



The role of scientific journals following the unification of Italy

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Abstract

1. In the second half of the 19th century, after Italian unification, new kinds of topics and contents arose, influenced by positivism, self-helpism and “hygienism” trends. Many series and journals were published promoting the **divulcation of scientific themes** and a **new philosophy of science**.

Among these newspapers, that had extremely eloquent titles, we find two groups. One displayed a more **theoretical nature** and was more philosophical, focussing on human sciences, e.g. the “*Rivista di Filosofia Scientifica*” and “*Il Nuovo Risorgimento*”. The other group was **markedly applied** and technical in character, e.g. “*Il Politecnico*”, “*Il Progresso*”, and “*La Scienza Applicata*”.

2. The “*Rivista di Filosofia Scientifica*” (1881-1891), published by Pompeo Dumolard, became the principal organ for the propagation of positivistic ideas in Italy, and its specific spheres of interest were “Scientific theories, physical-mathematical sciences, biology, psychology and anthropology, social sciences”. The review was directed by Enrico Morselli, together with other four positivistic scholars. Their intention was to demonstrate that objective prevails over subjective and that experimental observation prevails over abstract speculation, providing a link between philosophy and science. The “*Rivista di Filosofia Scientifica*” played a fundamental role in spreading positivism, evolutionism, Darwinism, and a new vision of social sciences.

3. A different position was represented by “*Il Nuovo Risorgimento*”, a “Review of philosophy, sciences, letters, pedagogy and social studies” (1890-1902), founded and directed by Lorenzo Billia, a militant catholic. Thus, the review was closely linked to the catholic milieu, as opposed to positivism, socialism and centralizing government. Its prime aim was to moralize both public and private life, and thus contribute to a profound spiritual renewal of the country.

4. “*Il Politecnico*” was a “Monthly repertory of applied studies to prosperity and social culture” (1839-1865). It had three series under his founder and director, Carlo Cattaneo, one of the main exponents of Italian positivism and an active patriot. After Italian unification, the review not only popularized scientific and technical knowledge, in order to foster civil progress, but it also participated in debate on fundamental topics regarding national unity. Its main purpose was to encourage applied studies, helping “to do instead of to know in the abstract”.

5. The aim of “*Il Progresso*” - “Monthly review of new inventions, discoveries and sundry items of interest” (1873-1892) - was to follow up human progress in all fields, focussing on practical,

material and concrete aspects, in order to further Italian economic activity. Another very important feature was its section on patents: not only did it list them, but it also opened an office for patents of invention and trade-marks at the review's head office in Turin. "Il Progresso" was closely linked to the industrial and commercial milieu, with the accent on modern and new disciplines.

6. "**La Scienza Applicata**" - "Monthly review of scientific applications arts, industries, agriculture and professional practices" - lasted only one year, during 1876, but it was very important also because it represented the first step towards the birth of the "**Rivista di Scienza**". Its contributors were chemists, agronomists, physicists, engineers, doctors, whose aim was to concretely contribute to the scientific development of Italy, because in this field Italy still was, as they recognized, a backward nation.

7. "**La Scienza Applicata**" constituted a fundamental precedent leading towards the "**Rivista di Scienza**" (1907-1909), then "**Scientia**", an "International review of scientific synthesis" (1910-1988). It was directed by Federico Enriques, a mathematician, philosopher and historian of science, together with Eugenio Rignano, an engineer interested in psychology, sociology and biology. The review promoted a unitary vision of modern knowledge, within which, tearing down disciplinary barriers, dialogue might be fostered between scientific and humanistic cultures: within this framework, science was accorded very considerable social value. Today, starting out from our national magazines opac (ACNP), the full texts of the issues are directly available as an open access source, from 1907 to 1941.

1. In the latter half of the 19th century, in the years following the unification of Italy, the press had a fundamental role in the development of the country, also because censorship, customs and duties on publications among the States of the peninsula had been removed. Given this new situation, authors and publishers were provided with a fine opportunity to contribute to the life of such a recently united country, and thereby improve its cultural, social and economic conditions.

The general premises for intellectual renewal, however, had already been launched in Europe during the 18th century, in particular in Great Britain and France, with the Enlightenment. Starting out from this development, another philosophical movement arose in Europe a century later, positivism.

Positivism, in the second half of 19th century, rejected concepts based on idealism and metaphysics, and proposed a method of inquiry based only on scientific facts, while asserting that the scientific method must be applied to every field of human knowledge (including for example, even painting, as was the case with pointillism). Positivism introduced a conception of philosophy that resembled the organization of other sciences, taking principles from natural sciences and applying them to the human sciences. In the view of this movement, human facts were considered natural facts, and historic evolution was considered natural evolution. Positivism totally trusted in the power of a progress based on the results of scientific method.

So, in this changing cultural context, a new philosophy of science was encouraged in all productive sectors and in all aspects of human life, where everybody was called on to participate in this modern trend of renewal.

Positivism was therefore a very important movement especially in Italy. Here, the particular situation of a country that had just been united necessitated a marked effort for improvement of Italy general conditions. Within this framework, publishing also acquired a fundamental role, with the promotion of new kinds of publications, topics and contents, some coming from Great Britain, where the industrial revolution was born with such great repercussions.

This is the case, for example, with the translation of *Self help. With illustrations of character and conduct*, written by Samuel Smiles and published in London by Murray in 1860. This work, with the Italian version produced five years later, gave birth to a particular sector of publications based on the figure of the self-made-man, whose aptitudes would improve the social conditions of Italians. The English text was translated by Gustavo Strafforello and was published in Milan in 1865 by the Editori della Biblioteca Utile. The title was altered and lengthened: *Chi si aiuta Dio l'aiuta ovvero storia degli uomini che dal nulla seppero innalzarsi ai più alti gradi in tutti i rami della umana attività* (*God helps those who help themselves, or a history of people who starting from nothing were able to rise to the higher reaches in all branches of human activity*).

But the Italian author who was considered the father of self-help in his country was Michele Lessona, who wrote a book significantly called *Volere è potere* (*Where there's a will, there's a way*), published in Florence in 1869 by Barbèra. Gaspero Barbèra was one of the main publishers of self-help literature, together with Emilio Treves and Ulrico Hoepli; the latter pair were most active also in producing a number of series of scientific publications.

In practice, the self-helpism trend, derived from the English model, introduced a meritocratic principle into Italy that potentially enabled everybody to advance within the social hierarchy, irrespective of origin, and to achieve success and status through hard work and personal determination. This opportunity, however, was made possible only through respect for the social order in force. Indeed, this movement held to a conservative vision, and was thus averse to social conflicts and the spread of socialist ideas.

However, within these limits, everybody could become a self-made-man, as a number of publishers demonstrated, such as the aforementioned Gaspero Barbèra in Florence, and Nicola Zanichelli in Modena. Together with Ulrico Hoepli, Felice Le Monnier, Giuseppe Pomba and others, Barbèra and Zanichelli were called “Risorgimental publishers”, because they truly supported the patriotic struggles against foreign governments.

The achievement of individual professional goals meant also the achievement of national progress, this greatly contributing to national development. Furthermore, out of this vision, came another very important trend, “hygienism”.

The aim of “hygienism” was to raise personal and home hygiene standards, in view of the fact that this was absolutely necessary to working classes; “hygienism” thus contributed to the improvement of public health and urban sanitary conditions in general.

It was encouraged especially through specific series of publications, handbooks and journals targeting a broad-based readership. In this field the key author was Paolo Mantegazza - a doctor, anthropologist, great traveller around the world, and writer - whose hygienistic publications were very popular in the latter half of the 19th century. He wrote, for example, a collection of guides whose titles were somewhat repetitive: *Skin hygiene, Head hygiene, Hearth hygiene, Blood hygiene, Love hygiene, Kitchen hygiene, Work hygiene*, etc.; furthermore, he was the author of a long-lived “Almanacco igienico popolare” (“People’s hygiene almanack”), published in Milan over a period of more than twenty years (from 1866 to 1889), first by Brigola and then by Dumolard. He was also the director of the newspaper “La natura. Rivista delle scienze e delle loro applicazioni alle industrie e alle arti” (“Nature. Review of sciences and of their applications to the industries and arts”), published by Treves again, in Milan, as from 1881.

This was not the only journal dedicated to “hygienism”. We also find “La salute. Giornale d’igiene per il popolo e di altre cognizioni utili” (“Health. Journal of hygiene and of other useful knowledge for the people”), or the more intellectually demanding “Il corriere sanitario. Giornale settimanale d’igiene pubblica e di medicina pratica ed interessi

professionali” (“The health courier. Weekly journal of public health and practical medicine and professional interests”).

Positivism influenced “hygienism”: Mantegazza wrote for several positivistic reviews, which, together with other scientific currents and cultural tendencies, contributed greatly to the improvement of, and development with regard to, living standards in Italy in the second half of the 19th century.

Hence, under its influence and in the context of a country that had been so recently unified, many publishers produced a great number of broad-readership publications in which positivistic ideas became quite evident, such as, the following series, mostly published in Milan and Turin, but also in Bologna: *Biblioteca scientifica internazionale* (the Italian equivalent of the American *International Scientific Library*) published by Dumolard (as from 1875); *Biblioteca utile (Useful Library)* and *Scienza del popolo (Science of the People)* by Treves; *Biblioteca di scienze moderne*, divided in the two sections, *Piccola* and *Grande (Small and Large Modern Sciences Library)* by Bocca; the famous series of Hoepli’s *Manuali (Handbooks)*; *Biblioteca scientifico-popolare (People’s Scientific Library)* by Loescher; *Biblioteca del popolo (People’s Library)* by Sonzogno; *Biblioteca di opere scientifiche (Scientific Works Library)* by Zanichelli, etc.

Alongside these many book series we find journals. Journals were an easier and more effective way of reaching a mass readership for the purpose of popularizing scientific knowledge. A number of these magazines were founded by important exponents of positivism, and their titles well define the contents; for example: “Scienza per tutti” (“Science for all”), “La scienza a dieci centesimi. Sapere è potere” (“Science for a dime. Learning is empowerment”); “Rivista scientifico-industriale delle principali scoperte ed invenzioni fatte nelle scienze e nelle industrie” (“Scientific-industrial review of the principal discoveries and inventions produced in the sciences and industries”), “Scienza e diletto. Rivista minima di varia coltura” (“Science and leisure. Minimal review of various cultural issues”), “Rivista contemporanea. Periodico mensile di filosofia, scienze, storia, letteratura [...]” (“Contemporary review. Monthly magazine about philosophy, the sciences, history, literature [...]”), etc.

The Italian Positivistic Society also founded its own review in 1895, in Rome: “Il Pensiero Moderno” (“Modern Thought”), which, three years later, became “Il Pensiero Nuovo. Rassegna di scienza di filosofia e di critica” (“New Thought. Magazine of science, philosophy and critique).

2. Well before “Il Pensiero Moderno” was founded, the “Rivista di Filosofia Scientifica” (“Review of Scientific Philosophy”) had been the principal organ for the propagation of positivistic ideas in Italy. For eleven years, between 1881 and 1891, it represented the high point and more mature period of positivism in Italy, and it was published in Turin and Milan by Pompeo Dumolard. Dumolard was a fundamental figure for the life of the review and an extremely active popularizer of scientific knowledge: we have already mentioned him with regard to Mantegazza’s almanack and the *International Scientific Library* series, where the director of “Rivista di Filosofia Scientifica”, Morselli, had published his important book on *Suicide (Essay of moral comparative statistics, 1879)*.

This journal started in July 1881, and in this first series every annual volume covered the period from July to June of the following year (1881-82, 1882-83, 1883-84). However the fourth year alone covered July 1884 to December 1885. For the second series, starting from January 1886, every volume covered the solar year, and in the second part of the review title, the scope was broadened out: “Scientific theories, physical and mathematical sciences, biology, psychology and anthropology, social sciences” (“Teorie scientifiche, scienze fisico-matematiche, biologia, psicologia e antropologia, scienze sociali”).

The “*Rivista di Filosofia Scientifica*” was directed by Enrico Morselli, together with other four positivistic scholars: Roberto Ardigò, Giovanni Canestrini, Gerolamo Boccardo and Giuseppe Sergi. We cannot include monographic accounts of these important personages and their work; only brief notes shall follow.

Enrico Morselli (1852-1929) was a psychiatrist. He also studied with Mantegazza, and was the director of the mental hospital in Macerata and, later, those of the universities of Turin and Genova, where he also taught. Roberto Ardigò (1828-1920) is considered the most original proponent of Italian positivism: he was a priest who then decided to leave the church and become a great supporter of this movement, Darwinism and democracy. He was also professor of history of philosophy at the university of Padua, then dean. Depression led him to suicide in Mantova in 1920. Giovanni Canestrini also taught at the university of Padua, where for thirty years he defended the theory of evolution. He was a naturalist who took part in many innovative research projects - for example on fish and acari - and he was an excellent popular science writer with many successful manuals to his name. The theory of evolution was also supported by the anthropologist Giuseppe Sergi, professor at the university of Bologna and then in Rome, where he founded the first laboratory of experimental psychology. Gerolamo Boccardo applied positivism instead to the economic studies and social sciences; he was close to Cavour, worked in the latter’s government and wrote a *General dictionary of sciences, letters, industries*.

This board of directors delegated to the founder Enrico Morselli the task of writing the “Introduction” to the first issue of the review in 1881, in which Morselli explained that “scientific philosophy” was the only real and possible philosophy, because it used the immense material provided by science to form and to develop itself. Following up Herbert Spencer’s theories and modern trends of thought, the review’s aim was to demonstrate that the objective prevails over the subjective, and experimental observation prevails over abstract speculation. Thus, the “*Rivista di Filosofia Scientifica*” hoped to provide a link between philosophy and science.

Morselli again, at the beginning of 1887, while presenting to the public the five-year budget, stated that general philosophical concepts should be based solely upon facts and laws existing in the various positivistic sciences. Thus, the members of the review exclusively adopted the positivistic and experimental method, a method used in physics and the biological sciences, and one that was reaching also into the field of the social sciences at that time. Thus, Morselli concluded - mentioning Galileo Galilei and Giordano Bruno - that there is no “divorce” between science and philosophy, and that the review would continue to spread this “new thought” among independent scholars, free from metaphysics bonds.

After eleven years, in December 1891, the “*Rivista di Filosofia Scientifica*” ceased publication, and for the last time its director could address some words to subscribers and readers. Essentially, there were three reasons for closure: firstly, the death of Pompeo Dumolard, the publisher who had always covered the costs, not looking to profits but to noble ideals; secondly, the enormous amount of work, time and energy put in by Morselli himself; thirdly, the fact that newspapers are like animals, i.e. they “are fated to follow a parabola similar to that of living organisms”. While it existed, the review “struggled for a high ideal, the unification of philosophy with science”, contributing greatly the progress in both fields, thus promoting the “Italian philosophical risorgimento”.

The fundamental role played by this review in spreading the word of positivism, evolutionism and Darwinism, and fostering a new vision of the social sciences, is widely recognized in the available literature dedicated to this initiative.

3. In Italy at that time, the concept of “risorgimento” took on different meanings according to the political, cultural and social ideals of its various exponents. Indeed, not all intellectuals shared the philosophical vision proposed by Morselli.

In this regard, we may briefly consider “Il Nuovo Risorgimento. Rivista di filosofia, scienze, lettere, educazione e studi sociali” (“The New Risorgimento. Review of philosophy, sciences, letters, pedagogy and social studies”), which started up just before the aforementioned “Rivista di Filosofia Scientifica” closed down. For the first five years, issues of “Il Nuovo Risorgimento” - published in Turin more or less on a monthly basis - straddled the year (going from July 1890 to October 1895); but the next volume of this series was issued in 1896, according to the solar year. Then, in 1897, a new series started up, terminating with the eleventh volume covering the period from January 1901 to April 1902.

The review was founded and directed by Lorenzo Michelangelo Billia (1860-1924), a school teacher of philosophy, then professor at the university of Turin - where he was also suspended for his dissenting views - writer for several newspapers and author of pedagogic essays. Billia was a very active catholic. He was a friend of Cesare Cantù (who wrote a *Course of popular morals*, in which he wrote that children’s education must always be subservient to ethics, because “the world needs more men of honour than it needs doctors”), and a great supporter of Antonio Rosmini’s ideals (the priest who founded the congregation of the Istituto della Carità), frequently contributing to his journal “Il Rosmini”, issued in Milan from 1887 on. Thus, the review founded by Billia was culturally related to the Catholic milieu and politically to the liberal party, as can be seen in its pages taking issue with positivism, socialism and centralizing government, and also in the accent it placed on moralizing both public and private life (e.g. the lead took in a sustained campaign against the proposal of a law to institute divorce).

In the first issue of “Il Nuovo Risorgimento”, Billia explained “The aims of the magazine” to his readers. Adopting an ironic and sarcastic tone, he listed all the negative traits of modern society, such as ill mannered behaviour, moral deficiencies, the destruction of the family, vulgarity, egoism, atheism, positivism, rationalism, etc. In Billia’s review, “risorgimento” meant something completely different from what it meant in “Rivista di Filosofia Scientifica”, and its founder was also against the “mercenary and corrupting” press. Via his magazine Billia hoped to present a dissenting voice: taking as his main points of reference the figures of Dante, Manzoni, Rosmini, Cantù and Pellico, he tried to revive faith in God and moral principles, being convinced of their beneficial effects on Italians.

Proceeding in this direction, during the 1890’s “Il Nuovo Risorgimento” discussed all sciences and especially pedagogy, which was considered by its director the science of prime importance, because it is only “from the dignity of family that the dignity of nation can begin”. In 1895 Billia frankly dealt with the important subject of “The crisis of positivism”, and stated that “positivism has been vanquished” because it was not a real science but a political trend that brought with it “indolence and the death of ethic values” and, in particular, he quite simply rejected “scientific philosophy” as an “insolent denomination”.

In the journals issued at the end of the 19th century in the field of philosophy, “risorgimento” clearly had no univocal meaning as a term. Its meaning was at least twofold. Billia’s review indicates that it was thoroughly permeated by Catholic moral principles, and the call for a return to the faith was to be underscored on the title page - from 1898 on - with the words of Gospel according to John, “and the truth shall make you free” (VIII, 32).

Among the scientific journals of this period - all promoting the development of Italy and all with very eloquent titles - the two just considered were more theoretically

oriented, and in particular the contents of “Rivista di Filosofia Scientifica”, compared with others, was more rarefied and less popular in appeal.

In fact, it is possible to separate these scientific reviews into two groups: one was more philosophical, focussing on theoretical aspects and the human sciences, and included “Rivista di Filosofia Scientifica” and “Il Nuovo Risorgimento”; the other group was markedly applied and technical in character, concentrating on a not highly cultured readership. To this latter group belonged, for example, the following three reviews, “Il Politecnico”, “Il Progresso”, and “La Scienza Applicata”. Each of these latter journals had its own approach and appearance, but all three were devoted to the task of popularization and to applied studies, and served as a means for the spread of a new kind of scientific culture.

4. “Il Politecnico. Repertorio mensile di studi applicati alla prosperità e cultura sociale” (“The Polytechnic. Monthly repertory of applied studies to prosperity and social culture”) was a monthly review published in Milan between 1839 and 1865, first by Pirola, then by Daelli and then by the Editori del Politecnico. During this period, two series were published, both lasting for six years: the first from 1839 to 1844; then, after an interruption of fifteen years, the second series, from 1860 to 1865.

However, “Il Politecnico” was a long-lived review, and under Cattaneo’s direction it had three series. Between 1866 and 1868, the review split into two parts, which continued to be published on a monthly basis: “Il Politecnico. Parte letterario-scientifica” (“Literary and scientific part”), and “Il Politecnico. Parte tecnica” (“Technical part”).

Then, from 1869 to 1927, “Il Politecnico” had a different target, and became more specific in nature, as “Giornale dell’ingegnere architetto civile ed industriale” (“Journal of the civil and industrial engineering architect”), published by Editori degli Ingegneri. During its last ten years of life, between 1928 and 1937, the publication revived its broader appeal under the simple name of “Il Politecnico”, published in Milan as before, now by Vallardi.

The founder, and editor of “Il Politecnico” for many years, was Carlo Cattaneo (1801-1869), one of the main exponents of Italian positivism and an active patriot who personally took part in the struggle against Austrian domination of the “five days of Milan”. In March 1848, Cattaneo led the rebellion that forced Austria to withdraw from the city; however, for this reason he then had to go into exile in Switzerland. Cattaneo studied law with the great jurist, Gian Domenico Romagnosi, developing the ideal of a civil philosophy that meant for him full social, political, economic freedom. For Italy he envisaged republican federalism such as he saw in Switzerland and in the USA. Very early on, Cattaneo began write in many journals about several topics, and also - for example - in “Antologia” (“Anthology”) founded by Vieusseux. When his master died, he also took on the arduous task of promoting “Annali di statistica” (“Statistical Annals”).

After Italian unification, the revived “Il Politecnico” not only popularized scientific and technical knowledge, in keeping with Cattaneo’s democratic ideas, in order to promote civil and social progress, but also participated in debates concerning fundamental issues regarding national unity, such as legislation reform, administrative organization, military enlistment, etc. As the second part of the title - “Monthly repertory of applied studies to prosperity and social culture” - indicated, the main purpose of the review was, namely, to encourage applied studies, because such studies constituted the sole path to prosperity such as would enable Italy to keep abreast of developments in other European countries.

On starting up the review, when he presented it to the readers, in the first issue of 1839, the founder realised that the title might sound ambitious. But as far as he was concerned, this need not be the case: the function of “Il Politecnico” was only to transpose into practical terms the “high and disdainful language” which science usually spoke. As a matter of fact, the vocation of the magazine was to help “*to do* instead of *to know* in the

abstract”, and it concerned “art in its wider and full meaning of application of human knowledge to the habits of the most cultured society” .

So, for Carlo Cattaneo “Il Politecnico” would bring together applied studies regarding both the useful and the fine arts. He divided these studies into four scientific areas, following this precise order: physical arts (including mathematics, agriculture, technology, natural history, medicine etc.); social arts (including economics, administration, law etc.); mental arts (including education, pedagogy, school systems etc.); and fine arts (including literature). For each of these areas there were three surveys: the most important were the Memorie originali (Original notes), i.e. contributors’ essays, and Reviews of new works, not only Italian but also written in many other languages. At the close of each issue a widely ranging section of News items was included, about anything considered of interest, for example meetings, lectures, inventions, new societies and academies, bibliographical notes, special projects, obituaries, commemorations, etc..

By adopting this approach, “Il Politecnico”, founded by Cattaneo hoped to combine “maximum variety of contents with a practical and popular level of treatment”, providing the public with scientific essays couched in the “simplest, easiest, and less boring” language.

The “Manifesto” of the second series - from 1860 to 1865 - was written again by Cattaneo. It confirmed the previous programmatic line, that became even more important because Italy was in a very special situation, in that it was trying to achieve political and administrative union. So, precisely within this framework - where positivism, influenced by the English philosophers Francis Bacon and John Locke, might have a great part to play - “science is strength”, and “to reason about science and art does not mean distracting minds from the supreme thought of the security and honour of the country”.

Foreign newspapers greeted the resumption of the review’s activities in 1860 most warmly, as we can read in the following three citations: “Llammamo la atencion de nuestros lectores sobre un periodico del mayor interés que se publica en Milan, intitulado el Politecnico” (“El Eco Hispano-Americano”, Paris); “C’est donc un heureux événement [...] la resurrection du Politecnico, du seul journal qui mérite les suffrages de tous le parties” (“Revue internationale”, Paris); “We have some good news: Il Politecnico, killed off by Austria [...] has been revived [...] for freedom and science” (“Pensiero ed azione”, London).

Cattaneo’s preface to the first issue of 1861 - the year of Italian unification - contained some more specific ideas, occasioned by this particular historical event. Here he said that the review plan was not that of many others, i.e. to adopt a critical vision, and this was because “Il Politecnico” was averse to all polemical spirit as such. Its aim was quite simply to expound, to state, to explain concepts, methods, theories, through “a collection of brief and meaningful works, and yet easy, clear, elegant of a geometrical elegance”.

The review addressed this message especially to youth, called on to build Italy, and encouraged at all times to pursue the twin ideals of “truth and freedom”, in order to achieve “the brotherly union of all European people”. In order to transpose this principle into practice, Cattaneo chose the other two key-words of “arms and railways”: the country had to be able to defend itself and to enhance the extensive circulation of people, goods or commodities, ideas and knowledge.

In the “Il Politecnico” contents page of the year 1861, we can see that arms and railways took first place in an ordered series of topics made up of twelve classes in all. The others, apart from arms and railways, were presented in the following order: chemistry and physics; natural history; medicine; economics; law and politics; geography and ethnography; history; philosophy and the history of science; literature and the fine arts; and, lastly, the two sections dedicated to commemorations and sundry items.

As we consider the essays about these subjects published in the second series, it seems quite clear that scientific divulgation was a very important aim, especially as regards certain given topics, such as the aforementioned “hygienism” theme, with several contributions from Mantegazza and, for example, an eloquent essay by Carlo Gola, *About the importance of bathrooms and in particular about the usefulness of Turkish baths*; no trivial topic because cleanliness was to be considered vital to the equality of men. During these years another writer frequently accepted in the review was Paolo Lioy, patriot, naturalist, expert of the highland districts and writer with a marked vocation for popular science. He was also the author of one self helpist work which was repeatedly republished: the name was more or less “*Slow and steady wins the race*” (*Chi dura la vince*, 1871).

In the issues published during the years 1860-1865 we may find traces of the main problems and questions under discussion at that time in every field, and in the cultural context, too. This is the case of the debate about book trade duties, a most heated debate in the year after Italian unification, because publications coming from other countries - and also for example from the nearby Ticino Canton of Switzerland - were subject to a duty. The book trade was to remain a difficult problem in Italy for a long time, due also to pirate printings and the lack of copyrights: it was therefore “always (...) without strength and courage”. This was true especially in this period, when Italians needed literacy, and the imposition of a duty on books was therefore considered a “barbaric” law, because it was seen as a tax that punished those who were trying to gain the first rudiments of learning. About the book trade “Il Politecnico” concluded that the time had come for better legislation, without penalties on printing, in “the interest of writers and of booksellers, of studies and of the country”.

Let us turn briefly to the fourth series: this series started up in 1867, a year after the review had been divided into two sections, also changing the second part of the title. The general name of the magazine became, as we saw: “The polytechnic. Monthly repertory of applied studies to prosperity and social culture”; then divided into the “Literary and scientific part” and the “Technical part”.

However, the only “Manifesto” for this series was that signed by the new editor, Francesco Brioschi (1824-1897), who - like his predecessor - took part in the resistance movement against Austria. Brioschi was a mathematician, engineer, professor of architecture, and he became famous for his cartography studies. He was member of several scientific societies, both in Italy and abroad, for example the National Sciences Academy from 1860, and the Academy of Prague. He was among the founders of the Chemical Society in Milan, and also co-director of the “Annali di matematica pura e applicata” (“Annals of Pure and Applied Mathematics”).

About this new series of “Il Politecnico”, Brioschi stated immediately that it maintained direct continuity with “Il Politecnico” as directed by Cattaneo. The previous programmatic line and its educational concept were reiterated, but then, after almost thirty years, division of the review into two parts became absolutely necessary, due to the deepening of scientific knowledge and greater specialization. This development concerned all sciences and required change in order to more effectively foster the advance of studies, in this way meeting the specialized interests of particular readers. Within the context of this renewal, there was only one element that diverged from Cattaneo’s scopes: now, “Il Politecnico” was also meant to have a critical function. Not only was it to expound; it was also to assume a critical function with a positive purpose, with a view to encouraging progress in all doctrines.

After this general “Manifesto” of the series, each of the two parts featured a short presentation. The “Literary and scientific part” was devoted to literature, history, philology, law, economics and the sciences of nature; the studies in all these fields aimed to raise the level of general culture of the people. As a matter of fact, as far as Brioschi was concerned,

it was still necessary to oppose the metaphysical spirit and further the cause of the positivism. Indeed, in the first issues of this new series we have, for example, the positivistic pedagogist Aristide Gabelli, and, in particular, the positivistic historian Pasquale Villari, who clearly explained the programme of positivistic school sustained by the review.

The “Technical part” was aimed toward sciences that could effectively meet material needs, such as engineering, hydraulics, industrial processes, and all types of technologies developed to enhance the productive system of the country. Another feature of this part was the large number of illustrations: this was truly a necessary ingredient since illustrations have a very important explicative function. The technical part of the review was designed, therefore, “to fill in a gap lamented several times”.

In conclusion, for all these scientific, cultural and social reasons, during the latter half of the 19th century, “Il Politecnico” had a fundamental role in Italy in building up a constructive national attitude, becoming one of the main reviews in the field of divulgation of scientific endeavours, and probably the most authoritative, most up-to-date, and most fully documented.

Today, there is much bibliographical work on the review and its founder. The significant contribution of both to the development of Italy has been fully acknowledged by historians and scholars.

5. “Il Progresso. Rivista mensile delle nuove invenzioni, scoperte e varietà interessanti” (“Progress. Monthly review of new inventions, discoveries and sundry items of interest”) made it quite clear in the second part of the title that it was an “Advertising organ for notices and announcements of a commercial and industrial nature” (“Organo di pubblicità pegli avvisi commerciali e industriali”).

The review started up in Turin in January 1873 and was published at least until 1892, but we don’t know exactly when it ceased publication. For the first six years - from 1873 to 1878 - “Il Progresso” came out the first day of every month, as we can read on its cover. Changes were then made in 1879 regarding frequency of issue (fortnightly), and also regarding the second part of the title: the accent was now placed more forcefully on the publication’s mission as a provider of information. Starting from this year it became a “Fortnightly review of new inventions and discoveries, scientific industrial news and sundry items of interest” (“Rivista quindicinale delle nuove invenzioni e scoperte, notizie scientifiche industriali e varietà interessanti”), and the cover stated that the review also contained a “Monthly list of patents of invention and of industrial patents”.

After some years came another change, when “Il Progresso” adopted a larger format and became an illustrated review, issued - as before - twice a month.

The first issue of January 1873 opened with a brief presentation. Here, the members of the editorial team anonymously (i.e. with no name to which the editorial could be ascribed) stated that they were persuaded of the necessity of such a review as this, because in that period Italians had embarked upon an industrial, agricultural and commercial “risorgimento” (as we saw, a word very frequently used): “Just as Italy was successfully established as a unified country politically free of foreigners, it will be able to win respect as regards industry, and to reach levels of quality that truly distinguish civil and industrious peoples, and it [this risorgimento] is perhaps the only one that will improve our destiny”.

As the title indicated, the review had the specific aim of following up human progress in every field, with news on inventions, discoveries and other fields of interest, especially concerning practical and applied knowledge, as a boom to the economy.

“Il Progresso” was therefore founded to provide Italians with the means whereby they might “keep abreast of all important events in the civilized world”. Distribution took place largely in northern Italy, the more industrialized part of the nation, but the review

could also be procured at a number of bookshops in other cities: in the north, it was available in Turin, Milan, Genoa, Venice, Parma and Padua; in central Italy, in Florence and Rome; and in southern Italy only in Naples.

From the start, "Il Progresso" seems to have been favourably received by the public. In the second issue of February 1873, the editorial noted that, since this initiative had been more successful than expected, it had been decided to add to the number of pages, to accommodate more content material. Three surveys appeared on the contents page: a Review of new inventions and discoveries; Industrial and commercial news; and Sundry items; rounding off with a List of patents of invention and of industrial patents.

Before entering into its third year of life, the editors declared to subscribers that the review intended to contribute to the progress of the nation, because Italy "had to become not only like other civil countries, but also renowned in the fields of the sciences, arts and industry". Reference was made also to the "splendour of her [Italy's] past": "Il Progresso" therefore attempted to promote "an intelligent and active revival of the arts, industry and commerce, instead of superfluous political questions".

In this case it is evident that - as opposed to "Il Politecnico" - the review would take no part in the political debate concerning the main problems being raised after Italian unification. Indeed, the magazine chose for its "motto" only keywords such as activity and utility, addressing itself directly to scientists, inventors and industrial entrepreneurs.

Catering for this kind of readership, "Il Progresso" devoted itself to any number of subjects, with the focus always on their practical, material and concrete aspects, as we can see in the yearly index of topics: for example, the pureness of water, river tunnels, the humidity of walls, false ivory, toxic beer, the conservation of butter, expeditions to the North Pole, chicken diseases, a new breed of horses, international postal rates, seaweeds, carrier pigeons, but also treasures in the depths of the sea, or Fata Morgana (complex mirages) and so forth. Among the inventions in all fields dealt with over these years, we find: automatic whistles for locomotives, the electric letter-book printing press, flood tides as a source of motive-power, a new seismograph, new treatment for diphtheria, secret codes, a submarine gun, paper from sugar-cane, steam-clippers, telescopes, a new process for glass gilding, and much more.

Another very important feature of the review was the section on patents. "Il Progresso" not only listed in every issue patents coming from Italy, Europe and America, but it also provided specific advice about them. As a matter of fact, during the life of the review this section became more and more specific in nature, and an office for patents of invention and trade-marks was opened at the review's head office in Turin, where one could obtain information on the "red tape", fees, size of drawings, terms of patents in Italy and in other countries, questions of effectiveness, validity, transfer, cancellation etc. The office was able also to undertake the full procedure (including technical drawings) on behalf of applicants, in order to obtain from the Italian and foreign governments ratification and the pertaining certification for patents of invention, as well as for registration for trade marks.

"Il Progresso" initially engaged in correspondence directly with other patents offices in a number of cities abroad. For Europe, Paris, London, Berlin, Vienna and Brussels, for the United States, New York, then enlarging its international contacts to take in Madrid and St. Petersburg. The inside back cover was occasionally devoted entirely to advertising the opportunities offered by its international patents office, with indications on all the actions required for taking advantage of this service: information covered the USA, all Europe (with the exceptions of Switzerland and Holland), Russia, too, but not Turkey. The office had its own historical patents repertory, going back to 1871, to check for patented or unpatented devices, etc. The review also provided expert reports and legal advice, and would legally pursue counterfeiters worldwide.

It is evident that “Il Progresso” was closely linked to the industrial and commercial milieu, in these fields offering not only a very up-to-date review, but also openings for initiative. In addition to the patents office, we find a translation service - from German, English and French - and also a bibliographical service. The inside back cover might deal with patents or frequently list the books directly sold at favourable prices by the review’s own office: popularizing scientific publications, manuals and practical guides, cheaper editions, books that presented scientific themes for example by the authors already mentioned, such as Michele Lessona, Paolo Liroy, Gerolamo Boccardo, and Samuel Smiles’ successful *Chi si aiuta Dio l’aiuta* (thirteenth editions in 1886).

About the members of the review’s editorial staff and board we know rather little. In 1874, the administrator was a certain G. B. Renier, then replaced by a certain P. Soave; at present, we are unable to discover more about these individuals. From 1880 on, a new figure joined the review: Giovanni Quaglia worked as editor alongside the administrator, Soave, and in 1885 he became both the editor and proprietor of “Il Progresso”. About Giovanni Quaglia, born in Turin in 1824, we know very little: he was a military officer; he took part in many campaigns and was much decorated; he also received special acknowledgement for building several long bridges over the rivers he crossed with his expeditionary force during the campaign of 1866. As a matter of fact, considering his particular skills as an engineer, one might well imagine that he was the review’s editor and proprietor (this Quaglia is the only plausible candidate among those of note to historians).

As regards the make-up of “Il Progresso”, our information becomes clearer when we learn of its contributors, whose names began to be listed on the cover only during the latter half of the review’s life. In 1886, for example, there were more than thirty contributors, in all. About half were engineers, including, notably, the most authoritative figure of Giacinto Berruti, president of the Society of Engineers on several occasions, and a member of Turin’s Royal Academy of Sciences. His specific field was hydraulic engineering and civil architecture, and he also studied abroad - in France and in England - holding public offices during the government of Quintino Sella. Among his many engagements in Turin, Berruti set up the government’s printing office for stamps and stamped paper; he directed the mines district and the Royal Industrial Museum, where he lectured to the students and teachers of professional schools; and he was also a financial inspector dealing in particular with flour tax.

Many of the engineers who wrote in “Il Progresso” worked for the railways, such as Orazio Chiazzari, who published a book on a new feed system for locomotive boilers; Nicola Ruggeri drew up a project for compressed air locomotives; Luigi D’Ancona studied smaller gauge railways; the marquis Emilio De Strens was an engineer for the northern railways (however, he is more famous for his beautiful summer villa, in the Liberty or Italian Art Nouveau style, close to Varese). We also find Stanislao Fadda, born in Cagliari (Sardinia), who had studied in Turin, and who played a fundamental part in constructing the national railway system, also receiving a prestigious award from the Institution of Civil Engineers of London. He became one of the most prolific authors of volumes about rail technology, in which he illustrated with precision mechanisms, vehicles, apparatus, motions, and many trains and tram-car devices.

Luigi Bombicci, who studied natural sciences in Pisa, was also a contributor to the review. In the year of Italian unification he held the first chair of mineralogy at the university of Bologna; he then directed the Mineralogy Museum, maintaining these two academic posts for more or less forty years, and he was also appointed dean, twice. He held many other posts in the city, for example, chairman of the local Committee for building materials, member of the Libraries and museums committee, geology teacher for more than twenty years at the Engineers’ application school. Bombicci was also the author of a

copious mineralogy handbook published by Zanichelli, made up of three volumes (the second edition reached one thousand pages).

The group of contributors included specialists from many other scientific fields and scholars of new disciplines. The role of “*Il Progresso*” was to shed light on all inventions in various branches of human knowledge, with the accent on modernity. For the review, for example, we find works by the physicist and mathematician Giuseppe Basso, professor at the university of Turin and member of the local Academy of sciences; by Domenico Tibone, who worked in the university Obstetrical Institute; by the chemist Silvestro Zinno; by the hydraulic engineer Giacomo Torricelli; by Egidio Pollacci, author of a book for the Minister of Agriculture and Commerce, *The theory and practice of vine-growing and of oenology clearly explained to the people*, published by Dumolard; by Carlo Perosino, who wrote a handbook on the Morse telegraph system, etc.

Two other interesting personages who contributed to “*Il Progresso*” were Francesco Denza and Gian Giacomo Arnaudon. Denza was a religious man (a member of the order of Barnabites) who studied natural science and astronomy. He is considered the father of meteorology in Italy, having founded a dedicated observatory and also the “*Monthly bulletin of meteorology*”, devoted to providing information on the principles of this new science in Italy. Arnaudon was a chemist and teacher in Turin, who participated to the industrial exhibition for this sector. In particular, he was the initiator in the field of technology of marketable goods, a subject that became obligatory in technical school curricula starting from 1860.

Thanks to these contributors, “*Il Progresso*” worked toward informing Italians of the progress being made in all scientific fields, modern inventions, new methods and industrial patents worldwide, thus fostering the economic development of Italy.

6. “*La Scienza Applicata. Rivista mensile delle applicazioni scientifiche alle arti, alle industrie, all’agricoltura ed agli esercizi professionali*” (“*Applied science. Monthly Review of Scientific Applications Arts, Industries, Agriculture and Professional Practices*”) was published in Bologna by Nicola Zanichelli. It lasted only one year, coming out during 1876. However, in spite of its very short life, it was very important also because - as we shall see - it represented the first step towards the birth of another scientific review at the dawn of the coming century, a publication that became the most important review of the field in Italy.

“*La Scienza Applicata*” was published between January (number 1) and the double November-December 1876 issue (numbers 11-12) that came out late in March 1877. It was not by mere chance that the publisher was Nicola Zanichelli - who had moved from Modena to Bologna - because in 1864 Zanichelli had already published the first Italian translation of Darwin’s work *Sull’origine della specie* (*On the origin of species*, printed by Murray in 1859, the publisher also of *Self help*). Darwin’s work was translated by Giovanni Canestrini (with Leonardo Salimbeni), and just with this volume the scientific publications activities of Zanichelli commenced.

The editor of “*La Scienza Applicata*” was Gino Cugini (born in 1852, he committed suicide in 1907), a naturalist, botanist, and school teacher at the beginning of his career. He became a professor of natural sciences at the university of Bologna and then at the university of Modena, where he was a well-known figure. He was an authoritative exponent of the local democratic party, a member of several institutes - for example the Botanic society, the Academy of sciences, letters and arts, the Health committee -, he also headed a botanic garden and an experimental agrarian station. He was very active as a lecturer and author of handbook in popularizing methods, techniques and processes to improve local farming.

When Gino Cugini founded “La Scienza Applicata” he was very young (aged twenty-four) and he was backed up by a group of nine scholars from various fields: chemists and agronomists of the university of Bologna, such as Antonio Selmi, Leone Pesci, Timoleone Bellenghi and Ciro Bettelli. Among these collaborators, we also find Adolfo Casali, who went on to write a dictionary of chemistry (Zanichelli, 1879); Alfredo Cavazzi, engineer, professor of chemistry, member of the local Academy of sciences; and Gian Pietro Piana, who taught veterinary pathologic anatomy at the university of Parma. We also note the presence of Guido Pellagri, who went on to build in 1885 (with Settimio Baschieri) the first smokeless factory in Italy for the production of gunpowder.

Augusto Righi was a member of the board, too: he was a physicist and professor at the universities of Palermo, Padua and Bologna. He was famous for his studies of electromagnetic waves, fundamental for the invention of the radio by one of his students, Guglielmo Marconi.

This broadly based editorial team presented its intentions in the first issue, with “A couple of words to the kind readers”. Firstly, they said that the advantage of scientific journals was that they popularize knowledge and provide updates for the scientific community. They declared that - as the name of the review indicates - they privilege applied studies; however, they would not exclude theoretic studies, in view of the fact that the latter can find applications, sooner or later. Both kinds of research were very useful in terms of scientific and social development, especially in Italy, because - as the editor together with the board recognized - in this field Italy still was a backward nation.

They therefore concluded that, since Italy had no such magazine, one had to be founded in the hope that the nation’s industrial sector would benefit from the sciences and that the nation’s products will be appreciated also abroad, thanks also to this review.

Issues of “Applied science” always had at least two surveys: the *Memorie originali* (Original notes) with contributors’ essays, and Scientific news, with lecture announcements, scheduled meetings, academic initiatives, special events, competitions and so forth. Then there were two bibliographical sections, one for books and the other for newspapers, both giving notice of Italian and foreign publications. In the books section, for example, one might learn from the review of the *Farmer’s Almanack* “that, under its modest title, it contains a small treasure of useful notes on hygiene as applied to domestic animals”; the manual was published by Livio Marconi, a contributor of the magazine.

The bibliographical survey of reviews contained very many items, including essays from the more up-to-date national, European and also American newspapers. Among the Italian reviews, for example, there was the Turin-based “Pharmacology Journal”, mentioned for an essay about the new invention of paper dishes and kitchenware.

Among foreign magazines we note the presence of “Scientific American” from New York, and “Leffel’s Mechanical News”; the German “Dingler’s Polytechnisches Journal”; “Le technologiste. Archives des progres de l’industrie française et étrangere. Arts metallurgiques, chimiques, divers et économiques”, from Paris; “The Engineer” from London, and the “English Mechanic and World of Science. Mirror of science and arts”, a well-known popular newspaper, published weekly from 1865 to 1926, dealing with “Engineering, building, inventions, electricity, photography, chemistry”.

In the first issue of January 1876, there were very many essays from more than twenty contributors, all Italians. Thus, all sciences were represented: we find the geologists and mineralogists Luigi Gambari, and the aforementioned Luigi Bombicci; engineers, such as Carlo Donati, Filippo Buriani and Pietro Conti; agronomists, such as Domenico Santagata, Francesco Marconi and the marquis Francesco Carega di Muricce, author of a successful Hoepli’s manual on agronomy; the anatomist Giuseppe Ciaccio; the zoologist Salvatore Trinchese; the anthropologist Giovanni Capellini; and the botanist Giuseppe Bertoloni. Chemistry was represented by Icilio Guareschi, writer of a lengthy history of

chemistry, and by Dioscoride Vitali, the head of the Pharmacy school at the university of Bologna and editor of the specialized magazine “Almanack of agricultural chemistry” (1873-1878). Representing physics we find Emilio Villari, a professor - who studied also in Berlin - at the university of Naples, director of the Vesuvian observatory, and brother of the aforementioned historian Pasquale Villari.

Among all these contributors, “Applied science” could boast two famous figures, Giovanni Battista Ercolani (1817-1883), and Quirico Filopanti, a nom de plume; the latter’s real identity was Giuseppe Barilli (1812-1894). Giovanni Battista Ercolani was a well-known doctor and veterinarian, a specialist in physiology, pathology, and, in particular, female anatomy, author of very important studies about foetal nutrition and diseases of the placenta. Ercolani was also dean at the university of Bologna, then chancellor; politically he was a moderate liberal, and became a very respectable figure in the city.

Quirico Filopanti was a mathematician, professor of mechanics and hydraulics in Bologna, and his studies led him to hypothesize the creation of time zones around the world. Before Italian unification, Filopanti was also an active patriot (who fought with Garibaldi) and an out-and-out democratic. From 1860 to 1864 he held the chair at the university but, refusing to swear loyalty to the monarchy - as the government required - he had to abandon his teaching post. His ideals consisted in the exaltation of culture and science, social renewal and a sort of universal fraternity, with people always taking first place. Politically, Filopanti was an extreme left winger; indeed, he was the founder and president of the Working Men’s Society in Bologna. He was not such a radical when it came to scientific theories and, for example, he rejected Darwinism.

In the later issues the number of contributors grew, especially in the engineering field and in particular in the specialized sector of railways and roadways; the list including for example Raffaele Canevari, Luigi Franceschini, Francesco Mora, Giuseppe Pozzolini and others. Here - as well as in the previous magazines - we have another confirmation of the great importance accorded to lines of communication within the context of national development. As we have seen, this was an aspect that “Il Progresso” too considered with great interest, and a certain affinity between the two reviews - addressing themselves to a similar readership - is evident, also because in various issues of “La Scienza Applicata” there was a full advertising page dedicated to the Turin-based review.

“La Scienza Applicata” dealt with many topics and subjects, and offered an alphabetic table of contents and index twice a year. Both the table of contents and the index were organized on the basis of a succession of main classes, with other various subcategories inside each, thus creating a sort of hierarchical classification system. The alphabetic table of contents of the first six issues concerned twenty-three classes in all, starting out from Agriculture to reach Veterinary Science, and including for example no less than seven kinds of Chemistry. We also have Domestic Economy, Physics, Photography, Hygiene, Hydraulics, Engineering, Mechanics, Scientific News, and Technical Language. In the following and last alphabetic table of contents, the main classes were then whittled down to fifteen, in some cases including two fields (Physics and practical mechanics), or cancelling some (within the field of Chemistry), but there were also the three new topics: Scientific Applications, Navy, and Technology.

In the index, readers could find the specific topics related to each field, listed in alphabetical order, as was the case, for example, for cattle-breeding, cocoons, compasses, cement, iron, locomotives, mills, morphine, paper, ploughing, pneumatic-tube conveyors, quinine, underground railways, steel, etc.

So, the vocation of “Applied science” took in a great deal. It looked into all sciences and brought together scholars from various fields, with the aim of improving technical knowledge within the nation’s newborn system of production. We don’t know why it lasted

only one year, but its example paved the way for a very important scientific review that the same publishing house, Zanichelli, would issue thirty years later.

7. “La Scienza Applicata” constituted a fundamental precedent for the “Rivista di Scienza” (“Review of Science”), that started up at the dawn of the new century and was issued between 1907 and 1909. In 1910 it became “Scientia. Rivista internazionale di sintesi scientifica” (“Scientia. International review of scientific synthesis”), and under this title had a very long life (1910-1988) as the main Italian publication especially for the fields of mathematics and physics.

The “Rivista di scienza” was founded by a group of five scholars belonging to various scientific fields: Federico Enriques and Eugenio Rignano were the directors, followed by Giuseppe Bruni, Antonio Dionisi and Andrea Giardina. Giardina was a zoologist at the university of Pavia, then at the university of Palermo where he became also dean of the faculty of natural sciences. Dionisi was a doctor, professor of pathologic anatomy at the university of Rome, and a volunteer during World War I; he was fully committed to activity regarding the hospital and social sectors. Bruni held the chair of chemistry at the Politecnico di Milano. Later, in Padua, he founded the “Journal of industrial and applied chemistry” and he was also an expert on patents in the international context. Eugenio Rignano (1870-1930) was an engineer, but he became interested in psychology, sociology and biology, taking inspiration for research, in general from English evolutionism, and from marxism. He was also an excellent popular science writer, with many essays published in the review.

Among the founders and board members, the main figure was Federico Enriques (1871-1946), a mathematician, philosopher and historian of science. He taught geometry at the university of Bologna and then at the university of Rome (where he was to be suspended as a result of fascist racial laws), and he came out against the principal exponents of idealism, Benedetto Croce and Giovanni Gentile. Enriques held many offices and received public attestations of merit: he was the first president of the Italian Philosophical Society, director of the “Magazine of mathematics”, proponent of a radical reform of university studies, and member of several Italian and foreign scientific academies, for example in Copenhagen, Madrid and Buenos Aires.

At the dawn of the 20th century, especially following the lines of thought of the two directors, the review favoured a unitary vision of knowledge, according to which dialogue might be fostered between scientific and humanistic cultures, and disciplinary barriers might be torn down. As a mission, the “Rivista di Scienza” was to create a link between science and philosophy, introducing into both new concepts, methods and ideas, in efforts to achieve a unity of modern knowledge. According to this vision, progress was considered an ongoing process, in which new theories extended previous theories, all in the direction of the rational and co-ordinated development of sciences. Hence Enriques’ references to *The philosophical Renaissance in contemporary science* (1907).

These are some of the main principles that the founders elaborated, well enlightened again by Enriques in his famous book *Problems of science* (1908), translated in English, German, French. This philosophical approach was maintained in the review also when it adopted the new title of “Scientia”. During the first half of the 20th century, this journal gained a prominent position in the sphere of philosophy of science, not only in Italy but also internationally, calling in, as contributors, the most authoritative scholars of a number of countries. “Scientia” had a very important function within the debates on scientific disciplines and more generally on the value of science, and accorded to science considerable social value, as considering it an indispensable part of modern civil life.

Because of its importance, an extensive bibliographical corpus is now available about the review. The full text is also directly available as an open access source, thanks to a digitalisation project conducted by the university of Bologna (Alm@ Digital Library).

In fact, starting out from our national magazines opac (ACNP), with links to the issues index, one can find not only all the titles published in “Rivista di Scienza” and “Scientia” between 1907 and 1941, but also the full text is available for each issue.