



#### RESEARCH ARTICLE

# Travels and representations at the core of Western agricultural science: discovering rural societies in Spain, Italy and Lebanon in the late-eighteenth and early-nineteenth centuries

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## Abstract

In the late-eighteenth and early-nineteenth centuries, Europe developed a deep interest in both natural resources and agroecosystems. Experts began to explore the rural hinterland and shores of the Mediterranean. These travellers described completely new settings, agroecosystems, and cultures through the lens of their own backgrounds. This article analyses the development of Mediterranean rural societies as an object of study of Western agricultural science. It describes the reports of travellers to rural lands in Spain, Italy and Lebanon, comparing their observations and representations, evaluating if there are common patterns in their reports and what features are still found in rural practices today.

## 1. Introduction

This article analyses the interests of European naturalists and agriculturists in Mediterranean regions in the eighteenth and early-nineteenth centuries. Scientific study journeys allowed these individuals to gain a deeper understanding of the relationship between the local populations and local environments. This relationship sometimes took the form of harmonious coexistence of people with nature, other times in the engineered taming of the latter to suit the purposes of the former. Study travels allowed European scholars to become acquainted with these dynamics and in some cases overcome certain prejudices regarding Mediterranean lands, even vis-à-vis lands not geographically distant from those of the scholars themselves. The idea of the Mediterranean at that time oscillated between a scientifically, technologically, and economically backward region to an idyllic, bucolic world crystalised in a classical setting. The dynamics between the local populations and the environment surrounding them were anything but overlooked by the scholars who visited the European countryside and described it in reports to institutions, private correspondence with colleagues, and publications. This epistemological process induced very different visions of rurality among the learned community.

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The scientific and cultural context in which this interest developed was promising. In the late-eighteenth and early-nineteenth centuries, Europe witnessed remarkable development in natural sciences, a better delineation of agricultural science, and an extensive mapping of local resources. In those decades, the Continent received and partly reworked the proposals of the British agricultural revolution. In addition, the scientific studies begun at the end of the Ancien Régime received a significant boost thanks to Napoleonic rule in some European areas and the subsequent greater circulation of species and knowledge. In this context, many naturalists and agriculturists became interested in the countryside of their nations as an environment and a rural society with its own practices and knowledge. They also tried to reconstruct the agricultural, environmental, and cultural heritage, hoping to find resources that could contribute to the wealth of the State. Naturalists and agriculturists explored the countryside, often accompanied by colleagues and local guides. They questioned landowners, farmers, peasants, and parsons about crops, manufacturing, flora, and fauna. They gathered information on local history, traditions, and habits. They transmitted the results of their explorations and interviews to policymakers, communicated their comments to colleagues near and far, and published their findings in new scientific journals or monographs, often accompanying them with engravings of landscapes, natural elements, and tools.

In the literature, recent comparative studies have focused on the application of science to the economy in the eighteenth century and the early-nineteenth century. The literature dedicated to naturalists and agriculturists in the rural world has understandably focused on explorations aimed at analysing plant and animal species, minerals and metals, the environment and the conformation of the land. Other valuable studies deal more with the reworking of rural practices both in the Mediterranean area and in other regions.

To a lesser extent, literature devoted itself to the image that experts had – and transmitted to colleagues and institutions – of human interaction with natural elements in the Mediterranean regions. It was an interaction that shaped cultures, perpetuated traditions, and gave birth to empirical knowledge. This issue has received little attention not only in the history of science, but also in the literature of cultural and social studies, even though Mediterranean rurality offers a wide range of cultural and social traditions and equally variegated natural settings. Particularly, the Italian States, Spain, and the Ottoman Empire had large rural areas that had not been the subject of methodical explorations and factual representations prior to the period in question, in part because of a bias by foreign travellers who saw them as backward and poor. 6

The Mediterranean regions were still often under-conceptualised in eighteenthand nineteenth-century English-language historiography in terms of socioeconomics and range of environments and resources. Even in cases where these regions were valued by British travellers for their environments and – especially in the case of Italy – their art, there remained a tendency to generalise both in writing and images. Most of the Mediterranean area was known simply as 'the warm south' without distinction or real attention to the social, cultural, and institutional complexity to be found in such an extensive region. With its landscapes, millennia of art, and lifestyles differing from those in northern Europe, it is true that this region inspired and influenced British artists, antiquarians, intellectuals, and travellers on a Grand Tour. However, where the Mediterranean areas were not apprehended as idyllic settings, the tendency was often to view them as generally backwards and incapable of making a significant contribution to scientific and technological progress. While negative stereotypes and relatively superficial travel analyses did not disappear entirely, during the Long Nineteenth Century the perceptions of Mediterranean lands by British travellers tended to become more stratified and the social, economic, and political issues increasingly contextualised.<sup>7</sup>

It is true that there were exceptions to this trend already in the eighteenth century, there being British and other northern European travellers who noted with interest the interaction between rural society and the environment in certain areas of the Mediterranean otherwise branded as backwards, such as Italian regions and Spain. For example, when the agriculturist Jethro Tull (1674–1741) travelled to southern Europe in the early 1710s in search of milder climates that would benefit his health, he took an interest in certain Italian agricultural practices. These practices would influence his technical proposals, which played a major role in the British agricultural revolution. Tull's importance as a 'codifier' of the long process of modernisation of agricultural techniques was such that the famous English agriculturist Arthur Young (1741–1820) visited Prosperous Farm, once Tull's estate, in 1794, in a sort of agrarian pilgrimage. Furthermore, while not comparable to the interchange within continental Europe, there was also a significant exchange of plant species and scientific knowledge among Italian and Spanish experts and British scientific institutions already in the late-eighteenth and early-nineteenth centuries.<sup>8</sup>

The article presents several examples of representations of the Ottoman Empire and some regions of the southern European rim in the eighteenth and early nineteenth centuries. Examining the work of European naturalists and agriculturists who were active in the Mediterranean basin, this paper discusses the study of rural societies that gained a certain independent status with the contemporaneous epistemological maturation of agricultural science throughout Europe (obviously, with substantial differences depending on the state of scientific, cultural, and economic progress in each country).

Of course, beyond the case studies analysed in this article, there are numerous other travellers who explored the Mediterranean regions for scientific research or economic prospecting. For example, French veterinarian and agriculturist François-Hilaire Gilbert (1757–1800) went to Spain at the turn of the nineteenth century on a State-promoted journey which involved gathering information on the agricultural sector and had direct value for the economy of France. The French diplomat Jean-François de Bourgoing (1748–1811) spent many years in Madrid in the latter part of the eighteenth century, travelling around Spain and developing an interest in merino sheep breeding, associated transhumance, and the production of woollens.

We will begin the case studies examined in the following pages with the perceptions of the aforementioned English agriculturist Arthur Young of certain areas of Spain. Young also visited other Mediterranean regions, such as southern France and parts of Italy, analysing the agricultural systems and the organisation of the rural societies he encountered along the way. At times, his judgements were superficial or idealising of some aspects. For example, historiographers have criticised his misunderstanding of the role of viticulture in the rural economy of southern

France.<sup>12</sup> He has also been criticised for his blanket judgement of France for the parcellation of land ownership, when in fact that situation differed a great deal from one zone to another. For example, in parts of southern France, such as Béarn, Languedoc, and Provence, the system of the favourite heir was probably practiced, and the preference was for maintaining inherited estates intact where possible.<sup>13</sup> The case of southern France will not be further addressed in this article. A particularly important criterion in selecting case studies is a description of the relationship between rural society and natural resources in contexts that tended to be discounted by foreign elites. The stress is on the development of Mediterranean rural societies as an object of study of Western agricultural science and on the knowledge dynamics that characterised this epistemological path.

To understand how erudite travellers viewed Mediterranean rural areas and the representations they gave of them, it is important to have a detailed picture of the circumstances of their travels, the original goal, how they described the countryside, and if they represented the rural society positively or negatively, accurately or in a biased manner. Furthermore, the article examines how the perception of a given area changed depending on the expert's background and home country. For instance, it is interesting to study if the aforementioned bias and underconceptualisation emerge in Young's description of rural Mediterranean Europe, such as northern Spain. What about the case where a Spanish expert, such as the botanist Antonio José Cavanilles, visited a region in Spain analogous to one studied by Young? Would we see the same bias and under-conceptualisation or would the Spaniard's perspective on his own country differ from Young's?

Considering and comparing the representations of the countryside and rural society in their reports (published and unpublished), this study is divided into two thematic cores. The first one considers the representation of the countryside as a place of idealised virtue, combining classical visions with sympathy for the oppressed. The second thematic core examines travellers' representations of some frequent problems in rural societies – especially related to health and hygiene (e.g., food poisoning) – and the measures taken by governments and scientific institutions to ease or solve such issues. An important part of the analysis considers if the experts exploring those regions – whether passing through or working with the local authorities – contributed to addressing those problems; were they actively involved or just passive reporters in their memoirs of underdeveloped regions? However, the idyllic and realistic representations did not contradict one another; they communicated dialogically to define a new field of study in the nascent agricultural science.

The article refers both to published and unpublished accounts against the backdrop of the great scientific, cultural, and institutional changes that characterised Europe in the eighteenth and nineteenth centuries. The choice of sources has also led to a selection of authors with an excellent scientific-cultural background and in-depth knowledge of the international context (some from direct experience through long study and journeys of exploration, others thanks to a close correspondence with the international learned community).

As for the texts published, these were directed to a cultured public interested in economy, as well as in culture, science, and technology. Even when it came to more frivolous texts, as in Carlo Amoretti's travel books, particular attention was paid to both scientific and cultural traits: an attention that went far beyond simple

erudition and reflected the enlightened individual dedicated to the analysis of reality in all its aspects. The unpublished sources belong to the knowledge network in which learned individuals and institutions were involved with the aim of improving the economy of the States or solving social problems. Therefore, the element that unites the two kinds of sources considered is that of sincerity – both in going deeply into the analysis and, on the other hand, in expressing prejudices and misinterpretations – in studying and representing the Mediterranean rural societies.

# 2. A distant countryside, between idyll and hard work

A common trait among many travellers is their representation of the countryside as the setting for a genuine and wise society, close to the cycles of nature, with a hardier temper than their urban counterparts enslaved by the developing industrial revolution. Some criticism was directed in particular to the low morals of the wealthy classes, often interwoven with criticisms of urban society, but sometimes also pointing a finger at rich incompetent landowners and authorities deaf to the needs of ordinary people.

A number of eighteenth-century philosophers looked to nature as an ideal to which humanity should return, Rousseau prominent among them. <sup>14</sup> On a more practical and economical level, the discussion of European colonialism was a key incentive for the 'rediscovery' of the rural hinterland. The 'peasant wisdom' evinced in the European cases I examine is in some way analogous to the indigenous knowledge in distant lands referred to in a volume edited by Londa Schiebinger and Claudia Swan (2005) and in more recent studies, such as an article on the viceroyalty of New Spain by Lance C. Thurner. <sup>15</sup> This article does not address the colonial context proper, but the conceptual framework that motivated personal and official explorations of the rural hinterland in southern Europe and other Mediterranean areas was essentially the same. There was growing awareness during this timeframe of the plight of the less affluent classes both in the cities and in the countryside, culminating in the spread of revolutionary ideals and later the Napoleonic system throughout Europe, bringing an epochal socio-cultural change that would not be reversed even by the reactionary nature of the Restoration. <sup>16</sup>

The return to an idealised distant nature on the one hand and the defence of the poor but virtuous peasant on the other were two elements that emerged, not without contradictions, in the accounts of respected naturalists and agriculturists during their travels in the Mediterranean countryside. Those travellers – who were learned individuals, if not true scientists *ante litteram* – were not blind to the numerous problems experienced by country people and discussed them critically in their reports. The reference to the two conceptual nuclei indicated above was, however, dealt with in different tones.

Arthur Young noted the industriousness of farmers and peasants cultivating the fields in north-eastern Spain on his 1787 tour of the Continent but was also negatively affected by the high rate of poverty among rural people, calling it 'striking' and adding that, with the exception of few regions, 'their towns [are] old, ill built, dirty, and wretched; the people [are] ill dressed, and generally deficient in wealth', despite the commitment with which they applied themselves to agricultural matters. Young also admitted that Spanish policies could have better promoted agriculture in

the region, which was backward although it did show some productive potential. He attributed this imbalance mainly 'to the state and policy of that monarchy', an even more paradoxical aspect if one considers that Catalonia had the reputation 'of being next to Valentia the best cultivated and, without exception, the most industrious [area] of Spain'. These observations were published in books and articles that contributed in a fundamental way to making Young famous on the Continent.<sup>17</sup>

A few years later, the Italian Filippo Re (1763-1817), Professor of Agricultural Science at the University of Bologna from 1803 to 1814, criticised Young's so-tospeak vision of rural systems considered more backward. Re appreciated Young in general both as an agriculturist and as a writer, criticising him above all for his comments on the countryside of central and northern Italy. In one of his agricultural essays of 1802, Re accused Young of being prejudiced against the Italians based on the presumption of the superiority of English agriculturists and reproached him - perhaps unfairly and over-harshly - for not having properly estimated Tuscan agriculture, an area Young had visited personally. According to Re it was an excellent example 'di ciò che può l'umana industria in un paese sterile e montuoso' [of what human industry can do in a barren and mountainous land]. 18 Re's criticisms were therefore not aimed specifically at Young's vision of the Catalan countryside, but we may assume that they similarly pointed out the English traveller's prejudice against the agriculture and living conditions of at least a part of Mediterranean rural society. However, while according to Re Young did not emphasise the tenacity of the Tuscan peasants, he certainly praised that of the Spanish peasants, who were limited in his opinion by the lack of adequate state policies to strengthen agriculture and improve rural health.

In favour of Young, it must be highlighted how similar descriptions of Spanish rural society were given by the botanist and clergyman Antonio José Cavanilles (1745–1804) for the Valencia region. Director in the last years of his life of the Madrid Royal Garden, Cavanilles made some trips to that area in the first half of the 1790s on behalf of the Crown to evaluate the existing natural and agricultural resources, and study manufacturing, trade, and rural society in general. He used local guides in his travels and did not limit himself to passive observation but also interviewed the locals. He published the collected information in two volumes between 1795 and 1797. <sup>19</sup>

Let us take an example from Cavanilles in which we can find some similarities with Young's description of Catalonia. Passing the town of Morella on his way to the village of Xiva with his travelling companions, Cavanilles noted the increasing 'aspereza del suelo y las peñas peladas' [roughness of the ground and exposed rocks]. The poverty of the villagers was in part due to the roughness of the soil but above all because they lacked property. They were tenant farmers who had to dedicate all their efforts to paying the landowners. They managed to survive by beekeeping – 500 hives, which in good years brought in about 20 reales each – and by the women washing clothes for the people of Morella. They also managed to grow some crops: vegetable gardens and small orchards. Cereal cultivation was not enough to feed the locals, fruits and legumes all went to the inhabitants of Morella, and meat was contraband.<sup>20</sup>

Cavanilles pointed out that Xiva was not an isolated case. He provided other examples highlighting the numerous difficulties confronting the peasants and the

sacrifices they made trying to overcome them. For example, in the Rossell area, near the Sénia and Cervol rivers, he noted an increase in olive groves and vineyards in those years but added that the situation had not always been so good. In the past, the inhabitants had been fewer, poorer, and undoubtedly 'descuidados' [careless] in managing their crops, having sold a large portion of their best lands to the people of nearby areas, keeping the worst for themselves. This forced them to double their efforts to counterbalance the loss. And they succeeded in improving production (cereals, wine, oil, figs, legumes, cattle, honey, and wool), followed by significant population growth. According to Cavanilles, Rossell now had all the credentials to become 'un pueblo considerable por la industria, población y riquezas' [an important town for industry, population, and wealth].<sup>21</sup>

Different issues affected the area of Riba-roja de Túria and neighbouring villages. The area was plagued by malaria in the middle of the eighteenth century due to the presence of rice fields, as a perceptive parish priest had pointed out. Scholars, including Cavanilles, did not use the term *malaria*, attributing the blame for the deaths to the putrid miasmas of the marshy areas according to the classic version of paludism. However, both the landowners and most of the day workers had tended to oppose the reduction of rice fields, which were the main source of income for the former and subsistence for the latter (other cereals and the mulberry-silk production chain were not in use). In the end, however, the isolated voices opposed to rice growing – including the perceptive priest – prevailed and 'triunfó la humanidad, y se prohibiéron los arroces' [civilisation triumphed, and rice fields were banned], commented Cavanilles. In 1769 Riba-roja de Túria had about 290 inhabitants; in the 1790s there were more than 1,000.<sup>22</sup>

However, we must examine Cavanilles' position on rice growing and its impact on the environment and rural health in greater detail. As a general rule, Cavanilles saw damage especially to lands where viable dry crops were purposefully replaced by rice fields, thus lands artificially rendered marshy that had not originally been such, and additionally, in areas where air tended to stagnate and allow accumulation of the feared miasmas. However, in cases where rice was grown on lands that had originally been swampy, areas with good air circulation were chosen to prevent miasmas from collecting and the fields were ridded of weeds that might rot, and hence the general effect was beneficial with respect to the original conditions. Cavanilles wrote that north-east of the town of Algemesí, close to the coast, 'el cultivo del arroz ha dado allí movimiento a las aguas antes detenidas, y ha disminuido la infección' [the cultivation of rice caused water that was previously stagnant to circulate and has reduced illnesses]. He recommended similar practices for the swampy areas in Ribeira Baixa and near the Albufera of Valencia.<sup>23</sup>

From the Riba-roja de Túria case, it also appears that, regardless of the real effectiveness of the measures adopted against rice fields, Cavanilles' praise was addressed to the aforementioned perceptive priest, who was a sensible connoisseur of the agricultural ecosystem, an active champion of public welfare, and shepherd of the flock entrusted to him. Cavanilles' judgement was benevolent above all towards the lower clergy, when small villages and rural areas were considered. On the other hand, he condemned certain *cabildos eclesiásticos* [ecclesiastical chapters] who lived on the products that the people delivered at the cost of much privation. The chapters assigned a large number of the faithful to a small number of parish priests, who

had to attend to the spiritual needs of perhaps a thousand or more souls. He complained that: 'Mientras que los individuos del Cabildo descansan y duermen, corre el pobre cura a dos o tres horas de distancia a administrar los sacramentos en una noche de invierno' [While the members of the chapter rest and sleep, the poor priest travels for two or three hours to administer the sacraments on a winter's night].<sup>24</sup> In this case, Cavanilles seemed to take the defence of the neglected peasants, but once again also of the lower clergy, with the culprits seen as the richer clerics unconcerned with the care of souls and the material conditions of their subordinates.

For the Alpine region and northern Italy, it was the clergyman Carlo Amoretti (1741-1816), humanist, naturalist, and agriculturist, who held some views similar to those expressed by Cavanilles for the religious and secular component of rural society. For example, he described the ancient Capuchin hospice at the Gotthard pass with admiration in what is considered one of the first tourist guides to northern Italy (stretching the definition of Mediterranean): Viaggio ai tre laghi Maggiore, di Lugano e di Como [Journey to the three Lakes Maggiore, Lugano and Como], first published in 1794. The hospice was located in Switzerland just beyond the current border. Amoretti praised the Italian Capuchins who, in 'voluntary exile', not only hosted travellers of any religion, but also welcomed the 'poveri viandanti' [poor wayfarers] by giving free shelter and food. This haven was described by Amoretti in a setting of unspoiled and almost primordial nature: a plateau with four lakes surrounded by the Alps, with their massifs veined with blue, white, and green, glistening with mica. 25 It was not a Mediterranean landscape proper, but it fits well in comparison with descriptions that Amoretti made of northern Italy, analysing the secular and religious components of rural society.

An example from the *Viaggio* itself is the information that Amoretti gave on the small Isola dei Pescatori (Fishermen's Island) in Lake Maggiore, northern Lombardy. Today it is an important tourist destination like the neighbouring islands. Amoretti described it as a rough place but not devoid of Italian charm: small houses, narrow streets, the smell of fish, and fishing nets hung up to dry everywhere; ragged men, half-naked children, women with sunburnt and water-damaged skin. Yet this rustic setting of fishermen hid relative well-being. Amoretti claimed that most of the islanders (about 400, according to his estimates) owned a house, a boat, and a net, to which was often added some plots of land on the shore. The island also had its own priest, established there in the seventeenth century by the cardinal of Milan Federigo Borromeo. Amoretti concluded that, given the general well-being, the natives rarely left the island – and the archipelago to which it belonged, the Borromean Islands – to seek their fortune on the mainland.<sup>27</sup>

It is interesting to note that the idealisation of the countryside in some cases analysed in this article has features that are still sought today in nature tourism, rural tourism, and even science tourism.<sup>28</sup> Amoretti certainly would not have imagined the tourist appeal of the Borromean Islands two centuries later, but his interest in that rustic and serene microcosm emerges in all its relevance if examined *a posteriori*. Quite pertinent regarding the tourism potential of some places and experiences evaluated in the late modern period in a recent article by John Brewer on Mount Vesuvius as a destination for travellers in the period 1760–1890, significantly subtitled 'Guides, Local Knowledge, Sublime Tourism, and Science'. Here the stress is

not on rural tourism, but the framework does not differ much from Amoretti's in the northern Italian countryside.<sup>29</sup>

Equally interesting is the description of agriculture, manufacturing, and trade in the valleys around Lake Como, also in northern Lombardy. In particular, Amoretti praised the commitment of many natives who, enriched after years of working elsewhere, returned and bought plots of land and applied good agricultural techniques to make them fertile. In periods when men were absent for seasonal jobs, they were replaced by women, 'laboriose e forti' [hardworking and strong]. Vineyards, orchards, citrus groves, mulberry growing, and silk manufacturing were widespread. It is interesting that, thanks to the mild lake climate, olive growing and oil production were restarting, seriously damaged by particularly cold years – the last in 1709, according to Amoretti – and by the slow recovery of the olive trees. Amoretti proudly underlined the contribution of the Patriotic Society of Milan, of which he was secretary; dedicated to the enhancement of agriculture in Austrian Lombardy, the Society had been working with the government since the 1770s in a campaign to relaunch olive growing.<sup>30</sup>

The Lombard countryside described by Amoretti was therefore very different from the vast Catalan and Valencian lands described by Young and Cavanilles. In addition to greater progress in agricultural techniques, the writer described interest on the part of the authorities in both economic productivity and social well-being. Of course, Amoretti's point of view was not impartial, but the promotion of agriculture and manufacturing, as well as culture and science, by the Austrian authorities in the Duchy of Milan is evidenced by a solid bibliography.<sup>31</sup>

At the same time, Re criticised Young for being biased and not very accurate in judging the agriculture of some Mediterranean areas. Of course, Cavanilles, a savant with a long Parisian education and a meticulous botanist in contact with the most important European naturalists, was also severe in judging the negative aspects of agricultural production in the Valencia region. In defence of the Bourbons of Spain, it must be said that the entire second half of the eighteenth century and the beginning of the nineteenth were characterised by attempts, albeit not very homogeneous, to improve agriculture, manufacturing, and commerce, related sciences and technologies, as well as the conditions of life of rural society in various areas of Spain. Important politicians worked on these fronts. For example, the Marquis of Ensenada, Minister of Finance and Secretary of State in the 1740s and part of the 1750s, supported the construction of *caminos* [roads] to facilitate the transport of wheat and flour from Castile to Madrid and the port of Santander, as well as starting the ambitious project of the Canal de Castilla, a network of navigable canals to facilitate the internal transport of grain and expand the irrigation of cultivated lands (work continued to the mid-nineteenth century). 32 Starting from 1775, the patronage of the Count of Campomanes, fiscal [public prosecutor] of the Council of Castile, was instrumental in the spread of economic societies in all the Spanish territories that contributed to the economy and the production of goods.<sup>33</sup> An important role was later played by Manuel Godoy, captain general, prime minister in 1792-1798 and and again in 1801-1808; looking to technocratic France, Godoy tried to revive the institutions dedicated to agricultural studies.<sup>34</sup>

In addition to the Bourbon authorities, some local 'enlightened' aristocrats played an important role in proposing strategies for progress in agriculture and manufacturing in Spain. A significant example is the *Real Sociedad Bascongada de los Amigos del País*, founded in the mid-1760s in the Basque Country. Its creators were nobles who united the management of small landholdings with an interest in industry and commerce. This new corporation selected its members based on their agricultural, technical-scientific, and economic competencies, including members who had become rich through commerce and were not born into a noble family.<sup>35</sup>

Another good example of Spanish aristocrats active in agricultural development is Pasqual Caro, brother of the second Marquis de La Romana and administrator of certain family lands in the Valencia area. Caro became a promoter of improvements in cultivation and irrigation, was concerned with the living conditions of the common people, kept tabs on the scientific debate of the time, and maintained a correspondence with Cavanilles himself (he was also against rice growing). Thus, examples such as the Basque aristocracy or Pasqual Caro show that at least a part of the Spanish nobility was interested in the agricultural progress of the country, maintained contacts with some exponents of the scientific community, and, at least in part, was socially flexible in the name of progress.

Let us go back to the Italian countryside to compare Amoretti's perspective with a different one. The testimony of the geologist Giovanni Battista Brocchi (1772–1826), a great traveller, careful observer of agroecosystems and rural habits, is interesting in this respect.<sup>37</sup> While he provided a rather realistic and non-judgmental image of peasants in the countryside around Brescia, in northern Italy, characterising them, for example, as ingenious in the search for specks of gold in the Oglio river but rather ignorant in terms of techniques for fertilising the pastures,<sup>38</sup> his writings about the Rome countryside published in 1820 associated the figure of the peasant with classical, timeless wisdom. He referred to the prophylactic measures of rural society against malaria, again attributed to the unhealthy air of swamplands according to the theories of paludism. The interesting aspect was that the context which Brocchi referred to was that of imperial Rome, although the problem of unhealthy areas in the Rome countryside was still serious in the early-nineteenth century.<sup>39</sup>

From what Brocchi wrote - based on sources such as Strabo, Columella, Martial, Pliny, and several others - the patricians used to wear only a tunic and nothing else to endure the heat when they went to the countryside 'for vacation'. On the contrary, the locals 'oltre all'avere tuniche più lunghe dette tunicae paganae, se dimettevano la toga ed il sago sovrapponevano la penula' [in addition to having longer tunics called tunicae paganae, if they discarded the toga and the sagum they overlapped the penula, which is a closed, sleeveless cloak, from which the arms could be brought out by lifting a lower flap or both flaps and throwing it over one's shoulder. In particular, in a hall of the Vatican Museums vedesi un bassorilievo rappresentante un rustico penulato che fa una libazione sopra un'ara colma di frutta' [it can be seen a bas-relief representing a rustic penulato making a libation over an altar full of fruit]. The patricians, on the other hand, chose the solution of avoiding the countryside - with its 'aria cattiva' [bad air] among 'luoghi palustri e morbosi' [marshy and noxious places] - in summer and autumn, preferring to go there in winter and spring. Brocchi seemed to think it was a stupid and unnecessarily limiting solution, since they could have solved it with a wise change of clothing. In fact, he concluded, 'I villici adunque e gli abitanti de' piccoli paesi ove non erano radicate

per anche le mode della città, e presso i quali serbavansi in vigore le buone antiche costumanze sapevano come i loro antenati a provvedere alla propria salute' [The peasants and the inhabitants of small villages, where the fashion from the city had not already taken root and where the good ancient habits were still practiced, knew like their ancestors how to provide for their own health].<sup>40</sup>

Regardless of the actual effectiveness of clothing against the spread of malaria and the origins of the unhealthy air (Brocchi tried to deal with the age-old questions in many passages of his account, proving to be, like his contemporaries, still at a loss), there is a clear image of a classic countryside where the virtue of the peasants constituted the pillar of wisdom, as opposed to the lascivious and stupid habits of the city dwellers. Here, therefore, the distant countryside that served as a background for a virtuous rural society was not located in a physically distant place – like the Spanish countryside represented, albeit with different perspectives, by Young and Cavanilles – but placed in another epoch: the classical period not much later than Virgil's *Georgics*. It should not be forgotten, in fact, that up to a century earlier than Brocchi's writings, these Latin authors were among the main authorities in the international community of agriculturists. And a certain classical rurality remained the model to which European academies and societies still referred in the second half of the eighteenth century and valid agriculturists at the turn of the nineteenth.

Brocchi travelled extensively in the 1820s between the Nile Valley, the Levant, and Sudan (where he died in 1826) as a mining inspector in the service of the *Wali* (Viceroy) of Egypt, Mehmet Ali. The account of his travels was published posthumously in Italy in many volumes. In Mount Lebanon, Brocchi offers us yet another vision of rural society as a model of virtue, industriousness, and tenacity despite the difficulties imposed by a not-always-benign nature and social injustices.

Brocchi praised the technical intelligence of the Lebanese peasants in building terraces in a completely mountainous region, in ably managing beekeeping, and in perfecting the techniques of mulberry growing and silk processing, to the point where they were summoned to the Wadi Tumilat, close to the Nile delta, as skilled labour to manage extensive mulberry plantations. 43 The Lebanese peasants, however, were in conditions of extreme poverty and few of them were landowners. However, Brocchi was told that many of them were able to read and write. The landowners, on the other hand, were characterised by widespread ignorance - like the Italian nobles, Brocchi emphasised - and often relied on the knowledge of their subordinates even to recite the names of the months. Like the Spanish authorities on Iberian soil (at least, according to Young), the local representatives of the Turkish authorities were not particularly inclined to favour public utility. For example, Brocchi admired the work of channelling a spring in the countryside near Beit ed-Dine, which favoured the irrigation of the surrounding area and operated some mills, but which in his opinion would not have been built if the local emir had not considered that plumbing system to make his own palace and gardens more pleasant.<sup>44</sup>

In the case of Brocchi's Lebanon, therefore, the distant countryside was again identified in a spatial rather than chronological dimension, contrary to his description of the Roman countryside. However, here too, a nostalgic nod to the return to nature can be sensed when Brocchi describes the custom of many Lebanese peasants and 'persone di bassa condizione' [people of humble status] to go barefoot

and bare legged even in winter. I can assume that it was a custom dictated by poverty, but Brocchi still indicated it was taken from the ancients and very different from European habits. Hore than the superiority of the European savant, one senses a note of Rousseaunian nostalgia similar to that for the Rome countryside. In any case, the contrast between oppressors and oppressed typical of the author, who experienced the social changes of Napoleonic Italy, returned in all the pages dedicated to the rural activities of Mount Lebanon.

Brocchi provides an interesting account regarding beekeeping in Lebanon. In particular, he emphasised certain non-invasive practices of extracting honey and wax: 'un uomo coperto il viso e le mani scaccia le api soffiando nell'alveare con un cannello' [a man with covered face and hands drives away bees by blowing into the hive with a blowpipe]. He also described a case of perfectly natural beekeeping – which we might call 'ecological' today – without the use of artificial swarms. This particular interest is justified by the prevailing methods of beekeeping at the time. At the end of the eighteenth century, the practice of destroying bee hives to collect honey and wax was still widespread in some European rural areas, even if less invasive methods were already in use in some communities, advocated by contemporary scholars, and perfected by the most advanced technical-scientific institutes. Brocchi observed the aforementioned practices in the 1820s, but from the description he gave of Lebanese agricultural, husbandry, and manufacturing practices, it was clear that such a human-nature balance had already been established for some time.

## 3. Institutions versus the rural world

The cases analysed so far illustrate examples of proud, hardworking, and resilient Mediterranean rural societies despite being neglected by the authorities, at least in some cases. They share a classic, timeless flavour, distant if not picturesque. The reports gave little consideration to the solutions to any problems and a limited record of the real potential of the lands. In some cases, such as Amoretti's *Viaggio*, they were not even texts written for the scientific community or to encourage the landowners to conduct more entrepreneurial management of their properties. This article now considers another type of representation of the countryside that emerges from the testimonies at the turn of the nineteenth century: publications and handwritten documentation in which learned individuals placed a greater emphasis on the limits of rural society. Were their visions dictated by prejudices or attempts to address the many problems of the countryside?

One issue of rural society that most worried both the institutions and the scientific community was people and cattle poisoned by consumption of toxic plants and mushrooms. According to surveys and awareness-raising initiatives in the Po Valley, for example, there is no trace of the peasant wisdom described by Brocchi in other rural contexts in the first centuries of the Common Era (CE) or in the contemporary mountains of Lebanon.

In Mantua, the local Academy of Sciences and Fine Letters, returned to the issue several times over the decades. At the end of the 1780s, there seemed to be a certain concern in its scientific branch about the consumption in the area of the fruits of a non-grafted variety of the genus *Prunus*. These fruits were often eaten – at times

also sold in town – and caused serious intestinal problems among the population, especially if they were unripe. Considered difficult to digest, they were regarded with strong suspicion by local physicians, the Patriotic Society of Milan, the supervisory body of the Faculty of Medicine of the University of Pavia, and government offices. The Municipal Congregation of Mantua was against encouraging their consumption. At best, the fruits might have been useful as a purgative, as certified by Arab pharmacy, or the plant as a rootstock for other species of *Prunus*, and landowners in the area were asked to conduct experiments in this regard.<sup>48</sup>

The Academy of Mantua had dedicated attention to the issue of toxic foods in the previous years. For example, in a dissertation contest, the theme of poisonous mushrooms and remedies for such poisonings had been proposed twice by the board. Later, in a 1799 session, the academics evaluated the possibility of improving courses for young people and rural parish priests on how to distinguish harmful herbs and mushrooms, which could be followed by a sort of information campaign in the countryside.

The topic also interested the University of Pavia. Giuseppe Bayle Barelle (d. 1811), Professor of Agriculture, published his *Descrizione esatta dei funghi nocivi e sospetti* [Exact Description of Harmful and Suspicious Mushrooms] (1808), accompanied by beautiful, coloured illustrations. He complemented his critical analysis of the scientific literature with a study of samples he collected in the countryside and with surveys on food uses by peasants.<sup>51</sup> In giving due weight to both third-party studies and acquaintances with the local people, Bayle Barelle departed from the sort of haughty paternalism that seemed to characterise the erudite references of Mantuan academics – however they may have been motivated by good intentions.<sup>52</sup>

During the Restoration, the authorities of the Kingdom of Lombardy-Venetia turned to the University of Pavia for the advice of Professor Domenico Nocca (1758–1841) and Professor Siro Borda (1764–1824) – respectively of Botany and *Materia Medica* [essentially pharmacology] – on how to instruct '*il popolo*' [the people] to identify plants and mushrooms that are harmful to humans, evaluating classes and illustrative materials, and indicating the species they considered to be the most dangerous in Lombardy. Direct experience in the countryside is evident in the professors' answers, indicating the distribution of each plant in the region and their local names. Nocca and Borda were therefore interested in the welfare of society – rural and otherwise – even if they remained neutral on the value of popular wisdom. There was only a hint of the emperor's generosity in the intention of 'salvare i suoi sudditi da' veleni' [saving his subjects from poisons], but it seemed dictated more by an obligatory obsequiousness than by the belief that the sovereign was really a saviour of the people. <sup>53</sup>

Another area where the learned men showed little confidence in peasants and farmers was the management of livestock, especially in prophylactic measures to prevent epizootic diseases. Numerous testimonies are published in the *Annali dell'agricoltura* [Annals of Agriculture], edited by Filippo Re and compiling information from most of central-northern Italy.

In 1811, the physician and veterinarian Girolamo Molin (1778–1851) described the problems of husbandry around San Vito al Tagliamento, a town in the Friuli countryside. In particular, he criticised breeder carelessness in allowing the cattle

to graze in the common pastures from spring to November – leaving them exposed to heat, cold, and bad weather – and to drink from the icy waters of some springs. Barn management was anything but prudent according to Molin, and there was no reference to the atavistic wisdom characterising Brocchi's peasants or to the practicality of the Spanish peasants described by Cavanilles or Young. Molin, for example, criticised poor maintenance of livestock bedding and the very structure of the barns, which were cramped, damp and poorly ventilated.<sup>54</sup> In the specific case of Molin, the opinion can be considered authoritative from all points of view. Graduating in 1803 from the University of Padua, he received excellent training at the École vétérinaire in Alfort and the Museum d'histoire naturelle in Paris; moreover, he was well acquainted with the rural society of Friuli and eastern Veneto, traveling in the countryside, talking to the farmers and trying to explain to them in simple words the veterinary knowledge he had acquired. In addition, he was Professor of Botany and Agriculture at the *Liceo* of Treviso (1811–1815) and of veterinary medicine at the University of Padua.<sup>55</sup>

Therefore, these were not prejudiced considerations, such as those of Young according to Filippo Re, nor were they sweetened by classical tones, as it might seem for Brocchi's assessment of the Roman countryside. Molin was firmly convinced of the potential usefulness of science to rural society, at least if the scientist were in dialogue with the latter, listening to its needs, trying to communicate his knowledge effectively and in the meantime awakening the authorities to social and agricultural problems. It should also be borne in mind that problems such as those described by Molin were also discussed by other experts working in the agricultural sector in the same years.

This was the case of physician, botanist, and agriculturist Giovanni Biroli (1772-1827), Professor at the Liceo of Novara and at the Universities of Pavia and Turin. In his Trattato di agricoltura [Treatise on Agriculture] published in four volumes between 1809 and 1812, he gave many instructions for the construction and organisation of farm facilities, including barns and chicken coops, noting several defects in the current management by landowners, farmers and peasants.<sup>56</sup> These were topics of interest at the University of Pavia, discussed in theses by engineering and architecture students during Biroli's tenure there (1811-1814). Like his predecessor Bayle Barelle, Biroli brought issues of rural everyday life into the sphere of scientific research and higher education.<sup>57</sup> And his perspective was as trustworthy as Molin's. He had studied medicine in Turin and Pavia and had direct knowledge of the rural society, ecosystems, and agroecosystems of eastern Piedmont and western Lombardy, areas in which he worked as a local doctor and explored as agriculturist and naturalist.<sup>58</sup> His international profile was less developed than that of Molin, consisting mainly of correspondence with the directors of foreign botanical gardens.<sup>59</sup> Nevertheless, he had thorough knowledge of regional rural practices.

Thanks to his direct knowledge of the countryside, Biroli also provided information in his *Trattato* on proper nutrition of livestock. For example, he recommended drying stubble well to prevent it from fermenting and causing intestinal discomfort and chopping up straw to make it more pleasant for the animals. He also encouraged the use of oats as a fodder that was well liked by a broad range of livestock. He warned against transporting and distributing them wet, condemning in one passage the dishonesty of traders who wetted the seeds to increase their weight and thus sale

price. He recommended recording the time since the harvest to prevent tympanites and colic from excessively old grains. He also shared detailed tricks depending on the genus of the livestock (cattle, horses, pigs, goats, and poultry) to which the seeds were given, confirming his familiarity with the rural microcosm. <sup>60</sup>

If livestock fodder was considered in the notes of Nocca and Borda evaluating harmful plants in Lombardy, at the turn of the nineteenth century, knowledge of the livestock feeding regime was also part of teachings at the Veterinary School of Madrid.<sup>61</sup> It was a topic in the textbooks used there, which were translations and adaptations into Castilian of the works of the great French veterinarian Claude Bourgelat. The Spanish version of the books listed the best herbs for livestock, gave scientific and common names, sometimes indicated the areas of Spain where they grew most frequently, and described their nutritional and generally beneficial properties for animals.<sup>62</sup> Bourgelat's studies were translated by the director and the deputy director of the school, Segismundo Malats (1750-1826) and Hipólito Estévez (b. 1758). They were the ones who inserted passages and annotations relating to the Spanish environment. The two veterinarians had been trained in the most important veterinary institutes in Europe and, alongside their other technical-scientific training, they gained a good knowledge of agricultural and zootechnical practices in the Spanish countryside. 63 For example, when discussing the potato as livestock fodder, they also emphasised its virtues as a popular food in northern Europe, where potatoes were used together with cereal flour for baking and also cooked in various ways as a basis for meals. 64 The detailed manner in which the uses of potatoes were described suggest they were not common in the Spanish countryside. 65

Beyond food-related topics, the Semanario de agricultura y artes [Weekly of Agriculture and Arts] (1797-1808) also addressed the link between the Veterinary School and the Spanish rural context, advertising the institute's activity and publishing articles by its professors and other writers. In 1798 the Semanario published a letter from a man from the countryside outside Madrid who had turned to the school for the care of a mule and had found great professionalism and efficiency from the staff. Moreover, compared to the price he had paid in the past for private care (65 reales), the school charged him a ridiculously low price (6 reales) because 'el rey nos paga para esto' [the king pays us for this], as a staff member assured him. Initially biased against any novelty (at least according to the editors of the Semanario), the man was quite satisfied with the quality/price ratio offered by the new school, 'pues bendito sea el rey, y la reina, toa su generación' [then blessed be the king, the queen, and all their offspring]. 66 Beyond the hagiographic character of the letter - although the Semanario did specify that the school had requested proof of the episode - we note the journal's goal of publicising the new services available to rural society.

### 4. Conclusions

Representations of the countryside and the rural society that populated it still evoked a complex and divergent picture at the turn of the nineteenth century. The experts considered in this article had an excellent scientific background, a great deal of travel experience, or direct knowledge of one or more agroecosystems

- or some mix of the above. They were all presumably characterised by openmindedness, critical analysis skills, intellectual scope allowing comparison of different contexts, and a scientific and cultural background to guide them in the study of the surrounding environment.

A traveller's background – like his/her profession and rank – was and still is decisive in the representation of the surrounding environment. Gerald MacLean also referred to the religious element in his analysis of travel books written by English travellers in the Ottoman Empire, for instance in the case of the protestant chaplain William Biddulph in the early-seventeenth century. This aspect is relatively unimportant in the backgrounds of the travellers studied in this article but emerges in Cavanilles' report on Valencian rural society when he describes Church interventions in rural affairs.

The visions and representations resulting from different backgrounds were by no means univocal, without bias, and free of under-conceptualisation. They sometimes simplified complex cultures but often expressed a willingness to understand contexts very different from their own and also from each other. Thus, to respond to the question 'Were their visions dictated by prejudices or attempts to address the many problems of the countryside?' formulated above, the analysis of rural Mediterranean society by travelling 'scientific' elites sought to account for specific economic, cultural, and environmental features of each individual situation. And as far as possible, they sought to overcome prejudices and superficial representations in order to be in a position to propose new interpretive keys of social issues both to governmental authorities and to their colleagues.

All the cases studied above show how poor Mediterranean rural societies became the object of both scientific research and anthropological-cultural interest in the late-eighteenth and in the early decades of the nineteenth century, while at the same time agricultural science sought its own autonomy from more mature branches of knowledge. In the idealised and distant countryside, classical visions complemented sympathy for the oppressed and the belief that any problems would sooner or later be solved thanks to the resilience of the peasants and farmers and the atavistic wisdom that informed them. Other comments, however, revealed the awareness that the rural world was not the paradise of ideals and that it could not achieve improved welfare or better productivity if left to its own devices. A contrast of this type is understandable in a technical-scientific field, that of nascent agricultural science, which at the turn of the nineteenth century was building its foundations upon past experiences and seeking epistemological autonomy.<sup>68</sup>

Regardless of the diversity of judgement and representation offered by the learned individuals considered, it is a fact that the countryside and rural society were a focus of great interest. They were and would be studied in light of the scientific and cultural progress achieved during the century of the Enlightenment, the greater international mobility that began with the Napoleonic Era and increased in the nineteenth century, and the growing ability to compare agricultural models of distant places. It also must be noted that the interventions of the scientific community and the authorities to prevent food poisoning and epizootic diseases while sensitising peasants and farmers to these issues with specific educational programs are precursors of more mature social policies that would develop in the nineteenth and the early-twentieth centuries.<sup>69</sup>

Via a comparative analysis of accounts by naturalists and agriculturists who explored Spain, Italy, and Lebanon, this article offers a new view on the importance of the relation between human society and the environment in the development of science in the late-eighteenth and early-nineteenth centuries. This article is also a call for further research. It aims to stimulate international debate on representations of rurality and studies of rural societies, and on the outcomes and consequences in our current conceptions. It would be interesting to extend research to other Mediterranean regions, such as northern Egypt and coastal Levant, just to mention two other areas well-known by Brocchi, or southern France and some Italian regions visited by Young. The addition of other experts and travellers with completely different cultural, social, and national backgrounds would enrich the representation of Mediterranean rurality emerging from the case studies considered herein.

#### **Notes**

- 1 For example see: Pierre-Etienne Stockland, 'Fighting the Angoumois Grain Moth: Henri-Louis Duhamel du Monceau and his network of entomological observers', in Yves Segers and Leen Van Molle eds., Agricultural knowledge networks in rural Europe, 1700-2000 (Woodbridge, 2022), 75-93; Martino Lorenzo Fagnani, 'Studying "useful plants" from Maria Theresa to Napoleon: continuity and invisibility in agricultural science, northern Italy, the late eighteenth to early nineteenth century', History of Science 59, 4 (2021), 373-406; Laurent Brassart, 'Les enfants d'Arthur Young? Voyageurs agronomes en France au temps du Consulat et de l'Empire', Annales historiques de la Révolution française 385 (2016), 109-31; Liam Brunt, 'Rehabilitating Arthur Young', Economic History Review 56, 2 (2003), 265-99. Refer also to a 2013 thematic issue of Annales du Midi edited by Corinne Marache and Nadine Vivier dedicated to nineteenth- and twentieth-century agricultural enquiries: Annales du Midi 125, 284 (2013), 495-510. See also Fraser MacDonald and Charles W. J. Withers eds., Geography, technology and instruments of exploration (Abingdon-New York, 2016). An interesting case study that interweaves scientific and cultural elements in the concept of traveling far from home and which has inspired me at the methodological level is the one analysed in Bruce Buchan and Annemarie McLaren, 'Edinburgh's Enlightenment abroad: navigating humanity as a physician, merchant, natural historian and settler-colonist', Intellectual History Review 31, 4 (2021), 627-49.
- 2 Peter Jones, Agricultural enlightenment: knowledge, technology, and nature, 1750-1840 (Oxford-New York, 2016); Laurent Brassart, 'La ferme des animaux: l'invention d'une politique de l'animal utile sous le Consulat', Annales historiques de la Révolution française 377 (2014), 175-96; Lareunt Brassart, 'Une politique agricole pour l'Europe?', in François Antoine, Jean-Pierre Jessenne, Annie Jourdan and Hervé Leuwers eds., L'Empire napoléonien: une expérience européenne? (Paris, 2014), 191-210; Emma C. Spary, Feeding France: new sciences of food, 1760-1815 (Cambridge, 2014).
- 3 On both scientific training travels and exploratory ones, I refer to important works such as: Pierre-Yves Beaurepaire, Les Lumières et le Monde: Voyager, Explorer, Collectionner (Paris, 2019); Katharine Anderson, 'Natural history and the scientific voyage', in Helen Anne Curry, Nicholas Jardine, James Andrew Secord and Emma C. Spary eds., Worlds of Natural History (Cambridge-New York, 2018), 304–18; Jorge Cañizares-Esguerra, Nature, empire, and nation: explorations of the history of science in the Iberian world (Stanford, 2006); Ana Simões, Ana Carneiro and Maria Paula Diogo eds., Travels of learning: a geography of science in Europe (Dordrecht-Boston-London, 2003). New and interesting perspectives recently appear also in a 2021 thematic issue dealing with the topic of travel in a diachronic and multifaceted way: The Journal of Modern History 93, 1 (2021).
- 4 For instance, Andrew Bevan and Brenna Ryan Hassett on changes in the household economies and rural landscape of the Greek island of Antikythera in the nineteenth century, or a 2014 article by Jane Gray examining rural family interactions and mobility in early-twentieth-century Ireland. Andrew Bevan and Brenna Ryan Hassett, 'Mediterranean households, British colonial statistics and Greek insular landscapes: insights from nineteenth-century Antikythera', *Continuity and Change* 34, 3 (2019), 349–73; Jane Gray, 'The circulation of children in rural Ireland during the first half of the twentieth century', *Continuity and Change* 29, 3 (2014), 399–421.

- 5 Few interesting studies have touched on such topics for the regions in question. Among these studies, please refer to: Gerald MacLean, *The rise of oriental travel: English visitors to the Ottoman Empire, 1580–1720* (Basingstoke, 2004); Ines Aščeríc-Todd, Sabina Knees, Janet Starkey and Paul Starkey eds., *Travellers in Ottoman Lands: the botanical legacy* (Oxford, 2018); Matteo Di Tullio, 'Il mito delle campagne lombarde nella cultura inglese sette-ottocentesca', in Giorgio Bigatti ed., *Quando l'Europa ci ammirava. Viaggiatori, artisti, tecnici e agronomi stranieri nell'Italia del '700 e '800* (Truccazzano, 2016), 67–120.
- 6 There is a broad range of historiography on the socioeconomic situation of the Italian States and Spain in the modern era. Some of the most important classics are: Albert Carreras and Xavier Tafunell, Historia económica de la España contemporánea (Barcelona, 2004); Paolo Malanima, L'economia italiana: dalla crescita medievale alla crescita contemporanea (Bologna, 2002); Alberto Marcos Martín, España en los siglos XVI, XVII y XVIII: Economía y sociedad (Barcelona, 2000). See also: Giovanni Federico, Breve storia economica dell'economia dell'agricoltura (Bologna, 2009). About the multifaceted and extremely complex analysis of the Ottoman Empire, its society, and products, see the many studies published in the series by Suraiya Faroqhi and Bogaç A. Ergene eds., The Ottoman Empire and its heritage: politics, society and economy (Leiden, 1994-continuing).
- 7 Rebecca Butler, Revisiting Italy: British women travel writers and the Risorgimento (1844-1861) (Abingdon-New York, 2021); Alex Chase-Levenson, The yellow flag: quarantine and the British Mediterranean world, 1780-1860 (Cambridge-New York, 2020); Patricia Cove, Italian politics and nineteenthcentury British literature and culture (Edinburgh, 2019); Joanna Innes and Mark Philp eds., Re-imagining democracy in the Mediterranean, 1780-1860 (Oxford, 2018); Robert Holland, The warm south: how the Mediterranean shaped the British imagination (New Haven-London, 2018); Maria Schoina, Romantic 'Anglo-Italians' configurations of identity in Byron, the Shelleys, and the Pisan circle (Farnham-Burlington VT, 2009); John Pemble, The Mediterranean passion: Victorians and Edwardians in the south (Oxford, 1987). 8 Martino Lorenzo Fagnani, 'From botany to agriculture: the scientific network linking Great Britain, Spain and Italy in the late eighteenth century', Agricultural History Review 69, 2 (2021), 213-35; Mauro Ambrosoli, The wild and the sown: botany and agriculture in western Europe, 1350-1850 (Cambridge, 1997), 343-46; Pierre Chaunu, La civilisation de l'Europe des Lumières (Paris, 1971), 330-32. Many references to Tull, his 'new husbandry', the context in which it developed, and the influence it had on agricultural development in Europe are also present in the classic work André J. Bourde, Agronomie et agronomes en France au XVIIIe siècle, 3 volumes (Paris, 1967). For Young's 'pilgrimage' to Prosperous Farm see Arthur Young, 'Miscellanies', Annals of Agriculture and Other Useful Arts, 23 (1795), 163–78, in particular 172–73. 9 See, for example: Jones, Agricultural Enlightenment; Martino Lorenzo Fagnani, 'From "pure botany" to "economic botany" - changing ideas by exchanging plants: Spain and Italy in the late 18th and the early 19th century', History of European Ideas 48, 4 (2022), 402-20. Regarding the great difference in economic and scientific progress between European countries, in addition to Jones's work, significant is Antonio Clericuzio, 'Plant and soil chemistry in seventeenth-century England: Worsley, Boyle and Coxe', Early Science and Medicine 23, 5-6 (2018), 550-83, where we read of a dynamism and a tendency towards experimentation in applying science to agriculture in England that was quite rare in seventeenth-century Italian states.
- 10 A.-F. de Silvestre, 'Notice biographique sur F.-H. Gilbert', in Mémoires publiés par la Société d'Agriculture du Département de la Seine, vol. 4 (Paris, Year X), 124–52.
- 11 Pedro Ruiz Torres, 'Reformismo e Ilustración', in Josep Fontana and Ramón Villares eds., Historia de España (Sabadell, 2008), 429; Carla Rahn Phillips and William D. Phillips Jr., Spain's golden fleece: wool production and the wool trade from the Middle Ages to the nineteenth century (Baltimore, 1997), 191.
- 12 Peter M. Jones, 'Agriculture', in W. Doyle ed., The Oxford handbook of the Ancien Régime (Oxford-New York, 2012), 236–51, specifically 239–40.
- 13 André Fel, 'Petite culture 1750–1850', in Hugh D. Clout ed., *Themes in the historical geography of France* (London-New York-San Francisco, 1977), 215–45, in particular 240.
- 14 Lee McLean, *The free animal: Rousseau on free will and human nature* (Toronto-Buffalo-London, 2013); Laurence Cooper, *Rousseau, nature, and the problem of the good life* (University Park, Pennsylvania, 1999).
- 15 Londa Schiebinger and Claudia Swan, *Colonial botany: science, commerce, and politics in the early modern world* (Philadelphia, 2005); Lance C. Turner, 'Botanizing in the borderlands: the limits of scientific indigeneity in late colonial New Spain', *Colonial Latin American Review* 30, 1 (2021), 109–36.
- 16 On the social and political changes brought by the French Revolution and the Napoleonic Era, see: Lynn Hunt, *Politics, culture, and class in the French revolution* (Berkeley, 1984); Michael P. Fitzsimmons, *The night*

the old regime ended: August 4, 1789 and the French revolution (University Park, Pennsylvania, 2003); Alexander Grab, Napoleon and the transformation of Europe (Basingstoke-New York, 2003).

- 17 Arthur Young, Travels during the years 1787, 1788, and 1789 undertaken more particularly with a view of ascertaining the cultivation, wealth, resources, and national prosperity of the Kingdom of France, 2<sup>nd</sup> edn, vol. 2 (Bury St. Edmund's-London, 1794), 317–18. Equally negative is the perception of this area recorded in a French expanded and posthumous edition focused on Young's notes about Spain and Italy: Arthur Young, Voyage en Italie et en Espagne pendant les années 1787 et 1789, ed., Léonce de Lavergne (Paris, 1860), 393. Quite negative aspects are noted in Arthur Young, 'Tour in Catalonia', Annals of Agriculture and Other Useful Arts, 8 (1787), 193–275. For Young's biographical profile see Gordon Edmund Mingay, 'Young, Arthur', in Oxford dictionary of national biography (Oxford, 2004), online ed.
- 18 Filippo Re, Saggio di bibliografia georgica (Venice, 1802), 204–06. For Re's biography see Gabriella Bonini and Rossano Pazzagli, 'Re, Filippo', in Dizionario Biografico degli Italiani, vol. 86 (Rome, 2016), online ed.
- 19 The Observaciones should have been part of an official natural history collection of Spain, never published despite the high scientific value of the contributions envisaged. For a multifaceted analysis of the Observaciones see the many articles in the thematic issue Cuadernos de Geografía de la Universitat de València 62 (1997), entirely dedicated to this important work by Cavanilles. For a general overview of Cavanilles' thought on issues dedicated to the rural world, see: Antonio González Bueno, Gómez Ortega, Cavanilles, Zea, tres botánicos de la Ilustración: la ciencia al servicio del poder (Madrid, 2002), 88–96; José María López Piñero, 'La obra botánica de Cavanilles', in Real Sociedad Económica de Amigos del País de Valencia ed., Antonio José Cavanilles (1745–1804): Segundo centenario de la muerte de un gran botánico (Valencia, 2004), 11–146; Antonio González Bueno, 'Reflexiones en torno a los viajes de A. J. Cavanilles por tierras de Valencia (1791–1793)', Asclepio: Revista de historia de la medicina y de la ciencia 47, 1 (1995), 137–67. On Cavanilles' life and scientific research see Antonio González Bueno, 'Antonio José Cavanilles Palop', in Diccionario Biográfico Español (Madrid), online ed.
- 20 Antonio José Cavanilles, Observaciones sobre la historia natural, geografía, agricultura, población y frutos del Reyno de Valencia, vol. 1 (Madrid, 1795), 12–3.
- 21 Ibid., 34-5.
- 22 Ibid., 153–4. For other examples of Cavanilles' negative opinion on rice growing, see: Antonio José Cavanilles, 'Observaciones sobre el cultivo del arroz en el Reyno de Valencia y su influencia en la salud pública', Memorias de la Real Academia Médica de Madrid 1 (1797), 99–128; Antonio José Cavanilles, 'Cultivo del arroz', Semanario de agricultura y artes 146 (1799), 245–52. For the Spanish context of the issue, see Pablo Giménez-Font, Las transformaciones del paisaje valenciano en el siglo XVIII. Una perspectiva geográfica (Valencia, 2008). See also Juan Riera Palmero and Anastasio Rojo Vega, 'Spanish agriculture and malaria in the 18th century', History and Philosophy of the Life Sciences 10, 2 (1988), 343–62.
- 23 Cavanilles, Observaciones, vol. 1, 172, 193–4. About Cavanilles' thought on the matter, see: José Ramón Modesto Alapont, Tierra y colonos: la gestión agraria del Hospital General de Valencia (1780–1860) (Valencia, 2008), 299–301; Pablo Cervera Ferri, El pensamiento económico de la Ilustración valenciana (Valencia, 2003), 257; Michel Drain, 'De le desecación a la recuperación y creación de nuevos humedales', in Michel Drain ed., Politiques de l'eau en milieu méditerraneén. Le cas de la péninsule Ibérique (Madrid, 2003), 103–11, in particular 104; Joan Francesc Mateu Bellés, 'El discurs il·lustrat de les Observaciones del Reyno de Valencia', Cuadernos de Geografía de la Universitat de València 62 (1997), 191–201; Ricardo Sanmartín Arce, La Albufera y sus hombres (Madrid, 1982), 40–1.
- 24 Cavanilles, Observaciones, vol. 1, 26-7.
- 25 Carlo Amoretti, Viaggio da Milano ai tre laghi Maggiore, di Lugano e di Como e ne' monti che li circondano (Milan, 1801), 97–8. On Amoretti's contribution to Italian culture see Franco Arato, 'Carlo Amoretti e il giornalismo scientifico nella Milano di fine Settecento', in Annali della Fondazione Luigi Einaudi, vol. 21 (Florence, 1987), 175–216. An analysis of Amoretti's interest in northern Italy, the Alpine region, and their lakes is given in Agnese Visconti, 'Carlo Amoretti in viaggio tra Lombardia Austriaca e Mendrisiotto (1791): sentimenti d'amore e interessi scientifici', Archivio Storico Ticinese 157 (2015), 108–23.
- **26** For example, in 2019 the *New York Times* classified the archipelago of which Isola dei Pescatori is a part as one of the ten most fascinating places in the world: 'Uno dei dieci luoghi più affascinanti del mondo secondo il NYT', *Forbes.it* [https://forbes.it/2019/08/21/posti-piu-belli-del-mondo-isole-borromee-new-york-times/]. See also this older article: Sarah Ferrell, 'The idyllic islands of Lake Maggiore', *The New York Times*, 19 July 1981 [https://www.nytimes.com/1981/07/19/travel/the-idyllic-islands-of-lake-maggiore.html].
- 27 Amoretti, Viaggio da Milano ai tre laghi, 29.

- 28 On these categories of tourism, partly still under definition and little studied by historiography, see: Joseph S. Chen and Nina K. Prebensen eds., *Nature Tourism* (Abingdon-New York, 2017); Katia Laura Sidali, Achim Spiller and Birgit Schulze eds., *Food, agri-culture and tourism: linking local gastronomy and rural tourism: interdisciplinary perspectives* (Berlin-Heidelberg, 2011); Susan L. Slocum, Carol Kline and Andrew Holden eds., *Scientific tourism: researchers and travellers* (Abingdon-New York, 2015).
- 29 John Brewer, 'Visiting Vesuvius: guides, local knowledge, sublime tourism, and science, 1760–1890', *The Journal of Modern History* 93, 1 (2021), 1–33.
- **30** *Ibid.*, 152–4. On the relaunch of olive growing in the Lake Como area, please refer to Agnese Visconti, 'Paesaggi di Lombardia: Il caso dell'ulivo tra ambienti naturali e tecniche manifatturiere (1772–1796)', in Gabriella Guerci, Laura Pelissetti and Lionella Scazzosi eds., *Oltre il giardino: Le architetture vegetali e il paesaggio* (Florence, 2003), 167–74.
- 31 Maurizio Romano, Alle origini dell'industria lombarda: Manifatture, tecnologie e cultura economica nell'età della Restaurazione (Milan, 2012); Luca Mocarelli, 'Clima e vita economica nello Stato di Milano tra metà Settecento e Restaurazione', in Luca Mocarelli, Guido Alfani and Matteo Di Tullio eds., Storia economica e ambiente italiano (ca. 1400–1850) (Milan, 2012), 129–42; Aldo Carera, I confini dello sviluppo. La regione economica lombarda come questione storiografica (XVIII-XX secolo) (Milan, 2004).
- 32 José Luis Gómez Urdáñez, El marqués de la Ensenada: El secretario de todo (Madrid, 2017); Ruiz Torres, Reformismo e Ilustración, 276–87, 299, 311; Josep Juan Vidal and Enrique Martínez Ruiz, Política interior y exterior de los Borbones (Madrid, 2001), 193–99, 233; Marcos Martín, España en los siglos XVI, XVII y XVIII, 84–86, 97, 181, 610, 644; Manuel Nóvoa, 'La obra pública de los ingenieros militares', in Alicia Cámara Muñoz ed., Los ingenieros militares de la monarquía hispánica en los siglos XVII y XVIII (Madrid, 2005), 183–202, 193–7.
- 33 Ruiz Torres, *Reformismo e Ilustración*, 485–90; Luis Miguel Enciso Recio, 'Los cauces de penetración y difusión en la Península: Los viajeros y las sociedades económicas de amigos del País', in José María Jover Zamora ed., *El Estado y la cultura (1759–1808), Historia de España* (Madrid, 1988), 3–56.
- 34 Ruiz Torres, *Reformismo e Ilustración*, 593–603; Josep Fontana, 'La época del liberalismo', in Josep Fontana and Ramón Villares eds., *Historia de España* (Sabadell, 2007), 7–36; Antonio Morales Moya, ed., 1802: España entre dos siglos, vol. 2 (Madrid, 2003).
- 35 Ruiz Torres, Reformismo e Ilustración, 480-90.
- **36** Josep Vicent Boira i Maiques, 'L'arròs, el regadiu i el bon govern: les cartes i documents de Pasqual Caro en l'obra de Cavanilles', *Cuadernos de Geografía de la Universitat de València* **62** (1997), 283–99.
- 37 Renato Funiciello and Claudio Caputo, 'Giovan Battista Brocchi's Rome: a pioneering study in urban geology', in Gian Battista Vai and W. G. E. Caldwell eds., *The origins of geology in Italy* (Boulder, 2006), 199–210; Valerio Giacomini, 'Brocchi, Giovanni Battista', in *Dizionario Biografico degli Italiani*, vol. 14 (Rome, 1972), online ed.
- 38 Giovanni Battista Brocchi, *Trattato mineralogico e chimico sulle miniere di ferro del Dipartimento del Mella*, vol. 2 (Brescia, 1807), 82, 150–1.
- 39 Angelo Celli, Storia della malaria nell'Agro romano (Città di Castello, 1925).
- 40 Giovanni Battista Brocchi, Dello stato fisico del suolo di Roma (Rome, 1820), 239-43.
- 41 The long-term development of this issue is masterfully analysed by Ambrosoli, *The Wild and the Sown*.
- 42 An example is given by Giornale d'agricoltura (Journal of Agriculture) edited by agriculturists Giuseppe Bayle Barelle and Giovanni Biroli in 1807–1808. Its motto was taken from Cicero's Cato Maior de Senectute and highlighted the importance to humankind of agriculture and rural living. Moreover, when Bayle Barelle was appointed Professor of Agricultural Science at the University of Pavia, in his inaugural lesson he touched on the importance of agriculture in ancient times, referring to the many temples dedicated to gods and goddess associated with rural life, such as Ceres, Bacchus, Flora, Pomona, etc. See Giuseppe Bayle Barelle, 'Del dovere, che hanno i proprietarj di dirigere co' loro lumi le campestri faccende, e dei rapporti dell'agricoltura cogli altri rami dell'utile sapere', Giornale d'agricoltura 1 (1807), 9–43, 27. See also Giovanni Mazzucato, Sopra alcune specie di frumenti. Memoria botanico-georgica (Padova, 1807), 2–3, 8. It was a text on cereals where the author a well renowned botanist and agriculturist in north-eastern Italy combined science with history and mythology referring to patron goddesses of agriculture such as Isis, Sita, Ceres, and others. Mazzucato also referred to ancient sources who described cereals, such as Hesiod, Homer, Cato, Hippocrates, Theophrastus, Varro, Columella, etc., and also the Pentateuch.
- 43 Giovanni Battista Brocchi, Giornale delle osservazioni fatte ne' viaggi in Egitto, nella Siria e nella Nubia, vol. 4 (Bassano, 1843), 196-7.

- 44 Brocchi, Giornale delle osservazioni, vol. 3, 83-4, 117-25.
- 45 Ibid., 341.
- 46 Ibid., 123.
- 47 Fagnani, 'Studying "useful plants" from Maria Theresa to Napoleon', 393-4.
- 48 Accademia Nazionale Virgiliana, Archivio storico, Mantua (henceforth 'ANV, As'), Colonia poi Classe agraria, 32, dossier Sulla coltivazione dei mirabolani and a letter by Carlo Amoretti to the secretary of the Academy of Mantua, Milan, 5 January 1789, archived in the dossier Sulla coltivazione degli ulivi (1785–1789). See also: Archivio di Stato di Milano (henceforth 'ASMi'), Agricoltura p.a., 44, dossier Mirabolano; Biblioteca Nazionale Braidense, AF XI, 34, register of the Society meetings, 106 recto and verso: meeting of 30 December 1788, points 4 and 5; Archivio di Stato di Pavia (henceforth 'ASPv'), Università Medicina, 634, letter by the Consiglio di Governo in Milan to the supervisory body of the Faculty of Medicine of the University of Pavia, 17 August 1788, and answer, 29 September 1788.
- **49** Archivio di Stato di Milano, *Studi p.a.*, 5, printed list of the topics for the 1784 contest; *Studi p.a.*, 250, printed list of the topics for the 1782 contest. At least five dissertations sent to the Academy for the contest are archived in ANV, As, *Dissertazioni*, 44: from number 17 to number 20; of comparative interest is the description of an unusual mushroom sent by a man named Diomede Tridapalli in 1779 (number 28).
- **50** ANV, As, *Colonia poi Classe agraria*, register of the Academy meetings 1792–1805: meeting of 4 March 1799.
- 51 This trait is clear in some observations by Giuseppe Bayle Barelle, Descrizione esatta dei funghi nocivi e sospetti (Milan, 1808), 26, 53, 58 (note 1).
- 52 On the scientific and didactic profile of Bayle Barelle see: Martino Lorenzo Fagnani, 'L'agraria "italiana" prima e dopo Napoleone: percorsi formativi di una scienza', *Società e Storia* 169 (2020), 457–91; Martino Lorenzo Fagnani, 'Agricultural science in Napoleonic universities: Didactics and research in Pavia, Bologna and Padua', *Nuncius: Journal of the Material and Visual History of Science* 34, 3 (2019), 575–601.
- 53 ASPv, *Università Rettorato*, 184, rector Marabelli to the general director of Public Education, Pavia, 27 January 1817 (draft); answer by Nocca and Borda; list 'delle più comuni piante velenose' [of the most common poisonous plants] by Nocca and Borda. Their opinions were confirmed by Giuseppe Moretti, Professor of Rural Economics.
- **54** Girolamo Molin, 'Sopra le principali malattie proprie alla bovina specie del Cantone di S. Vito al Tagliamento...', *Annali dell'agricoltura del Regno d'Italia* **9** (1811), 97–121.
- 55 Alba Veggetti, 'Molin, Girolamo', in Dizionario Biografico degli Italiani, vol. 75 (Rome, 2011), online ed.
- 56 Giovanni Biroli, Trattato di agricoltura, 4 vols. (Novara, 1809-1812).
- 57 For example, the following theses addressed topics related to stabling and the maintenance of farm spaces: ASPv, *Università Matematica*, 154: 11 June 1812 (Francesco Barbosio from the Department of Agogna, with Novara as capital), 8 June 1814 (Saverio Zanzola from Novara), 14 June 1814 (Angelo Rizzi from Torre Bianca near Pavia).
- 58 On Biroli see Silvana Bartoli, ed., Palazzi del sapere: Giovanni Biroli e la Novara napoleonica (Novara, 2009).
- **59** For example, Bibliothèque Centrale du Muséum national d'histoire naturelle, Paris, *Fonds André Thouin* (1747–1825), Ms THO 367/1, Biroli to André Thouin, Pavia, 3 November and 2 December 1811. Archivo del Real Jardín Botánico, Madrid, DIV. I 56, 3 13 and 14, letters by Biroli to Mariano La Gasca, director of the Madrid Garden, Turin, 15 January and 12 April 1817, revealing their exchange of garden catalogues, seeds, and probably texts. The two communicated in Latin and through the diplomatic channel of the two capitals.
- **60** Biroli, *Trattato di agricoltura*, vol. 2, 35, 38-9, 89-90.
- 61 The School was opened in October 1793 after a long and tormented incubation, in which the debate was mainly about the space to be given to the teaching of non-military veterinary medicine in an institution that would still depend on the War Department. For some of the more interesting proposals that emerged during this process, please refer to the documentation in Archivo Histórico Nacional, Madrid (henceforth 'AHN'), Estado, legajo 2927, exp. 309. For the reconstruction of the early years of the School, see Luis Ángel Moreno Fernández-Caparrós, 'Influencia de la ciencia y la técnica del Madrid de los Borbones en la creación del Real Colegio-Escuela de veterinaria durante el siglo XVIII', in José Manuel Cid Díaz ed., Temas de historia de la veterinaria, vol. 1 (Murcia, 2000), 211–32.
- **62** For instance, see Claude Bourgelat and Segismundo Malats, *Nuevas observaciones físicas, concernientes a la economía rural, cria, conservación y aumento del ganado caballar* (Madrid, 1793), 35–84.

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- 63 On Malats and Éstevez see the advertencia in Segismundo Malats, Oración que el día 18 de octubre de 1793, en que se abrió la Real Escuela de veterinaria de Madrid... (Madrid, 1793), without page numbers. See also Archivo de la Real Sociedad Económica Matritense de Amigos del País, Madrid, exp. 138/6, list of associates by merit, Madrid, 23 August 1794; AHN, Estado, legajo 2927, exp. 309, Alonso de Rus García to Manuel Godoy, Madrid, 21 May 1795. See also: Ángel Salvador Velasco, 'Madrid y Córdoba, sedes de las primeras escuelas de veterinaria en España', in Libro de ponencias y comunicaciones del XVI Congreso nacional y VII hiberoamericano de historia de la veterinaria (Córdoba, 30 de septiembre, 1 y 2 de octubre) (Córdoba, 2010), 325–30; José Gómez Piquer and José Manuel Pérez García, Crónica de 150 años de estudios veterinarios en Aragón (1847–1997) (Zaragoza, 2000), 30–5.
- 64 Bourgelat and Malats, Nuevas observaciones físicas, 72-5.
- **65** Rebecca Earle, 'Promoting potatoes in eighteenth-century Europe', *Eighteenth-Century Studies* **51**, 2 (2018), 147–62, 151; Bertie Mandelblatt, 'Foods and diets', in Joseph C. Miller ed., *The Princeton companion to Atlantic history* (Princeton, 2015), 204–7, in particular 206.
- 66 'Carta de un labrador de las inmediaciones de Madrid', Semanario de agricultura y artes 59 (1798), 106-8.
- 67 MacLean, The Rise of Oriental Travel, 94-101.
- 68 See, for example: Jones, Agricultural Enlightenment, 225.
- 69 For an interesting case of elementary education sensitive to the human-countryside synergy, see Omar Mazzotti and Massimo Fornasari, 'Agricultural education and Italian primary school teachers: the Romagna in the late nineteenth century', *Modern Italy* 26, 1 (2020), 51–66.

#### French Abstract

Au XVIIIe et au début du XIXe siècle, l'Europe a développé un intérêt profond pour les ressources naturelles et les agroécosystèmes. Des experts ont commencé à explorer le coté rural et les rives de la Méditerranée. Ces voyageurs ont décrit des environnements, des agroécosystèmes et des cultures totalement nouveaux à travers le prisme de leurs propres antécédents. Cet article analyse le développement des sociétés rurales méditerranéennes en tant qu'objet d'étude de la science agricole occidentale. Il décrit les rapports des voyageurs sur les terres rurales en Espagne, en Italie et au Liban, en comparant leurs observations et leurs représentations, en évaluant s'il existe des modèles communs dans leurs rapports et quelles caractéristiques se retrouvent encore aujourd'hui dans les pratiques rurales.

#### German Abstract

Im späten 18. und frühen 19. Jahrhundert entwickelte Europa ein starkes Interesse sowohl an natürlichen Ressourcen als auch an agrarischen Ökonsystemen. Experten begannen damit, das bäuerliche Hinterland und die Küstenregionen des Mittelmeeres zu erkunden. Diese Reisenden beschrieben völlig neuartige Milieus, agrarische Ökosyteme und Kulturen durch die Brille ihrer eigenen Erfahrungen. Dieser Beitrag analysiert, wie die ländlichen Gesellschaften um das Mittelmeer zum Forschungsgegenstand der westlichen Agrarwissenschaft wurden. Er beschreibt die Reiseberichte in ländliche Regionen Spaniens, Italiens und des Libanon, vergleicht ihre Beobachtungen und Repräsentationen, und untersucht, ob es in den Berichten gemeinsame Muster gibt und welche Besonderheiten sich bis heute in der ländlichen Praxis finden.