. In particular, Venetian aristocrats wanted as educators for their children only teachers who could prove a high level of excellence in their area (17); Ramazzini was then selected as a Professor of the Padua University by virtue of his scientific credits.

Welcome addresses were concluded by Pietro Apostoli, the President of SIMLII and by Kazutaka Kogi, president of ICOH, who conveyed their hopes that the congress could be the starting point for new collaborations within

associations to improve workers' health protection. Besides, Apostoli recalled that this day was to be considered as the continuation of the SIMLII national congress that had been held immediately before, in Bologna, under the chair of Francesco Violante.

The first part of the congress, held in Italian during the morning, was mainly characterized by historical-medical issues and hence focused on Bernardino Ramazzini and his historical context. The second part, held in English in the afternoon, dealt with research going on in occupational health and future developments.

Giuliano Franco, full professor of Occupational Health in Modena, opened the morning session with a contribution on “Ramazzini, forerunner of public health” (*Ramazzini, un antesignano della sanità pubblica*), where he recreated the figure of the Italian physician, as well as the social context at the time, and the method used to write his most famous work, *De Morbis Artificum Diatriba*. Then he focused the different aspects of the treatise that includes principles still valid for clinicians and not only for occupational doctors as well as pioneering thinking in medical ethics, epidemiology and public health (7, 8, 10). Actually, Ramazzini, also defined as a “proto-sociologist of health” (13), was at first acknowledged by the Italian scientific community as a forerunner of public health, whereas only starting from the 1930s he was identified by Luigi Devoto (1864-1936) as the father of Occupational Health. According to Franco, an interesting feature of Ramazzini's work was his passing from workplace analysis to working group analysis and his identifying harmful industrial effects on community's health. The example of this new and broader risk conception is the description of mortality excess in people living close to a plant of Finale. Ramazzini also gives pioneering advice on health promotion (to avoid smoke and wine excess and to perform regular physical exercise) that can be summarized in the “value of moderation” which is the core of Ramazzini's legacy.

Francesco Carnevale, occupational physician in Florence and historian of Occupational Health, delivered a contribution on “The fate of Ramazzini: yesterday, today and tomorrow” (*La fortuna di Ramazzini: ieri, oggi, domani*), where he recreated the acknowledgement of *De Morbis Artificum* in the different historical ages. This analysis was based on a detailed series of “indicators” of his fate, such as the number of editions and translations, the commercial value of first editions at antique dealers, commemorations of Ramazzini along the centuries, art objects (medals, stamps, busts), street names and finally his work quotations between the 19th and 20th century, that is in the period that marked the birth of occupational health as an autonomous discipline (3, 4).

In his contribution “Illustrated Ramazzini” (*Il Ramazzini illustrato*), Maurizio Ripa Bonati, researcher in History of Medicine at the University of Padua, hypothesized which images might have been included in the first editions of *De Morbis Artificum*, should they have been illustrated. In detail, he presented a collection of images from works coeval to Ramazzini’s, illustrating the occupations he described (2). Thus, Ripa Bonati tried to evidence which are the similarities between *De Morbis Artificum* descriptions and coeval images, wondering whether the latter could in some way enrich the concepts dealt with in the text.

Giorgio Zanchin, president of the *Societas Internationalis Historiae Medicinae* and professor of Neurology at the University of Padua, presented a contribution on “Topical issues in *De Morbis Artificum*” (*Attualità del De Morbis Artificum*) with special focus on description of etiopathogenetic mechanisms and clinical features of migraine in Ramazzini’s work. Zanchin assumed that Ramazzini had correctly identified a relationship between strong – pleasant and unpleasant – smells and this disease (18, 20). Actually osmophobia is present in 43% of subjects affected by migraine and is a relevant clinical marker for differential diagnosis between headaches and migraines (6). Reading *De Morbis Artificum*, the neurologist stated that also Ramazzini was affected by migraine. Beside his contribution, Zanchin presented the results of some studies that identified the possible remains of Bernardino Ramazzini and the Padua house where the physician might have lived the last years of his life (12, 19).

Gaetano Thiene closed the morning session with a contribution on “The Medical School in Padua in the eighteenth century” (*La Scuola Medica a Padova nel ‘700*), showing that although the golden age of Padua studies generally went back to Renaissance, the 18th century was also an extremely rich period. Indeed that period started in 1700 with chair assignments to Ramazzini and Antonio Vallisneri (1661-1730), followed by the appointment of Giovan-

ni Battista Morgagni (1682-1771), chair of Anatomical Pathology and finally with the foundation of the Ospedale Giustiniano (1778-1796), housing a real clinical school of great modernity. In this hospital, part of the beds was indeed devoted to students’ education and training under the guide of Andrea Comparetti (1745-1801).

The afternoon works started with a contribution by Sergio Iavicoli, Secretary General of ICOH on “Occupational Medicine and Technological Development”. He first recalled the historical roots of ICOH, whose first meeting was held in Milan during the International Exhibition of 1906, following the success achieved by Giuseppe Volante (1870-1936), in preventing ancylostomiasis among workers involved in building the Simplon tunnel (1). Then he reported that technological innovation might have positive or negative impact on workers’ health. In this connection, mention was made of the possible risks associated with nanotechnologies, new pathologies such as indium lung disease in Indium Tin Oxide (ITO) industry and some emerging zoonoses such as hepatitis E among slaughters. Furthermore, the recent European and world investments towards green technologies, should lead experts to investigate if green jobs are safe for workers. On the other hand, emerging technologies can provide new tools for exposure assessment and clinical research.

Finally, the afternoon session ended with a keynote lecture “From *De Morbis* to Exposome”, delivered by Stephen M. Rappaport, professor of Environmental Health and director of the Berkeley Center for Exposure Biology at the University of California, Berkeley. According to Rappaport, Ramazzini was an early environmentalist, who shifted focus from diagnosis to etiology of diseases. In particular, he paid much attention to the working environment, as a possible source of diseases, and hence he is considered by Rappaport as the forerunner of the concept of exposome, which in its more general definition concerned the altogether of any external factor likely to cause diseases. The USA expert showed that today we can assess and quantify the role of exposome in the individual by analyzing the presence of chemical compounds in the blood. In this way it would be possible to identify some markers, differentiating healthy from unhealthy subjects and likely to be indicators of pathological exposure to some occupational and environmental factors (14, 15, 16). In particular, Rappaport presented a subdivision of such markers according to four basic categories: pharmacological, food, polluting and endogenous.

This last lecture threw a strong glance to the future, proving that history of medicine can be a major tool for awareness of intimate links between past, present and future and that – after three hundred years from his death – the figure of Bernardino Ramazzini still deserves attention

not only from historians, but also from physicians and all the people with an interest towards Occupational and Environmental Health.

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