

## HEADING REPORT(H)A: Environmental Stories

### When fruit season arrives: Oporto Agricultural Station (1931-1979) and the promotion of fruit farming from an environmental history perspective

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In the mid-20th century, the agronomic concept of “fruit tree” meant a “woody plant producing edible fruit” (Gondim, 1957: 1), thus encompassing plants cultivated since ancient times in the agricultural landscape of Entre Douro and Minho, in north-western Portugal (Gonçalves, 1996). We know that fruit consumption in the human diet has ancient roots, predating the invention of agriculture itself, evoking the Genesis myth, in a symbolic way, which presents the first human couple eating fruit from the trees in the Garden of Eden (Gn, 1, 29; 2, 8-9). On the other hand, recent archaeobotanical studies have shown how various wild fruits were part of the diet of Palaeolithic hunter-gatherer communities, overcoming a chronic scarcity of data once filled with the imagination of researchers (Jones, 2009; Peña Chocarro, Pérez Jordà, & Zapata Peña, 2017; Weiss, 2017). These studies have also shown the impact of fruit tree cultivation on Neolithic cereal-based farming models, as various species of fruit trees were adopted (Pérez-Jordà, Peña-Chocarro, García Fernández, & Vera Rodríguez, 2017; Pérez-Jordà, Peña-Chocarro, & Pardo-Gordó, 2021). The long process of domestication and introduction of fruit trees into the Mediterranean agro finds a poetic echo in Virgil’s *Georgics* and is a relevant subject in the agricultural treatises of Classical Antiquity, namely in Columela’s *De re rustica* (lib. V, VIII-XI). In more recent times, cultivated fruit trees fall into several classes, as mentioned in a 19th century horticultural catalogue (Loureiro, 1871), including citrus fruit (orange, lemon, etc.), pome fruit (pear, apple, etc.) and stone fruit (plum, peach, etc.). Fruit trees also include trees and shrubs that produce nuts (such as hazel and walnut), shrubs that produce berry (such as gooseberry) and other types of trees (such as chestnut and olive).

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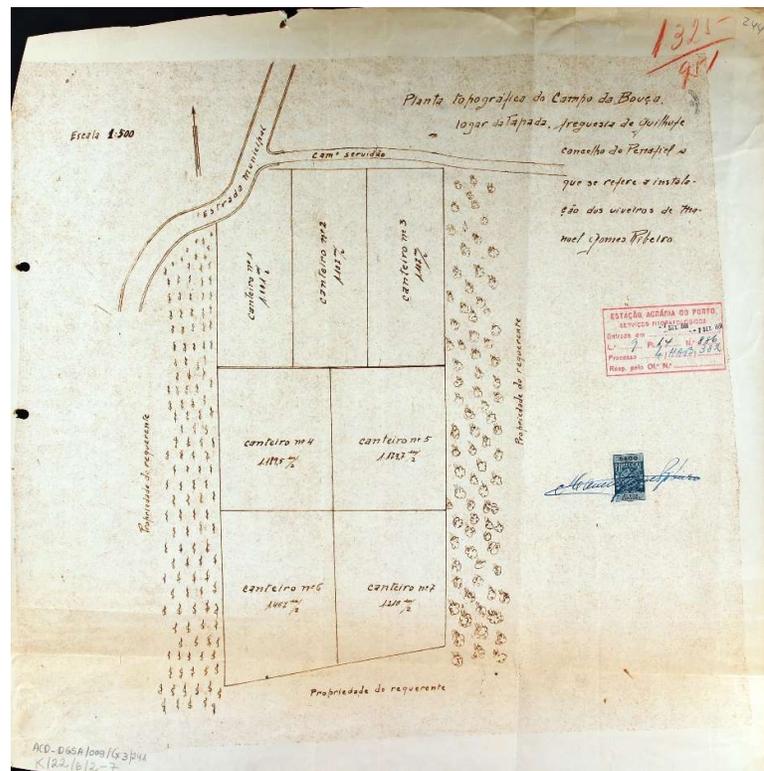
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During the 20th century, the promotion of fruit farming in Portugal acquired particular importance within the political framework of the *Estado Novo* (New State, 1933-1974), despite being at a much lower economic level than that of viticulture. One of the aims of the fruit development policy was to create “industrial orchards” to overcome the productive limitations of family farming. The initiatives taken at the time included the creation of the *Junta Nacional das Frutas* (National Fruit Board, 1936), which reformulated the previous National Fruit Export Board (1931), and the *Plano de Fomento Frutícola* (Fruit Promotion Plan, 1962), which was aimed at regulating nursery activities. In turn, the installation of fruit tree nurseries was a prerequisite for providing propagation material for orchards well adapted to the agricultural specificity of each region of the country. One of the main concerns was to ensure, as far as possible, plant material free of pests and diseases, which required, among other things, a periodic inspection of nurserymen, regulated by Decree No. 27.055 of 29 September 1936. The most prominent nurserymen – such as, for example, the *Companhia Hortícola-Agrícola Portuense*, located at Virtudes Estate, in Oporto – published annual catalogues with a list of available fruit trees (CHAP, 1960). At an official level, the *Direção-Geral dos Serviços Agrícolas* (General Directorate for Agricultural Services) also published catalogues of its own nurseries, located in the various agricultural regions, namely the II Agricultural Region, where the Oporto Agricultural Station was placed (SEA, 1962).

Some recent research has addressed this dimension of agrarian activity during the *Estado Novo* at a national level (Pires, 2018, 2019). However, there are still considerable knowledge gaps at regional level, and the contribution of Environmental History could open up the strictly agronomic scope of fruit farming to an interdisciplinary dialogue. In this respect, the existence of a documental collection in the *Arquivo Distrital do Porto* (Oporto District Archive, ADP) is of special interest. It comprises 11 boxes with documents from the former Oporto Agricultural Station, produced between 1935 and 1981, rescued from imminent destruction when donated to ADP by a private individual. The *Estação Agrária do Porto* (Oporto Agricultural Station), a regional agency created in 1931, initially focused on research, experimentation and promotion of potato and maize crops; other sectors would later be added, such as viticulture and fruit farming. It provided technical assistance in a

geographical area comprising the agricultural sub-regions of *Minho Duriense*, *Beira Minhota* and *Douro Litoral* (Art. 53 of Decree No. 20.526 of 18 November 1931). Fruit farming, which is well represented in this documental collection, could motivate a case study on its relative importance in the regional agricultural landscape. The existing documents allow us to analyse, specifically, aspects of the nursery activity, “the basis of a possible promotion of fruit farming” (Gondim, 1959: 4), in the territory covered by the Oporto Agricultural Station. During a brief examination of existing documentation, possible research topics were identified, such as the following:

- a) Regional nursery network: the reports for the 1956/57 and 1958/59 agricultural campaigns give a list of the nurseries inspected by the fruit farming services, totalling 73 and 65 nurseries respectively, which suggests the existence of a significant number of commercial nurserymen in the region. One of the boxes in this documental collection contains more than two hundred topographic plans of nurseries, of which we reproduce, as an example, the plan of Manuel Gomes Ribeiro’s nurseries, in Penafiel (fig. 1).



**Fig. 1.** Topographic map of Manuel Gomes Ribeiro’s nurseries, in Campo da Bouça, Tapada, Guilhufe parish, municipality of Penafiel. Source: Arquivo Distrital do Porto. PT/ADPRT/ACD/DGSA, cota ACD-DGSA/009/Cx 3/ 241.

b) Species and varieties of fruit trees: the aforementioned reports include a list of the fruit trees existing in the region's nurseries, which exceed 25 species, indicating the respective quantities of grafted plants and rootstocks (fig. 2). Among them, we can mention fruit trees which are nowadays rare, such as the loquat (*Mespilus germanica*), cultivated in Europe since ancient times (Baird & Thieret, 1989), and fruit trees of more recent origin, such as the Japanese loquat (*Eriobotrya japonica*), introduced in Europe at the end of the 18th century (Rivals, 1978). The Japanese loquat has become a common fruit tree in vegetable gardens and backyards, and its fruit is known regionally as *magnórios*. Eurico de Campos Gondim, the agricultural engineer responsible for the phytosanitary inspection campaigns, alludes, however, to the difficulty in maintaining control over the labelling of fruit trees, which leads to repeated confusion in the nurseries. He does not fail to get it off his chest: "How useful it would be to have a specialised body to tell the farmer what to plant – instead of leaving him to the misleading fantasies of catalogues!" (Gondim, 1959: 5).

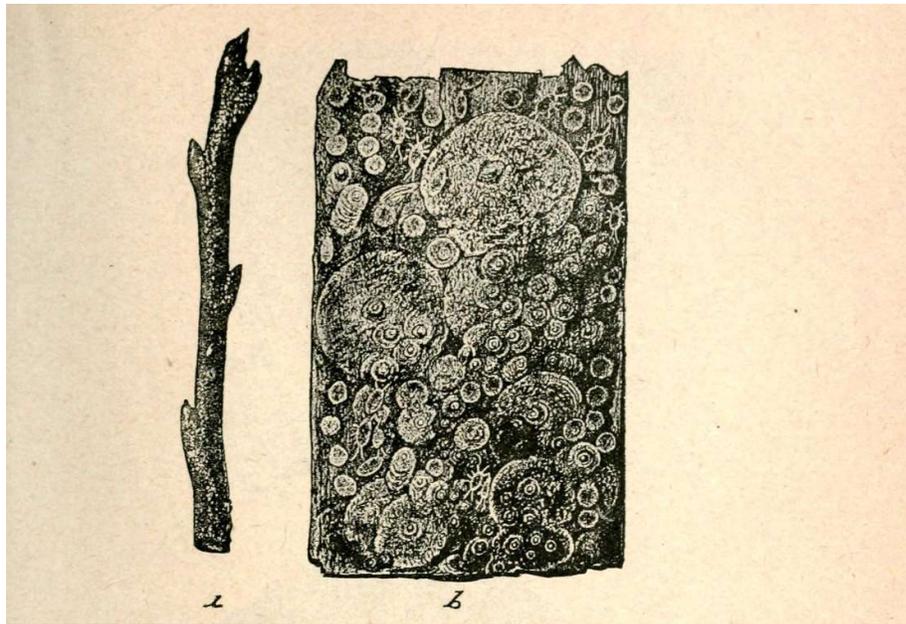
Relatório alfabetico das espécies existentes nos viveiros  
e as respectivas quantidades

Espécies	Plantas enxertadas		Cavacos
	Com 1 ano	Com mais de 1 ano	
Ameixieiras .....	12.940	15.908	13.054
Amendoeiras .....	2.420	1.062	-
Avelãs .....	274	490	-
Castanheiras .....	8.230	3.359	346.320
Cerejeiras .....	2.964	11.335	4.082
Citricas diversas (grupo fruit, citrinas, etc.)	2.397	227	-
Macieiras .....	2.095	4.833	-
Macieiras .....	10.614	8.222	8.030
Figueiras .....	6.760	1.057	-
Funchos .....	4.550	130	-
Limoeiros .....	213	855	-
Mamelões .....	230	567	-
Laranjeiras .....	21.928	46.854	26.412
Limoeiros .....	3.028	1.515	-
Lagoa Berry .....	35.025	25.056	25.595
Marmeleiras .....	4.711	3.789	-
Hespereiras (comm) .....	110	20	-
Hespereiras (do Japão) .....	-	230	-
Magueiras (comm) .....	2.305	853	-
Magueiras (Fragaria nigra) .....	-	380	-
Oliveiras .....	8.389	123.954	2.500
Pessegoeiros .....	19.694	15.953	8.585
Pereiras .....	19.422	31.511	19.400
Tomateiros .....	3.451	253	-
Tangerineiras .....	6.811	3.021	-
<b>Total .....</b>	<b>179.821</b>	<b>303.454</b>	<b>449.758</b>
<b>TOTAL EXISTENTES .....</b>			<b>933.033</b>

06/10. Porto, 3 de Maio de 1957

Fig. 2. Nursery campaign of 1958/1959. List of existing fruit species and respective quantities. Source: Arquivo Distrital do Porto. PT/ADPRT/ACD/DGSA, cota ACD-DGSA/006/Cx. 1-7, K/22/3-28-5.

c) Crop health: the reports mention the pests and diseases with the highest incidence on nursery plants, such as San José scale (*Quadraspidiotus perniciosus*) (fig. 3), considered to be the most important pest on apple trees, first observed in Portugal in 1931, near Aveiro (Coutinho, 2011); on the other hand, peach leaf curl (*Taphrina deformans*) is mentioned as the main disease. In some nurseries it was possible to “totally eradicate” pests or diseases in infested stands, but in other cases it was necessary to grub up fruit trees, in appreciable quantities, while recognising the difficulty of maintaining strict control over plant health. In this regard, mention is made of fruit trees offered by vine nurseries to their clients as a gift, but in a deplorable state of health. Worse still: “The market fairs turn up full of fruit trees, generally severely parasitised, sold cheaply – which are generally what the farmer prefers!” (Gondim, 1959: 1).



**Fig. 3.** San José scale (*Quadraspidiotus perniciosus*): (a) infested branch; (b) enlarged bark showing different development stages of the insect. Source: Jarvis (1908: 55).

The problem of plant health in fruit-growing nurseries raises some questions: how were plant-health treatments carried out in those days? What phytopharmaceutical products were used? What type of environmental control was

performed? From the reports mentioned above, it appears that the recommended treatments were generally carried out by the nurserymen themselves, with no mention of the risks inherent in the preparation and application of plant protection products. If, in some cases, a lack of treatments is detected, “excessive” treatments are also mentioned, such as that of a nurseryman who killed a dozen peach trees from a collection “with an exaggerated dose” (Gondim, 1957: 3). However, as long as nursery plants are not associated with horticultural crops, phytopharmaceuticals are considered “of almost innocuous use” (Gondim, 1957: 4). Among the products used as an insecticide, oleoparathion is mentioned, “with very good results”, parathion being an extremely toxic organophosphate compound, when inhaled, ingested or in contact with the skin (NCBI, 2022). We are thus faced with a situation of high risk to human health and the environment, which reflects, on a regional scale, the situation denounced by Rachel Carson in *Silent Spring* (1962) – one of the most influential works of contemporary environmental culture, published in Portugal for the first time in 1966 (Carson, 1966). The exponential growth in production and consumption of pesticides at that time shaped the so-called “golden age of pesticides”, which preceded the advent of integrated protection practices and organic farming (Amaro, 1996).

In conclusion, this is a document collection that contains relevant information on the regional fruit-growing sector, in its agronomic and environmental dimensions, in a recent historical period. This collection is available to be duly studied and compared with other sources for contemporary Environmental History, and it is hoped that someone motivated will dedicate himself/herself to this promising research.

#### **ACKNOWLEDGEMENTS**

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the *Direção de Serviços de Desenvolvimento Rural – Delegação do Cávado e Ave* (Directorate of Rural Development Services – Cávado and Ave Delegation); and, especially, Mr Carlos Coutinho, technical agent of the *Estação de Avisos Agrícolas do Entre Douro e Minho* (Agricultural Warning Station of Entre Douro and Minho), for his generous collaboration and explanations provided.

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## DOCUMENTAL COLLECTION

Arquivo Distrital do Porto. PT/ADPRT/ACD/DGSA. Fundo: Direção Geral dos Serviços Agrícolas. Subfundo: Estação Agrária do Porto. Datas de produção: 1935-1981. Dimensão e suporte: papel. Extensões: 11 caixas; 1 outros; 0,8 m lineares.

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