and Roberts (4) have found a certain amount of root die-back, but not significantly more than that which occurs in a normal palm. Because the disease occurs on many soil types of varying fertility, they believe that the disease is not caused by any particular edaphic condition (4), nor could they find any fungus or bacterial organism associated with the frond-drop condition. Based upon their observations of field spread, binucleate cells, and the fact that the condition may occur in palms which are not of bearing age, they suggest that the disease may be the result of infection by an unknown virus (4).

Due to the lack of information concerning the cause and effect of the disease there are at present no recommended control measures.

Acknowledgements

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Brighter Botany Corner

Report on the promotion of growth of palm seedlings by an oil spray reminds us of the man who claimed he could always get action by greasing some palms.

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Palms on Postage Stamps

Claude Weber

The palms rank next to the cereals in importance as a source of staple food for millions of inhabitants of tropical regions. They also come next to the grass family in the number of stamps which represent members of the plant kingdom. Hundreds of stamps have been dedicated to palms, palm cultivation, palm industry, or show one or more palm trees as a feature of some scenery. It is often possible to identify the palms even if the name is not given, especially on modern stamps. A systematic review of the represented genera and species will indicate the characters which make the identification of palms possible. It is rather remarkable that in a family which includes over 200

genera and 2500 species fewer than 20 genera and 25 species appear on stamps. These are mainly of the more useful and widely distributed ones, such as the coconut, the date palm and the oil palm. Others, such as the *coco-de-mer*, are shown for a different reason, e.g. those growing in a limited area where they are more representative of a given country than those which have been introduced wherever the climate is suitable for their growth.

Postage stamps provide an excellent means for publicity and the various palms are often used for this purpose. They are shown in southern Europe to call attention to the mildness of the climate or in tropical countries to show the wealth of natural resources as well as the beauty of the landscape.

At least three species of *Phoenix* appear on stamps. The date palm, *Phoenix dactylifera*, has been cultivated for over 5000 years in southwestern Asia, where it probably is native, and in North Africa. From there it has been successfully introduced into other parts of Africa, the West Indies, California and Mexico. The date palm in cultivation possesses a slender, straight or slightly bent, more or less rough-looking trunk terminated by a crown of pinnate leaves, but when neglected or allowed to grow uncontrolled, new sprouts appear from the base, a reason date palms are often seen in clumps. These offshoots serve to propagate the trees faster than by seeding and with the security that those from a female tree will always give a female tree. In cultivation, 90 per cent of the male trees are removed. According to Hill (1), the date palms can grow with less water than any other crop. The fruits, rich in carbohydrates, are easily preserved and are the main food of the Arabs. Iraq is the main exporting country of dates. Date palms, and dates, among other tropical fruits, appear on numerous stamps of Africa and also on a few of the Antilles.

Phoenix canariensis of the Canary Islands has almost completely replaced the date palm for ornamental purposes since its introduction into the gardens of the South of France in 1864. Although La Promenade des Anglais at Nice, France, is still planted together with *Phoenix dactylifera*. The trunk of *Phoenix canariensis* is thicker, its leaves are larger and greener than those of *Phoenix dactylifera*. Since the former species does not produce offshoots, it is more favorable for decorative purposes in avenues especially in southern Europe and southern United States. A good example of this palm is shown by the French stamp issued in 1946-1948, representing La Croisette at Cannes.

Phoenix reclinata comes from the tropics of Africa. This palm is characterized by several slender trunks which tend to lean outward, and by its long leaves. It is depicted on stamps of the Belgian Congo and other African countries where it grows in masses along rivers.

Trachycarpus Fortunei, the windmill palm, with fan-shaped leaves was introduced into Europe from southeastern Asia in 1842. It is favored for its hardiness and for the attractive bright yellow flowers which appear in abundant sprays. The trunk is covered with fibers and the dead leaves persist if not cut. Two Russian stamps issued in 1948 and representing the shoreline of Sukhum and the Stalin Highway at Sochi in Crimea have good illustrations of this species.

Pritchardia pacifica, another fan-palm, is native to Fiji, and is planted in the southern parts of the United States as well as in the West Indies. It appeared on a stamp of Jamaica in 1919 representing "King's House."

Washingtonia filifera, one of the two *Washingtonia* species, is a native palm, growing wild in southern California, Arizona and in Mexico. Its fan-shaped leaves bear many filaments as expressed by its Latin name. This tall tree with a heavy trunk is planted as an ornamental in many countries of the world. It appears on a stamp of the United States, 1954 issue, representing "The Alamo."

The common palmetto, *Sabal Palmetto*, grows wild in the coastal areas of the southeastern states. It may be dwarf when growing in thickets or it may become 90 feet tall when planted in a suitable place. The common palmetto is the state tree of Florida where the leaves and leafstalks are used by the brush industry because of their high fibre content. This palm is recognizable on the United States stamp issued in 1930 for Carolina-Charleston.

The African *Hyphaene thebaica* is easily distinguishable from the other palms by its forked stems. Like the date palm it is dioecious, each tree being either male or female. Various parts of this palm are used for making mats, hats, baskets, woven bowls, rope, and building material; the hard nuts are also strung together by natives to form a weapon called *wargaji*. This palm appears on stamps of Eritrea and of Somalia.

The genus *Borassus* is illustrated by *Borassus aethiopum*. The wine made from the sap of this species is the richest in sugar of all the palm wines. It grows in Central Africa where, it is said, the elephants feed on the fruits. Dalziel (2) records: "In parts of Senegal several scores are planted at a child's birth and they serve to some extent as a dowry." It is shown growing in the savannah on a stamp of the Belgian Congo issued in 1955.

The double coconut or *coco-de-mer*, fruit of *Lodoicea maldivica*, was an object of mystery for centuries until the discovery of the area in the Maldive or Seychelles Islands in 1743 where the palm grew. This strange looking fruit first was found floating in the Indian Ocean and was thought to be produced by a tree living under water and kept by a daemon punishing with sudden death those who would attempt to approach it. The double coconut was supposed to be an antidote to all poisons and due to its rarity was very expensive in Europe or Asia, selling for up to 150 crowns each. Some kings even gave a ship for one according to Berthold Seeman (3), *Lodoicea* grows on the hill slopes and valleys of some of the Seychelles Islands but it is rarely cultivated. To obtain the nuts, sometimes weighing from forty to fifty pounds, the tree was formerly cut down, a practice which has made it rare outside a government and a private reserve. The *coco-de-mer* appeared in 1938 on a stamp of the Seychelles but unfortunately the unusual fruit is omitted.

Many genera and species are used in preparing palm wine which is obtained usually by removing the inflorescences before they open and collecting the sap in bamboo containers for fermentation.

One of the most important sources of palm wine is the pinnate-leaved *Raphia vinifera*, abundant in the tidal bayous of

4. Top row, *Phoenix dactylifera*, Israel 1959, 350 pr.; *Phoenix canariensis*, France 1946-48, 6 f.; *Phoenix reclinata*, Congo Belge 1931-37, 10 c.; 2nd row, *Trachycarpus Fortunei*, Russia 1948, 40 k.; *Pritchardia pacifica* Jamaica 1919-21, 2 d; *Washingtonia filifera*, U.S. 1954, 9 c.; 3rd row, *Sabal Palmetto*, U.S. 1930, 2 c.; *Hyphaene thebaica*, Italian Somaliland, 1954 Air, 1.20 s.; *Borassus aethiopum*, Congo 1955, 6.50 f.; Bottom row, *Lodoicea maldivica*, Seychelles 1938-41, 50 c.; *Metroxylon Sagu*, Japanese occupation of Malaya 1943, 30 c.; *Elaeis guineensis*, Nigeria 1935, 5 s. Photograph courtesy of the Arnold Arboretum, Harvard University.

5. Top row, *Roystonea regia*, Cuba 1955 Air, 12 c.; *Roystonea oleracea*, Brazil 1937, 300 r.; *Orbignya Cohune*, British Honduras 1938, 3 c.; 2nd row, *Arecastrum Romanzoffianum*, Argentine Republic 1935-51, 5 c.; *Cocos nucifera*, French Oceania, 1955 Air, 13 f.; *Jubaea chilensis*, Chile 1936, 20 c.; 3rd row, "Tree of Life," Iraq 1923, 1 r.; "Moslem leaf pattern," Pakistan 1951. 4 a.; palm branches for victor at Olympics, Greece 1937, 50 l.; bottom row, Hebrew coin with stylized date palm, Israel 1948, 3 m.; palm branch for allegory of victory, U.S. 1943, 2 c.; "Liberty Tree," Haiti 1891, 1 c. Photograph courtesy of the Arnold Arboretum, Harvard University.

the west coast of Africa. Species of this genus also give the West African piassava, a fiber used for brushes and brooms. Gambia, in 1953, issued a special stamp to show the African wine palm.

Starch is an unusual product obtained from palms. *Metroxylon Sagu*, the sago palm, stores starch in the stem. When the tree is eight to 15 years old and before it commences to flower, it is cut down and the starchy pith removed. The sago palm is mostly cultivated in Malaya and Indonesia and is both wild and cultivated in New Guinea. On stamps of Labuan, North Borneo, Samoa, etc., it is illustrated with a short trunk and large pinnate leaves.

Rattan, especially used for baskets and furniture, is produced by a few species of climbing and spiny palms belonging to the genus *Calamus*. These are so common in the jungle of the Old World that they do not need cultivation. A stamp of the Dutch Indies issued in 1932, shows "plaiting rattan."

The royal palm, *Roystonea regia*, is a native of Cuba where it is one of the commonest palms, growing from the plains to the mountains. The fruit is used for pig feed. It is easily recognized by the smooth green crownshaft rising above the stout columnar trunk and crowned by the pinnate leaves. Most of the time its bole grows straight, being slightly thickened above the middle. This palm is commonly planted along avenues in the Western Hemisphere and in Asia. Numerous stamps of Cuba and other countries of the West Indies as well as of South America and the Philippines depict the royal palm, either growing in its natural habitat or planted.

The cabbage palm, *Roystonea oleracea*, is also a native of the West Indies. Trees 110 feet high have been measured, about twice the normal height for *Roystonea regia*. The best characters to distinguish *Roystonea oleracea* from the royal palm are the leaves, which stay either horizontal or ascending instead of drooping, and the trunk which is enlarged at the base instead of at the middle. It is often planted, especially in South America. The issues dedicated by Brazil to the Botanical Gardens of Rio de Janeiro in 1937 and 1958 show how beautiful and majestic an avenue planted with this palm can be. The cabbage palm is also shown on stamps of Dominica and of the Dominican Republic where the terminal buds are used as a vegetable.

Areca Catechu produces betel nuts which are chewed by more people than any other masticatory. Although a native of Malaya, it is widely cultivated in whole Tropical Asia. Prudhomme (4) states that it is as rare to meet a coconut palm with a straight bole as it is to meet a betel-nut palm with a twisted trunk. This tree grows very tall and can be seen among coconut palms on stamps of Ceylon representing scenes of this country.

The oil palm, *Elaeis guineensis*, is a native of West Africa now introduced into tropical America because of the high concentration of oil in the fruits. Oil is expressed from both the pulp and the kernel of the fresh fruits. This oil is exported to Europe and the United States mainly from the countries bordering the Gulf of Guinea. It is used in margarine, in soap and also in the manufacture of tin plate. A wine is also made from the oil palm. This species still grows wild in the tropical forests of the

West Coast of Africa where the fruits are gathered by the natives but is also planted in groves. The oil palm is a medium sized tree reaching 45 feet in height with a slender bole. The trunk of young trees is covered with the remains of old leafstalks which fall off later, leaving a more or less smooth trunk on mature trees. The huge pinnate leaves are somewhat more graceful than those of the date palm. The inflorescences, male or female on the same tree, form a characteristic rounded mass; the male inflorescences appear on young trees a few years before the female. The oil palm appears on many stamps of those countries where it is one of the main natural resources. Thomas & Prince Island in 1948 and Nigeria in 1953 show the best illustrations of this palm.

Orbignya Cohune also produces oil. This palm, a native of Central America, is widespread in British Honduras, eastern Guatemala and Honduras. The yield of fruits is comparable to that of the African oil palm but the kernels are harder to crack and are lower in fat content. The cohune palm with a hanging cluster of fruits is represented on a stamp of British Honduras in 1938.

The coconut, *Cocos nucifera,* is the best known of palms, being one of the most important economic plants. Its origin is still doubtful, but some botanists believe it to be of the Malayan Archipelago. Growing near the sea shore, and the nut being especially well adapted for transportation in salt water, the coconut palm might have spread by marine currents from one island to another. Because it is such a useful plant, it has been widely disseminated and introduced by man into many countries. The coconut is now planted everywhere that it can survive, even at altitudes of up to 5000 feet. Trees can reach a height of 100 feet; the slender bole is usually arching, with a more or less swollen base. The numerous pinnate leaves are drooping and the fruits are borne in clusters. Coconuts are exported to temperate regions mainly in the form of copra or dried coconut meat which is obtained by dividing the fruits in two halves and by drying the kernel under the natural heat of the sun or by fire. The desiccated coconut meat is widely used by industry as a source of oil as well as a component of delicatessen. Several stamps have been designed to illustrate either the coconut palm or the preparation of copra, especially those from India, Ceylon, the Philippines and Indonesia.

Arecastrum Romanzoffianum, the queen palm, belongs to a genus related to *Cocos.* It is a graceful palm with large pinnate leaves which grows wild from central Brazil to Argentina. A Brazilian stamp issued in 1939 elucidates this species, as does also one of the Argentine Republic picturing the Iguazu Falls.

Jubaea chilensis, the *coquito* of Chile, occurs farther south on the western side of South America than any other palm and is still abundant as a wild tree in Central Chile. For cultivation the sap is extracted from the trunk, but in order to collect the sap the tree must be cut down. A good tree may deliver up to ninety gallons of sap, which, as maple sap, is concentrated by boiling; the concentrated sirup is called *miel de palma.* This tree possesses a very wide and straight trunk crowned by pinnate leaves. In 1936, Chile issued a stamp representing the coquito palm growing in the mountains.

Palms have played such an important role in the daily life of peoples for centuries or even thousands of years as in the case of the date palm that many legends have become associated with them. The date palm was introduced to the region now known as Israel in ancient times. It is represented on a stamp of that country with symbols of Rosh Hashonnoh, the Jewish New Year, and on stamps picturing old coins. One of the oldest symbols, the "Tree of Life," has also found application among postage stamp designs. For the Assyrians (ca. 2000 B.C.), as we find on their reliques, the Tree of Life was composed of grape vines climbing on a date palm. Iraq in 1923-25 and Ukraine in 1923 issued stamps showing such a pattern.

Palm branches were a symbol of victory for the Greeks and for the Romans. A stamp issued in Greece in 1937 shows a victor at the Olympics acclaimed by a crowd waving palm branches. It is still used in this sense on stamps of the United States, Cuba, Brazil, Colombia, Italy, etc. With the coming of the Christian era palm branches were adopted as a symbol of martyrdom. Thus we find them in the hands of martyrs or in the coats of arms of destroyed cities, such as Strasbourg and St. Etienne, France.

The date palm is also bound to the Moslem religion. Mohammed compared it to man, for the sexes are separated on different trees. In the Koran he states that the date palm is blessed among trees as the Moslems are among men. Since reproduction of plants and animals is forbidden in this religion, the palm tree can only appear in a very stylized manner, as on a stamp of Pakistan of 1951 depicting a "Moslem leaf pattern."

Stylized palm trees appear also on coats of arms of different countries or towns: e.g. Zanzibar (date palm), British Honduras (cohune palm), New Caledonia (coconut palm), Haiti (cabbage palm). Haiti's "Liberty Tree" is a stylized cabbage palm surmounted by a Phrygian cap, a symbol of the French Revolution in the latter part of the 18th century. The wine palm (?) represented on the seal of Liberia, a republic founded in 1822, signifies another historical event.

In the foregoing paragraphs I have attempted to give an overall picture of the great diversity by which palms are employed as postage stamp designs. I have, by no means accounted for all of the stamps, for it would have made this article too long and it would also have been superfluous, since a handbook listing all plants represented on postage stamps is being prepared by members of the American Topical Association for publication in 1960. (For information, write A. T. A., 3306 N. 50th St., Milwaukee, Wisconsin.) This article was intended to show and to convey the intellectual satisfaction one may receive either in combining botanical and ethnobotanical studies with philately, or in finding lasting values in artistic designs.

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