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MARIS LIGUSTICI: THE EMERGENCE OF A TRADITION OF MARINE NATURAL HISTORY BETWEEN GENOA, LA SPEZIA AND NICE (1805–1850)

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ABSTRACT

The emergence of marine natural history in the Ligurian Sea has traditionally been interpreted through the contributions of individual naturalists, particularly Antoine Risso. This paper proposes a different perspective by reconstructing the formation of a scientific network rather than the achievements of isolated scholars. Drawing on published works, prefaces, correspondence and contemporary historical accounts, the development of marine natural history is examined in the Ligurian Sea between 1805 and 1850.

The study identifies a sequence of interconnected phases. The pioneering investigations of Luigi Ferdinando Marsili and Lazzaro Spallanzani provided the methodological foundations for the study of the Ligurian Sea but remained essentially individual enterprises. A decisive turning point occurred with Barthélemy Faujas de Saint-Fond's journey of 1805, which connected the emerging naturalists of Genoa and Nice with the scientific network of the Muséum national d'Histoire naturelle in Paris. Within this framework Antoine Risso developed a comprehensive program of regional marine natural history centred on the waters off Nice, Domenico Viviani in the gulfs of Genoa and La Spezia, while Antonio Bertoloni initiated parallel investigations of marine algae and zoophytes in the extreme eastern area of the Ligurian Sea. Giuseppe De Notaris later recognised these complementary lines of research as parts of a single scientific enterprise, introducing the concept of the *Maris Ligustici* as a coherent natural region. Jean Baptiste Vérany subsequently reinforced this synthesis by integrating the research on Ligurian fauna into an international zoological network.

By shifting the focus from individual naturalists to the emergence of a scientific tradition, this study argues that the *Maris Ligustici* was progressively constructed as a distinct object of natural history through the convergence of regional investigations, institutional developments and international scientific networks.

KEY-WORDS: History of science; Marine natural history; Ligurian Sea; Mediterranean.

INTRODUCTION

Between the late seventeenth century and the first half of the nineteenth century, the Mediterranean gradually emerged as one of the principal laboratories of European natural history. This process, however, did not develop uniformly across the basin. Different regions followed distinct scientific trajectories and reached different levels of maturity (Cattaneo-Vietti, Russo 2019). The Adriatic Sea already possessed a well-established natural history tradition initiated by the works of Vitaliano Donati (1745) and Giuseppe Olivi (1792), while the Gulf of Naples had become one of the leading centres of Mediterranean zoology through the studies of Filippo

Cavolini (1785, 1787), Giuseppe Saverio Poli (1791), and, a few decades later, Stefano delle Chiaje (1823–1829).

The Ligurian-Provençal basin likewise attracted the attention of naturalists from the beginning of the eighteenth century. Luigi Ferdinando Marsili's investigations, carried out between 1706 and 1708 along the Provençal coast and published in the *Histoire physique de la mer*, constituted the first attempt to interpret the sea as an integrated natural system in which physical, geological, and biological phenomena formed parts of a single reality (Marsili, 1725). Although Marsili's work profoundly influenced the early development of marine natural history, it did not give rise to a sustained tradition of research in the Ligurian Sea and Lion Gulf. Instead, its legacy survived chiefly through the continuing debate on the nature of marine organisms—particularly the red coral—stimulated by the discoveries of Jean-André Peyssonnel (Vandersmissen, 2016) and other naturalists of the following generation.

This chronological gap also corresponds to a profound transformation in the institutional organisation of French science. During Marsili's lifetime, the principal reference for natural history was the Académie Royale des Sciences (Seguin, 2023), where figures such as Abbé Jean-Paul Bignon and René-Antoine Ferchault de Réaumur played a decisive role in promoting and evaluating scientific research. By the beginning of the nineteenth century, however, the newly established Muséum national d'Histoire naturelle had become the principal European centre for natural history (Blanckaert et al., 1997). Through its collections, scientists and extensive international network, the Muséum profoundly reshaped the circulation of natural history knowledge and provided the institutional framework within which Faujas de Saint-Fond, Lacépède, Geoffroy Saint-Hilaire developed their scientific activities.

A new phase of investigation of the Ligurian Sea began during the 1780s with the repeated expeditions of Lazzaro Spallanzani along the Ligurian coast. Between 1780 and 1785, the naturalist repeatedly visited Genoa, the Gulf of La Spezia (particularly Portovenere) and Marseille, gradually transforming the Ligurian coast into a natural laboratory for the study of marine life. His investigations included fishes, zoophytes (sponges and anthozoans), sea urchins, coralline algae, phosphorescent organisms, and numerous other marine invertebrates, which he observed either directly in their natural environment or immediately after collection. Particularly significant was his stay at Portovenere in 1783, where he established a simple coastal laboratory equipped with seawater tanks, optical instruments, and preservation materials, developing an *in situ* approach based on the observation of living organisms (Rolla, 2021).

Spallanzani himself recalled that his decision to devote particular attention to zoophytes originated from reading Peter Simon Pallas's *Elenchus Zoophytorum* (1766) where the Author lamented that a thorough understanding of Mediterranean gorgonians remained impossible because of the "*supina negligentia*" of Italian naturalists, in spite to the immediate access to the extraordinary biological richness of the Mediterranean (Pallas, 1766). In a letter to Charles Bonnet, Spallanzani admitted that he felt personally challenged by this criticism and, "as a good Italian," resolved to dedicate his 1783 period of summer vacation to the study of the marine productions of the Gulf of La Spezia (Spallanzani, 1788). The origins of Ligurian marine research were therefore closely connected with a conscious response to a challenge raised within the wider European zoological community.

Despite their scientific significance, these investigations shared an important characteristic. They remained essentially individual enterprises, closely associated with the personalities of their authors. A stable network of naturalists, a shared research program, and, above all, the conception of the Ligurian Sea as a coherent object of natural history had yet to emerge.

This situation changed during the first decades of the nineteenth century. In Genoa, the institutional foundations of natural history were strengthened through the reorganisation of the University and the Botanical Garden. In Nice, the young Antoine Risso launched a systematic program of marine zoological research that would transform the Bay of Nice into one of the Mediterranean's leading centres of marine natural history. Meanwhile, in eastern Liguria, Antonio Bertoloni, native of Sarzana and Professor of Botany at the University of Bologna, initiated the systematic study of marine algae and zoophytes (anthozoans) in the Gulf of La Spezia.

FAUJAS DE SAINT-FOND'S JOURNEY (1805): GENOA, NICE, AND THE EMERGENCE OF A SCIENTIFIC NETWORK

The summer of 1805 marked a turning point in the natural history of the Ligurian Sea. During his journey along the Ligurian Riviera, Barthélemy Faujas de Saint-Fond (1741–1819), geologist at the *Muséum national d'Histoire naturelle* in Paris came into contact with two naturalists whose scientific careers would profoundly shape the study of the north-western Mediterranean: Domenico Viviani in Genoa and Antoine Risso in Nice.

The principal record of this journey is the celebrated letter addressed to Bernard-Germain de Lacépède on 20 August 1805 and published the following year in the *Annales du Muséum d'Histoire Naturelle* (Faujas, 1806). More than a simple travel account, the document provides a unique snapshot of the scientific community then emerging along the Ligurian coast. It is the first text in which Genoa, Nice, and the *Muséum national d'Histoire naturelle* are explicitly connected within the same scientific framework.

When Faujas arrived in Genoa, he encountered a profoundly renewed intellectual environment. The Chair of Natural History was occupied by Domenico Viviani (Pellerano, 2013) one of Italy's leading botanists. He had in fact achieved a considerable scientific visibility through the publication of the *Annali di Botanica* (1802–1805), a periodical entirely edited by himself that contributed significantly to establishing his reputation among Italian botanists and naturalists (Neri, 1879).

Nevertheless, in the first decade of the nineteenth century he was also actively engaged in researches about marine zoology. Between 1803 and 1805 he published a series of memoirs devoted to the marine organisms of the Gulf of La Spezia and the Ligurian Sea. In the *Mémoire sur le Sabella penicillus* (1803), he investigated a tube-dwelling polychaete using the methods of comparative anatomy recently introduced by Georges Cuvier, critically reassessing the interpretations of Pallas, Spallanzani, and Olivi. He extended these investigations to the benthic fauna of the Ligurian coast in his *Memoria sopra alcune nuove specie di animali osservate nel Mare Ligustico* (1804). In *Phosphorescentia maris* (1805), he proposed a biological explanation for marine phosphorescence, attributing the phenomenon to fourteen small luminous organisms (copepods, amphipods, polychaetas) collected along the Ligurian coast. In this work, the Ligurian

Sea appears not merely as a source of specimens but as a natural laboratory in which the major zoological problems of contemporary European science could be investigated.

It was in this scientific context that Faujas met Viviani. The letter makes it clear that their collaboration extended far beyond botany. Viviani guided the French naturalist through the local marine fauna, placing at his disposal his knowledge of fish nomenclature, the Ligurian fisheries, and the coastal communities. Faujas openly acknowledged this contribution, stating that the *Catalogue des poissons de la rivière de Gênes et du Golfe de La Spezia* should be regarded as “rather the work of Professor Viviani than my own” (Faujas, 1806). This statement highlights not only Viviani’s scientific authority but also the collaborative character of natural history at the beginning of the nineteenth century.

Scientific knowledge was not produced exclusively within universities or museums. Field observations depended on the constant interaction between naturalists and fishermen and fish markets. Vernacular names were compared with Linnaean nomenclature; unusual specimens were collected, described, and dispatched to Paris; local observations immediately entered the wider circulation of European scientific knowledge.

From Genoa, Faujas continued to Nice, where he met the young Antoine Risso, whom he described as “*jeune naturaliste instruit et plein de zèle, qui s’occupe des poissons, des productions marines et des minéraux*”. This concise description proved remarkably prophetic. Fishes, marine productions, and geology would indeed become the fundamental components of the regional program of natural history that Risso developed over the following two decades.

The letter also offers valuable insight into the research methods adopted by contemporary naturalists. Faujas explicitly refers to Martin Brünnich’s *Ichthyologia Massiliensis* (1768), observing that Brünnich had merely placed Provençal vernacular names alongside the Latin ones. By contrast, the catalogue prepared with Viviani sought to establish correspondences between Linnaean nomenclature, Lacépède’s taxonomy, Italian terminology, and the vernacular names used by Genoese fishermen.

Faujas’s journey therefore marks the transition from a series of largely individual natural history investigations to the emergence of a genuine scientific network. Genoa, Nice, and Paris became complementary centres within a shared community of research whose exchanges of specimens, correspondence, and ideas laid the foundations for the subsequent scientific programs of Risso, Bertoloni, De Notaris, and Vérany.

ANTOINE RISSO AND THE CONSTRUCTION OF THE NATURAL HISTORY OF THE SEA OF NICE

If Faujas de Saint-Fond’s journey of 1805 marked Antoine Risso’s entry into the French scientific community, the works he published between 1810 and 1826 reveal the gradual development of a research program that transformed the Sea of Nice into one of the principal laboratories of Mediterranean natural history.

Over the course of his career, Risso devoted himself increasingly to the study of the marine environment. Ichthyology represented only the starting point of a much broader scientific enterprise that progressively expanded to include crustaceans, mollusks, medusae, and, more generally, the natural productions of the Alpes-Maritimes.

The preface to the *Ichthyologie de Nice* (1810) records that the manuscript had been submitted in 1809 to the Institut de France, where it received a favorable report from Bernard-Germain de Lacépède and Étienne Geoffroy Saint-Hilaire (Risso, 1810). Encouraged by this recognition, Risso decided to publish the work and to send the most remarkable specimens - particularly those belonging to new species - to the *Muséum national d'Histoire naturelle* in Paris.

In February 1809 François Péron and Charles-Alexandre Lesueur arrived in Nice, where they remained for almost six months, conducting most of their marine investigations in the Bay of Villefranche-sur-Mer. Assisted by Antoine Risso and by local fishermen, they extended to the Mediterranean the pelagic investigations begun during the Baudin expedition (Jones, 2017), collecting gelatinous plankton, measuring seawater temperature, and relating changes in pelagic communities to variations in weather and sea conditions.

By then Risso had become the acknowledged authority on the marine fauna of the Bay of Nice. According to Dolan (2023), he introduced Péron and Lesueur to local fishermen, demonstrated the importance of systematically examining the catch, and collaborated in observations on water temperature at different depths as well as in the collection of planktonic organisms.

This integration of systematic zoology with environmental observation already characterises the *Ichthyologie de Nice*. The work is far more than a taxonomic catalogue of fishes. Before describing individual species, Risso discusses the physical geography of the bay, the nature of the seabed, water temperature, prevailing winds, and the principal fishing techniques. Species are then presented not only through their morphological characteristics but also in relation to their habitats, seasonal occurrence, capture depth, and, where appropriate, their economic significance. Marine organisms are therefore interpreted as integral components of their natural environment.

The same perspective is developed further in the *Histoire naturelle des Crustacés des environs de Nice* (1816). Here taxonomic descriptions are consistently accompanied by ecological observations concerning substrate, bathymetric distribution, and collecting methods. Particularly noteworthy was Risso's description of the new deep-water shrimp *Penaeus antennatus* (today *Aristeus antennatus*) now recognised as a characteristic species of the continental slope. Its appearance in Risso's work raises important questions regarding the fishing techniques available during the early nineteenth century and provides one of the earliest indications of growing scientific interest in the deeper Mediterranean.

The full scope of Risso's scientific programme becomes apparent only in the monumental *Histoire naturelle des principales productions de l'Europe méridionale* (1826–1827). In the *Avant-propos* he explicitly states that his objective was not to compile a regional fauna but to construct a comprehensive natural history of the Alpes-Maritimes: “*L'ouvrage que je livre au public est un grand chapitre non seulement de l'histoire des montagnes, de l'air et des mers, mais encore de celle des êtres organisés qui les vivifient.*” The sea thus becomes one component of a unified natural system embracing geology, atmosphere, vegetation, and animal life. Equally revealing is the celebrated sentence in which Risso summarises his method: “*J'ai comparativement interrogé le fond de la Méditerranée et les points les plus élevés des montagnes.*” This image captures the originality of his scientific vision. The deep sea and the

mountains are not treated as separate worlds but as complementary expressions of the same natural region¹.

The *Avant-propos* also reveals the extraordinary breadth of observations accumulated over more than two decades. Risso records systematic measurements of temperature, atmospheric pressure, winds, rainfall, and earthquakes; he describes soundings, water-temperature observations, marine phosphorescence, and changes in the coastline (Risso, 1826–1827). Zoology thus becomes only one component of a far broader program aimed at describing the natural environment as an integrated whole.

It was precisely this comprehensive approach that ensured the lasting influence of Risso's work. When Giuseppe De Notaris undertook his study of the zoophytes of the Ligurian Sea in 1846, he identified "*l'exposition des espèces de la mer niçoise du Risso*" as one of the two principal foundations of Ligurian marine zoology, placing it alongside Bertoloni's investigations of the Gulf of La Spezia (De Notaris, 1846). De Notaris's judgement recognised not merely the taxonomic value of Risso's publications but, more importantly, their role in establishing a new way of studying the sea.

Risso, therefore, emerges as the first naturalist to transform the Sea of Nice from a collecting ground into an autonomous object of natural history. His originality lay not simply in the number of species he described but in his ability to integrate zoology, geology, climatology, bathymetry, and fishing practices within a single regional research program.

ANTONIO BERTOLONI AND THE ZOOPHYTES OF THE GULF OF LA SPEZIA

If Antoine Risso became the principal interpreter of the natural history of the Sea of Nice, Antonio Bertoloni emerged as the leading figure in the study of the eastern Ligurian coast.

Born in Sarzana in 1775, Bertoloni spent almost his entire academic career in Bologna, where he succeeded his father Giuseppe as Professor of Botany and Director of the Botanical Garden of the University. Although his institutional career developed outside Liguria, he maintained a close relationship with his native region throughout his life, regularly returning to the Gulf of La Spezia, which became one of the principal settings for his natural history investigations.

Unlike Risso, whose work developed within the scientific network of the *Muséum national d'Histoire naturelle* in Paris, Bertoloni worked primarily within the Italian university tradition. Through the University of Bologna he introduced the methodological rigor of Italian botanical science into the study of Ligurian nature, progressively extending it to marine organisms.

¹ Interestingly, recent conservation initiatives seeking to integrate the Maritime Alps with the adjacent marine environment - including the *Mercantour - Alpi Marittime* transboundary cooperation programme, the *Alps of the Mediterranean* UNESCO nomination, and the Interreg Italy-France Maritime project **CAP'M** (Cooperation between the Marine Protected Areas of Cap Martin and Capo Mortola) - echo, albeit in a completely different scientific and institutional context, the holistic vision already expressed by Risso two centuries earlier, when he described the mountains and the Mediterranean as complementary components of a single natural system (Interreg Italy-France Maritime Programme, 2024–2026. *CAP'M - Cooperation between the Marine Protected Areas of Cap Martin and Capo Mortola*. Interreg Italy-France Maritime Programme 2021–2027).

With the publication of the *Historia Fucorum Maris Ligustici* (1819), based in part on algal collections made by Bernardino Turio on the rocky shores of Portofino (Bavestrello et al., 2024), Bertoloni laid the foundations of Ligurian phycology by producing the first systematic account of the marine flora of the Ligurian Sea. The importance of this work lays not only in its floristic contribution but also in its implicit recognition of the Maris Ligustici as a coherent geographical and natural unit worthy of systematic investigation.

Bertoloni's interests, however, soon extended to the zoophytes of the Gulf of La Spezia, culminating in the *Specimen Zoophytorum Portus Lunae* (1810). These investigations constitute the first systematic study of the coralligenous zoophytes (anthozoans, hydrozoans, bryozoans) of eastern Liguria and rank among the most original contributions to Italian marine zoology during the first half of the nineteenth century.

Here again, the Gulf of La Spezia was treated not simply as a collecting ground but as a natural environment to be investigated systematically. Bertoloni described marine organisms through their morphological characters while paying constant attention to substrate, growth patterns, and environmental relationships. As in Risso's work, taxonomy was increasingly integrated with ecological observation, reflecting a broader understanding of marine organisms as components of a complex natural environment.

GIUSEPPE DE NOTARIS AND THE CONSTRUCTION OF THE *MARIS LIGUSTICI*

Among the Ligurian naturalists of the first half of the nineteenth century, Giuseppe De Notaris occupies a distinctive position. A botanist by training and successor to Domenico Viviani as Professor of Botany at the University of Genoa, he cannot be regarded as a marine zoologist in the same sense as Antoine Risso or Giovanni Battista Vérany. Nevertheless, his contribution to the natural history of the Ligurian Sea was fundamental because he was the first to integrate the results achieved in different branches of marine research and to interpret them within a common regional framework.

In the *Algologiae Maris Ligustici Specimen*, presented to the Royal Academy of Sciences of Turin in 1841 and published the following year (De Notaris, 1842), he deliberately chose as his object the Maris Ligustici, thereby identifying, already in the title, a coherent natural region. In the introduction, he explicitly acknowledged Antonio Bertoloni's *Historia Fucorum Maris Ligustici* (1819) as the foundation of Ligurian phycology.

The significance of De Notaris's work becomes even more apparent with the publication of the *Prospetto della Flora ligustica e dei Zoofiti del Mare Ligustico* (1846). In this volume alongside the terrestrial flora, De Notaris included the zoophytes of the Ligurian Sea - that very group of organisms whose study had been stimulated decades earlier by Pallas and subsequently pursued by Spallanzani, Bertoloni, and Risso.

The botanical section of the work reconstructs a genealogy of Ligurian botany. De Notaris recalls how the vegetation of the region had already been investigated by Carlo Allioni, Antonio Bertoloni, and Domenico Viviani. Of Viviani, he particularly emphasises the importance of the *Flora Libyca* (1824), in which Ligurian vegetation had been interpreted according to the phytogeographical concepts of Augustin-Pyramus de Candolle (1820). Liguria thus appears as part of the broader Mediterranean floristic system.

The perspective changes fundamentally when De Notaris turns to marine organisms. His introduction to the section devoted to zoophytes constitutes one of the most important historical documents for understanding the development of marine biology in the Ligurian Sea. Referring to the coralligenous polyps of the region, he states that only two previous works deserved to be regarded as fundamental: “*Non abbiamo, a mia notizia, intorno ai Polipi coralligeni del mare ligustico che il saggio sui Zoofiti del golfo della Spezia del chiarissimo cav. Bertoloni, e l’esposizione delle specie del mare nizzardo del Risso.*” According to him, marine zoology in the Ligurian Sea rested upon two independent yet complementary traditions: (i) the marine zoology developed by Antoine Risso in the Sea of Nice and (ii) the studies of zoophytes conducted by Antonio Bertoloni in the Gulf of La Spezia.

The remainder of the introduction reinforces this interpretation. De Notaris remarks that he had been able to relocate almost all the species accurately described by Bertoloni, whereas many of Risso’s species were known to him only through the published literature, despite extensive searches in the principal private collections of Genoa, including those of Rosellini, Savignone, Don Carlo Zino, and the Gabella brothers. This observation provides a valuable glimpse into the material culture of nineteenth-century zoology, demonstrating that scientific continuity depended not only upon publications but also upon the preservation and circulation of natural history collections.

De Notaris belonged to an academic network very different from that of the previous generation: he was a member of the Royal Academy of Sciences of Turin, the Istituto Lombardo, the Academies of Sciences of Bologna and Naples, and numerous learned societies throughout Europe. His intellectual horizon was therefore no longer defined by individual cities or local schools but by an increasingly national and international scientific community.

This broader perspective becomes particularly evident in his collaboration with Giovanni Battista Vérany on the *Descrizione di Genova e del Genovesato*. De Notaris represents the transition from the pioneering phase of Ligurian marine natural history to its full intellectual maturity. Rather than simply adding another chapter to the study of the Ligurian Sea, he became the first naturalist to write its history: identifying its principal actors, reconstructing its genealogy, and recognising its scientific unity.

JEAN BAPTISTE VÉRANY AND THE MATURITY OF LIGURIAN MARINE NATURAL HISTORY

With Jean Baptiste Vérany, the natural history of the Ligurian Sea entered a new phase. He belonged to a different scientific geography, in which Turin, Genoa, and Naples increasingly complemented the traditional French centres. His career marks the transition from the construction of regional research programs to the full integration of Ligurian marine zoology into the wider European scientific community.

In the preface to the *Monographie des Céphalopodes de la Méditerranée* (1851), he explicitly recalled that his scientific vocation originated from the encouragement of Franco Andrea Bonelli, Professor of Zoology at the University of Turin and Director of its Zoological Museum, who was then engaged in enriching the museum’s collections with specimens from the Italian seas. It was Bonelli who persuaded him, in 1824, to undertake a systematic study of marine

mollusks and, whenever possible, to observe living specimens. Bonelli therefore emerges as the principal scientific influence on V  rany's early career, far more explicitly than Antoine Risso.

The preface to the *Monographie* also provides valuable insight into the research practices of nineteenth-century marine zoology. V  rany explains that he built his collections through the daily examination of fish markets, frequent collecting expeditions, and close collaboration with fishermen, whom he rewarded for every unusual specimen they brought him. Animals were examined immediately after capture, described from life whenever possible, and illustrated by the author himself.

During the 1830s, V  rany's scientific network expanded rapidly. Through Professor Wagner, he established contact with Jean-Baptiste de F  russac, who, together with Alcide d'Orbigny, was preparing the monumental monograph on cephalopods. V  rany contributed with Mediterranean material, observations, and illustrations to the project, which remained unfinished following F  russac's premature death (F  russac & d'Orbigny, 1835–1848). A substantial part of his observations subsequently passed to d'Orbigny, to whom V  rany deliberately relinquished priority for several new species.

The same preface documents an extensive international network of collaborators. V  rany acknowledges Eduard R  ppell for providing Mediterranean specimens from the collections of Frankfurt, August Krohn for material collected in the Strait of Messina, Stefano Delle Chiaje for advice received during his stay in Naples, and Massimiliano Spinola, who made both his zoological library and his scientific expertise available in Genoa. Unlike Risso's generation, whose scientific connections remained centred largely on the Paris *Mus  um*, V  rany operated within a polycentric network linking Turin, Genoa, Naples, Frankfurt, and Paris. It is remarkable that, on the cover of the *Monographie des C  phalopodes de la M  diterran  e*, V  rany figured the remarkable pelagic octopus *Tremoctopus violaceus*, a species that had been described by his friend Stefano delle Chiaje nearly two decades earlier.

V  rany himself recalled that his official duties as assayer required him to reside in Genoa, enabling him to continue the investigations begun in Nice. In the *Catalogo degli Animali Invertebrati marini del Golfo di Genova e Nizza*, published in 1846 as part of the *Descrizione di Genova e del Genovesato* (1846), the Sea of Nice and the Gulf of Genoa were treated for the first time as a single zoological region. The title itself is significant: object of investigation was no longer a single coastal district or city, but the entire north-western sector of the Ligurian Sea.

The organisation of the catalogue reflects this broader perspective. Species are described not only through their taxonomic characters but also with reference to habitat, bathymetric distribution, vernacular names, and, whenever possible, collecting methods.

Equally revealing is V  rany's relationship with the preceding literature. Risso is scarcely mentioned in the preface to the *Monographie*, whereas the 1846 catalogue repeatedly cites species originally described by the naturalist of Nice. This apparent contradiction suggests that the relationship between the two should not be interpreted as a simple master-disciple succession. V  rany belonged to a new generation characterised by increasing disciplinary specialisation and a much broader scientific network, yet he implicitly acknowledged the importance of Risso's work by adopting his taxonomy as the foundation of his own investigations.

The *Monographie des C  phalopodes de la M  diterran  e* (1851) represents the culmination of this scientific trajectory. By publishing the work in French, V  rany sought to reach

the widest possible scientific audience, reflecting the international character of his research network. At the same time, the dedication to Charles Albert of Savoy and the decision to publish the work in Genoa illustrate the growing role of the Kingdom of Sardinia in promoting the natural sciences.

With Vérany, the tradition of natural history established during the previous decades reached full maturity. The Ligurian Sea had become recognised not merely as a productive collecting ground, but as a coherent natural region and a privileged laboratory for Mediterranean natural history.

CONCLUSIONS

This study shows that the emergence of marine natural history in the Ligurian Sea was not the achievement of a single naturalist but the outcome of the progressive construction of a scientific tradition. Between the late eighteenth century and the middle of the nineteenth century, independent investigations carried out in Genoa, Nice and the Gulf of La Spezia became increasingly interconnected through institutional development, scientific correspondence and international research networks. Within this framework, the Ligurian Sea gradually ceased to be merely a geographical setting and became a coherent object of natural history.

The principal contribution of this paper is therefore historiographical. Rather than reconstructing the achievements of individual scholars, it highlights the formation of a regional research program based on the interaction between field observations, museum collections, local knowledge and European scientific institutions. In this process, the concept of the *Maris Ligustici* emerged not simply as a geographical designation but as a scientific category that unified complementary lines of investigation into a common intellectual tradition.

Viewed from this perspective, the Ligurian Sea appears not as a peripheral area in the history of Mediterranean science but as one of the regions in which new approaches to marine natural history were developed and consolidated during the first half of the nineteenth century. The scientific networks established during this period provided the foundations upon which the subsequent development of Ligurian marine biology would be built.

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