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## Sugar Islands: The Sugar Economy of Madeira and the Canaries, 1450–1650

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# **Sugar Islands: The Sugar Economy of Madeira and the Canaries, 1450–1650**

**Alberto Vieira**

Europe was always quick to name its islands according to the products that they supplied to its markets. Thus some were called the islands of pastel (dyestuff), others the islands of wine. Madeira and some of the Canary Islands, given the role that sugar played in their economies and in the life of their people, became known as sugar islands. These island groups played an essential role in the transfer of sugar from the Mediterranean to the Caribbean along what could be called the "Sugar Route."

This chapter traces the parallel evolution of sugar agriculture on the islands of Madeira, Gran Canaria, Tenerife, La Palma and Gomera from the Fifteenth to the Seventeenth Centuries. The focus will be on the productive and commercial cycles of this product and on the essential questions of land, water, and slavery which determined much of the history of sugar in its Atlantic island stage. Madeira will be the point of departure for this study because it was chronologically first, because the industry spread from there to other areas including the Canaries, and because the surviving documentation from Madeira permits a close examination of sugar's impact on society and economy in ways that may permit us to fill in gaps in the documentary record of the Canary islands as well.

## **The System of Landed Property and Water Rights**

The process of the occupation and settlement of Madeira and the Canaries was not identical.

Between 1439 and 1497 the two islands of the Madeiran archipelago were a dominion (senhorio) of the Order of Christ which established as its representatives three captains: João Gonçalves Zarco at Funchal (1450), Tristão Vaz at Machico (1440) and Bartolomeu Perestrelo at Porto Santo (1446). In the Canaries, there were both royal islands (Gran Canaria, La Palma, and Tenerife) and those under lordly or seigniorial control (Fuerteventura, Lanzarote, La Gomera and El Hierro). Moreover, in the Canarian archipelago, an indigenous population existed which slowed the process of occupation and which confronted the colonists with rival claimants to the distribution of lands that is among those autochthonous people who accepted Castilian sovereignty.<sup>1</sup>

An understanding of the system of property requires a deep study based on documentary sources to establish the system of relations based on the ownership and production of the limited arable. For Madeira, some registers of taxation on sugar growers exist, but for the Canaries this kind of information can only be seen in land distributions or "repartimientos," and notarial records.<sup>2</sup> The system of property in both archipelagos was defined by the distribution of land to the settlers and later by sale, exchange, or redistribution. In both cases, the situations were the same, varying only according to the process of settlement and the peculiarities of each island. In these cases, the crown ceded to the captains and governors the power to distribute lands to settlers and conquerors according to their participation in the process and to their social rank.<sup>3</sup> All these donations or grants were made according to norms established by the crown following the model established during the resettlement of the Iberian Peninsula. These grants not only noted the social condition of the recipient, but also, sometimes imprecisely, the area of cultivation, the improvements to be made, and the time limit in which cultivation was to begin.

From the beginning, on the Portuguese islands the crown and later the lord of the island,

Prince Henry (Infante Dom Henrique), regulated the distribution of lands. At first the monarch, D. João I instructed the captains that the lands should be "conveyed unencumbered and without any rent to those of high quality and others who possess the means to use them well and stripping timber and in breeding livestock. . ." <sup>4</sup> Later, João Gonçalves Zarco, using the prerogatives reserved to him and his descendants, held an important portion of land in Funchal and Ribeira Brava. Other grants were made in accord with the Alfonsine regulations to those in a position to take advantage of them, failure to do so, costing them their right of possession. In the Canaries as well, the social distinction between the grantees was apparent. Following the *cedula real* of 1480, Pedro de Vera made grants to the conquistadors "according to their merits." <sup>5</sup> We must recall that the not all Canary Islands represented an ecosystem for sugar cultivation, distinct from Madeira where the chroniclers noted there was water and wood in abundance.

In Madeira from the second half of the Fifteenth Century leases of *aforamento and meias* became general and they evolved in the Sixteenth Century into sharecropping contracts. This was a specific situation in Madeira which had the characteristic of consuetudinary law. We should note that the various contracts of lease (*arrendamento*) that have survived are not uniform in the arrangements between the contracting parties. In some the lord might contribute improvements, in others this was left to the *colono* or renter, reserving possession at the end with no penalties. The norm was a contract of limited duration obliging the renter to pay an annual fee or one half of the product. In the Canaries, we also encounter diverse contract arrangements (leases, sharecropping, mortgages) for the use of the land similar to those of Madeira.<sup>6</sup> We should also mention the so-called contract of *complantación* in which the proprietor of the land, in order to begin cultivation, cedes the land for a fixed period and only after that period is a rent paid.

Given the importance of water for the sugar crop, its possession and distribution were essential elements of the organization of the economy. If in Madeira this was not a problem at first given the abundance of water, in the Canaries, scarcity immediately generated concern. For this reason we have land grants with, and without water. Water ran in the streams (*ribeiras*) abundantly in the north. In the south during the summer the streams were almost all diverted to the *levadas* (water-course) or irrigation and aqueduct systems.<sup>7</sup> It was, in fact, in the stream beds and their margins that the history of the island was played out. The principal parishes contained the headwaters of one or more streams. Funchal, the principal settlement of the island, is traversed by three streams. Streams and their sources were considered public domain in the first documents about the island. In the areas of greatest population concentration and of intensive land use such as Funchal, the water of the stream beds was not sufficient to meet the requirements of the residents. Thus in 1485, Duke D. Manuel recommended that the waters of the Ribeira of Santa Luzia be used only for sugar mills, flour mills and their associated activities and for no other reason. It was with D. João II that water rights were definitely defined in a way that lasted until the Nineteenth Century. In letters of 7 and 8 May, 1493 he established once and for all that waters were common patrimony to be distributed by the captain and officers of the municipal council to all proprietors since, "without the waters the lands can not be exploited." From this point water was public property to be used by those who held lands and needed it. Still, from the end of the Fifteenth Century water was negotiated in the same way as land. It was with the regulations (*regimento*) of D. Sebastião of 1562 that the early system was changed. Water could be sold or rented which then caused a gap between property in land and property in water.<sup>8</sup> The tradition of building *levadas* made the Madeirans their most famous builders and they brought this skill wherever they went, first to the Canaries and then

to America.<sup>9</sup> The skill and ingenuity of the Madeirans in this occupation was reflected in the request of Afonso de Albuquerque who asked that the king send Madeirans, to cut the wood to make the *levadas* with which sugar cane was irrigated, "in order to change the course of the River Nile."<sup>10</sup>

In the Canaries, except for the islands of Gomera and La Palma, water was less accessible. It was the patrimony of the king or lord who then distributed it to the settlers. The "dulas" were established "according to the measurement of the said lands and the division made," and above all, according to the agriculture for which they were destined, sugar having a preferential status. In this way, the grants (datas) of land inform us of the cultures to be initiated and on which woodland and water distribution was based. Thus we have "grants of irrigation (regadio)" and of "dryland (secano)." Those who sought to invest in infrastructure by building an *engenho* were guaranteed thirty *fanegas* of irrigated land. In Tenerife, for the first decade of the Sixteenth Century we have 24 cases in which the building of a water or animal powered mill is ordered to be done within two or three years. In the Canaries, the most important element was the rights to water since they defined the ability to exploit the land, and thus it's utility. The lands granted for cane fields were made with the obligation to construct a water-powered mill. In this context, the lands near the stream beds or "barrancos" were greatly sought and were reserved for the principal settlers.<sup>11</sup>

According to Virginia Rau and Jorge de Macedo, "the production of sugar benefited broad sectors of the population, including among the producers not only small and medium farmers, but also shoemakers, carpenters, barbers, merchants, surgeons, and millers as well as noble functionaries, municipal officers, and others who lived on the margins of this rich production. All these small producers took advantage of the system on the island to make their tiny production

profitable."<sup>12</sup> Historian Vitorino Magalhães Godinho reinforced this characterization of Madeiran social reality by noting the concentration of cane fields in a small number of islanders.<sup>13</sup> The situation in the first half of the Sixteenth Century was different in that the limited number of owners indicates that the cane fields were concentrated in the hands of privileged island social groups: the aristocracy, merchants, and artisans, local and royal functionaries. At both times this group of proprietors represented only about one percent of the island population.<sup>14</sup> This tendency toward concentration accelerated from the Fifteenth to the Sixteenth Century as the number of proprietors decreased in the regions near the "Partes do Fundo"(embracing the districts of Ribeira Brava, Ponta do Sol and Calheta). Moreover here the continuity of ownership was marked since changes by sale, dowry or lease were reduced. The stability of property depended primarily on its entail [vinculação]. Thus, between 1509-1537, 18% of the cane fields of the zones of the "Partes do Fundo" were entailed while in Funchal about 17% were so encumbered, an amount representing about 38% of the production of that captaincy.

For the Canary Islands we lack the documentation that permits a similar analysis or allows for an examination of the ties between the proprietors of the cane fields and the mills. We do know that the mill owners were favored from the outset, guaranteed as they were thirty fanegas of land. We know of eleven grants in Tenerife. Among these were the "haciendas" of the Adelentado in Daute, Icod and El Realejo, of Tomás, Justiniano, Bartolomé Benítez and the Duke of Medina Sidonia in La Orotava, Cristóbal Ponte and Mateo Vina in Daute, Blasyno Inglesco de Florentino and Juan Felipe in Güimar, Tenoya, and Lope Fernández in Taganana. One of the most important properties was developed by Juan Fernández de Lugo Señorino with the haciendas of Argual and Tazacorte. In 1508, its ownership was taken over by Jácome Dinarte who in the following year sold

it to the Welzers who in turn sold it in 1513 to Jácome de Monteverde. The size of his property is suggested by an observation of Gaspar Frutuoso who stated that the mills could operate from January to July with enough cane to produce 7,000 or 8,000 *arrobas* of sugar. The information on production is scattered and do not permit so much conclusion<sup>1</sup>. Thus in La Orotava the mill that belonged to Pedro de Lugo and which had been owned by Tomás Justiniano produced 556 *arrobas* in 1535 and 1,112 in 1536. In Daute, the two sugar-mills of Mateo Viña produced between 5 and 6,000 *arrobas*. Finally, the hacienda El Realejo of the Adelentado produced in 1537-38 some 9,000 *arrobas* of sugar. In Gran Canaria, a sugar-mill at Telde produced 1,190 *arrobas* in 1504.<sup>15</sup>

### **The Production of Sugar**

Sugar cane's first experience outside of Europe demonstrated the possibilities of its rapid development beyond the Mediterranean. Gaspar Frutuoso testified to this: "this plant multiplied in the land in such a way that its sugar is the best that is known in the world and it has enriched many foreign merchants and a good part of the settlers of the land."<sup>16</sup> This reality mobilized the attention of both foreign and national capital for only in this way can we understand its rapid increase. If at the beginning of the occupation of the islands sugar had been a secondary activity, it became the predominant agriculture and product, a position it was to hold for only a short time.

On Madeira sugar cane with the support and protection of the lord and the crown occupied the island and took over the arable in two areas: a warm southern strip from Machico to Calheta, sheltered from prevailing winds (*alisios*) where the cane fields rose up the slopes to 400 meters of altitude; and the captaincy of Funchal which contained most of the best sugar lands within its borders. Machico had only a small area appropriate for cane. With external investments, state and

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local protection, and markets in the Mediterranean and in northern Europe, sugar expanded rapidly on the island. By the mid Fifteenth Century chroniclers like Cadamosto and Zurara took note of the situation.<sup>17</sup> There was a period of growth from 1450 to 1506 despite a depression from 1497-99. It was especially rapid from 1454-72 during which production grew at a rate of 13% per year and then from 1472 to 1493 when that rate was 68% per year or a rise of 1,430% in that period. Recovery after the depression of 1497-99 was rapid. The high point was reached in 1506 after which rapid decline began. In the captaincy of Funchal production fell 60% between 1516 and 1537. In Machico, the fall was slower and resulted from the impoverishment of the soil, but after 1521 the decline was generalized so that by 1525 levels were more or less what they had been in 1470. By the 1530s the sugar economy on the island was in full crisis and the inhabitants were abandoning their cane fields and turning toward the planting of vineyards.

Many explanations for the sugar crisis have been offered, most of them based on external factors. Nevertheless, Fernando Jasmins Pereira in his *Açúcar Madeirense* has offered a different view, arguing that the crisis resulted from ecological and socio-economic conditions on the island itself: "the decline of Madeiran production is principally due to the impoverishment of soils which given the limited area available for agriculture inevitably reduced the productive capacity."<sup>18</sup> In this view the Madeiran crisis was not the result only of the competition from the Canaries, Brazil, the Antilles, and São Tomé, but resulted above all from internal factors like the lack of fertilizers, soil exhaustion, and climatic changes. Competition from other areas, plague in 1526, and labor shortage aggravated the situation. And to all this we must take note of an insect that affected the cane for which there is evidence from 1593 and 1602. Thus the last quarter of the century witnessed a turn to more profitable agricultures like wine. Thus in 1571 Jorge Vaz from Camara de Lobos spoke in a

testament of a property that," had always been in cane and I now order that it be planted in grapes so that it can yield more. . ."19

The Canaries have been seen as an area of competition with Madeira but it was the Madeirans themselves that promoted sugar there. It was during the crisis on Madeira that technicians linked to the sugar industry went to the Canaries and cane plantings arrived in Gran Canaria, Tenerife, La Palma and Gomera, but not to the other islands due to their sterility as Gaspar Frutuoso tells us. The surviving documentation provides scattered information about levels of production. In 1507 Tenerife produced 34,545 *arrobas* and La Palma 2,727. We know that in 1506 Gomera yielded 1,100 *arrobas* to its lord, and a reference to Gran Canaria for 1534 mentions 80,000 *arrobas*.<sup>20</sup>

Traditionally, historians have argued that after the middle of the Sixteenth Century competition from other producers and the uncontrolled expansion of viticulture caused a crisis in sugar. Manuel Lobo Cabrera does not agree, and has held that there was a certain flourishing in the reign of Philip II.<sup>21</sup> He believes that the crisis resulted mostly from Caribbean competition and, above all, from the closing of the northern market, particularly of Antwerp, due to Philip's military policies in Europe.

During the Seventeenth Century the cane fields on the islands gradually declined in importance. Only on Madeira does there appear to have been a slight recovery when Brazilian production slowed, but this seems limited to the area around Funchal. That is substantiated by a tax record of 1600 which listed 108 owners of cane fields, most of them from this area. This is almost the only evidence of sugar production on the island until other tax records of 1689.<sup>22</sup> By the year 1600 on Madeira, the retreat of the industry is obvious. Medium size properties had been replaced

by very small ones. The great majority (89%) produced only from five to fifty *arrobas*, indicating an activity aimed at household use for the making of preserves, jams, and sweets. Up to 1640 this decline was made ever more apparent by the increasing presence of Brazilian sugar in the port of Funchal to the extent that measures were taken in 1616 to insure that there would be an equitable of sugars from both places. Dutch occupation of sugar producing areas in Brazil caused a rebirth of some sugar production on the island to meet the market demand for jams and preserves. In 1643 there were not enough functioning *engenhos* to handle to production of the cane fields. In accord with a royal provision of 1 July 1642, the crown sought to promote cane cultivation by exempting mills from paying the *quinto* tax for five years or half of it for ten years. Various owners took advantage of this benefit, but when Brazilian production recovered in the following decade and Brazilian sugar reappeared in the port of Funchal, the former situation returned.<sup>23</sup> Madeiran sugar once again lost out to the competition. As late as 1658 there was an attempt to stimulate the industry by reducing the tax on production to one-eighth, but the crisis was inevitable. Added to this was the fact that from 1643 to 1675 the *quinto do açúcar* tax was not properly collected as was noted in the latter year. In an *alvará* of 15 October 1688 the crown ordered that taxes on sugar should be limited to an eighth of production as the most effective way of stimulating the industry.<sup>24</sup>

The existing historiography of land ownership and distribution in Madeira has concentrated almost solely on the judicial conditions of land distribution and ownership and has not been concerned with who, and under what conditions, the grants of land (*sesmarias*) were awarded, the nature and changes of the land-owning system, and the ways in which differing levels of fertility may have influenced this system.<sup>25</sup> Madeira, because it was unoccupied when discovered, provided a kind of experiment for European colonization beyond the continent, and the techniques

and processes of its settlement provided a model for the other Atlantic islands and for Brazil.<sup>26</sup>

The system of property on both the Canarian and Madeira archipelagos was defined by the distribution of land to colonists and then by sale, exchange, or later grant. In both cases, with variations depending on local conditions, the process was the same. The crown gave to captains and governors the power to distribute lands to colonists and conquerors according to their actions in the conquest or settlement and with regard to their social status. All the grants were made according to norms established by the crown and following the models previously defined in the resettlement of the peninsula. In both archipelagos the grants required the improvement or development of the land within a set period of time which decreased over time as settlement grew. In Madeira, the period fell from ten years to five years after 1433. In the Canaries, the first colonists in Gran Canaria were given a period of six years to develop their lands while the grants made at Tenerife at the end of the Sixteenth Century provided only two to three years. That these grants were intended to stimulate colonization is demonstrated by the requirements to construct a house on the property, to reside there within five years, and in the case of single men, to marry.

The process in the Canaries differed from that on Madeira archipelago which from 1439 to 1497 was controlled by the Order of Christ. Its authority was represented by the captains appointed: João Gonçalves Zarco at Funchal (1450); Tristão Vaz at Machico (1440) and Bartolomeu Perestrelo at Porto Santo (1446). The Canaries were another matter. In that island chain there were royally-controlled (*realengo*) islands (Gran Canaria, La Palma, Tenerife) as well as those under seigniorial control (Fuerteventura, Lanzarote, la Gomera, El Hierro).<sup>27</sup> Moreover, the Canaries had an indigenous population which slowed the process of occupation and placed the settlers in conflict with those Canary islanders who accepted Castilian sovereignty.<sup>28</sup>

On the Portuguese islands the distribution of lands was from the beginning regulated by the crown and later by the lord of the island, the *infante* Dom Henrique. The king, Dom João I, ordered the captains to grant the lands "free and without any pension. . ."<sup>29</sup> Later, João Gonçalves Zarco, making use of his prerogatives as captain reserved for himself and his descendants an important tract of land in Funchal and Ribeira Brava. Other grants were made according to the regulations of Dom Afonso to those in condition to improve them. Those who lacked the ability or resources lost their right of possession. This created the basis for social differentiation among the first colonists and it opened the door to the growth of large-scale properties. In the Canaries also there was social differentiation among those receiving land grants. In compliance with a royal *cédula* of 1480, Pedro de Vera was required to make these grants to conquistadors "according to their merits."<sup>30</sup>

After 1433 with the donation of the lordship of the islands to Dom Henrique, he had the power to distribute lands but was required to respect the previous concessions, demonstrating that the regulation of land distribution was done by the king. Dom Henrique ceded this power to the captains.<sup>31</sup> The grants of Dom Henrique confirmed the royal regulations and stipulated that the lands could be granted for a period of five years after which the right of possession ended and the lands could be given out in a new concession, a significant departure from the former royal concessions. With this the social differentiation of the grantees disappeared and the the period to initiate cultivation was shortened. Both demographic pressure and the scarcity of lands to distribute caused this change.

In the following decades the granting of lands in *sesmarias* and the legitimating of occupation generated a number of conflicts which called for the legislative intervention of the Lord or the judicial arbitration of his *ouvidor* (senior judge). For example, conflicts arose over the use of

fire to clear forests because of the prejudicial effects on the neighboring cane fields. Finally, between 1501 and 1508, the concession of lands in *sesmaria* was ended except for the lands that could be developed as cane fields or vineyards.<sup>32</sup>

On both archipelagos the power of the captains and the governors to distribute lands created innumerable problems. On Madeira, the Lord sent Dinis de Goa in 1466 as his representative with full powers to resolve all disputes including those involving land and water. In the Canaries as well similar disputes over land grants moved the crown to send in 1506 and 1509 representatives to regulate and legitimate concessions.

### **The Sugar Mills**

The processing of sugar cane was done with the technology common to the Mediterranean world. The availability of water-power led to a generalized use of water mills. On Madeira, the first mill for which we have evidence is that of Diogo de Teive, registered in 1452. In those areas without access to appropriate water power, animal or human force was used, these mills being called *trapiches* or *almanjaras*. We know little about the technical aspects of these mills. We do know, according to Giulio Landi, that in the third decade of the Sixteenth Century one of them operated more or less by the same system used for pressing oil from olives: "The places where with great activity and skill sugar is made are in great properties and the process is the following: first, after the cut cane is carried to these places, they are placed underneath a millstone moved by water which presses and squeezes the cane, extracting all the juice."<sup>33</sup>

One of the questions that have provoked the greatest debate has to do with the evolution of the technology of sugar-making, particularly the development of the cylinder mill. The primitive

*trapettum* was used in ancient Rome to press olives and sumach and was, according to Pliny, invented by Aristreu, God of Shepherds. But this became an inefficient method on the large plantations and was succeeded by the mills arranged with an axle and cylinders. It is here that opinions differ. One version holds that this was a Mediterranean discovery. Noel Deerr and F.O. von Lippmann attribute the discovery to Pietro Speciale, a prefect in Sicily; Spanish historiography favors Gonzalo de Velosa, a *vecino* of the island of La Palma who presented his invention in 1515 on the island of Santo Domingo. David Ferreira Gouveia ascribes this innovation to Diogo de Teive on Madeira in 1452. Others look to the origins of the invention in China. The sugar-mill of three cylinders developed later in Brazil where it was considered a Portuguese invention always linked to the Madeirans who resided there.<sup>34</sup> On Madeira, the first reference to axles for the mill date from the last quarter of the Fifteenth Century. In 1477, Alvaro Lopes received authorization from the captain of Funchal to, "make a sugar mill of mill stone and presses or in another form. . .this engenho should be water-powered with its building and a boiling house. In 1505 Valentim Fernandes referee the white wood used in the making of, "axles and screws for sugar mills." To this was also associated the inventory of the mill of António Teixeira at Porto da Cruz which mentioned, "Wheels, axles, presses, furnaces, and *speeches*".<sup>35</sup>

For the Canaries, Guillermo Camacho y Pérez Galdós describes this engenho as being constructed of three cylinders. The author bases this statement on a contract of 1511 between Andrés Baéz and the Portuguese Fernando Alonso and Juan González to cut three axles, one big and the others smaller for a water wheel and its equipment. Twenty years later, we have the inventory of the mill of Cristóbal de Garcia in Telde where wheel and axles are mentioned. Nevertheless, J. Pérez Vidal remains of the opinion that the first system used in the Canaries was

like an olive press, a Renaissance invention with "little rollers."<sup>36</sup>

The word *trapiche* later entered the vocabulary of sugar to designate all types of mills composed of cylinders used to grind sugar canes. Around Funchal, near Arucas there is a place with this name, proving the existence of this type of mill. In the Canaries, land grants (*data de terras*) distinguished between water- and animal-powered mills. On Madeira, the hydrologic conditions were favorable to the general use of water mills of which the Madeirans became expert builders. Moreover, the conditions were created for the development of this agriculture with the innumerable water courses and the large forests which could provide fuel for the furnaces and lumber for the construction of the axles for the mills. All the social and economic interactions created by sugar were dominated by the mill, but this did not mean that the development of cane fields only took place in their shadow. Here, even more than in Brazil, there were many proprietors without the financial resources to setup the basic industrial operation of a mill and thus remained dependent on the services of others.<sup>37</sup> In an estimate of the production of the captaincy of Funchal in 1494, there were only 14 *engenhos* listed for a total of 209 agricultors holding 431 cane fields.

It is not easy to establish the exact number of mills in the islands. The information is in many cases contradictory. Thus for Madeira in 1494 there are references to only 14 sugar-mills when in another document of 1493 there are mentioned 80 sugar masters, indicating a higher number of mills. German historian Edmund von Lippmann referred to 150 sugar-mills in Funchal at the beginning of the 16th century, a number that does not seem to conform to a reasonable estimate of production given the size of the arable or the number of cane fields. Later, at the close of the Sixteenth century, Gaspar Frutuoso referred to 34 sugar-mills, nine of which were in the captaincy of Machico and the rest in Funchal.<sup>38</sup> In the Seventeenth Century the numbers of mills

was smaller. Thus Pyrrard de Laval referred in 1602 to seven to eight working sugar mills. In the decade after 1649 there is notice of only four sugar-mills, two constructed in 1650. This decline called for new incentives such as loans and tax exemptions from the *quinto* for five years. These were aimed mostly at Funchal and Câmara dos Lobos which implied that there were even harder times for sugar growers in Calheta, Ponta de Sol, and Ribeira Brava who did not receive such favors.

Trying to establish the number of mills in the Canaries presents a similar problem since information is imprecise and scattered. Perhaps the most exact is that of Thomas Nichols in 1526 and of Gaspar Frutuoso in the last decade of the Sixteenth century. Still, while the data provided by the former seems trustworthy, Frutuoso does not seem to merit much confidence.<sup>39</sup> He noted 24 mills on Gran Canaria while Tenerife had only three. We should also mention that on Gomera and La Palma, islands under lordly control (*señorio*) the mills were for the most part property of the lord who then leased them to Genoese and Catalan merchants.<sup>40</sup>

The price of setting up an industrial operation of this type was beyond the capacity of many agriculturists. The evaluation made of a mill for the inventory of António Teixeira of Porto La Cruz in 1535 placed its value at 200 *milréis*. Another document of 1547 set a value of 461 *milréis* on the cane fields, mill, and the water needed by them. In 1600, in Funchal João Berte de Almeida sold to Pedro Gonçalves da Câmara an *engenho* valued at 700 *milréis*. In 1644, the mill of Gaspar Bethencourt in Ribeira de Socorridos was valued at 500 *milréis* and in the previous year that of Baltasar Varela de Lira was sold for 422 *milréis*.<sup>41</sup> For the Canaries, we have similar dispersed estimates for the cost of building a mill. In 1519, the mill of Miguel Fonte in Daute was evaluated at 4,641,320 mrs. There was considerable variation here as well. In 1556 the mill of Valle de Gran

Rey was priced at 1,237,417 mrs while in 1567 one in La Orotava was sold for 6,000,000. For Gran Canaria we have the mills of Francisco Riberol in Agaete y Galdar valued at 300,000, that of Francisco Palomar in Agaete at 750,000, and that of Constantino Carrasco in Las Palmas at 450,000. In La Orotava we have more precise construction costs of various aspects of a mill's infrastructure taken from the inventory of Alonso Hernández de Lugo's mill made in 1584. Its total value was 1,125,252 mrs.<sup>42</sup>

Production levels for the Atlantic island mills were different from the sugar mills of the Americas. For Madeira at the end of the Fifteenth Century we have a listing of only 17 sugar-mills for a total of 233 cane field owners. This does not include those who operated in the area of Caniço and Câmara dos Lobos.

Table 3.1: Madeiran Engenhos

Area	No. of Mills	Arrobas	Average/Mill
Funchal	2	16,545	8,273
Partes do Fundo	15	66,906	4,460
Total	17	80,451	5,563

Taking into account only the “Partes do Fundo” region, we note that each mill would have a production of almost 5,000 *arrobas* or about 63 tons a rather high figure given the state of the available technology.<sup>43</sup> Moreover, these mill owners were not among the most important owners of cane fields. Only Fernão Lopes had some 1600 *arrobas*. There were Labradors with a higher production but who did not own mills themselves. In the first half of the Sixteenth Century these

levels fell by two-thirds to an annual average of 1,478 *arrobas* per mill.

Table 3.2: Madeira Sugar Production in the First Half of the Sixteenth Century

Area	No. of Mills	Arrobas	Average/Mill
Funchal	17	17,863	1,051
Ribeira Brava	6	13,524	2,254
Ponta do Sol	5	8,012	1,602
Calheta	10	19,204	1,920
Machico	8	9,409	1,176
Total	46	68,012	1,479

Sugar mill owners constituted a minority of the total number of sugar producers and in this period of profound changes in the structure of production, the disparity between them was growing. In the Early Sixteenth century there were 269 owners of cane fields and forty-six owners of sugar-mills.

The difference between cane farmers and mill owners is very clear. To be a great proprietor of cane fields was not synonymous with being a mill owner. In the Sixteenth century some mill owners were among the principal producers, but most grew much less, as for example, was the case of João de Ornelas who in 1530 declared a production of only 70 *arrobas* on his sugar-mill in Funchal. The existence of the two groups, cane farmers and mill owners created the peculiar dynamic of sugar production on Madeira.

In the Canaries, particularly on Gran Canaria and Tenerife, the situation appears to have

been different. Here, great property was synonymous with the existence of a sugar mill, a result of the process of how land had been distributed, and the average production per mill seems to have been higher than those of Madeira. Gaspar Frutuoso referred to two mills of the Ponte family in Adeje (Tenerife) produced 8 to 9 thousand *arrobas* while that of Juan de Ponteverde in La Palma was at around 7 to 8 thousand. For Gran Canaria, he indicated that the 24 mills produced on an average of 6-7,000 *arrobas*. From rental contracts of mills we know that Don Pedro Lugo in El Realejo produced in 1537-38 and average of 4,500 *arrobas* and another mill in La Orotava produced 1,122 *arrobas*. In the Seventeenth Century the tithes paid by the seven mills operating on Gran Canaria, Tenerife, and La Palma provide an idea of annual production for the period after 1634A. Macias present new information about the sugar in the Canaries Islands, with the estimated production in 1520:<sup>45</sup>

Island	sugar-mills	Sugar(arobas)
Gran Canaria	38	152.000 to 190.000
Tenerife	16	64.000 to 80.000
La Palma	4	16.000 to 20.000
La Gomera	6	24.000 to 30.000
	64	256.000 to 320.000

### **Slaves and Sugar**

In the encounter between the force of will of the first European settlers and the rugged terrain of the islands, the colonists constructed a Europe in the Atlantic. Madeira, thanks to its geography became

defined by a specific agrarian appearance, quite distinct from the great open spaces of the continent. The excessive division of agricultural lands, the only possible way of making use of the arable, and the distribution of population in both the south and north of the island, influenced the system of cultivation and the ownership of the land. The large initial grants of land were divided as the population grew and as agriculture developed. The early extensive use of the land gave way to intensive cultivation based on innumerable terraces constructed by owners, renters or sharecroppers. Given this situation, it is difficult if not impossible to imagine great sugar cane properties comparable to those of the Americas. There, the cane fields advanced outward from the mills and were always indissolubly linked to them. This was not the pattern in Madeira where many people owned cane fields, but few owned mills. Still another peculiarity of Madeira was the concentration of sugar-mills in areas with the easiest access to the external world that is principally around Funchal, even though it was not always the area of greatest importance in cane cultivation. This peculiar arrangement in the production of sugar influenced the use of slaves. In Madeiran agriculture it is necessary to distinguish two groups of proprietors; those who had leased their lands to renters or dependents, and those who were full proprietors. This double form of ownership promoted the development and use of contracts of sharecropping (*contrato de colonia*) beginning in the Sixteenth Century. On the other hand, the reduced size of the cane fields meant that a sugar-mill was not always nearby nor were numerous slaves always necessary. The use of slaves must be seen in relationship to the structure of landholding on the island. In direct ownership and in leased arrangements the role of slaves was clear enough, but the same can not be said for the *colonia* contracts.<sup>46</sup>

In the Canaries as well, on the islands of Gran Canaria, Tenerife, La Palma and Gomera, the

link between the slave and the sugar economy and the extent of the cane fields must take the geographical and agricultural environment into account. The conquest itself produced the first slaves, taken as prizes of war from among the original inhabitants or Guanches. Later, the proximity to Africa favored access to the market for black slaves who eventually assumed a role of importance in the society. Moreover, unlike Madeira, the evolution of landholding depended on the initial process of conquest. Large estates developed although they were later broken up by division at death, dowries, and sale. The available information drawn from notarial records reveals this process and the perpetuation of some important large estates (*fazendas*) associated with sugar mills. This process can also be noted on Tenerife and on La Palma.<sup>47</sup>

The presence of slaves in the formation of the island societies from the Fifteenth Century forward was not a phenomenon isolated from the social and cultural context of the Atlantic. The lack of laborers for new cultivation, the need for workers in sugar cane agriculture, the active role of the Madeirans in the opening of the Atlantic world, and the proximity of Africa all played a role in shaping slavery. Madeira, because of its location near the African continent and because it was much involved in the exploration, occupation and defense of Portuguese areas there, was wide open to this advantageous trade in slaves. The Madeira's marked the first centuries by the efforts they made to acquire and trade in this powerful and promising commodity. The first slaves that arrived in Madeira and contributed to its economic takeoff were Guanches, Moroccans, and Africans. On one hand, the sugar harvest called for access to laborers which because of the lack of free workers implied slaves. On the other hand, the proximity of the market for slaves in West Africa and the involvement of islanders in this commerce made the islands one of the first destinations for these slaves, and they remained so until the growth of other regions. Note, for example, the relationship

between the curve of sugar production and the manumission of slaves in which the numbers of freed slaves evolved according to the state of the sugar economy. As sugar production declined in the last quarter of the Sixteenth Century, the number of manumissions rose. An opposite movement took place in the first quarter of the Seventeenth century probably associated with a rise in sugar production stimulated by the Dutch occupation of Pernambuco. But this island recuperation was brief and the number of manumissions increased again in the second half of the century. The number of manumissions was not the highest in the principal cane growing areas, but rather in Funchal, Câmara dos Lobos and Caniço. In the Canaries this relationship was also apparent. Lobo Cabrera notes that on Gran Canaria after the mid-Sixteenth century there was a decline in the number of slaves, perhaps the result of the competition from American sugar. Proprietors determined the role and concentration of slaves. On Madeira, Funchal had 86% of the owners and 87% of the slaves, reaching its highest levels in the Sixteenth Century. Within the captaincy of Funchal, the district of the city had 74% of the owners and the two urban parishes--Sé and São Pedro --held 64% of these, the rest being distributed among the captaincy of Funchal (23%), Machico (11%) and Porto Santo (2%).

Comparing the distribution of the slaves and the sugar-mill we can see some distinct difference with the patterns in the Americas. In the Antilles and South America the numbers of slaves per mill was frequently over 100 and there were cases of mills with far more. On Madeira they usually did not exceed 30 per mill over all, the largest mean distribution being 77 per mill in Funchal and 24 in Ribeira Brava.<sup>48</sup> In a total of 502 sugar producers, only 78 (16%) owned slaves. For the Seventeenth century, the number of owners with slaves was higher (39%) but there seems to be no direct relationship between the levels of production and the number of slaves. Thus, for

example, Maria Gonçalves, the widow of António de Almeida, had the largest number of slaves reported but she produced very little sugar.

On the Canaries a parallel situation existed. On Gran Canaria documents reveal properties with 30-35 slaves. The average size on Tenerife and La Palma was about half that on Gran Canaria, but on Tenerife there may have been a few rare properties with up to 100.<sup>49</sup> Note that on Madeira the highest number reported by João Esmeraldo was 14 slaves on the *fazenda* of Lombarda at Ponta do Sol. The majority of producers (63%) had about five slaves. Taking into consideration the labor necessary for sugar making, we must assume that the majority of workers on the *engenhos* were free not slave. The largest number we have been able to establish were the twenty slaves on the property of Ayres de Ornelas e Vasconcelos, but this was for both father and son.

On Madeira, the tendency was for a low average number of slaves per owner. Over half (58%) of the owners held only 1 or 2 slaves and no more than eleven percent of the owners held more than five captives. Those with more than ten slaves were less than two percent of the owners, and once again these were found in the area of Funchal. In general we can say that this was small-scale slaveholding and 89% of the owners held from one to five slaves. Moreover, the link between slavery and sugar was weak. Of 104 persons who owned both slaves and land, only nine had cane fields. The majority of the rest owned wheat fields and vineyards.

For the Canaries analysis of the existing data reveals a different arrangement. On Gran Canaria in the city of Telde, the majority of the slaves was held by cane farmers and mill owners and was thus directly employed in sugar. Here the family of Cristóbal Garcia de Moguer stands out. Owner of a mill, he had sixty slaves in his service, thirty-seven of them at the mill, including a kettleman (*calderero*) and a cane field specialist (*canavieiro*). This situation was also found in

Galdár, Guía, Arucas, Agüimes, and Agaete, all regions of cane cultivation. Around Tenerife we know only that Alonso Fernández Lugo had 28 slaves in 1525. In Daute there were two important slave owners--Cristóbal de Ponte and Gonzalo Yanes. In 1506, the sugar-mill of Icod had 25 slaves. In the Seventeenth Century the situation changed, at least in Las Palmas where the slave owners were found mostly in the service sector, a fact which suggests that slavery was a more patriarchal or household related institution in that place.<sup>50</sup> On the island of La Palma, strongly associated with sugar is where the highest concentration of slaves was found, reaching 29.9 percent of the population.<sup>51</sup> There were also slaves on La Gomera but at present it is impossible to determine how many.

Slaves were always linked to sugar cultivation on these islands but never in the same proportion as was found on Sao Tomé and Brazil. The scattered evidence drawn from the documentation of Madeira and the Canaries attests to this. In 1496, the crown noted this relationship on Madeira by prohibiting the sale for debts of real estate, slave men or women, animals or mill equipment, allowing only the charges to be made on production ("novidades arecadadas"). In another document of 1502 concerning irrigation, the king noted that it was the custom of proprietors to send "the slaves and the salaried men in their service to irrigate their fields,"<sup>52</sup> The link between slaves and the work of cultivating and preparing the cane fields can also be seen in the existing documentation. That slaves did other jobs at the mills is also apparent. The regulations of the *alealdadores* (those who checked the quality of sugar) of 1501 that mentions masters and alealdadores who make 'broken sugar' (açúcar quebrado) will be subject to strict penalties and in the case that they are slaves; the fine will be paid by the owner.<sup>53</sup> Slaves sometimes served as assistants to the skilled workers or sometimes were themselves the skilled specialists. In

1482, in a suit over "tempered sugar" two sugar masters, a Master Vaz and André Afonso, testified. The first stated that while he had been away in the Canary Islands, his slave had tempered the sugar; the second said that in his absence this job had been done by a youth who worked on salary. To such statements indicating that slaves served in the making of sugar, others can be added demonstrating their role as "officials," at the mills, that is as skilled technicians. First we can mention the Canarian slaves presented on the island sugar masters who come to our attention because of limitations placed on their leaving the island in 1490 and 1505. From this period we have only two references to two "master" slaves on Madeira and we can not tell if they were Guanches. In 1486, Rodrigo Anes, "o Coxo," from Ponta do Sol freed in his will the slave Fernando a "mestre de engenho," that is probably a builder of mills. In the testament of João Vaz, he refers to his slave, Gomes Jesus, as a "sugar master." Later in 1605 a certain Jorge Rodrigues, a freedman sought a compensation of 3 *milréis* for the service he had performed at the engenho of Pedro Agrela de Ornelas.<sup>54</sup> The French traveler Jean Moquet reported in 1601 that the slaves had an important role on the engenhos and that he had seen, "a great number of black slaves who worked in sugar near the town." The only peculiarity of slave service on the Madeiran mills was the fact that they worked alongside free men and freedmen, especially salaried employees. In 1578 António Rodrigues, a worker declared in his will that he had worked, presumably for wages, under the direction of Manuel Rodrigues, the overseer of the engenho of Dona Maria.<sup>55</sup>

For the Canaries, recent studies, especially those of Manuel Lobo Cabrera, have revealed similar evidence for the Sixteenth and Seventeenth Centuries. In the Sixteenth, the links between slavery and work in the field and at the mill is clear. There is reference to the black's house (*casa de negros*) as part of the infrastructure of the mills implying their presence. Slaves did the most varied

tasks at the mill: *molederos* (cane millers), *preñseros* (pressmen), *bagaceros* (bagasse removers), and *caldereros* (kettlemen). They might be owned by the mill owner or rented from other owners. Such rental contracts for mill service are common in the Canaries. There was also a strong presence of freedmen as skilled specialists and as workers.<sup>56</sup> We should also note that in the Canaries field cultivation was often done by cane farmers (*esburgadores de cana*) and by renters so it was possible for a proprietor to hold extensive cane fields without directly needing to own the slave laborers. This system was generalized on the island of Tenerife and it must have had some effect on the weight of a slave presence on the society.<sup>57</sup> Still, many owners did have slaves whom they employed in these tasks. A free man who leased property during the sugar harvest almost always had a few slaves who acted as his assistants. Thus, slaves might be lacking as integral part of the property of those who owned fields and mills, but that does not mean that they were absent from the process. On the other hand, slaves were sometimes attached to the land. In 1522 in La Orotava (Tenerife) a city councilman rented out a cane field for five years and along with it three slaves whom the renter had to clothe and feed.<sup>58</sup> This was a frequent situation on La Palma and Gran Canaria.

To summarize, on Madeira as had happened in the Canaries, the labor force used at the mills was mixed, made up of slaves, freed, and free persons who did a variety of tasks and, when compensated, were paid in money or sugar. Some of the slaves belonged to the proprietor of the mill but others who worked for wages under rental contracts. In Brazil there was also a mixed labor force, but slaves predominated. They might be property of the mill owner, the cane growers, or of others who rented them out. The difference in the proportion between slave and free workers is the primary difference between the industry from one side of the Atlantic to the other.

## **The Price of Sugar**

It is difficult to establish the evolution of sugar prices in the island markets because documentation is lacking for the reconstruction of a price series.<sup>59</sup> What information remains is disperse and disconnected. For Madeira it is possible to bring together sufficient data for the third decade of the Sixteenth century and the same can be done in the Canaries for the island of Tenerife. Moreover, there are other factors that influenced the price of sugar such as the chronic lack of specie on the islands and the use of sugar therefore as a means of exchange. In the Fifteenth and Sixteenth Centuries this led to its continual devaluation. Sugar was used as a means of exchange in both island groups, but more commonly in the Canaries.<sup>60</sup>

We must also keep in mind that the law of supply and demand conditioned sugar prices over the course of the year. There were monthly fluctuations in accord with the stage of the sugar cycle and the presence of shipping in the port.<sup>61</sup> Thus we find the highest prices in the months of June and July, exactly the moment when the year's first sugar became available and when merchants had the most funds at hand. White sugar had two prices, depending on whether it had been "cooked" once or twice. On Madeira in 1496, one price was almost double the other. Of 15,000 *arrobas* from the first processing only 10,000 would remain after the second and this had a strong effect on the final price.<sup>62</sup> Moreover, it reduced the volume of product and thus tended to maintain the value of sugar when there was an excess on the market.

In the decade of the 1470s the price of sugar entered into a sharp decline. This is confirmed by the actions of the lord (senhor) after 1469 who sought to impose a monopoly on commerce. The Madeiran's opposition to a similar solution led the duke, Dom Manuel to try something new. Thus

in 1496 he fixed the price at 350 *réis* for once "cooked" sugar and 600 for that which had been processed a second time. Two years later he established a maximum quota for export at 120,000 *arrobas*. This was at a time of sugar's decline. The first sugars sold at Machico were priced at 2000 *réis* per *arroba*. By 1469 the price was at 500 *réis* for once "cooked" sugar and 750 for twice processed sugar, In 1472, the price rose again to 1000 *réis* per *arroba* but this rise was short-lived and to be the result of devaluation of the currency. In 1478 matters returned to normal. Prices continued to fall until the beginning of the Sixteenth Century and only with the price revolution did the situation change as could be seen on both archipelagos by the 1520s. On both Madeira and the Canaries it is clear that after the 1530s the competition of American sugars began to have an effect. The situation in the Canaries, however, reversed itself once again in the 1540s, probably due to inflation.<sup>63</sup>

More than white sugar was marketed. Various subproducts and lower grades as well as preserves and sugared fruits were also produced. These were important on both archipelagos. At Tenerife, for example, lower grades (*escumas* and *rescumas*) were sold for half the price of white sugar while on Madeira and Gran Canaria that was only true of *rescumas* since the *escumas* were more highly valued. On Gran Canaria in the Sixteenth Century from 2,500 *arrobas* of sugar, 20 percent was refined sugar, 60% white, 12% *escumas*, and 8% *rescumas*. A similar distribution existed on Madeira from 1520-1537.<sup>64</sup>

### **Sugar and Atlantic Commerce**

The social and economic developments in the Atlantic islands were directly related to the demands of the Euro-Atlantic world. This was true for the islands: first as a peripheral region of European

business, adjusting their economic growth to the needs of the European market and the European shortages of foodstuffs; later as consumers of continental production, trading at a disadvantage with Europe; and finally, as an intermediary between the Old World and the New. We can note that especially by the beginning of the Sixteenth Century that the "Mediterranean Atlantic" was defining itself as the point of contact and aid for the commerce with Africa, the Indian Ocean, and America. All this created a network of interests between the bourgeoisie and the aristocracy in power in the peninsular during the process of occupation and the economic development of the new societies. This peninsular component was reinforced by the participation of a Mediterranean bourgeoisie attracted by new markets and by the rapid and easy expansion of their operations. A group of Italians, more or less linked to great Mediterranean commercial groups actively participated in the exploration, conquest and occupation of the new Atlantic space. To this end, they were interested in the conquest of the Canaries archipelago, the Portuguese expeditions of geographic exploration, and in commerce along the West African coast. Their penetration in the island world gained them a position in the society and economy established there. The investment of merchant capital is it national or foreign, was essential to the new economy and generated new wealth for these commercial endeavors. Commerce was thus the common denominator for the products introduced, and that most valued in the new economy was sugar.

Madeira was at the outset the most important entrepot. Exploration became linked to commerce and from the mid-Fifteenth century an active trade with Portugal was maintained, at first in woods, *urzela*, (cudbear, a dyestuff) and wheat, and later in sugar and wine. This trade eventually spread to North European and Mediterranean cities with the appearance of foreigners interested in the sugar trade. Spaniards and Italians in the Canaries established an active trade with the Iberian

peninsula from the mid Sixteenth Century forward. After the conquest, Italians, Portuguese and Castilians controlled the island trade. The English and Flemish merchants layed out the routes of the Nordic trade in a second stage of this commercial development. By the end of the Sixteenth Century, Tenerife and Gran Canaria were the primary producers.

The insular sugar trade, concentrated on Gran Canaria, Tenerife, Gomera, La Palma, and Madeira was the principal link to the European market. On Madeira, this trade became dominant between 1450 and 1550 but on the other islands it grew at the beginning of the Sixteenth Century and became dominant only by the 1530s.

In the opinion of Vitorino Magalhães Godinho, the Madeiran sugar trade, "oscilated between liberty strongly restricted either by the crown or by powerful capitalist interest groups on one hand and overall monopoly." Thus commerce remained free only until 1469 when a fall in prices led to the intervention of the senhor and the exclusive control by the Lisbon merchants. Madeira's, used to trading with foreigners, did not appreciate this change. Nevertheless, in 1471 Infante Dom Fernando decided to establish a monopoly company, a move which then resulted in a bitter conflict between the contractors and the local government on the island representing the sugar producers. Twenty-one years later, the island still faced a difficult situation in the sugar market which led the crown in 1488 and 1495 to reestablish its monopoly control, establishing rules for the planting, harvesting and marketing of sugar in 1490 and 1496. But this policy, designed as it was to protect the income generated by sugar, ended in disaster, and in 1498 a new policy was instituted by which a production limit (*escapulas*) of 120,000 *arrobas* was set to be distributed among various European purchasers.<sup>65</sup> With some changes this system remained in place until 1508 when the system of free trade was restored. The charter of the captaincy of Funchal stipulated in 1515 that

sugar, "can be carried to the east and the west or to any other place that merchants and shippers desire without any impediment."<sup>66</sup> The situation in the Canaries was quite different. There the sugar trade had been opened to all agents and markets, the only restrictions being imposed by political and religious considerations, especially in regards to Flanders and England at the end of the Sixteenth Century.<sup>67</sup> The intervention of local municipal councils and the crown was felt only in quality control not in the marketing and production aspects as was the case in Madeira.

### **The Sugar Merchants**

The early development of the sugar economy attracted the first wave of foreign merchants to Madeira, a process only limited by ordinances against their residence on the island. Still, by the mid-Fifteenth Century the crown was extending special privileges to Italians, Flemings, French, and Breton merchants, allowing them to remain on the island in order to gain access to European markets. This was considered destructive to the interests of Portuguese merchants and the crown and led the Lord to prohibit the permanent residence of foreigners. The question was raised at the Cortes of Coimbra in 1472-73 and that of Evora in 1481 at which time the Portuguese bourgeoisie complained against the effective monopoly of the sugar trade held by Genoese and Jewish merchants. The king, compromised by the advantageous position held by the foreigners which his policy of privileges had created, reacted ambiguously, seeking to safeguard the existing concessions but responding favorably to the petitions of his subjects to limit the residence of foreign merchants by making them secure licenses. On Madeira, residence was impossible without these and resale in the local market was prohibited to foreign merchants. The *câmara* of Funchal sought to expel the foreigners in 1480 but were prevented by the Lord. In 1489, Dom João II recognized the utility of

foreign merchants and ordered that foreigners be considered "natives and residents (*vezinhos*) of our kingdoms."<sup>68</sup>

By the 1490s, difficulties in the sugar market once again stimulated a xenophobic policy. Foreigners were given three or four months between April and September to do their business and were not allowed to have shops or agents in the city, but by 1493 Dom Manuel recognized the negative effects of such restrictions on the Madeiran economy and removed them all, allowing the foreigners eventually to become involved not only in commerce, but in administration and landholding on the island.<sup>69</sup>

The "white gold" of sugar attracted Italians, Flemings, and French merchants to Funchal. The Italians, and chief among them Florentines and Genoese, were on the island from the mid-Fifteenth Century as the principal sugar merchants and their activities also extended into landholding, a situation made possible by purchase and marriage. In the decade of the 1470s through a contract established with the island's lordship, they had already established a predominant majority position. They were represented by Baptista Lomellini, Francisco Calvo, and Micer Leão. In the last quarter of the century, Cristopher Columbus, João Antonio Cesare, Bartholomew Marchioni, Jerónimo Sernigi, and Luis Doria joined together. This group was followed by a more numerous one in the beginning of the Sixteenth Century which linked the resident Italian community together in the sugar trade. Foreigners came to depend on a group of agents or representatives to maintain the scope of their commercial operations in the islands; men like Gabriel Affaitati, Luca Antonio, Cristovão Bocollo, Matia Minardi, João Dias, João Gonçalves e Mafei Rogell. It is noticeable that the first group was primarily Italians while the second included representatives of some of the island's principal families.

The merchant-bankers of Florence were particularly important in arranging the commercial and financial arrangements for Madeiran sugar in European markets. From Lisbon where they enjoyed royal confidence, they created an extensive network of ties that linked Madeira to the principal European ports. They obtained almost exclusive control from the Royal Treasury through their contract to collect royal duties. Figures such as Bartolomeu Marchioni, Lucas Giraldi e Benedito Morelli had a direct effect on the sugar trade in the beginning of the Sixteenth Century. These merchants and their agents kept the network functioning. For example, Benedito Morelli em 1509-1510 maintained on the island agents likes Simão Acciaiuolli, João de Augusta, Benoco Amador Cristóvão Bocollo and António Leonardo. Marchioni in 1507-1509 was represented by Feducho Lamoroto. João Francisco Affaitati, from Cremona, the Lisbon agent of one of the most important commercial families, actively participated in this trade between 1502 e 1526, by means of contracts of purchase and sale of the sugar collected by the crown as duties (1516-1518, 1520-1521 e 1529) and in payments in sugar in exchange for pepper. He also did this in partnership with other merchants through agents on the island. This group of merchants penetrated insular society where their royal privileges favored their linkages to the land and office holding elites. Their appearance among the municipal councilors and treasury officials indicates their position in the sugar economy. Men like Rafael Cattano, Luis Doria, João and Jorge Lomelino, João Rodrigues Castelhana, among others acquired some of the best and most productive lands and were counted among the most important owners of cane fields.

The French and the Flemings, following the Italian example, were attracted to the island as well by the sugar trade, but their interest remained only in the commerce of sugar and not in its production and thus they did not set down roots in local society as the Italians did. João Esmeraldo

was the exception. The French played an active role in the sugar trade while the Flemings were in a secondary role. The French acquired large amounts of sugar in Funchal, Ponta do Sol, Ribeira brava, and Calheta shipping it in French ships to a number of French ports. Some of these merchants incorporated Madeira into a network that linked the Canaries to Nordic and Andalusian ports.

The escapulas or sugar quotas up to 1504 and the sugar collected as royal duties were funneled to European markets either by direct delivery, by free trade or in exchange for pepper. This sugar was handled by merchants or commercial consortia in Lisbon in which Italians like João Francisco Affaitati e Lucas Salvago played a central role. The Italian-controlled network based in Lisbon dominated the sugar trade in the first three decades of the Sixteenth century, but by the 1530s it was somewhat in decline as foreign merchants, faced with the instability of the Madeiran sugar market began to seek other trades. After the Italians, the Portuguese and Spanish traders were the most important while the northern merchants did not play much of a role. This is additional evidence that the Flemish sugar route remained under the control of the Portuguese factory in Antwerp. During the period between 1490 and 1550, exclusive Italian control in the first decade and predominance in the next two was replaced by Portuguese, Castilian, and French traders. Among the foreign merchants the trade concentrated in a few hands. The five leading merchants in the period handled over 70% of the sugar shipped, or over 10,000 *arrobas* each while among Portuguese merchants only one shipped over 1,000 *arrobas*. The Cremonese noble, João Francisco Affaitati, who headed the Lisbon operations of his family business, became the principal merchant in the Madeiran sugar trade in the period 1502 to 1529, handling more than seven times the amount of all the Portuguese merchants together.

The network of the sugar trade at Funchal was created and motivated by foreigners, Germans or Italians, who arrived after an advantageous stop in Lisbon. They controlled the major consortia in the sugar trade even though their fixed residence was often Lisbon, Flanders, or Genoa. Their operations depended on representatives and agents on the island whom they chose first from among their relatives, next from their compatriots with roots on the island, and last from locals or Portuguese. The number of local agents was a gauge to the importance of the firm. The Welsers e Claes operated in the Funchal market through agents in Lisbon like Lucas Rem and Erasmo Esquet, who then had representatives in Funchal to deal with day to day operations. These men in turn had little to do with local society and they often dealt with more than one foreign merchant firm, just as the firms often used multiple agents.

By the second half of the Seventeenth Century, Madeiran sugar was being replaced by the Brazilian product. Madeira's and Azorians played a part in this commerce supplying wine and vinegar in return for sugar, tobacco, and brazil wood and eventually even entering into the slave trade. For this the Madeira's created their own network of trade through Madeira's stationed in Angola and Brazil. Diogo Fernandes Branco was a perfect example of this new situation. He specialized on the export of wine to Angola in exchange for slaves which he then sold in Brazil for tobacco and sugar. A household industry employing many women in the city and surrounding areas developed on the island in which these products were transformed into conserves and other sugar byproducts, all of which were organized by merchants like Fernandes Branco according to requests they received. The principal ports for these goods were the north of Europe: London, St Malo, Hamburg La Rochelle, and Bordeaux. Fernandes Branco served as the direct representative for merchants in a number of these ports, sending wines and sugar products in return for

manufactured goods since money and bills of exchange were rarely sent to Madeira. His correspondence reveals his own network of contacts in Lisbon and in Brazilian ports. He seems to have specialized in supplying wine to Angola and Brazil and sugar to the dining tables of Europe. His activities reveal the structural position of Madeira in the second half of the Seventeenth Century as an entrepot between the interests of the commercial bourgeoisie of the Old and New Worlds. Funchal was a key piece in this puzzle, a place where small merchants awaited an opportunity to enter into these trades. Angola and Brazil were two other locales for this activity as was Barbados from time to time until eventually with the rise of English commercial hegemony in the Atlantic world, it assumed a dominant position.<sup>70</sup>

The Canaries also witnessed the active participation of foreign merchants through the Fifteenth and Sixteenth Centuries. Portuguese, Genoese, and later Flemish and French merchants were involved in the conquest and occupation of the islands, in the creation of their social and economic base, and in the development of commercial networks. The Genoese, well-established in Andalusia, participated actively in the trade of *urzela* and slaves in the archipelago. Blocked in their Mediterranean trade by the Muslims and by Italian rivals they sought in the "Atlantic Mediterranean" a new site for their activities. Madeira, Gran Canaria and Tenerife in the Fifteenth and Sixteenth Centuries thus became their Atlantic homeland where they settled as residents (*vezinhos*) becoming in the process powerful landowners, merchants, and moneylenders. We can identify three types of foreigners: 1. conquerors who took part in the winning of the Canaries as warriors or financiers of expeditions; 2. Settlers who developed after the conquest benefiting from the process of occupation; 3. merchants who handled local exchanges and then the commerce in sugar and manufactured items, aided to some extent by their resident compatriots.

Conquerors and settlers became important in the new societies of Tenerife and Gran Canaria as *hacendados*. Such was the case of Cristóbal Ponte and Tomás Justiniano who next to the Lugos were the richest men on the island. F. Clavijo Hernández considers Tenerife the center of Genoese mercantile operations. They financed the conquest, the planting, and the harvesting of the sugar cane. A similar role was played on Gran Canaria by Francisco Riberol, Antonio Manuel Mayuello, Bautista Riberol, and Jacome Sopranis whose importance was symbolized by their patronage of the principal chapel of the Franciscan convent and by the designation of one of the streets as the "street of the Genoese." As in Madeira, their influence spread into local administrative life as functionaries or as the holders of government tax contracts as was the case of Juan Leandro and Luis de Couto who in 1524 collected the royal third.<sup>71</sup> To this group of legal residents (*vezinhos*) we must add the more numerous merchants who were simply passing a period on the island. According to the count made by Guilherme Camacho y Pérez Galdos they considerably outnumbered the resident merchants.<sup>72</sup> On Tenerife, the situation was inverted. There the *vecinos* made up 57% of the resident merchants. The majority of them dedicated their activity to sending sugar to Europe and importing manufactures to the islands. Most had shops on the Anlalucian coast and operated through a network of agents and representatives. Francisco Riberol, one of the principal Genoese, for example, sometimes resided in Seville and sometimes on Gran Canaria where he had considerable interests in the sugar industry. While the Genoese were the principal representatives of the Italian merchant community on the islands, there were also Lombards like Jacome de Carminatís and Florentines like Juanoto Berudo, one of the conquerors of La Palma.

The Flemish community had equal importance in Canarian society and economy. Despite their occasional presence in the Fifteenth Century as merchants or conquerors, it was really in the

early Sixteenth century that they began to arrive in the archipelago in force. Attacked by the commerce in sugar and dyestuff, they established an important export trade, and their activities extended into all aspects from sales to loans of capital and goods to export trade. In this way, they created a net of relations throughout the islands from their bases on Gran Canaria, Tenerife, and La Palma.<sup>73</sup> Tenerife attracted the largest number of merchants from the Low Countries, most of whom were visitors rather than residents on the island. Like the Genoese, the Flemings also penetrated island society and achieved the status of residents (*vecinos*), becoming tied to the principal local families and directing trade circuits with Bruges or Antwerp, their cities of origin.<sup>74</sup> Only on La Palma did a small community develop which played major role in local matters.

In the Canaries, companies (partnerships) developed not only in the commercial sector, but in transport and production as well. For example, in 1513 the Welsers acquired cane field in Tazacorte (La Palma) which later were passed to their agents Juan Bissan and Jácome de Monteverde. On Gran Canaria partnership contracts were common between cane farmers and merchants or between cane farmers and *canavieiros* [those who weeded the cane fields]. In Las Palmas, Santa Cruz and Garachico partnerships were formed by local and foreign merchants to do business with three primary markets; the Northern and Mediterranean ports, the African coast, and the Americas. This was generally done through Seville or Cadiz using the offices of resident agents. Three Barcelona merchants formed a company in 1536 to trade in Canarian sugar and slaves using Cadiz as redistribution point. Another Barcelona-based group was established in 1574.<sup>75</sup> In these relations between the Canaries and Andalusia, family ties predominated with relatives often serving as agents in the islands. By the first quarter of the Seventeenth Century, the picture was changing because of political considerations, the English were gone and there were fewer Flemings and

Genoese.<sup>76</sup>

### **Commerce in White Gold**

Sugar provided the major element in the trade between Madeira and Europe in the Fifteenth and Sixteenth Centuries and it played a similar role in the Canaries beginning in the Sixteenth Century. On Madeira and some of the Canary islands it was the basis of wealth and the commodity that could be used to acquire food and manufactured goods. But during this period the sale and value of sugar oscillated because of conditions in the markets where it was consumed and because of competition from other producing regions. The producers' expenses were varied. Direct sales, sometimes pledged before the harvest, were often used to pay existing debts or were made in exchange for goods and services. On Madeira, the "books of the fourth and the fifth", registers of taxes, reveal how producers disposed of their sugar.<sup>77</sup> In the Canaries, different types of contracts are registered in notarial records. These reveal the principal buyers as well as the use of sugar to pay for services. For Madeira in the first half of the Seventeenth Century we can see how the sugar was distributed by mill owners and cane farmers. There, 81,280 *arrobas* was sold to 2,492 buyers; an indication of a distribution to small buyers and a situation quite different from the monopoly control that had characterized the high point of sugar's growth in the previous century.

Engenho owners and cane farmers usually used the product of their harvests to pay for the salaried laborers they employed. From 1509-1537 there are references to the payment in sugar for a variety of services and purchases. The accumulation of profits by the sugar producers and their redistribution into the local economy had an effect on the life of the island and on the development of its artistic and architectural context.<sup>78</sup> In the Canaries, there was also an advance of goods and

services against the expected harvest, a system that tended to subordinate the producers. Here too, despite regulations to the contrary, the payment of workers in the harvest was made in sugar which led to its circulation as a means of exchange.<sup>79</sup>

For over a century, sugar was Madeira's principal item of trade with the outside world. The difficulties of penetrating the European market led the crown to control this trade which after 1469 was done under the permanent supervision of the Lord Proprietor and the crown. This situation remained in place until 1508 when the contract system was abolished. The northern ports, especially Flanders, dominated the sugar trade receiving half of the established quotas (*escápulas*). Similarly, the Italian ports dominated the Mediterranean trade. If we compare the quotas of 1498 with the sugar shipped from 1490-1550 as is done in Table 3.3 we can see the major difference lies in the share taken by the Italian cities, perhaps because of their role in redistributing this sugar to France and the Levant.

Table 3.3: Exports of Madeira Sugar to Europe 1490–1550

Destination	Quota of 1498		Market, 1490–1550		Merchants	
	@	%	@	%	@	%
Flanders	40,000	33	105,896	39	11,375	2
France	9,000	13	500	-	8,469	2
England	7,000	6	1,438	1	1,072	-
Italy	21,000	30	140,626	52	407,530	80
Portugal	7,000	6	20,657	10	23,798	5
Turkey	15,000	13	2,372	1		-

Others			32		68,185	13
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Madeiran sugar was being carried primarily to the Flemish and Italian markets and Portugal itself, the ports of Lisbon and Viana do Castelo, was only in third place, receiving about ten percent of the total. From about 1511, Viana do Castelo became important, redistributing sugar to Spain and northern Europe. In the period 1535-50 of the 56 ships entering Antwerp with Madeiran sugar, 16 had sailed from Viana. In the period 1581-1587, Viana was the only Portuguese port receiving Madeiran sugar. For the Mediterranean, Cadiz and Barcelona played a similar role as the major ports for the trade with Genoa, Constantinople, Chios, and Agues Mortes.<sup>80</sup>

Export statistics for the period 1490-1550 demonstrate that about 39% of the trade went to Flanders and 52 % to Italy but Italian merchants actually shipped about 78% of all Madeiran sugar. The early difficulties for foreign traders were overcome by the 1480s as some became residents involved with both production and commerce of sugar. Data for the later Sixteenth Century is more difficult to locate but from 1581-87 the island exported just under 200,000 *arrobas*.

In the early Sixteenth Century the sugar market was expanding. Madeira in the previous century had been almost alone as a producer, but now the Canaries, the Barbary coast, São Tomé, and later Brazil and the Antilles were also making sugar. This competition affected the sugar market. Madeira, however, maintained its preferential status and in the markets of Florence, Antwerp and Rouen its sugar still commanded the highest prices. Perhaps this situation explains the frequent references to stops in Madeira of ships trading with São Tomé, the Canaries, and North Africa. It may also explain why there is a reference to the sale of Madeiran sugar in Tenerife in 1505.<sup>81</sup> Normand shipping also favored Madeira although after 1539 São Tomé began to overtake it

as a supplier to northern markets.

As competitors arose, the routes of trade shifted away from Madeira. Cane fields were abandoned, the industry of sweets and preserves was endangered, and activity in the port of Funchal atrophied. As this happened, the commerce of the Canaries picked up, providing an active competition in northern and Mediterranean markets. The two archipelagos both sent their products to the markets of London, Antwerp, Rouen, and Genoa. Madeira's only advantage was that being first as an exporter of sugar and wine, it had won the preference of many sellers and consumers.

Canarian sugar began to arrive in quantity in European markets. Between 1549 and 1555 fifty-eight ships traveled between Antwerp and the Canaries. According to A. Cioranescu the commerce of Tenerife was most intense with the Low Countries, limited only by warfare and religious conflicts. Santa Cruz was more oriented toward the sending of wine and dyestuff to England, a result of the opening of Bristol to trade with the Canaries which had been proposed in 1538 by Charles V. On Gran Canaria, the northern trade, particularly with Flanders, was based on sugar, although Flemings did not become important in it until the decade of the 1550s.<sup>82</sup>

Italian merchants based in Cadiz and Seville played a leading role in developing the Canarian sugar trade. They established themselves on Tenerife, Gran Canaria, and La Palma and used Cadiz as the central distribution point in the Mediterranean. The conquest of northern markets came later. In fact, the first shipment of Canarian molasses to Antwerp in 1512 did not please the buyers.<sup>83</sup> Only by the 1530s were Flemish buyers anxious to get Canarian sugars, partly because of the collapse of the Madeiran market, and partly because of the Flemish community established on the islands by that time. The trade with the northern ports was facilitated by Portuguese from Lisbon, Vila do Conde, and Algarve who had learned the routes and skills in the Madeira trade. On

Gran Canaria and Tenerife as earlier in Madeira, the Italo-Flemish merchant community was the axis of trade with the European markets for sugar. On all these islands, the communities overlooked religious differences to unite for the common cause of selling sugar, and together they dominated the sugar trade.

Good information on Canarian sugar exports is difficult to find but it seems clear that the relatively low number of sailings to Italy from the islands can be explained by the fact that Andalusian ports, especially Cadiz, served as intermediary destinations, playing a role similar to Viana do Castelo in the Madeiran trade with northern Europe. Canarian trade with northern Europe was often direct. Gran Canaria, for example, sent various grades of sugar and conserves to Rouen and Antwerp.

By the mid Sixteenth Century competition from Brazilian sugar began to have an effect on the Atlantic islands. Madeira turned to the Brazilian product to stimulate its own trade. José Gonçalves Salvador has stated that the islands served as "a trampoline for Brazil and the Rio de la Plata" in the period 1609-1621.<sup>84</sup> He also made clear that this relation might be direct or indirect through Angola, São Tomé, Cape Verde or the Guinea coast. From the close of the Sixteenth century, the trade in Brazilian sugar used the ports of Funchal and Angra dos Reis for legal and contraband exports to Europe. Pressures on the crown and appeals from Madeira's led to its limitation. Thus in 1591 unloading Brazilian sugar in Funchal was banned, an action that seemed to have little effect since the minutes of the town council of Funchal for 17 October 1596 asked for the full application of this law. After 1596 there is evidence of an active role in defense of local sugar production by local authorities. Violations of these restrictions were punished by a fine of 200 *cruzados* and a year of penal exile.<sup>85</sup>

Constant pressure from businessmen in Funchal involved in this commerce led to a consensual solution. In 1612 a contract was established between the merchants and the town in which the merchants were allowed to sell a third of this Brazilian sugar which after 1603 had been completely restricted from sale; violators having been punished by loss of the cargo and a 200 *cruzado* fine. After 1611 this was changed and sale of Brazilian sugar was allowed after local sugar had all been sold. To this end, slaves and boatmen were threatened that any movement of sugar without expressed authorization by the municipal council would be punished by a fine of 50 *cruzados* and 2 years of penal exile.

After the Portuguese restoration of independence in 1640, commerce with Brazil faced further regulations. First, there was the creation of monopoly through the Brazil Company in 1649 and its creation of a convoy system. Madeira and the Azores after 1650 were allowed to send two ships a year with a capacity of 300 *pipas* to trade for tobacco, sugar, and wood. Later a limit was set at 500 crates of sugar. The two ships a year were sent with licenses from the Conselho da Fazenda and were supposed to benefit all the island's merchants. Some ships claiming to be victims of shipwreck or corsair attacks landed crates of sugar, perhaps attempting to avoid the prohibitions. Infractions were punished with prison terms.<sup>86</sup> For the Seventeenth Century Canaries we only have export figures for Gran Canaria in the first quarter of the century.<sup>87</sup> By that time, the relative importance of Seville and the French ports had become inverted.

### **Place of Madeira in the World of Sugar**

Madeira, archipelago and island, played a singular role in European expansion. Various factors in the Fifteenth Century made it a key to Portuguese activity, a kind of Atlantic "lighthouse" to orient

and guide further maritime activity. This role as a base of communications and the development of its agriculture of sugar and wine allowed Madeira to overcome the isolation of its location. It also served as a point of reference for the Atlantic in terms of its social organization and in the role of slavery within it. As Sidney Greenfield has observed, Madeira served as a trampoline between "Mediterranean sugar production" and American "plantation slavery." In this Greenfield was simply following the arguments developed by Charles Verlinden in the 1960s, arguments that now must be modified due to recent work on slavery on the island.<sup>88</sup> In truth, Madeira was the social, political, and economic starting point for the Portuguese Atlantic and for "the world the Portuguese created" in the tropics.

It was Columbus who opened the New World and traced the route for sugar's expansion to it. He was no stranger to this product having been involved in its commerce on Madeira. Prior to his personal relationship on the island, he had been like many of the Genoese merchants dealing in Madeiran sugar. Tradition has it that the first cane plantings he brought to America came from La Gomera in the Canaries which at that moment was in the process of sugar's expansion while the industry was already well-established on Madeira.

Madeira's soils made sugar cane cultivation through intensive agriculture profitable. Madeira made production on a large scale possible as prices began to reflect by the late Fifteenth Century. In 1483, governor don Pedro de Vera wishing to make the conquered areas of the Canaries productive sought to bring sugar plantings from Madeira. Portuguese took an active part in that conquest and in bringing this new area into the world economy by acquiring lands as settlers, by working for wages as specialists in sugar-making, or by constructing sugar mills and setting them in motion. On La Palma, for example, we can refer to Lionel Rodrigues, *mestre de engenho* who

earned that title after twelve years of work on Madeira.<sup>89</sup> The Canaries would later play a similar role for the Spanish Indies. Thus, in 1519 Charles V recommended to the governor Lope de Sosa that he facilitate the departure of sugar masters and specialists for the Indies.<sup>90</sup>

Sugar had moved southward to Cape Verde and São Tomé but only in the latter did it encounter the water, forest and land suitable for its expansion. In 1485, the crown recommended that João de Paiva proceed with the planting of sugar cane. For the making of sugar there are references to, "many masters from the island of Madeira." It was here on São Tomé that the sugar structure which would pass to the other side of the Atlantic developed. From the Sixteenth Century, the competition from the Canaries and especially São Tomé naturally led to a reaction from Madeiran producers who complained to the crown in 1527.<sup>91</sup> The crown promised to respond in the following year but no decision seems to have been made.<sup>92</sup>

Meanwhile across the Atlantic the first steps in the distribution of land in Brazil was being made. Once again, the presence of Madeiran cane and Madeiran sugar specialists can be noted. The crown drew on them to create the industry's infrastructure. In 1515 the crown had asked for the good offices of anyone who might build a mill, and in 1555, João Velosa, called by many a Madeiran, built one at royal expense. To develop the industry in Brazil specialized laborers would be needed and Madeira was the principal source. Thus in 1537 *engenho* carpenters on the island were prohibited from traveling to the lands of the Moors.<sup>93</sup>

With such restrictions and facing the slow decrease in island sugar production, many Madeira's headed for the Brazilian cane fields where they appear as specialists and proprietors in Pernambuco and Bahia. Some of these Madeira's like Mem de Sá and João Fernandes Vieira, the liberator of Pernambuco in the mid-Seventeenth Century became important mill owners. The ties between

Brazil and the island and sometimes through it to European markets continued. In 1599, for example, Cristóvão Roiz of Câmara dos Lobos on Madeira declared having close to 100 *milréis* invested in three sugar masters in Pernambuco in partnership with two other investors.<sup>94</sup>

As the Atlantic sugar market revealed the existence of areas of better conditions and larger capacity, the island sugar industry was irretrievably lost. Cane fields slowly disappeared, replaced by vineyards. Only the economic conjuncture in the second half of the Nineteenth century would permit their return. But this situation proved ephemeral and even then was only possible with a protectionist policy. The cane fields lost their ability to produce sugar, the "white gold" of the islands, but in its place they made cane brandy and liquor. The rum and aguardente produced today are the heirs of the sugarcane culture of Madeira and the Canaries.

## Notes

1. See Antonio Rumeu de Armas, *La Conquista de Tenerife, 1494–96*, (Santa Cruz de Tenerife: Aula de Cultura de Tenerife, 1975); Elías Serra Rafols, *Alonso Fernandez Lugo: Primer Colonizador Español* (Santa Cruz de Tenerife: Aula de Cultura de Tenerife, 1972); and Alfonso García Gallo, "Los Sistemas de Colonización de Canarias y América en los Siglos XV y XVI," *I Coloquio de Historia Canario Americana*, (Las Palmas, Cabildo Insular de Gran Canaria, 1977).
2. This documentation results from the accounting organized by each mill as can be inferred from a document of 1550 (*Provisão e regimento for the taxing of sugar, 12 June 1550*, *Arquivo Histórico da Madeira*, (Funchal, 1990), vol. 19, no. 98, 119–124). See José Pereira da Costa and Fernando Jasmins Pereira, *Livros de Contas da Ilha da Madeira, 1504–1537* (Coimbra: Biblioteca Geral da Universidade, 1985); and idem, *Livros de Contas da Ilha de Madeira* (Funchal: Centro de Estudos de História do Atlântico, 1989). For the Canaries, the documentation is limited to questions of land distribution. See, Pedro Cullén del Castillo, ed., *Libro Rojo de Gran Canaria, Gran Libro de Provisiones y Reales Cédulas* (Las Palmas: Cabildo Insular de Gran Canaria, 1995); Elías Serra Ráfols and Leopoldo de la Rosa Oliveira, eds., *Reformación del Repartimiento de Tenerife en 1506 y Colección de Documentos sobre el Adelantado y su Gobierno* (Santa Cruz de Tenerife: n.p., 1963); Francisca Moreno Fuentes, *Las Datas de Tenerife, Libro V de datas originales* (La Laguna: Univ. de La Laguna, 1978); idem, *Las Datas de Tenerife (Libro Primero de Datas por Testimonio)* (La Laguna: Univ. de La Laguna, 1992); and Eduardo Aznar Vallejo, *Documentos Canarios en el Registro del Sello (1476–1517)* (La Laguna: Instituto de Estudios Canarios, 1981). In recent years some books of the provincial notary's records of Las Palmas and Santa Cruz de Tenerife have been published.

3. Compare the provisions of the letter of D. João I with those referred to by José de Vieira y Clavijo, *Noticias de la Historia de las Islas Canarias*, 3 vols. (Santa Cruz de Tenerife: Goya Ediciones, 1950–52), 681.
4. "On the concession of lands to the first settlers of the island of Madeira (1426)," in João Martins da Silva Marques, *Descobrimientos Portugueses: Documentos para a Sua História* (Lisboa: Instituto para Alta Cultura, 1944), supplement to vol. 1, bk. 19, 109.
5. *Cedula regia* (4 Feb. 1480); and Del Castillo, ed., *Libro Rojo de Gran Canaria*, 1–2.
6. See J. Peraza de Ayala, "El Contrato Agrario y los Censos en Canarias," *Anuario de Historia del Derecho Español* 25 (Madrid: 1955): 257–291; and Aznar Vallejo, *Documentos Canarios en el Registro*, 239–242.
7. In the Canaries where water was always scarce it played a central role in the occupation of the islands. Although the situation was quite different from that found in Madeira, the policy toward water developed in the same direction, moving from common rights to private control over time. See J. Hernández Ramos, *Los Heredades de Aguas en Gran Canaria* (Madrid, 1954); and Antonio M. Macías Hernández, "Aproximación al Proceso de Privatización del Agua en Canarias, c. 1500–1879," *Agua y Modo de Producción* (Barcelona, 1990), 121–149.
8. Compare *Arquivo Histórico Ultramarino*, Madeira e Porto Santo, no. 3281 (5 Nov. 1813), published by E. C. Almeida, *Arquivo da Marinha e Ultramar: Madeira e Porto Santo*, (Lisboa, 1907), 223–25, 238. Registre books of the distribution of water exist only from the eighteenth century: *Arquivo Regional da Madeira*, *Câmara de Santa Cruz*, no. 135; *Câmara da Ponta do Sol*, no. 181; *Câmara do Porto Santo*, no. 46, 124; *Biblioteca Nacional de Lisboa*, cod. 8391. In an *alvará* of D. Henrique of 18 Aug. 1563 in E. C. Almeida, *Arquivo da Marinha e Ultramar-*

*Madeira e Porto Santo* (Lisboa, 1907), 238, the position of evaluator was created to determine the price of water; see J. José de Sousa, "As levadas," *Atlântico* 17 (Funchal: 1989): 41–47.

9. Felipe Fernández-Armesto, *The Canary Islands after the Conquest: The Making of a Colonial Society in the Early Sixteenth Century* (Oxford: Clarendon Press, 1982); and Leoncio Alfonso Pérez, *Miscelanea de temas canarios* (Santa Cruz de Tenerife, 1984), 223–68.

10. Afonso de Albuquerque, *Comentários de Afonso de Albuquerque*, 2 vols. (Lisboa: Casa da Moeda, 1973), parte 4, chap. 7, 39.

11. *Fontes Rerum Canariarum*, VI (La Laguna: Instituto de Estudios Canarios, 1953), 144. See also Fernández-Armesto, *The Canary Islands*, 48–68; Eduardo Aznar Vallejo, *La Integración de las Islas Canarias en la Corona de Castilla (1478–1526): Aspectos Administrativos y Económicos*, 2d ed. (Las Palmas: Cabildo Insular de Gran Canaria, 1992), 229–245; Jiménez Sánchez, *Primeros Repartimientos de Tierras y Aguas en Gran Canaria* (Las Palmas, 1940); A. Guimera Ravina, "El Repartimiento de Daute (Tenerife), 1498–1529," *III Colóquio de Historia Canario Americana* (1980), (Las Palmas, Cabildo Insular de Gran Canaria, 1980) I, 115–57; and Benedicta Rivero Suárez, *El Azúcar en Tenerife 1496–1550* (La Laguna, Instituto de Estudios Canarios, 1990), 19–33.

12. Virginia Rau and Jorge Macedo, *O Açúcar na Madeira no Século XV* (Funchal, Junta Geral do Funchal, 1992), 22.

13. Vitorino Magalhães Godinho, *Os Descobrimentos e a Economia Mundial*, 2d. ed., 4 vols. (Lisboa: Ed. Arcádia, 1983), 4: 81.

14. To calculate this percentage we must take into account the number of owners in 1494 and between 1509 and 1537. For an estimate of the population, we take into account the 15,000

inhabitants for 1500 and 19,172 for 1572. See Fernando Augusto da Silva, *Elucidário Madeirense*, 3 vols. (Funchal, Junta Geral do Funchal, 1960), 3: 103.

15. Tithe records and account books are lacking for the sugar-mills. Available information comes from notaries records in the archives of La Palma and Santa Cruz de Tenerife. Only with the period 1634–1813 do we have data on production. See J. R. Santana Godoy, "Acerca de un Recuento Decimal de los Azúcares de las Islas Confeccionado por Millares Torres, 1634–1813," in *Historia General de las Islas Canarias*, ed. Augustín Millares Torres, 15 vols. (Las Palmas: Edirca, 1979), 4: 151–55; and idem, "La Hacienda de Daute 1555–1606," *Revista de Historia de Canarias* 38, no. 174 (La Laguna: 1984–86), 115–50. Reference to the four sugar-mills of the Adelentado is found in Guimera Ravina, "El Repartimiento de Daute (Tenerife)," 115–57. Oswaldo Brito, "Argenta de Franquis una Mujer de Negocios," *Santa Cruz de Tenerife*, : 59–83; C. Negrin, "Jácome Monteverde y las Ermitas de su Hacienda de Tazacorte en La Palma," *Anuario de Estudios Atlánticos*: 323–54; Ana Viña Brito, "Aproximación al Reparto de Tierras en La Palma a Raíz de la Conquista," *VII Colóquio de Historia Canario Americana*.(Las Palmas, Cabildo Insular de Gran Canaria, ): 473; Viña Brito, "Los Ingenios de Argual y Tazacorte (La Palma)," *Producción y Comercio de Azúcar de caña en Época Preindustrial: Actas del Tercer Seminario Internacional, Motril, 23–27 de septiembre 1991* (Granada: Diputación Provincial de Granada, 1993), 75–93; Gaspar Frutuoso, *Livro Primeiro das Saudades da Terra*, 53, 58, 71; Eduardo Aznar and Ana Viña Brito, "El Azúcar en Canarias," *La Caña de Azúcar en Tiempos de los Grandes Descubrimientos, 1450–1550: Actas del Primer Seminario Internacional, Motril, 25–28 de septiembre 1989* (Motril: Junta de Andalucía and Ayuntamiento de Motril, 1990), 173–88. ., A Macías, Canarias, 1480-1550, Azúcares y crecimiento Económico, in *História do Açúcar. Rotas e Mercados*, (Funchal, Centro de

Estudos de História do Atlântico, 2002), 157-191

16. Gaspar Frutuoso, *Saudades da Terra*, 6 vols. (Ponta Delgada: Instituto de Ponta Delgada, 1963), 113.

17. António Aragão, *A Madeira Vista por Estrangeiros, 1455–1700* (Funchal: Direcção Regional dos Assuntos Culturais, 1982), 37; and Gomes Eanes de Zurara, *The Chronicle of the Discovery and Conquest of Guinea*, trans. Charles Raymond Beazley and Edgar Prestage, 2 vols. (New York: B. Franklin, 1963), chap. 2, p.17.

18. Fernando Jasmins Pereira, *Açúcar Madeirense* (Lisboa: 1969, Sep. Dos *Estudos Políticos e Sociais*, vol. VII, nºs.1-3, 1969), 158.

19. Isabel Drummond Braga, "A Acção de D. Luís de Figueredo de Lemos: Bispo do Funchal, 1585–1608," *III Coloquio Internacional de Historia da Madeira*, Funchal, Centro de Estudos de História do Atlântico, 1992 572; and *Arquivo Regional da Madeira, Julgado de Residuos e Capelas*, fs. 499v–500v (30 May 1571), 52v–88 (20 Aug. 1583).

20. José Sánchez Herrero, "Aspectos de la Organización Eclesiástica y Administración Económica de la Diócesis de Canarias a Finales del siglo XVI," *Anuario de Estudios Atlánticos*, 17(Las Palmas, Casa de Colon, 1971): 71–90.

21. Manuel Lobo Cabrera, *El Comercio Canario-europeo Bajo Felipe II* (Funchal: Centro de Estudos de História do Atlântico, 1988), 7, 115–116.

22. This comes from the *recollection do oitavo*. See *Arquivo Nacional da Torre do Tombo, Provedoria e Junta da Real Fazenda do Funchal*, no. 980, 525 – 39.

23. Among those who benefited were Diogo Guerreiro, Inácio de Vasconcelos, António Correa Bethencourt, and Pedro Betancour Henriques. See *Arquivo Nacional da Torre do Tombo*,

*Provedoria e Junta da Real Fazenda do Funchal*, 965a, fol. 7; 181–82; 222; no. 966, fol. 8v; Arquivo Nacional da Torre do Tombo, *Provedoria e Junta da Real Fazenda do Funchal*, 396, fol. 63v; 969, fol. 48–48v. See also Frédéric Mauro, *Le Portugal, le Brésil et l'Atlantique au XVIIe siècle (1570–1670): Étude Économique*, 2d ed. (Paris: Fondation Calouste Gulbenkian, Centre Cultural Portugais, 1983), 248–50; and Arquivo Nacional da Torre do Tombo, *Convento de Santa Clara*, bk. 19, letters of 10 Feb. 1649 and 18 Oct. 1649.

24. Taxes on sugar production are a key to evaluating the state of the industry. On Madeira there was first the *quarto* (one-fourth) and then the *quinto* (one-fifth), which was collected from each producer. In the Canaries, the most important tax was the tithe (*diezmo*) collected by the church. The register books for the tithe have disappeared and all that remains is the information gathered by A. Millares Torres for the period 1634–1813. During this period there are seven sugar-mills listed on the islands of Tenerife, Gran Canaria, and La Palma. See Paulino Castañeda Delgado, "Pleitos sobre Diezmos del Azúcar en Santo Domingo y Canarias," *II Colóquio de Historia Canario Americana*, (Las Palmas, Cabildo Insular de Gran Canaria, 1979), II, 247–72; Benedicta Rivero Suárez, *El Azúcar en Tenerife*, 179–86. The tithe was not collected as one-tenth of the cane produced, but rather as one out of each twenty *arrobas* of white sugar. This led to conflicts that were resolved in 1543 in a brief of Pope Paul III who established the tithe as one tenth of all sugar produced before the division made between mill owners and dependent cane farmers.

25. For Madeira there exists a documentation of productivity organized by each sugar mill. See Regiment to the recollection of the sugar (12 June 1550), *Arquivo Histórico da Madeira*, vol. 19(Funchal, 1990), no. 98, 119–24; Costa and Pereira, *Livros de Contas da Ilha da Madeira*; and idem, *Livros de Contas da Ilha da Madeira*. For the Canaries, the documentation is limited to

questions of land distribution. See, for example, del Castillo, ed., *Libro Rojo de Gran*; Serra Ráfols and Rosa Oliveira, eds., *Reformación del Repartimiento de Tenerife*; Moreno Fuentes, *Las Datas de Tenerife, libro V de Datas Originales*; idem, *Las Datas de Tenerife (Libro Primero de Datas por Testimonio)*; and Aznar Vallejo, *Documentos Canarios en el Registro*.

26. On the evolution of landed property, there are few studies for Madeira and the ones that exist are limited on the question of the land grants. See Fernando Jasmins Pereira, *Elementos para a História Económica de Madeira* (Funchal, Centro de Estudos de História do Atlântico, 1991), 22–35, 88–95; Maria de Lourdes Freitas Ferraz, *A Ilha da Madeira sob o Domínio da Casa senhorial do Infante D. Henrique e as Suas Descobertas*, (Funchal: Secretaria Regional do Turismo e Cultura, 1986); Manuel Pita Ferreira, *O Arquipélago da Madeira. Terra do Senhor Infante* (Funchal, Junta Geral do Funchal, 1959). Joel Serrão, "Na Alvorada do Mundo Atlântico," *Das Artes e da História da Madeira*, 64, no. 31 (Funchal: 1961): 1–9. On the Canaries the question of land distribution is better documented. See, for example, Vicente Suárez Grimón, *La Propiedad Publica, Vinculada y Eclesiástica en Gran Canaria en el Crisis del Antiguo Regimen*, 2 vols. (Las Palmas, Cabildo Insular de Gran Canaria, 1987), I; and Fernández-Armesto, *The Canary Islands after the Conquest*.

27. See Alberto Vieira, "O senhorio no Atlântico Insular Oriental. Análise comparada da dinâmica institucional da Madeira e Canárias nos séculos XV e XVI," *III Jornadas de Estudos sobre Fuenteventura y Lanzarote*, vols. (Puerto del Rosario, Cabildo Insular de Fuerteventura, 1989), 1: 33–48.

28. Armas, *La Conquista de Tenerife*; Serra Rafols, *Alonso Fernandez Lugo Primer colonizador*; Alfonso Garcia-Gallo, "Los Sistemas de Colonización de Canárias y América en los Siglos XV y XVI," *I Colóquio de Historia Canario Americana*, Las Palmas, Cabildo de Gran Canaria, 1977

29. Silva Marques, *Descobrimientos Portugueses*, vol. 1 supplement, bk. 19, 109.
30. Del Castillo, ed., *Libro Rojo de Gran Canaria*, 1–2; and Arquivo Nacional da Torre do Tombo, *Santa Clara*, maço 1, no. 47 (1454).
31. Arquivo Nacional da Torre do Tombo, *Livro das Ilhas*, fol. 550v.
32. Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, I, fs. 204–209; 249–252; 52, 287–288; 289v–291.
33. António Aragão, *A Madeira Vista por Estrangeiros* (Funchal, Direcção Regional dos Assuntos Culturais, 1981), 87.
34. Noel Deer, *The History of Sugar*, 2 vols. (London, 1940–50); Edmund von Lippmann, *História do Açúcar, desde a Época mais Remota até a Começo da Fabricação de Açúcar de Beterraba*, 2 vols. (Rio de Janeiro: Le Uzinger, 1941–47); Fernando Ortiz, *Los Primitivos Técnicos Azucareros de América* (Havana, 1955), 13–18; See, for comparison, Moacir Soares Pereira, *A Origem dos Cilindros na Moagem de Cana* (Rio de Janeiro, 1955); David Ferreira Gouveia, "O Açúcar da Madeira: A Manufactura Açucareira Madeirense (1420–1550)," *Atlântico* 4 (Funchal:1985), 268–269. Alberto Vieira, *A Madeira, a Expansão e História da Tecnologia do Açúcar*, in *História e Tecnologia do Açúcar*, (Funchal, Centro de Estudos de História do Atlântico, 2000), 7–20
35. Arquivo Nacional da Torre do Tombo, *Convento de Santa Clara*, maço 13, no. 1 (4 July 1477); António Baião, *O manuscrito de Valentim Fernandes* (Lisbon, 1940); A. Artur, "Apontamentos históricos de Machico," *Das Artes e da História da Madeira*, (Funchal, 1949) 1, 8–9. The question of Teixeira's inventory is whether to date the mill from the date of his testament on 7 Sept. 1535 or to date it from 13 Sept. 1495, the date of his wife's testament.
36. Guillermo Camacho Pérez-Galdós, "La Hacienda," 29; Archivo Historico y Provincial de Las

- Palmas, *Protocolos*, no. 733, fol. 81. A. Millares Torres, *Historia General de las Islas Canarias*, 3 (Las Palmas:Edirca, 1977): 120–121; Luis Pérez Aguado, *La Cana de Azúcar en el Desarrollo de la Ciudad de Telde* (Las Palmas, 1982), 5–27; Pérez Vidal, "El Azúcar," *II Jornadas de Estudios Canarios– América* (Santa Cruz de Tenerife, Caja General de Ahorros, 1981), 177; Manuel Lobo, EL Ingenio en Canarias, in *História e Tecnologia do Açúcar*, (Funchal, Centro de Estudos de História do Atlântico, 2000), 105-115.
37. On 20 Mar. 1499 (*Arquivo Histórico da Madeira*, (Funchal, *Boletim do Arquivo Distrital do Funchal*, 1973), vol. 17, no. 227, 386–387), this situation was noted and the possible negative implications for the collection of the *quinto* tax.
38. *Livro Segundo das Saudades da Terra* (Ponta Delgada, Instituto Cultural de Ponta Delgada, 1979), 99–135. Edmund von Lippmann, *Historia do Açúcar*, 13.
39. See A. Cioranescu, *Thomas Nichols, Mercader de Azúcar, Hispanista y Herege* (La Laguna, Instituto de Estudios Canarios, 1963); Gaspar Frutuoso, *Livro Primeiro das Saudades da Terra* (Ponta Delgada, Instituto Cultural de Ponta Delgada, 1984).
40. Gloria Díaz Padilla and José Miguel Rodríguez Yanes, *El Señorío en las Canarias Occidentales, La Gomera y el Hierro hasta 1700* (Santa Cruz de Tenerife, Cabildo Insular de El Hierro, 1990), 319–320.
41. A. Artur, "Apontamentos Históricos de Machico," *Das Artes e da História da Madeira* (Funchal, 1949), I:1, 8–9; *Arquivo Regional da Madeira*, *Capelas*, caixa 8 (19 Jan. 1547); *Arquivo Regional da Madeira*, *Misericórdia do Funchal*, no. 40, fs. 49–58 (11 Sept. 1600); *Arquivo Nacional da Torre do Tombo*, *Convento de Santa Clara* caixa 4, no. 11 (20 Dec. 1644); *Arquivo Regional da Madeira*, *Misericórdia de Funchal*, no. 42 fs. 249–51 (25 Mar. 1645).

42. Díaz Padilla and Rodríguez Yanes, *El señorío*, 320; Aznar and Viña Brito, "El Azúcar en Canarias," 185; *Archivo Histórico y Provincial de Tenerife, Protocolos: Juan de Anchieta*, no. 455, fs. 82ff., in *Fernando Gabriel Martín Rodríguez, Arquitectura Domestica Canaria (Santa Cruz de Tenerife, Aula de Cultura, 1978)*, 298–304.

43. The Madeira *arroba* equalled 28 *arratéis* (lbs.) until 1504 when it was changed to 32 *arratéis*.  
[Editor's note].

45. Fructuoso, *Livro Segundo das Saudades da Terra*, 90, 98, 122; Rivero Suárez, *El Azúcar*, 53, 71; Millares Torres, *Historia General de las Islas Canarias*, 4: 151–155; ., A Macías, Canarias, 1480-1550, Azúcares y crecimiento Económico, in *História do Açúcar. Rotas e Mercados*, (Funchal, Centro de Estudos de História do Atlântico, 2002), 157-191

46. These contracts have merited a number of studies. See, for example, Fernando Augusto da Silva and Carlos Azevedo Menezes, "Colonia, Contrato de," *Elucidário Madeirense*, I, 290–292; Jorge de Freitas Branco, *Camponeses da Madeira* (Funchal, Publicações D. Quixote, 1987), 153–187; João José Abreu de Sousa, "O Convento de Santa Clara do Funchal: Contratos Agrícolas (Século XV a XIX)," *Atlântico* 16 (Funchal: 1988): 295–303.

47. Manuel Lobo Cabrera, *La Esclavitud en Las Canarias Orientales en el Siglo XVI: Negros, Moros y Moriscos* (Santa Cruz de Tenerife: Cabildo Insular de Gran Canaria, 1982), 165; Manuel Lobo Cabrera and Ramón Díaz Hernández, "La Población Esclava de Las Palmas Durante el Siglo XVII," *Anuario de Estudios Atlánticos*, 30 (Las Palmas, Casa de Colon, 1984): 4. See also Benedicta Rivero Suárez, *El Azúcar*, 43–81; and *Oswaldo Brito, Augusta de Franquis una Mujer de Negocios* (Santa Cruz de Tenerife, Cabildo Insular de Tenerife, 1979).

48. Lobo Cabrera, *Esclavitud en las Canarias Orientales*, 211–212.

49. Manuel Lobo Cabrera, "Esclavitud y Azúcar en Canarias," in *Escravos com e sem açúcar*, ed. Alberto Vieira (Funchal, Centro de Estudos de História do Atlântico, 1990), 106–109.
50. Manuel Lobo Cabrera, "La población esclava de Telde en el siglo XVI," *Hacienda* 150 (1982): 6–, 70–71; Lobo Cabrera, *La esclavitud en las Canarias*, 200; A. Cioranescu, *Historia del Puerto de Santa Cruz de Tenerife*, (Santa Cruz, 1977), 110; Pedro Martínez Galindo, *Protocolo de Rodrigo Fernández (1520–1526)* (La Laguna: Instituto de Estudios Canarios 1988), 107; Manuel Marrero, "La Esclavitud en Tenerife," *Revista de Historia* (La Laguna: Univ. de La Laguna, 1966), 77; and Manuel Lobo Cabrera, "La Poblacion Esclava de Las Palmas," *Anuario de Estudios Atlanticos* 30 (Las Palmas:1984): 229–309.
51. M. Garrido Abolafia, *Los Esclavos Bautizados en Santa Cruz de La Palma (1564–1600)* (Santa Cruz de la Palma, 1994); Manuel Lobo Cabrera e Pedro Quintana Ambrós, *Población Marginal en Santa Cruz de La Palma. 1564-1700*, (Madrid, Ediciones La Palma, 1997)
52. Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, I, fs. 262v–69v. Regimento régio (12 Oct. 1502), *Arquivo Histórico da Madeira*, 17 (Funchal: Boletim do Arquivo Distrital do Funchal, 1973), doc. 203, 356; I, 98–98v; Carta régia *Arquivo Histórico da Madeira*, (Funchal, Boletim do Arquivo Distrital do Funchal, 1973) doc. 258, 429–431.
53. Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, vol. 1, fs. 262v–69v; *regimento* in *Arquivo Histórico da Madeira* 17 (Funchal, Boletim do Arquivo Distrital do Funchal, 1973), no. 203, 356; vol. 1, fol. 98–98v; *carta régia*, no. 258, 429–31. The term "açúcar quebrado," sometimes refers to what was called in the Caribbean muscovado sugar.
54. Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, I, fs. 34v, 36v; *Arquivo Histórico da Madeira*, 16 (Funchal: Boletim do Arquivo Distrital do Funchal, 1973),

- no. 145, 241–242; *Arquivo Histórico da Madeira*, (Funchal, Boletim do Arquivo Distrital do Funchal, 1973) 16, fs. 107–107v; *Arquivo Histórico da Madeira*, [Funchal: Boletim do Arquivo Distrital do Funchal, 1973] 16, no. 284, 451–452. Contrary to Manuela Marrero, "De la Esclavitud en Tenerife," *Revista de História* 100 (La Laguna: 1952): 434, slaves were linked to the sugar harvest and there is reference to at least one sugar master in Telde. See Manuel Lobo Cabrera, *Esclavos Indios en Canarias* (Madrid, 1983), 528, no. 55. *Arquivo Histórico da Madeira* 3 (Funchal, Boletim do Arquivo Distrital do Funchal, 1933): 154–59; *Arquivo Regional da Madeira, Capelas*, caixa 118, no. 4, no. 684.
55. Moquet, *Voyages*, bk. 1, 50, cited by Vitorino Magalhães Godinho, *Os Descobrimentos e a Economia Mundial*, 4 vols. (Lisboa, Ed. Presença, 1983), 4: 201; *Arquivo Regional da Madeira, Misericórdia de Funchal*, no. 684, fol. 539.
56. Lobo Cabrera, *Esclavitud en las Canarias Orientales*, 233–35; Manuel Lobo Cabrera, *Los Libertos en la Sociedad Canaria del Siglo XVI* (Madrid: Consejo Superior de Investigaciones Científicas; Tenerife: Instituto de Estudios Canarios, 1983), 51, 61.
57. Rivero Suárez, *El azúcar*, 43–93.
58. M. Coello Gómez et. al., *Protocolos de Alonso Gutiérrez (1522–1525)* (Santa Cruz de Tenerife: Cabildo Insular de Tenerife; and Instituto de Estudios Canarios, 1980), 178 n. 333.
59. Alberto Vieira, *O Comércio Inter-insular nos Séculos XV e XVI* (Funchal, Centro de Estudos de História do Atlântico, 1987), 57.
60. Vitorino Magalhães Godinho, "Preços e conjuntura do século XV ao XIX," *Dicionário de História de Portugal*, Lisboa, Figueirinhas iii, 488–516; José Gentil da Silva, "Echanges et Troc: l'Exemple des Canaries au Debut du xvi Siècle," *Annales* 165 (Paris: 1961): 1004–10011; Manuel

Lobo Cabrera, *Monedas Pesos y Medidas en Canarias en el Siglo XVI* (Las Palmas, Cabildo Insular de Gran Canaria, 1989), 10–13; Rivero Suárez, *El azúcar*, 147–148.

61. Fernando Jasmíns Pereira, *Estudos sobre História de Madeira* (Funchal, Centro de Estudos de História do Atlântico, 1991), 232–234.

62. *Arquivo Histórico da Madeira*, 15, (Funchal, Boletim do Arquivo Distrital do Funchal, 1972): 64.

63. *Arquivo Histórico da Madeira* 15 (Funchal, Boletim do Arquivo Distrital do Funchal, 1972): 46, 229, 313, 318, 372–380; Frutuoso, *Livro Primeiro*, 113; Armando de Castro, "O Sistema Monetário," *História de Portugal*, ed. José Hermano Saraiva, 6 vols. (Lisbon: Alfa, 1983), 3: 236–238; and Manuel Lobo Cabrera, *El Comercio Canario Europeo Bajo Felipe II* (Funchal, Centro de Estudos de História do Atlântico, 1988), 117.

64. Lobo Cabrera, *El Comercio Canario*, 116; Pereira, *Estudios*, 219–224.

65. Magalhães Godinho, "Os Descobrimentos," 87; *Arquivo Regional da Madeira, Câmara Municipal do Funchal*, registo geral T, I, fs. 1–1v, letter on the sugar trade (Alcochete, 14 July 1469); *Arquivo Histórico da Madeira*, 15 (Funchal: Boletim do Arquivo Distrital do Funchal, 1972), 45–47; fs. 1v–2v (25 Sept 1469); *Arquivo Histórico da Madeira*, 15 (Funchal: Boletim do Arquivo Distrital do Funchal, 1972), 47–49.

66. *Arquivo Regional da Madeira, Registo Geral da Câmara Municipal do Funchal, T. I*, fs. 308v–309 (Sintra, 7–8 Aug. 1508), published in *Arquivo Histórico da Madeira* 18 (Funchal: Boletim do Arquivo Distrital do Funchal, 1973), 503–4; Alvaro Rodrigues de Azevedo, "Notas," in *Saudades da Terra* (Funchal, 1873), 501.

67. See Lobo Cabrera, *El Comercio Canario*, 7.

68. Mauro, *Le Portugal*, 225; Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, T. I, fs. 5v–6; Arquivo Histórico da Madeira, 15(Funchal, (1972), 57; fol. 148–148v; Arquivo Histórico da Madeira, 15(Funchal: Boletim do Arquivo Distrital do Funchal, 1972), 68; Henrique Gama Barros, *História da Administração Pública em Portugal nos séculos XII a XV*, 2d ed., 11 vols. (Lisbon: Liv. Sa da Costa, 1945–54), 10: 152–153; Rau and Macedo, *O Açúcar na Madeira*, 26 n. 27; *Monumenta Henricina*, 15 vols. (Coimbra, 1960–1974), 15: 87–89; Arquivo Regional da Madeira, *Câmara Municipal do Funchal*, no. 1298, fol. 37; fol. 68; fol. 87v; Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, T. I, fs. 292–93; Arquivo Nacional da Torre do Tombo, *Gavetas XV–5–8 summarized in As Gavetas do Torre do Tombo*, 12 vols. (Lisbon, 1960–1977), 4: 169–70.
69. Gama Barros, *Historia*, 10: 155; Fernando Jasmins Pereira, *Alguns Elementos para o Estudo da História da Madeira* (Funchal, Centro de Estudos de História do Atlântico, 1991), 139–62; Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal*, T. I, fol. 262v, 291v.–292 in Arquivo Histórico da Madeira, 17(Funchal: Boletim do Arquivo Distrital do Funchal, Boletim do Arquivo Distrital do Funchal, 1973), 350–358, 369. See also Rodrigues de Azevedo, "Anotações," in *Saudades*, 681–682.
70. See his correspondence in Alberto Vieira, ed., *O Público e o Privado na História da Madeira*, 2 vols. (Funchal: Centro de Estudos de História do Atlântico, 1996–98).
71. My comments here are based on a broad range of archival sources. See also Lobo Cabrera, *El Comercio Canario*, 19; Manuela Marrero, "Los Genoveses en la Colonización Tenerife" *Revista de Historia canaria* 16 (La Laguna: 1950); Aznar Vallejo, *Documentos Canarios en el Registro de sello*, 196; Augustín Guimerá Ravina, " El Repartimiento de Daute (Tenerife, 1498–1529) in III

*Colóquio de Historia Canario Americana*, (1978), I, (Las Palmas, Cabildo Insular de Gran Canaria, 1980), 127–128; Fernando Clavijo Hernández, *Protocolos de Hernán Guerra(1510-1511)* (Santa Cruz de Tenerife, Cabildo Insular/Instituto de Estudios Canarios, 1980), 39–40.

72. Camacho y Pérez Galdós, G., *La Hacienda de los Principes* (La Laguna, 1943), 524. This author notes 88 Genoese merchants of whom 81 (82 percent) were *vecinos*. In my review of printed sources, I only found 54 Genoese of which 29 percent were *vecinos*.

73. Marrero Rodrigues, M., *Los Mercadores Flamengos*, 601–609.

74. Giles Hana, a Flemish merchant and *vecino* of Tenerife, married Francisca de Carminatis, daughter of the Lombard merchant Juan Jácome de Carminatis who himself was married to the daughter of Jaime Joven, a Catalan merchant and *vecino* of the island. Flemish merchant Juan de Xembrens married Ana de Betancor, daughter of Guillén de Betancor. See Marrero Rodrigues, "Los Genoveses", 611–614.

75. Marrero Rodrigues, *Los Mercadores*, 351 n. 177; José Peraza de Ayala, "Historia de la Casa de Monteverde," in *Nobiliário de Canarias* (La Laguna, 1959), II, 491–579; Manuel Lobo Cabrera, "Los Vecinos de las Palmas y Sus Viajes de Pesqueria," *III Colóquio de Historia Canario Americana*, (1978), II, (Las Palmas, Cabildo de Gran Canaria, 1980) 471; Guilherme Camacho y Pérez Galdós, "El cultivo de la caña de azúcar," *Anuario de Estudios Atlánticos*, 7 (Las Palmas, Casa de Colon, 1961): 33–34; Manuela Marrero Rodrigues, "Una sociedad para comerciar en Castilla, Canarias y Flandres en la Primera Mitad del Siglo XVI," *III Colóquio de Historia Canario Americana*(1978) (Las Palmas, Cabildo Insular de Gran Canaria, 1980), I, 161. See also various articles by J. M. Madurell Marimon "Notas sobre el Antiguo Comercio," *Anuario de Estudios Atlánticos*, 3 (Las Palmas:Casa de Colon, 1957): 563–592; "El Antiguo Comercio," *Anuario de*

*Estudios Atlánticos* 7 (Las Palmas: Casa de Colón, 1961): 71–74; and "Miscellanea de Documentos Historicos Atlánticos," *Anuario de Estudios Atlánticos* 25 (Las Palmas, Casa de Colón, 1979): 224–225, 235–238.

76. Elisa Torres Santana, *El Comercio de las Canarias Orientales en Tiempo de Felipe III* (Las Palmas: Cabildo de Insular de Gran Canaria, 1991), 304–308.

77. See Pereira, *Livro de Contas da Ilha da Madeira, 1502–1537*, 2 vols. (Funchal, Centro de Estudos de História do Atlântico, 1989).

78. David Ferreira de Gouvea, "O açúcar e a economia madeirense (1420–1550): Consumo de excedentes," *Isleña* 8 (Funchal: 1991): 11–22.

79. Lobo Cabrera, *Comercio Canario Europeo*, 113–114; Rivero Suárez, *El azúcar en Tenerife*, 147–148.

80. Joel Serrão, "Nota sobre o Comércio do Açúcar entre Viana do Castelo e o Funchal," *Revista de Economia*, (Lisboa, 1950) III, 209–212; Virginia Rau, *A Exploração e o Comércio do Sal em Setúbal: Estudo de História Económica* (Lisbon: n.p., 1951); *Arquivo Regional da Madeira, Registo Geral da Câmara Municipal do Funchal, T.I*, fol. 301–301v, published in *Arquivo Histórico da Madeira*, 17, 453–54; Domenico Geoffré, *Documenti sulle Relazioni fra Genova ed il Portogallo del 1493 al 1539* (Rome, 1961); and Madurell Marimón, "Notas," 486–487, 493–494, 497–499.

81. *Acuerdos del Cabildo de Tenerife*, [La Laguna, Instituto de Estudios Canarios, 1948] I, 83. no. 447 (26 Mar. 1505).

82. The island received manufactured products especially textiles from Antwerp, Ghent, Holland, and Rouen. These were traded for money and sugar by Genoese and Flemish merchants such as

Bernardino Anehesi, Jerónimo Lerca, Lamberto Broque, Sebastian Búron, and Jerónimo Fránquez. See Eddy Stols, "Les Canaries et l'Expansion Coloniales des Pays-Bas Méridionaux," *IV Colóquio de Historia Canario Americana*, I, (Las Palmas, Cabildo Insular de Gran Canaria, 19 ), 908; Manuel Lobo Cabrera, "El Comercio entre Gran Canaria," 32–33.

83. Magalhães Godinho, *Os Descobrimentos*, 4: 98.

84. José Gonsalves Salvador, *Cristãos Novos e o Comércio no Atlântico Meridional* (São Paulo, Pioneira/MEC, 1978), 247.

85. For example, in January 1596, the town councillors prohibited António Mendes from unloading the sugar of Balthazar Dias. Three years later he was obliged to reship a cargo of Bahian sugar without unloading any of it. See *Arquivo Regional da Madeira, Registo Geral da Câmara Municipal do Funchal*, t. 3, fol. 44v; *Arquivo Regional da Madeira, Documentos Avulsos*, caixa 4, no. 504, fs. 12v–13v refers to the prohibitions of 1591, 1597, 1601. *Arquivo Regional da Madeira, Câmara Municipal do Funchal*, no. 1312, fs. 7–8v; no. 1313, fs. 20–23 and *passim*.

86. *Câmara Municipal do Funchal*, no. 396, fs. 75v–76; *Arquivo Regional da Madeira, Registo Geral da Câmara Municipal do Funchal*, t. 9, fs. 29v–30v (10 June 1664).

87. Torres Santana, *El Comercio de las Canarias Orientales*, 300.

88. Sidney Greenfield, "Madeira and the Beginnings of New World Sugar Cane Cultivation and Plantation Slavery," in *Comparative Perspectives on Slavery in New World Plantation Societies*, ed. Vera Rubin and Arthur Tuden (New York: Academy of Sciences, 1977); Charles Verlinden, "Les Origines Coloniales de la Civilization Atlantique. Antecedents et Types de Structure," *Journal of World History* 4 (1953): 378–398. On slavery, see *Alberto Vieira, Os Escravos no Arquipélago da Madeira: Séculos XV a XVII* (Funchal, Centro de Estudos de História do Atlântico, 1991).

89. Gloria Daz Padilla y José Miguel Rodríguez Yanes, *El Señorío en las Canarias Occidentales* (Santa Cruz de Tenerife, Cabildo de Insular de El Hierro, 1990), 316.
90. José Pérez Vidal, "Canarias, el Azúcar, los Dulces y las Conservas," *II Jornadas de Estudios Canarios-América* (Santa Cruz de Tenerife, 1981), 176–179.
91. Arquivo Regional da Madeira, Câmara Municipal do Funchal, *vereações* 1527, fol. 23v.
92. Arquivo Regional da Madeira, *Documentos Avulsos*, no. 66 (8 Feb. 1528).
93. Arquivo Regional da Madeira, *Registo Geral da Câmara Municipal do Funchal, T.I.*, fol. 372v.
94. Arquivo Regional da Madeira, *Julgado de Resíduos e Capelas*, fs. 391–96, Testament of 11 Sept. 1599. In 1579 (Arquivo Regional da Madeira, *Misericórdia do Funchal*, no. 71, fols. 114–215) Gonçalo Ribeiro refers to being in debt to Manuel Luis, *mestre de açúcar* "who is now in Pernambuco." See José António Gonçalves de Mello, *João Fernandes Vieira: Mestre de Campo do terço da infantaria de Pernambuco*, 2 vols. (Recife: Univ. do Recife, 1956), 2: 201–267.