Workers of the Jewish religion and traditions were also included in this group because at that time, in Modena at least, many of them had the same profession and were rag-merchants. Ramazzini has rashly been described as anti-Semitic. A reprint of the English translation of *De Morbis* had to include a “Notice” on the second cover page warning of the “...anti-Semitic nature of certain portions of the text”. (Ramazzini, 1993). However, an objective reading of chapter XXXII and his other works in which he mentions the subject, for example in the 1692 *Constitution*, brings us to the conclusion that we are not dealing with a “prejudice of the times” but rather a sort of motivated declaration, historically founded, of anti-racism. Thus the preamble: “The Jews are a people unlike any other, since they have no fixed abode but are to be found everywhere; they are simultaneously indolent and industrious; they neither plough nor harrow nor sow, nevertheless they reap. These people are also afflicted by various diseases and not, as is commonly believed, by an infirmity of birth or their perverse way of life but because of the work they carry out. It is also false to ascribe the smell that Jews give off as being innate or endemic. In fact, this smell is a result of their cramped homes and financial straits. When they lived in Jerusalem, where perfumes abounded, they were surely clean and sweet smelling”. It should also be noted that Ramazzini was rightly included in the circle of intellectuals who participated in some way in initiatives that nowadays would belong to the conception of “Christian Judaism”. In particular, it has been established that Ramazzini collaborated in the research of poetic epitaphs in Jewish cemeteries (Malkiel, 2006).

Ramazzini’s attention also focuses on another group of workers, those working in salt-works, soap-makers, dyers, latrine cleaners, winemakers, vintners exposed to gases and vapours that can harm their health. Tanners, screeners, grain measurers and pallbearers belong to the same group. For the latter he not only includes the “chemical” risks they are exposed to in their profession and the prevention measures to be adopted, but also on a more ironic, tragic note, he thanks them for the services they have rendered to the medical profession to protect its reputation: “It is only right to worry about the health of pallbearers since theirs is a trade we cannot do without. It is only right, since they not only bury the dead, but also the errors of physicians. So it is only right that, as far as
possible, they be repaid for their service protecting the reputation of the medical profession”.

He pays considerable attention to trades that affect organs and apparatuses excessively or force the workers to adopt unnatural postures for prolonged periods of time. Goldsmiths, engravers, potters, weavers, shoemakers and tailors are examined in this group. Regarding the latter, Ramazzini shows the deforming effects of their trade with supreme agility: “It is a comic sight when one sees tailors and shoemakers on their special feast-days marching through the city in pairs in procession, or when they are accompanying one of the members of their guild to his tomb. It makes one laugh to see a group of hunchbacked, stooping, limping men who sway from one side to the other, as if they had all been carefully chosen for such a performance”.

In the tertiary society of the knowledge economy, which characterises contemporary society in industrialised countries, what Ramazzini has to say in his advice to learned men (which includes representatives of other intellectual and liberal professions) is highly topical. Although they each have their own specific characteristics, all are exposed to risks resulting from their sedentary lifestyle and psychological risk factors: “…Scholars should devote themselves to their studies by all means, but guided by unquestionable moderation, nor should they devote themselves so utterly to cultivating their minds that they neglect their bodies. They must preserve a balance, so that both mind and body may live together in harmony, like guest and host, serving each other rather than wearing one another down”.

The diseases of workers in De Morbis ends with the Dissertation on the Care of the Health of Nuns. This chapter is not only of interest because of the unique nature of the subject in question (one Ramazzini knew very well since he had been physician in several convents) but also because it is here that Ramazzini expounds the highly modern and current principle that underlies preventive medicine: “Prevention is better than cure”.

During the years in which the figure of the occupational doctor was having difficulty in establishing itself, both because it was something completely new and still to be consolidated in newly industrialised countries and because work was undergoing profound transformations in the industrialised countries, De Morbis remained a polar star that was able to guide the “mission” of those doctors
who had chosen to take care of workers' health. Indeed, after stating that workers nearly always carry out activities that are exhausting and degrading, albeit necessary and a source of countless advantages to mankind, Ramazzini goes on to outline the ethical principles an occupational doctor should follow and states that medicine itself is indebted to workers: 'I, for my part, have done my utmost, and did not believe it beneath me to enter the most humble workshops to observe the characteristics of their manual labour. On the other hand, nowadays the field of medicine also applies observations that are derived from mechanics. I would like to point out, to my medical colleagues in particular, that in actual fact all the trades I have described are to be found in all situations and, furthermore, that the same trades may be practised in a different manner in certain regions. This means that the diseases caused by those trades may differ from the ones I have described. In artisan workshops, through first-hand observation, I have therefore tried to gather all pertinent observations and suggest medical recommendations for both the treatment and prevention of the illnesses that usually afflict these workers. So when a doctor is summoned to treat a patient, he should not immediately feel his pulse without inquiring about his circumstances and pronounce judgement as he usually does. Just like a judge, the doctor should sit down, on a stool or bench if needs be, or on a gilded chair in the house of the rich and should talk to the patient amiably before he decides whether he should be offering medical advice or humane compassion. There are numerous questions the doctor should ask the patient or those around him. In De affectionibus Hippocrates says, 'When you come to a patient's house, you should ask him what sort of pains he has, what caused them, how many days he has been ill, whether his bowels are working and what sort of food he eats'. One more question should be added to this list: 'What is his trade?' When the patient belongs to the common folk, this question is of the utmost importance, as it helps identify the cause of his illness. In practice, doctors rarely ask their patients this question. However, if for some reason the doctor already knows what trade he carries out but pays it little heed, he is actually compromising the effectiveness of any treatment'.

By laying the foundations of the values of occupational medicine, Ramazzini also provides a communicative strategy to divulge it. Although he is dealing with complex subjects, he writes clearly
(showing his great knowledge of the subject), with elegant lexis, and at times embellished with frequent quotations from all fields of knowledge. Furthermore, although he is describing professions that are permeated with human suffering, Ramazzini manages to lighten the text with his appropriate use of humour and sarcasm – what we have before us is a scientific treatise that not only illuminates the intellect, but also arouses passion and emotions.

Whether because of its terms of precocious environmental epidemiology or because of the way it effectively castigates habits and misconduct, a beautiful page by Ramazzini is the one in the chapter dedicated to the diseases of chemists. The year is 1689 and we are in Finale in the Duchy of Modena, a relatively developed town thanks to its river trade where the Sarfatti brothers make corrosive sublimate in their home; the vapours that are emitted, in particular those of the calcinations of “Roman vitriol” reach the nearby houses (as well as the homes of those employed in this production, but of this no mention is made) and in particular the home inhabited by Lieutenant Onofrio Onofri. The latter presents a complaint to the Podesta of Finale, Carlo Barbieri, who finds himself unprepared because “the subject is one of Chemistry and for a Doctor”. He carefully drafts a report and sends it to Modena, including the opinion of the physician Giovanni Paolo Stabe de Cassina, the official doctor who was defending the plaintiff. However, to be on the safe side the Podesta also asked for a second medical opinion from Doctor Quirici, who was on the Sarfattis’ side. The report aroused considerable curiosity in scientific circles in Modena as well as the interest of Bernardino Corradi, Commissioner of the Duchy Ordinance and an expert in chemistry. The contending opinions turned into a sort of duel between Corradi and Cassini and both Ramazzini and Leibniz, who was in Modena at the time, took part on the sidelines. Cassina supports Lieutenant Onofri and claims that the fumes emitted from a substance are of the same nature as the substance in question, and in this case in particular, since it is a derivative of the vitriol calcinations it is corrosive and desiccating, thus causing “oppression of the heart, the chest, difficulty breathing, asthma, polyps, pleurisy and other similar indispositions”. Corradi believed the opposite, supporting the Sarfatti brothers since he believed the fumes were not harmful since “that volatile salt is not only different, but completely different to the spirit and essence
of the aforementioned”. Attempts to find all the documents necessary to reconstruct the episode were unsuccessful (Di Pietro, 1976; Zocchetti, 2000). As Ramazzini himself writes, an “epidemiological approach” can be seen in this episode. In the specific exposure of a group of people, a “cause” is identified together with a detailed “effect” that seems a plausible result of exposure. Furthermore, Ramazzini identifies the source of the “data” in the parish death register and the testimony of the local doctor, thus identifying a reference population to be used as a “reference group”. He concludes this episode by identifying “primary prevention” measures, in other words, moving the workshop to the outskirts of the town. Led by prejudice, at that time and also later, his final comment was deemed by some as not so much pointed and enriching but rather “irreverent”. Ramazzini writes: “In the end, the judges sustained the merchant and vitriol was declared innocent. Whether the legal expert judged this case correctly or not, I shall leave to the opinion of experts in natural sciences” (Ramazzini, 2000).

I.II. The “success” of De Morbis

It can be said that no other medical work has met with as much success as De morbis (Felton, 1997; Carnevale and Baldasseroni, 2000). The book’s success can be seen in its numbers and the publication of new editions, translations, emulations and quotations. Over the centuries the book has constantly been written about with admiration and awe (“Everything has already been written!”), with trust and devotion (“Ramazzini said so!”), with curiosity (“Let us see what Ramazzini wrote on this subject”) and also as a tool, to confirm a notion or concept, to see how pertinent it was to Ramazzini’s book if it were just a hypothesis (“As Ramazzini says”; “As Ramazzini has taught us”; “In such a case Ramazzini would have said...!”). Ramazzini’s bibliography, which includes the numbers of editions, translations and re-printings of De morbis over three centuries, outlines a phenomenon that one could call the “differential impact” of the book, one that is anything but banal and takes on different meanings at different points in time and in different economic and social contexts (Carnevale, 2000).

The first period of De Morbis’ success can be pinpointed between
around 1700 and 1775. During this period, the first 1700 edition was sold out and further editions of the work appeared in the bigger cities (there were probably also several further editions that the most important academics, scholars and followers of Ramazzini and his works did not see; Maggiola, 1902; Ranelletti, 1913; Devoto, 1914; Donaggio, 1928; Devoto, 1933; Pieraccini, 1933; Cave Wright 1940; Conti, 1941; Pazzini, 1953, Di Pietro, 1977). During the same period, just a few decades after, it was translated into nearly all European languages, the last being Italian. The importance of this phase is one that had a positive impact of a cultural nature for the scientific and medical avant-garde and, either directly or through the latter, also for the “advisors” of princes, all figures that were part of a “scientific European community” that was learned, dynamic and much more closely linked together than one would expect. In this period Ramazzini’s teaching was probably not part of common clinical practice or the inspiration for legal measures or financial initiatives, either central or peripheral, that would have improved working conditions. Even less so was information about occupational diseases part of the public domain, so it was impossible for it to reach those directly affected and encourage some sort of “self-help”. In view of what was to happen later, at the end of this period there was one single voice, one that was faint but nevertheless able to transmit Ramazzini’s message in diverse circles and in view of what was to happen later, there was something prophetic about it. The voice was that of Adam Smith (1723-1790) and in 1776, in the chapter Of the Wages of Labour in his An Inquiry on the Nature and Causes of the Wealth of Nations he writes: “Almost all categories of workers are subject to certain characteristic diseases caused by their excessive diligence in their own kind of work. Ramuzzini [sic!], an eminent Italian physician, wrote a book on such diseases” and he then goes on to say: “If employers were always to listen to the precepts of reason and humanity, they would often have reason to curb rather than stimulate the diligence of many of their workers” (Smith, 1973). This is an extremely strong expression, one that can be interpreted as a prophetic criticism, a forerunner of Taylorism that was officially promoted as the “scientific” organization of work around one and a half centuries later. Luigi Devoto offers another testimony of the same nature as the one attributed to Smith several decades after the latter and this is also worthy of mention; in his book Two Nations, Queen Victoria’s formidable
minister Disraeli (1808-1881) wrote as if he had read Ramazzini although he never mentioned it directly (Devoto, 1933).

At a later date, somewhere between 1875 and the 1880s, if one takes re-editions and new translations as an indicator, there seemed to be a gradual decline in Ramazzini’s work since the number of publications diminished. There was a secondary phenomenon to be seen in this period – that of the adaptations and attempts to update De Morbis. Following the successful translation with lengthy notes and additions by Antoine François de Fourcroy (1755-1809), published in 1777 (Ramazzini, 1777), the most sensational example was that by Philibert Patissier (1791-1863) in France who wrote a “Treatise on the diseases of craftsmen and those who carry out certain professions, following in Ramazzini’s footsteps” in 1822 (Patissier, 1822). John Darwall from Birmingham (1796-1833) did the same with a doctoral thesis in Latin (Darwall, 1821). These were new texts that were inspired by Ramazzini and unlike the original, as is shown clearly in the subtitle of Patissier's book: “A work which indicates the precautions to be adopted in reference to public and private health, by those who manufacture, those who run factories, the factory managers and by all those who work in unhealthy crafts and trades” (Patissier, 1822). The context in which they are writing had changed completely compared to Ramazzini’s lifetime and the “bourgeois revolution” had unfolded so that in several countries, for example both France and England, with all its great technological, health, economic and social effects, and the “industrial revolution” was already in its more advanced stages. With his famous “Tableau”, as early as 1840 Louis-René Villermé (1782-1863) skillfully highlights the most tragic effects in France with his book “On the Physical and Moral Condition of Workers in Cotton, Wool and Silk Production” (Villermé, 1889). Parallel to the first laws to protect the workers, minors and female workers that were called for by philanthropists and lawyers in England, not only was there the foundation of the first organisations for those directly involved, but also a resounding call for a new approach to the study of occupational diseases. The fundamental work by Charles Turner Thackrah (1795-1833), “The Effects of Arts, Trades and Professions and of Civic States and Habits of living on Health and Longevity” (Thackrah, 1831) was first published in 1831 and included numerous quotations by Ramazzini, but there is no doubt that if one compares it to De Morbis, it differs
not only in spirit but also in its methods and objectives. Thackrah "undertakes an analysis of the risks and diseases for workers in factories, in reference to the machinery and technology of the industrial revolution [...] by means of statistics [Thackrah] showed beyond all possible doubt, that workers in that industry do not live as long as those who work in agriculture...". (Benison, 1985). On the basis of this analysis Thackrah comes to the following conclusion: "We can say that each day of the year, the corpse of an individual is buried who would otherwise have lived for years in good health and full of vigour; every day we witness the sacrifice of one and often two victims, offered in sacrifice at the altar of the artificial conditions imposed by society, these are the very same individuals who had been saved from the conditions laid down by nature" (Thackrah, 1985). The judgement expressed by the English statistic and demographer William Farr (1807-1883) on Ramazzini’s work is certainly of interest: "[the Diatriba] studies nearly all the activities carried out in an Italian city" ... what is striking is "the absence of any accurate observations regarding the mortality of workers in various trades" (Farr, 1973). Thackrah’s and therefore indirectly also Ramazzini’s work was then echoed in the United States where Benjamin McCready (1823-1892) compiled a preliminary overview that went largely unheeded for decades "On the influence of Trades, Professions and Occupations in the Production of Disease in the United States" (McCready, 1837). Any search for precocious Ramazzini followers in Italy is exceedingly disappointing. More than two centuries were to go by before there was to be an updated, complete treatment of occupational diseases and this regarded not so much or not only craftsmen but rather the workers in the dawning industry (Giglioli, 1902; Pieraccini, 1906). What is noteworthy in this lengthy lapse of time is a sort of manifesto written by Giacomo Barzellotti (1768-1839) for the prevention of poverty in which he expounds the complete occupation of the poor in the country and in artisan activities, while also reappraising the harmfulness of several traditional trades, hypothesising the introduction of solutions that not only regard organisational measures but also, in line with his times, ones based on the use of new chemical compounds that could neutralise the ones used traditionally (Barzellotti, 1839).

Ramazzini’s work did not escape the notice of Karl Marx (1818-1883) who quotes it in the fourth section of the first book of Das
Kapital, in which he deals with the production of the relative surplus value and, more specifically, the division of work in society and its exacerbation in the manufacturing period (Vengrowa, 1968). The author says that the division of work, "Attacks the individual at the very roots of his life, it is the first to afford the materials for, and to give a start to, industrial pathology". After having quoted a 1781 translation reprinted in 1841 (in: Encyclopédie des sciences médicales, 7e disc, Auteurs classiques) of The Diseases of Workers, Marx writes: "The period of Modern Mechanical Industry has, of course, very much enlarged his catalogue of occupational diseases" and to substantiate his claim he included a long list of French, German and English studies as well as the famous, official Reports on Public Health. (C. Marx, 1947). The shrewd English scholar Farrington repeatedly claimed (with lengthy reasoning) that Ramazzini is to be considered the "prophet of a new era" since he had been able to revolutionise the medical science and sanitary practice of the previous two millennia with his simple claim that medicine has a specific task, which is to protect the health of workers. (Farrington, 1942; Farrington 1951; Farrington 1953).

During the last two decades of the nineteenth century and the beginning of the twentieth century occupational medicine developed considerably, in Germany in particular (Hirt, 1873) and in England (Aldridge, 1892). At the same time industrial hygiene was founded, a branch of prevention in workplaces and this was to establish itself, at times autonomously in Anglo-Saxon countries in particular and in some cases in different ways to that of occupational medicine. Parallel to this, one can say that Ramazzini and his work on diseases continued to fall into oblivion, at least if the publications and translations of De Morbis are used as an indicator. Historians of medicine worldwide and not just from Italy (Castiglioni, 1936; Pazzini, 1947; Premuda, 1983) have therefore strived to find the right place for Ramazzini within the development of Italian and universal "sanitari art". Henry Ernest Sigerist's (1891-1957) succinct judgement in this regard has met with widespread agreement – De Morbis (1700) is to the history of occupational medicine what De fabrica humani corporis (1543) by Andrea Vesalio (1514-1564) is to anatomy, De motu cordis (1628) by William Harvey (1578-1657) to physiology and De sedibus et causis morborum (1761) by Giovan Battista Morgagni (1682-1771) to pathological anatomy (Sigerist, 1936).
Ramazzini was basically a cautious interpreter, but a conscious one, of the philosophical trends of his times; he can be placed near the movements of the Academies and those based on Galileo's inspiration in particular although, as Salvatore De Renzi wrote (1799-1872), in certain ways he also stood by the Tuscan iatropharmaceutical school which "... at that time was practised, Hippocratic in its observation, simple in its medications, devoid of any method at the sickbed, searcher of truth, immune to prejudice, diligent in its study of natural facts, modest in opinion, educated and elegant in saying, personified in Francesco Redi (1626-1697)" (De Renzi, 1845; 1848). However, Ramazzini was not destined to remain at the mercy of historians of medicine alone. Occupational doctors, Italian ones in particular, have often used Ramazzini as a flag, as a "nume tutelare" for different reasons and on various occasions, not only to make sure his rightful place in history was recognised and thus to transmit a message that was both general and universal regarding the advantages of protecting workers, but they also used his authority to further their own specific requests during certain periods, i.e. with a more promotional function, and also, during the Fascist period in particular, to claim an Italian primacy regarding the birth and paternity of occupational medicine. With the encouragement of Gaetano Pieraccini (1864-1957) a magazine was published in Florence with the title Il Ramazzini, Giornale Italiano di Medicina Sociale from 1907 to 1917; Luigi Devoto (1864-1936) had always been a fervent and consistent support of Ramazzini, both on the occasion of the birth of the Clinic of Work when he promoted a new translation (from French) of De Morbis (Ramazzini, 1908), and in 1933 when he not only promoted another Italian edition with a parallel text (Ramazzini, 1933) but also encouraged a "tribute" be paid on the occasion of the three hundredth anniversary of Ramazzini's birth. On this occasion he solemnly said: "... Today times have changed. The celebration of the third centenary of Ramazzini's birth has been granted by the Head of the Government, and the considerable participation of the political press, following the initiative of the Italian People, in this centennial shows that just how great a figure Ramazzini is in our times has now been recognised: the Italian movement towards the people and towards a work that is defended, extensive, protected and exalted brings us closer to him and Ramazzini is the son of our times because today, in our
country especially, man has regained his high biological value and will no longer be underestimated compared to machines" (Devoto, 1933). If one is to judge Devoto's effusion correctly, one must bear in mind that in the Italy of that period, the political and cultural conditions encouraged excesses of enthusiasm that coincided at times with reality being distorted. In fact, today it is not possible to confirm that the workers really were completely protected and were not underestimated compared to machines and production despite the considerable development in the studies of occupational diseases. Two further events during this period should be pointed out - above all, the 1940 English version of De Morbis, the complete and authoritative work by the Greek scholar Wilmer Cave Wright (1865-1951) including philological notes and parallel text that, regardless of any commemorative celebrations, thus filled a gap that had been felt in all Anglo-Saxon countries for a considerable length of time (Ramazzini, 1940). The second event regarded the historian of economic thought, Romani, who carried out a careful study of working conditions at the end of the eighteenth century, following the outline of Ramazzini's work, and he came to the following conclusions: De Morbis did not give him any clear and sound knowledge of the state of techniques and the workers' living conditions at the end of the 1600s and what struck him most was not so much the humble state of technical development but rather, "the almost total lack of any kind of hygienic measures aimed at protecting the human life involved in activities that were an indispensable part of existence" (Premuda, 1983).

During the second half of the twentieth century there were countless translations and reprints of Ramazzini's work - in Russian (Ramazzini, 1961), in Portuguese - Brazilian (Ramazzini, 1971), in German (Ramazzini, 1977), in Japanese (Ramazzini, 1979), in Spanish (Ramazzini, 1983), in Swedish (Ramazzini, 1991), in German (Ramazzini, 1998), in Spanish - Mexican (Ramazzini, 2000), in Modern Greek (Ramazzini, 2001). The success of Ramazzini's work in this period evokes a vision by Devoto that is as poetic as it is effective: "Ramazzini can be compared to a powerful watercourse that disappears at a certain point in the dark bowels of the underground and continues its march. Someone can hear its deep gurgling but they are unable to define it. A long stretch has to be covered before those human waters can emerge" (Devoto, 1933). At this point, the flow of water
has emerged completely and its regime should be anything but turbulent, on the contrary, it should be reassuring from all points of view, also historically and culturally. *De Morbis artificum diatriba* is now available worldwide; it has therefore been “globalised” and can be regarded as a unifier. During the 1970s and 1980s in particular, in industrialised countries it was used to give weight to the request for health and safety measures at work, a request that was often put forward by the workers and their unions themselves using force and disputes. The same thing is still happening today, and it is to be hoped it continues to do so in the so-called countries undergoing industrialization. Ramazzini’s work has also been used as a historical source of information of fundamental importance. The chapter on technology from the end of the fifteenth to the beginning of the sixteenth centuries in *Storia del Lavoro in Italia* [The History of Work in Italy] by Amintore Fanfani (1908-1999) is based almost exclusively on explicit quotations and others from *The Diseases of Workers* (Fanfani, 1959). Piero Camporesi (1926-1997) wrote a unique chapter on the “history of material life” in his *La miniera del mondo* [The Mine of Life], on “ignoble trades”, also using a considerable amount of first-hand information from Ramazzini (Camporesi, 1990).

I.III. Ramazzini’s “Method” from a historical perspective

In the light of historical evaluation, it seems only right to re-discover the true meaning of the message that Ramazzini so authoritatively managed to transmit three hundred years ago. This message is still alive, with the very words he used when he said: “...offering preventive measures, being vigilant in trades and factories, making those who are suffering because of their trade give it up, studying the mortality rate among the inhabitants near the workplaces because many of their deaths are caused by the former, resisting the temptation to let blood in professional illnesses, not abandoning the chronically or terminally ill but rather studying them carefully so that something can be done to relieve their suffering and, finally, bearing in mind that even if they cannot be avoided, professional illnesses can be alleviated” (Ramazzini, 1982). As has already been mentioned, the greatest merit of the “doctor of occupational medicine” was when he recommended
one more question be added to the traditional ones – "what is your trade?" (quam artem exerceat), thus achieving effects that were truly revolutionary, at least regarding diagnostic processes and the treatment of occupational diseases. Thanks to the work method he suggested, it is difficult not to discern further useful indications in addition to his prophetic question, and formulate a series of new questions that are more suitable to the constantly changing conditions and organization of work: quot artes exercuisti?, quales artes exercuisti?, quamdiu sine opere fuisti?, quae varia auctoramenta aut quae variae rationes instauravisti? (how many and which jobs have you had? When were you unemployed? What kind of contracts have you had? i.e. how precarious is your job and how inferior your position?). Furthermore, as was recently suggested by an American doctor of occupational medicine, “What is the riskiest part of your job?” and “What are you doing to avoid that risk?” (Goldstein, 2007). Ramazzini’s teachings therefore fundamentally steer us towards complete, authentic work case studies that reveal the quantity, quality and length of all the trades carried out, without neglecting the calamity of unemployment and various kinds of contracts, typical and non, signed by the workers and affecting them today, as in the past; this applies not only to European workers, but to workers all over the world.

Despite the fact it refers to a pre-industrial age and is incomplete, includes suggestions for bizarre and irrational medical treatment, several observational errors and the misinterpretation of vital phenomena that his contemporaries had already rejected, for example the clamorous case of the tiny devils Ramazzini believed to be in the mines, his work is one that is accurate, extensive and highly original (Montanari, 1685).

De Morbis is an original, creative and also “satirical” compilation of the knowledge available in numerous cultural fields and of the studies regarding trades, work and society; it illustrates the sociological and economic characteristics of certain trades, both manual and intellectual, and points out the sufferings and painful stigmata of workers to the “consciousness” of man and the common sense of “princes”. It is a point of reference for all those who want to start and develop either “social” movements or government initiatives “from the top”, both of which are able to rationalise and change everyday reality by different means, albeit gradually.
Ramazzini’s work transmitted and continues to recall, to doctors of occupational medicine in particular, the application of a minimal but indisputable technical standard while carrying out one’s profession; in other words, by means of direct studies, making the knowledge and correlations of the effects the various activities have on workers possible, foreseeing the possible psycho-physical effects of various trades on young workers during the recruitment stage; direct observation of how the job is organised, any active hierarchies, the materials used, the modes and movements needed to carry out the various tasks.

To avoid ending up making just banal statements, careful attention must be paid to a unitary and diachronic historical vision of the evolution of events that are as complex as those of the health of workers (Farge, 1977). Although conditions gradually worsened during the industrial revolution, the working class also made slow and irregular but steady progress that was, in the end, to have positive effects on the health of the workers themselves and their families. A fact that contributed to the delayed understanding of this apparent contradiction was a vision that has been called “Ramazzinian” or even better, Ramazzinian “extremism”, which was that of constantly searching for a specific pathology that was closely correlated to various trades and professions, also in periods and situations that have undergone fundamental change (Cottereau, 1983). While such a vision tends not to favour the actual but single or traditional causal factors of the harmfulness of the work, the so-called typical professional pathology, with “pathognomic” signs puts a multitude of other factors in the background, starting with the wages, the length of the job, diet, excessive subalternity, lack of assistance and welfare, all factors that can have negative effects, “excessive wear and tear” and that affects some groups of workers more than others, and in certain situations and historical periods (not just in the past) more than others. One must bear in mind that various forces are at work on the body of each worker who is carrying out an activity and therefore also on more or less homogeneous groups of workers; some of these forces are certainly protective while others are harmful to varying degrees, but at the end of a complex fight, all of them influence that worker’s biological fate, his natural life and his death. Certainly, the factors with a positive impact also include certain mechanisms, some of which were “in-
formal" and implemented by the workers themselves, starting with the important one of actually choosing which trade they carry out, as well as the preventive measures that were introduced by the state on several occasions, either because it was in their interest or they were forced to by the growing influence of the workers' movement. All the aforementioned efforts of the most varied kinds have been analyzed separately by historians and, as a result, it is hard to understand how, despite the presence of such hostile conditions as those imposed by factories and urbanisation, a working "culture" and its unions, whether of defence or attack, managed to achieve the start of a process that led to improved conditions for both the workers and their families and, as a result, to society in general.

In an attempt to reassess Cottereau’s hypothesis, Jorland confirms the fact that historically it is impossible not to recognise Ramazzini’s cultural and scientific success (and not just in France): “La première chose qui frappe quiconque étudie l’hygiène professionnelle au XIXe siècle, c’est la rémanence jusque tard dans le siècle comme traité de référence de l'"Essai sur les maladies des artisans" de Bernardino Ramazzini publié pourtant un siècle auparavant, en 1700, puis augmenté en 1713, traduit du latin et commenté par Fourcroy en 1777 puis par Philibert Patisser en 1822. Il est encore cité en 1892. En 1874, un texte allemand intitulé 'Die Krankheiten der Arbeiter' [the diseases of workers] est toujours traduit par ‘les maladies des artisans” (Jorland, 2005). Thus, by analyzing the reasons for his success, the French historian claims that Ramazzini’s "essay" should be regarded as a research programme that is to be updated over the years and, on the one hand, is still producing results that take typical occupational diseases into account, for example those caused by external noxae coming from the mineral, vegetable or animal kingdom or from all three; on the other hand, these results also take into consideration and even highlight a “second group” of illnesses – those caused by an excess or lack of movements by certain body parts. These can be divided into at least four kinds – posture, sitting or standing up, the use of one’s sight and those deriving from excessive use of the voice. According to Jorland, in other words, if the first category of diseases are occupational diseases in the closest meaning of the expression, those in the second group represent the effect of what we now call "wear and tear from work" (Jorland, 2005) – the very ones that have so
clamorously been identified as “fourth category factors” (factors that differ from physical fatigue) in Italy in the second half of the 1960s during the trade union fight against the harmfulness of work (Carnevale and Moriani, 1986).

I.IV. The situation today

The twenty-first century has brought with it mass communication tools that are constantly showing us shining objects, increasingly sophisticated equipment with futurist functions. In the West, immaterial production is exalted and the knowledge economy has triumphed and is constantly expanding and the new economy is faltering. In this context, the knowledge that everyday life is still supported by material objects to a great extent is becoming weaker and weaker. Who is extracting iron, coal, oil, aluminium, lead, mercury and stone and who is producing tools, computers, cars, synthetic resin, leather and agricultural products? The answer is to be found more and more frequently in the third world and newly industrialised countries, while the more dangerous kinds of production, which still takes place in developing countries, is mostly carried out by immigrants.

In the mines, caverns, blast furnaces, petrochemical plants, workshops, cotton mills, paper mills, assembly-lines, construction worksites, inside the darkest and unhealthiest little factories, thousands of workers are carrying out their professions and extracting raw materials, churning out partly-finished goods, creating handmade products and very often not only exhausting the materials, but also their health. This was confirmed by the “global” estimates by ILO for the data regarding the 1990s, which showed a progressive increase in the number of accidents at work worldwide, with an estimated total of 250 million non-fatal accidents in 1999 and 160 million professional pathologies a year. The number of work-related deaths each year is 1.2 million, but it is believed that the real figure is much higher (Takkala, 2005). For example, according to official data, 222 fatal accidents at work are reported in India each year, a figure that is analogous to the one in the Czech Republic where, however, the work force is around 1% of that in India. In actual fact, ILO estimates that the number of fatal accidents in India is around 40,000 a year (ILO, 2005).
One can ask oneself whether globalization is contributing to the worsening of the phenomenon rather than alleviating it. There is no doubt that the intensification of competitive pressure between producers is reflected on all parts of the productive chain, the suppliers in particular since they have to offer increasingly lower prices if they want to be given the job, and thus frequently driving the level of worker treatment to the inhumane. When survival on the global market means reducing costs, those who pay the consequences are the workers with the least contractual power, or rather, unqualified workers in newly industrialised or developing countries, who are subjected to an excruciating work pace and low wages. A considerable number of factory-concentration camps are the hidden face of the irresistible Chinese economic miracle and it is there that the workers are exploited in the true or pretended ignorance of the multinationals that commissioned the products. In this context, the inspection system is ineffective since most of the workers do not enjoy freedom of expression and therefore, either because they are "told" or threatened to do so, make declarations that do not correspond to the truth as regards their real working conditions.

Worldwide two phenomena are establishing themselves – that of the increasing offer of immigrant labour and that of a pervasive deregulation of the labour market. The first leads to the extreme vulnerability of the workers who are in unbridled competition with one another for a job as they fear losing it and, with it, their only source of income. The second merges into a grey area between the formal and informal sector, creating fertile terrain for the proliferation of organizations that border on the illegal or are totally illegal and are therefore increasingly less subject to inspections and controls.

Those who support the advantages of globalization believe that the wealth created thanks to the increase in world trade can only lead to an improvement in health services and education and therefore also to an improvement in health.

Other more critical analysts claim that there is no serious support to the paradigm that links trade/growth/wealth, at least in the sense of the equal distribution of these advantages, and that in countries with a low income, economic growth has also led to an increase in inequality, a reduction in public resources and greater risks to health due in particular to specific un- "healthy" determining factors that are correlated to work and everyday life. The predominance of labour
in the less industrialised countries together with the liberalization of trade has led to obsolete and risky technologies being transferred towards those countries, involving chemical products, the treatment of dangerous waste such as asbestos, an increase in assembly line labour, reduced workplace quality with minimal opportunities for improvement and an increase in temporary and precarious jobs.

In purely economic terms, over the last 20 years' growth on the world market the benefits have been unproportionally in favour of the wealthier countries, unlike during the two previous decades (1960-1980) (Weisbrot et al., 2002). The investment flow has concentrated on a dozen countries, while most of the poor countries have remained on the borders and are having to compete with one another to make sure they also get a slice of the "world" market.

It is only to be expected that these economic globalization processes will have effects on the health of workers, in both wealthy and poor countries, albeit it to different degrees and with profoundly different mechanisms, as can clearly be seen if one considers that the gap between the average income in industrialised and developing countries has gone from 1:50 in the 1960s to 1:120 today (Froneberg, 2005).

There are numerous variables responsible for the difference in the negative effects on the health of workers in rich countries and in developing countries (Takkala, 2005):

- Many productive processes are tackled with greater manpower commitment in developing countries compared to industrialised ones;
- The climatic conditions are often more taxing in developing countries;
- Knowledge and awareness of the dangers, and as a result how to deal with risk management are significantly inferior in countries with low incomes;
- Machinery, plant and equipment are generally outdated in developing countries;
- In developing countries there are often no appropriate measures to control exposure during the transport of dangerous products, with carcinogenic substances and minerals, which were more frequently used in industrialised countries in the past;
- An increase in shift-work in industrialised countries, also at night, factors that are linked to circulatory pathologies;
• Presence of infectious diseases correlated to work (malaria, hepatitis, bacterial and viral infections) in particular in low-income countries; the possibility that reduced life expectancy in developing countries impedes any manifestation of pathologies with a lengthy time-lag such as tumours and cardiovascular diseases.

II. The Health of Princes

A good ruler is one who acts for the publicum bonum

In the Treatise dedicated to the hereditary prince Francesco d'Este, son of the then governing Duke Rinaldo (1655-1737), who then went on to rule from 1737 to 1780 under the name of Francesco III (1698-1780), Ramazzini writes that, "It is very important that he who governs others enjoys a perfect state of health [...] for when the prince falls ill and is suffering, the laws and the public good also languish".

The Health of Princes seems to be a distant echo of the great treatises on the figure of the prince (Nutton, 1990) and of "high-ranking" figures, ranging from De regimine principum by San Tommaso (1221-1274), The Ideal Figure of the Prince in the State by Gottfried Leibniz (1646-1716), Il Principe [The Prince] by Nicolò Machiavelli (1469-1527), De cardinalatu by Paolo Cortese (1465-1510), De Literatorum & Eorum qui Magistratibus Funguntur Conservanda Praeservandaque Valetudine by Guglielmo Grataroli (1516-1568) and De Togatorum Valetudine Tuenda Commentatio by Vopiscus Fortunatus Plemp (1601-1671).

Guided by educated social Catholicism, Ramazzini firmly believed that the work of scientists for mankind was only possible via princes and that the rulers would be neglecting their duties if they did not let themselves be inspired and guided by scientists. The development of this thought immediately brings to mind Antonio Gramsci (1891-1937) who recognised the prince in the figure of the political party. According to Gramsci, "The modern prince cannot be a real person, a concrete individual, but only an organism; an element of complex society in which the establishment of a collective, recognised will has already begun, and has partially asserted itself in the action" (Gramsci, 1955). It is time to exalt the shadows that have expanded over the years as an effect of the application