

# Mangoes... the Goan Inheritance

by Fernando do Rego

VASCO DA GAMA's discovery of the sea route to India in 1498 and the invasion and conquest of Goa in 1510 by Afonso de Albuquerque, turned our motherland into a centre of all Portuguese colonial activities in the Orient. During the first two hundred years of the Portuguese presence in that area, one of the most positive aspects was the wealth of information gathered on India, its peoples, customs and habits and its flora and fauna. These were genuine spiritual, cultural and scientific values that were then little known in the West and would have a profound impact on modern history. As Adam Smith said: "*The discovery of America and the passage to the East Indies by the Cape of Good Hope, are the two greatest events in the History of Mankind*".

One of India's greatest natural assets is its flora. The country stretches from the Himalayas to Cape Camorim (Kanyakumari), covering areas that have temperate, tropical and subtropical climates. This leads to a broad range of plant species, including many that have, over time, been of worldwide interest.

Ever since antiquity, many peoples have shown their interest in certain aspects of Indian flora. The mango tree, one of its most important components, has been the subject of special study and enjoys a reputation throughout the World that is second to none. It has been grown in India for some four thousand years, with studies of its origin leading to the conclusion that it first appeared in the area embracing Assam, Burma (now Myanmar) and Thailand, as some wild plants of both *Manga indica* and *Manga sylvatica* have been found in this vast region. With this historic back-drop, it is no surprise that references to mango trees and their fruits appear in Indian Vedic books and in descriptions of orchards in epic works such as the *Ramayana* and the *Mahabharata*.

Plants were already studied in ancient India. The exact science called *Vrikysheuveda* was one of the subjects studied at several teaching centres, and the criteria used to classify the plants was generally according to their medicinal use. This method was adopted by Van Rhee (1680-1703) in "*Hortus Indicus Malabaricus*" and would later be the inspiration for Carl Linnaeus (1753) when he extended the use of Latin names to Indian plants in his "*Species Plantarum*."

## **The mango in the literature:**

The earliest literary references to mangoes in general were apparently made by the Chinese authors Hsuen Tsang (624-645 AD) and Fa Hsien (409-411 AD), while Persian literature called it “*Ambag*”, as recorded by Ibn Haukal (902-968 AD).

A review of the literature on the mango of Goa led me to find from 1328 to 1995, thirtyone references of historians, travellers, scientists, etc.

The first western mention of the plant came in 1328, when Friar Jordanus Catalani or Jourdain de Severac mentioned it in his “*Rec. de Voyage* (book number 42)” but it was Ludovico de Varthema who first used the word mango in 1510, when relating his travels. The first Portuguese reference to the fruit probably appeared in the early sixteenth century, in Gabriel Rebelo’s description of the Moluccas. Garcia de Orta repeated the name in 1553 in “*Colóquio Trigésimo Quarto sobre as Mangas.*”

Christobal Acosta then produced a description and for the first time a design of the mango tree. Linschoten adopted the same words, and in 1653, Niccolao Manucci was the first historian to give the names of some of the Goan varieties. He wrote: “*As I have promised to speak of the fruits of India, chiefly of the mango and jack-fruit, I may mention that the best mangoes grow in the inland of Goa. They have special names which are as follows: Niculao- Alfonso, Malaisse, Carreira Branca, Carreira Vermelha, Conde, Joanni Pereira, Babia (large and round), Araup, Porta, Secreta, Mainato, Lady of Agua de Lupe. These are again divided into varieties with special colour, scent and flavour. I have eaten many that had the taste of peaches, plums, pears and apples of Europe. The mango is a little bit heating and laxative, and however many you may eat them, with or without bread, you still desire to eat more, and they do you no harm. While still unripe they are added to dishes, to pastries, et cetera. The juice of the ripe fruit mixed with milk is drunk, and is sustaining. They also make the fruit into preserves, which are exported to various places; various kinds of pickles are also made, which keep good for two years and the stones are used in medicine. The tree on which the mango is grown is the size of a walnut-tree; the fruit grows in clusters, like plums in Europe.*” (MANUCCI, 1907-1908, Vol. III, p. 170-171.)

### **Our varieties:**

The first register of the varieties found in Goa was by SAM PAIO, in 1902 and later by REGO, in 1974. Some of them were mentioned among the varieties from the rest of India by WOODROW, 1904; BURNS and PRAYAG, 1920; SINGH, 1977. In 1995, MATHEW and DHANDAR found 75, but identified only 47, believing that the others were repeated names due to the common habit in Goa and India of attributing a new different name every time a mango tree is grafted with an already known variety. The following is an alphabetical list including many of the one hundred and six varieties that existed or still exist in Goa and that are of Goan origin, as particularly after 1961, many varieties from other Indian States were introduced in Goa: *Abreu, Afonsa, Afonsinha, Amini, Anands, Araujo, Araup, Areca, Aruda, Aurea, Babio, Barasmasi, Barreto,*

*Bastarda, Bemcorada, Bispo, Bolo, Bombio, Brindão, Burgó, Camões, Carreira, Carreira Branca, Chimut, Cidrão, Colaço, Colaço Branca, Conde, Costa, Cola, Custodio, Derrubada, Diniz, Dom Bernardo, Dom Fernando, Dom Filipe, Dom João, Dourado, Dourada, Dulce, Durbate, Fernandina, Ferrão, Figueiredo, Filipina, Fottio, Frederico, Frias, Furtado; Gargó, Godgó, Hilário, Japão, Jerónimo, Jesuíta, Joanni-Parreira, José, Kapri, Madame, Malaia, Mainato, Malgessa (Eccondó Malgessa and Pocddó Malgessa), Malcorada, Malgoa, Marichenan, Marchon, Matekin, Mateus, Matutina, Máxima, Miranda, Mirió, Mogri, Monserrate de Bardez or Monserrate Branco), Monserrate de Salsete (or Monserrate Vermelho), Monteiro, Mozambique, Mrina; Naik, Nicolau-Afonso, Nossa Senhora Agua-de-Lupe; Oliveira; Papel, Papel Bela, Papel Branco, Pires, Porto, Reário, Rebello, Reinol, Rosa, Rosário, Sacarina, Salgada, Salgadinha, Santana, Santiago. Santo António, Secretina, Severino, Sonar, Tanque, Temudo, Timor, Timoteo, Toranja, Tokio; Undurli, Xavier.*

There were evidently no established criteria for attributing the names, as they adopted surnames and the Christian name of saints and kings. They were also influenced by questions of size, flavour, scent and other qualities. The various mango research Centres in India have some varieties that also add the name Goa, such as, *Bangalore-goa, Kaanka-Goa, Kodur-Goa, Malda-Goa, Neel-Goa and Papayo Raju Goa*. These varieties do not exist in Goa and may have been taken from there to other areas where they were given different names and the “surname” Goa so as to identify their origin.

In 1912, Caetano Xavier Gracias was the first Goan to describe the plant and its precious fruit : *“Originally from India, where it is abundant and widely grown. Better mangoes are obtained when the tree is grown using grafting or layering. The best mangoes in India come from Goa, where it was grown and the use of grafting was widely spread by the Jesuits, and it was from Goa that some of the finest types were taken to Brazil during the reign of King João VI at the start of the last century. This is why it is grown and found almost throughout equatorial and southern America”*.

### **The “baptism” of Goan mangoes:**

It remains to be seen when, why and how mangoes were “baptised” with Portuguese names. It seems very probable that the mangoes - like the new converts to Christianity - got their names from the Portuguese missionaries who (apart from their evangelical activities) devoted themselves to selecting the finest varieties, grafting them and baptising the results with surnames and other names in Portuguese.

This tradition was later developed by the landlords of local groves, where high quality mango trees that merited cultivation were grown alongside the palm trees. Thus, the different varieties with Portuguese names appear in orchards and yards belonging to Catholic, Hindu and Muslim families.

Perhaps the first record comes from Sebastião Gonsalves (1553-1619), who reports that the name of the *Malgessa* mango derived from the Maljaz Temple in Kanheri, a village near Bombay.

Many of the varieties listed either as a result of personal observation during my career in the Department of Agriculture, Goa (1955-1988) or collected from existing literature have vanished over the centuries, probably due to their poor quality, which led to the end of their production.

In 1962, the Botanical Survey of India set up a team under Rolla Seshagiri Rao to draw up an exhaustive study on Goan flora. The team detected 115 angiosperms belonging to 657 genera and divided into 146 families. The families include the Anacardiaceae, which in turn includes the most important species for Goa's economy, the *Anacardium occidentale*, L. (cashew tree) and the *Mangifera indica*, L. (mango tree).

### **The mango in our economy:**

The most important fruit trees are the mango, the cashew, the pineapple, the banana, the papaya and the jack-fruit. Unfortunately, the system used to grow these does not involve large-scale orchards.

For example, both the mango tree and jack-tree have always been an integral part of coconut groves. A Jesuit priest justified this traditional custom, claiming that the coconut was vital to the Goan economy and that the shade provided by the adjacent mango and jack-fruit trees is important in maintaining soil humidity, since the coconut gardens are not irrigated.

Mango trees form an additional source of income for the *batcar* (landlord). During the mango season, which lasts from early March to mid June, the trees are rented out to the traditional renters (*rendkar*), who pay the landlord according to a contract that varies according to each year's production. One part is paid in cash (*rend*), while the other is in mangoes (*pensaum*) of each variety found in the orchard. The *rendkar* picks the mangoes, takes them to the local as well as other markets, where the *Malcorada* (locally called *mankurad*) is very popular. Local preserve factories also use the most appropriate varieties.

Unlike the cashew, the coconut and the areca, it is not possible to make an accurate calculation of how much the mango contributes to Goa's economy because there are no detailed records of the area it occupies, the costs involved or the profits made. As mentioned above, mangoes have always been a secondary crop for the Goan *batcar*, an additional source of income and fruit for his family.

### **The technique of grafting:**

It was probably the Portuguese who introduced grafting into Goa, a technique adopted in their own country, so as to reproduce the finest varieties of mango trees. The *Mangifera indica*, L. has two strains: the mono-embryonic and the poly-embryonic. In

the former, the seed comes from an allogamic fertilisation: crossing two plants of the same or of two different varieties. Thus, the seed and the resulting future plant offer no guarantee of having the qualities of a specific variety. In the latter case, the seed produces small plants that are identical to the mother-plant and can be separated from it and planted. This is the result of the embryo - even if it comes from different varieties - being generally suppressed, while the plants formed derive from the vegetative development of the ovule's tissues and therefore retain the qualities of the mother-plant.

All the varieties in India are mono-embryonic, which means that the material obtained from the seed is very variable, imposing the need for grafting to maintain the original characteristics. The polyembryonic varieties only exist on the Malabar Coast. Just ten varieties are known, the important ones being the *Alour* and *Chandrakaran*. Therefore, in order to maintain the quality of any specific mono-embryonic variety, for many years it was essential to use vegetative methods of reproduction.

It may be that the Indian "gurus" did not know about these methods of grafting prior to the Portuguese arrival, although Hayes (1945) claims that grafting was already used. Thus, it fell to the Portuguese to bring the science of grafting - already widely used in Portugal - to India.

Francisco de Souza (1750) was the first authority to credit the Portuguese with the improvement in mangoes by grafting. However, Bragança Pereira (1886) disagreed, claiming that the Portuguese merely improved the existing method used in Goa at the time. This argument was based on a "*Portaria das Ilhas*" from 1553, but there appears to be a problem with the document's date, since there were neither regulations nor a "Council of Ilhas" at that time.

The grafting technique used on mango trees was perfectly established by 1872, as shown by two publications from that year.

Friar Clemente da Ressurreição (1773), whose book was published in 1872, noted that grafting could be carried out both during the Sravana months (from the Hindu calendar, corresponding to July and August) and the south-west monsoon months (June to September). He added that it was particularly beneficial during the full moon, when there were better guarantees that the *callus* will form.

In his *magnum opus* "Practical Manual for the Indian Farmer", Bernardo Francisco da Costa, the man who pioneered India's canned fruit industry through his *Costa e Companhia* factory (the first in Asia) provides detailed information on methods of vegetative reproduction, including grafting of mango trees.

This method unquestionably revolutionised mango production, first in Goa and later throughout India. The means of reproducing mangoes through hybridisation was first introduced into India in 1942 at the Saboor (Bihar) Agricultural Centre, and excellent varieties have since been produced.

### **The Goan mango goes abroad:**

There is no reliable information on the spread of mango trees outside Asia. Some claim that the Persians took them to the eastern coast of Africa in the tenth century, but José Mendes Ferrão believes that it may have been the Portuguese, since the fruit was not mentioned in Vasco da Gama's report, whereas several other fruits from the coast of Mozambique are recorded. Had the fruit existed there at the time when Vasco da Gama arrived, the authors of the report would certainly have seen it.

The spread of the Goan mango to the American continent was one consequence of the discoveries. According to Ferrão, the earliest information on the introduction of the mango tree in Brazil mentions "*seven seeds with endocarps of mango trees and each one of them has four to five sprouts*". These had been sent in January 1683 by D. Francisco Távora, the Viceroy of India and Count of Alvor on board the "*São Francisco Xavier*."

### **The mango in our folklore :**

The mango tree is also closely connected with the Hindu religion. As a pantheist religion, this includes plants and animals that contribute to human life as part of its belief system.

Legend has it that it was Hanuman - the close friend of Rama who helped him ransom Sita after she had been kidnapped by the king of Lanka - who brought the sacred tree to India.

The *Chaturmas Mahatma* considers it to be an incarnation of Prajapati, father of all creatures.

The mango tree appears in the rituals of several Hindu festivities. Hindu brides, dressed in yellow, worship Gauri Xencor (Parvati and Shiva) so they will keep her *soubhaguea* (happily married) before a mango tree painted on a wall, between the sun and the crescent moon. Mango leaves are used to form garlands to decorate *mandaps* and houses on special occasions, symbolising joy and prosperity. The first rice-shoot is wrapped in a mango leaf to be hung from the doors of temples and houses.

Twigs are used as toothbrushes and the leaves act as plates at several ceremonies, such as *Panch-pallav*. Twigs are also used to light the scared fire (*home*) at the *samadha* (ceremonies to appease the stars).

Mango leaves are included in the mixture of five cow elements used to purify pregnant Hindu women. The child's cradle is surrounded by mango leaves as a good omen. One of the Hindu festivals in Goa is the "Zagor" celebrated at the start of the Spring. In the village of Carambolim, one of the oldest Comunidades of Goa, Zagor is celebrated with music and folk dances. In one of them the people sing: "*Ambya tujem pann ambotto*" i.e. "Oh mango! your leaf is sour".

### **Hosannas of our poets:**

As it is so deeply rooted in Goan culture and forms a part of Goan identity, the mango tree was also a muse for Goan poets. There are many examples, but I have chosen an extract from a poem by Manohar Sardesai, originally written in Konkani:

*Like a drop of honey  
Or soft as a bride's lips  
Our pride, our wealth,  
Is the Goan mango.*