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List of ornamental and useful plants cultivated on Huahine Island, French Polynesia. Part 1

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ABSTRACT

The article presents a list of ornamental and useful plants cultivated on Huahine Island in French Polynesia. These are flowering plants with unique visual and fragrance features, such as: Frangipani Tree, Tiare Tahiti, Gardenia, Bougainvillea, Hibiscus Tree, Blue Water Lily, Ti Plant, Ylang Ylang, Madagascar Rosy Periwinkle, Orchid. These plants belong to the traditional and cultural characteristics of Huahine Island, as in the entire French Polynesia.

Keywords: Ornamental plants, useful plants, essential oil plants, perfumery industry, Huahine, *Plumeria alba*, *Gardenia tahitensis*, *Gardenia augusta*, *Bougainvillea glabra*, *Hibiscus tiliaceus*, *Nymphaea capensis*, *Cordyline fruticosa*, *Cananga odorata*, *Catharanthus roseus*, *Phaius grandifloras*, Orchid

1. INTRODUCTION

Huahine – an island in the Pacific Ocean, in French Polynesia, within the Leeward Islands group, located in the archipelago of the Society Islands. The island is a commune with the same name. During the high tide, two islands are formed: Huahine Nui and Huahine Iti.

There are about 5,800 permanent residents (Polynesians) living on the island, its area is about 75 km². The highest peaks on the island are Mont Turi (669 m elevation) and Mont Pohuerahi (462 m elevation) mountains on Huahine Iti. It was discovered by James Cook in

1769 during a British scientific expedition to the Pacific Ocean. Currently, the island is a tourist centre, as well as a place for copra processing and vanilla cultivation (Figs 1 & 2).

Away from Tahiti about 170 km, Huahine consists of two smaller islets – Huahine Nui and Huahine Iti. Rich vegetation and landscape unchanged by man give this island a somewhat wild character. White, sandy beaches and a crystal clear lagoon are an ideal spot for a break from the hustle and bustle. Thanks to the fertile soil on the island, vanilla is intensively grown. Being on the island, it is worth visiting its plantations and the Botanical Garden Eden Park, where, apart from admiring the nature, you can buy original preserves prepared from exotic fruits. The island also has archaeological sites from the period before the Europeans arrived.



Fig. 1. Huahine Island, French Polynesia



Fig. 2. Huahine Island, French Polynesia

2. RESULT

2. 1. Frangipani Tree (Tipanie) *Plumeria alba*

Tipanie is the real symbol of the tropical Paradise. The Polynesian people usually wear the *tipanie* behind their ear even though its sap is toxic. The large variety of this plant includes flowers ranging in color from white to purple (even pink and orange). The blossoms enhance public areas and beautify the *women* (Figs 3: a & b) [1, 2].



Figure 3a. *Plumeria alba* L.



Figure 3b. *Plumeria alba* L.

2. 2. Tiare Tahiti (Tiare Maohi) *Gardenia tahitensis*

The *Tiare Tahiti* is the emblem of our islands. The sweet scent of this pure white flower fills the air of our gardens and public places. We all love wearing a *tiare tahiti* behind our ear, men like flower buds and women prefer open flowers. But wearing a flower usually follows a funny custom: the taken persons should wear the flower behind their left ear, and the single person should wear it behind their right ear. Polynesian people created this custom to signal whether they're available for romance or not.

We also use *tiare tahiti* to make flower leis to offer our guests as a warm and generous welcome. The *Tiare Tahiti* is one of the main components of the famous *Tahiti Monoï* (coconut oil for the skin), which is often sold with a dried *tiare* inside the bottle (Figs: 4: a & b) [3, 4].



Figure 4a. *Gardenia tahitensis* DC



Figure 4b. *Gardenia tahitensis* DC

2. 3. Gardienia (Tiare Taina) *Gardenia augusta* Merr (*Gardenia jasminoides* J. Ellis)

The tiare *taina*, Tahitian name of the *Gardenia*, is indisputably **THE Polynesian rose**. The plant flowers from September to February. During this period, you can wear this beautiful rose behind your ear or enjoy it in a flower lei or a bridal bouquet (Figs 5: a & b) [5-8].



Figure 5a. *Gardenia augusta* Merr



Figure 5b. *Gardenia augusta* Merr

2. 4. Bougainvillea (Vare'au) *Bougainvillea glabra*

The bougainvillea is greatly appreciated in French Polynesia. The women praise the beauty of their bougainvillea because of its large panel of colors from purple to pure white in their gardens. This plant can be grown as an ornamental tree or dwarf ornamental in the garden and even as a bonsai plant inside the house (Figs 6: a & b) [9-12].

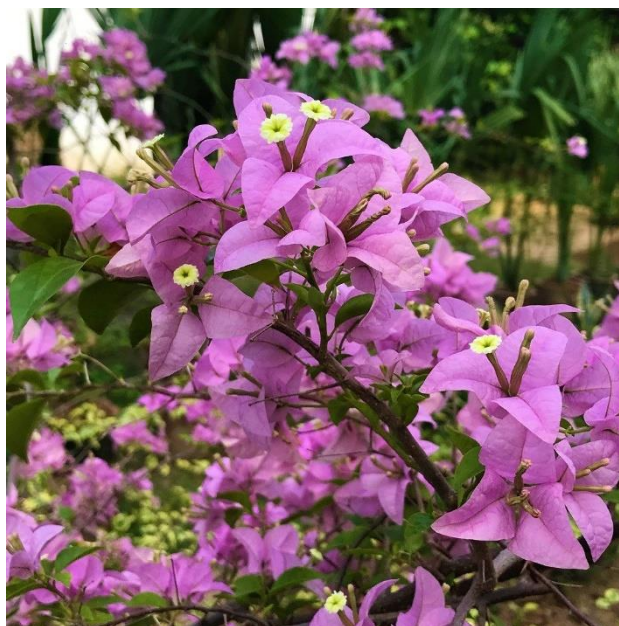


Figure 6a. *Bougainvillea glabra* Choisy



Figure 6b. *Bougainvillea glabra* Choisy

2. 5. Hibiscus Tree (Purau) *Hibiscus tiliaceus*

In French Polynesia, the *purau* blooms all along the shoreline of our islands and also likes other water points such as lakes and rivers. Its seeds float on the water pushed by the wind and currents and take root when they reach a new shore. The flower (similar to their cousin, the hibiscus) has the ability to change color throughout the day; in the morning its petals open yellow then become orange and fade to red brick at night. The Polynesian people enjoy its welcomed shade, and use the fallen flowers for medicine and the leaves as ecological plates. The wood is used to manufacture canoes and paddles. Dancers use its bark to make their “grass skirt” called in Tahitian *more*, and other components of their traditional dance costume (Figs 7: a & b) [13-17].



Figure 7a. *Hibiscus tiliaceus* L.



Figure 7b. *Hibiscus tiliaceus* L.

2. 6. Blue Water Lily, *Nymphaea capensis*

The water lily is an aquatic plant that grows along Polynesian water points. Often confused with its close cousin Egypt lotus, the water lily is native to India. It owes its name to the fact that the Greeks dedicated it to the nymphs. Its silhouette is the image of well being and good health. Because of its purifying and moisturizing properties, the herbal products derived from the flowers have a soothing and relaxing effect and are especially recommended for stress and anxiety. In French Polynesia, this beautiful freshwater flower has three colors: white, pink and purple. However it is interesting to know that only the white water lily has medicinal properties. In fact this plant helps to heal itching, insect bites and minor burns (Figs 8: a & b) [18-20].



Figure 8a. *Nymphaea capensis* Thunb. var. *zanzibariensis* (Casp.) Verdc. (Nymphaeaceae)

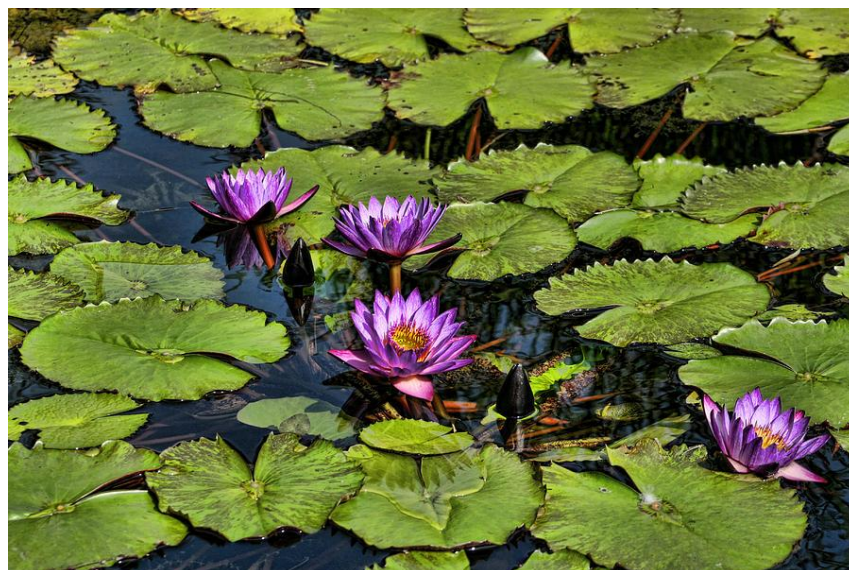


Figure 8b. *Nymphaea capensis* Thunb. var. *zanzibariensis* (Casp.) Verdc. (Nymphaeaceae)

2. 7. Ti Plant (Ti, Auti) *Cordyline fruticosa* L. (A. Chev.)

The *ti* plant, or more commonly known as *auti* is a sacred plant. Tradition tells that the god Ta'aroa offered his *ti* plants to humans so that they could eat during the long periods of famine. The roots of the plants are high in carbohydrates and gave the Polynesians strength to survive against starvation. Hawaiians ate the leaves of the green plants as spinach. The *ti* plant was also essential to traditional Polynesian wedding ceremonies. Marriage was very important and no decision was taken lightly. When two people wanted to get married, they had to have the approval of their respective families. Once obtained the consent of the families a branch of *ti* was planted at their *fare* (houses). In addition to openly announcing their new situation of "engaged people" it symbolized the blessing of their elders and the wish that abundance would fill their home. Finally, a branch of *ti* was used by the *tahua* (priest) to bless their union and declare them man and wife (Figs 9: a & b) [21-25].



Figure 9a. *Cordyline fruticosa* L. (A. Chev.)



Figure 9b. *Cordyline fruticosa* L. (A. Chev.)

2. 8. Ylang Ylang (Moto'i) *Cananga odorata*

Widely used in cosmetics, the essential oil of ylang-ylang has antidepressant and relaxing virtues recommended in cases of anxiety, depression and arrhythmia. In islands, Ylang-Ylang is mainly used for its flowers commonly put behind the ear, for its exotic scent and its long lasting perfume. In the Marquesas Islands, the *moto'i* is an important ingredient in the manufacturing of their famous love potion, the *Kumu'hei*. Coco Chanel has internationally spread the aroma of this flower with its perfume Chanel n 5 (Figs 10: a & b) [26-35].



Figure 10a. *Cananga odorata* (Lam.) Hook.f. & Thomson



Figure 10b. *Cananga odorata* (Lam.) Hook.f. & Thomson

2. 9. Madagascar Rosy Periwinkle (Perevai, Tihapai) *Catharanthus roseus* (L.) G. Don

This small decorative plant wears well its Latin name “*Catharanthus*” that means "flower which purifies." Despite the toxicity of its stems and foliage, this plant is one of the oldest medicinal plants in the world. It fights against diabetes and hypertension, helps to heal infected wounds and insect bites. Its malaria, anticancer and anti-leukemic assets have always made it a plant widely used in medicines. The infusion of its flowers is particularly widely used as an anthelmintic. Many sailors from around the world have long benefited from its appetite suppressant properties. During their long journeys, they survived by eating less food and making the ship lighter (Figs 11: a & b) [36-43].



Figure 11a. *Catharanthus roseus* (L.) G. Don



Figure 11b. *Catharanthus roseus* (L.) G. Don

2. 10. Orchid, *Phaius grandiflorus* (*Calanthe grandiflora*)

The refined elegance of this flower has attracted gardeners around whole world. The Orchidaceae family includes over 25,000 species today, a number that keeps on increasing due to the hybridization of different varieties of this beautiful flower. The orchid is becoming more and more essential as an ornamental plant to Polynesian gardens and greenhouses where they're cultivated with passion and admiration. The species of *Phaius grandifloras* is known from Raiatea, Tahaa, Huahine and Moorea [44, 45].

3. CONCLUSIONS

Fragrant and useful flowers from Huahine Island are the basic cultural form as well as the visual one of the inhabitants of this island. Some flowers (*Plumeria alba*, *Gardenia tahitensis*, *Gardenia augusta*, *Bougainvillea glabra*, *Hibiscus tiliaceus*, *Nymphaea capensis*, *Cordyline fruticosa*, *Cananga odorata*, *Catharanthus roseus*, *Phaius grandifloras*) are harvested and used in the perfumery industry as a unique and regional additional source of income. Often, the tourists visiting the island receive a fragrant flower as a symbol of Huahine Island.

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