PINEAPPLES IN ANCIENT AMERICA*

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Dr. Collins (Ph.D., University of California, 1922) has been geneticist and head of the Department of Genetics at the Pineapple Research Institute of Hawaii since 1930. In 1938-39 he conducted an expedition into South America to look for wild and semi-wild species of pineapples, covering areas in Brazil, Argentina, Paraguay, and Bolivia.

IN THE early morning of Sunday, November 3, 1493, the fleet of vessels under the command of Christopher Columbus on his second voyage to the New World, made a landing in the lesser Antilles of the West Indies. A landing was made on the first island they approached, to which Columbus gave the name "Marie-Galante." They soon returned to their ship and sailed for a larger, mountainous island visible in the distance, on which they landed Monday, November 4, 1493. Columbus gave to this island the name "Guadeloupe." According to the chronicle of Peter Martyr, here, at an Indian village, they found pineapple plants and fruits, "the flavor and fragrance of which astonished and delighted them." This is the first recorded contact of European people with the pineapple.

Although the pineapple represented a new and exotic fruit to these Europeans who sailed with Columbus, it appears to have been a common and an important element in the diet of the inhabitants of tropical America in pre-Columbian times. How widely the fruit was distributed and used by the Indians is to some degree indicated by the records left by those adventurous souls who penetrated many tropical regions during that romantic period of exploration and adventure following the discovery of the New World.

The pineapple shares the distinction accorded to all the major food plants of the civilized world of having been selected, developed, and domesticated by peoples of prehistoric times and passed on to us through one or more earlier civilizations. The pineapple, like a number of other contemporary agricultural crops such as corn, potatoes, tobacco, beans, and peanuts, originated in the Americas and was unknown to the people of the Old World before the discovery of America.

The Indians of tropical America had developed and named a number of different varieties of pineapples, selected by them or their ancestors because of their size of fruits, good quality, and absence of seeds. Wild pineapples that are probably the foundation stocks from which these domestic varieties were derived are still to be found in tropical America, but they are generally small-fruited, inferior in eating quality, and extremely seedy. None of these can be singled out now as the form or forms which gave rise to the domestic pineapples of today or even of those varieties in the possession of the Indians at the time of the discovery of America.

The pineapple appears to have been used very little by the native American tribes in their religious ceremonies, for which reason it has not been found as a motif for pottery designs, temple ornaments, and other decorations, as were corn and potatoes. There is some evidence, however, that it may have figured in some of the religious rites of the Indians of Mexico, for Acosta in his History of the Indies gives a detailed description of an Indian god which he described as holding in his left hand a white target with five pineapples made out of white feathers and set in the form of a cross. Since this god was used by the Indians previous to the introduction of Christianity, the image was probably made long before the coming of Europeans. This would then indicate that the Indians of Mexico were acquainted with pineapples in pre-Columbian times.

Thompson believed that the Maya Indians of Central America were not acquainted with the pineapple before the discovery of America by Europeans. He discusses this possibility as follows:

The pineapple (Ananas sativus) possibly did not reach the Mayas until shortly after the conquest. The Prospero Indians who were entirely cut off from Spanish influence were found to be cultivating the pineapple when first visited by Europeans in 1646 (Cogolludo, Book XII, Chap. 7). This, of course, is not direct evidence that the pineapple was known to these tribes before the arrival of the Spaniards in the new world, as many of the articles introduced by them passed from tribe to tribe and were well established in remote areas long before Europeans had penetrated so far. Pineapples were certainly cultivated in the Cueva region prior to the conquest (Oviedo, Book XXIX, Chap. 29) and on the Mosquito Coast (M. W.) and the Usamacinta basin (Tozzer, 1912). In view of the close relations between the Chiriqui area and the Mayas as demonstrated by the importation into Chichen Itza of gold objects from this region, it is not unlikely that food products of the two areas were interchanged.

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The island of Guadeloupe in the West Indies, where pineapples were first seen by people from the Old World when Columbus landed here on his second voyage to the New World in 1493.

The Relacion Breve relates that Father Ponce was received during his journey to Yucatan in 1588 at many of the Maya villages with gifts of pineapples.

Thompson also points out that there is no word in the present Maya language for the pineapple and that the Spanish piña is used. This, he believes, does not necessarily mean that the pineapple was unknown to the Maya before the Spanish Conquest, since the Maya Indians have accepted Spanish words for other things, the earlier Maya terms being known only to a few of the older Indians at the present time. In a letter to the author in 1946, Dr. Thompson stated that he would now consider that the Maya of the peninsula of Yucatan did not have the pineapple but that the Maya of other Central American regions did have it in pre-Columbian times.

Stephens found what he believed to represent a pineapple made of stucco mounted on a circular base, used as an ornament in front of a small shrine.
or altar among the ancient ruins on the sea-coast of Yucatan at Tulum. His illustration, when viewed under low-power magnification, shows a scalelike surface which could represent the eyes (or individual fruitlets) of a pineapple fruit. Stephens presents arguments in favor of this town being inhabited by the Indians at the time of the discovery of America, concluding that the ruins examined in 1840–41 were not of great antiquity.

The following is quoted from Stephens’ account of his visit to these ruins:

Near the foot of the steps overgrown by the scrubby wild palm, which covers the whole cliff, is a small altar with ornaments in stucco one of which seems intended to represent a pineapple. These wanted entirely the massive character of the buildings and are so slight that they could almost be pushed over with the foot. They stand in the open air exposed to strong easterly winds and almost to the spray of the sea. It was impossible to believe that the altar had been abandoned 300 years.

The 300 years would take the date back to about 1540, approximately the time of the Spanish conquest of Yucatan. Stephens believed that the Indians had continued to use these buildings long after the conquest.

A. M. Tozzer, who has made comprehensive studies of the culture of the pre-Columbian inhabitants of Central America, stated in a personal communication that he was sure this ornament mentioned by Stephens could not have represented a pineapple.

Cook states that the pineapple was known in Peru before the arrival of the Spaniards and gives the Inca name (Aechyapalla) for it; on this he bases his belief that the Inca Indians were acquainted with this fruit. This is the only indication we have so far found that the Indians of the west side of South America knew the pineapple before 1492.

De Oviedo, who lived in the New World from 1513 to 1547, voiced his belief that the pineapple was an old and well-known fruit when he observed that “In all these islands [West Indies] it is a fruit which I hold old and very common, because they are found in all these Islands and on Tierra Firme” [mainland of Central and South America]. He described three distinct varieties grown by the Indians of Haiti and produced the first illustration of a pineapple. This is a pen drawing used to supplement his description of a pineapple, which he admitted lacked exactness.

Columbus found pineapples being cultivated in fields by the Indians in 1502 at a place he called Puerto Bello on the Atlantic coast of what is now the country of Panama. His son Ferdinand reported finding pineapples being cultivated at Veraqua in this same general region in the year 1503:

They make another wine of the fruit we said is found in the Island of Guadeloupe, which is like a great pineapple: it is planted in great fields and the plant is a sprout growing out at the top of the fruit itself, like that which grows out of a cabbage or lettuce. One plant lasts three or four years and bears.

Again, during his last voyage in 1503, Columbus found pineapples growing at Belen, which is a short distance north of the mouth of the Panama Canal. According to Irving’s account, Columbus in 1503 landed on the island of Guanaja a short distance off the coast of Honduras, where he traded with a large canoeload of Indians who were quite different in appearance and clothing and who had apparently just arrived from Yucatan. They had come intent on trading with the Indians of the island and brought cotton cloth, copper utensils, pottery vessels, cocoa, beer made from maize, and wooden swords edged with sharp pieces of flint of a type found in Mexico at a later date.

In 1503, while Columbus was exploring the coastal area of Panama, “He again heard of a nation in the interior, advanced in arts and arms, wearing clothing and being armed like the Spaniards.” These incidents indicate trading between the interior and the coastal area where pineapples were found by Columbus.

In 1519, only twenty-six years after Columbus first saw the pineapples on the island of Guadeloupe, Pigafetta recorded pineapples growing in coastal areas of Brazil, which is probably the first record of pineapples on the mainland of South America.

Gerommo Benzono, who lived in Mexico from 1541 to 1555, records pineapples being grown in that country, and about this same time, Jean de Lery again records pineapples growing in Brazil. Whether this represents a new area for Brazil or whether it was the same as reported by Pigafetta some twenty-two years earlier, we do not know.

In 1565 Sir John Hawkins, sailing in his ship Jesus of Lubeck, stopped at a place along the coast of Venezuela known then as Sante Fe, in order to take on supplies of water and provisions. Here he received from the Carib Indians, who were described as naked savages armed with poisoned arrows, “hennes potatoes and pines.” These latter were pineapples “of the bigness of two fists.” The inside of these pines was said to “eateth like an apple but is more delicious than any sweet apple suggered.”

In 1595 Sir Walter Raleigh made his remarkable expedition some 400 miles up the Orinoco River in northern South America. He reports hav-
ing secured quantities of pineapples from the Indians in trade at various points while ascending the river. This observation was made one hundred and two years after the discovery of America, and one might well argue that the pineapples could have been introduced into this area in the intervening years and that it does not necessarily represent a pineapple area of pre-Columbian times. Neither do we know about the amount of communication between the Indians of the coastal area of Panama, where pineapples were known to exist in previ-
ous, twelve (and possibly more) show isolated pineapple plants as a part of the native vegetation. From these paintings we may conclude that pineapples were a common feature of the north Brazilian coastal area in the early part of the seventeenth century.

Laufer, in discussing the migration of the pineapple, believed that the absence of the seeds in the cultivated species was induced by long-continued asexual reproduction and thus served to indicate a great age for the cultivated species. This belief

Columbian times, and the tribes in the interior of the country. However, the fact that Sir Walter Raleigh found them in some abundance and that the Indians also made a kind of wine from them argues for a long-time presence in a country inhabited by primitive people having limited means or inclination for travel and transportation.

In 1637 Frans Post, a Dutch painter, came to Brazil as a government official while the northern part of Brazil was under the domination of the Dutch government. During his stay in Brazil, he painted a large number of landscape, seaport, and village scenes portraying the country and customs typical of Brazil at that time. Among these paint-

This map, showing the distribution of pineapples in tropical America at the time of the discovery, is based upon records left by the early explorers.

that long-continued asexual reproduction induces or causes the loss of seed production, at one time quite current in regard to seedless fruits in general, has been shown to be erroneous. Seedlessness usually first appears in plants as a result of mutation in the chromosomes (a hereditary change) or as a consequence of hybridization, which is thereafter perpetuated by the asexual method of propagation. It is not difficult to call to mind examples in horticulture of plants long propagated asexually that still produce seeds. In the cultivated pineapple in Hawaii, new mutations (reverse mutations) have been found and perpetuated by asexual propagation which permit the development of seeds in the

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formerly seedless variety. Thus, the commercial seedless variety has suddenly reverted while under cultivation to a seedy condition. The seedlessness of the pineapple cannot be considered as an indication of its age as a cultivated plant.

The early explorers of America were primarily interested in the search for gold, finding a sea route to the Indies, or carrying the gospel to the native peoples, whom they looked upon as heathens, and probably had little interest in transporting plants from one part of the new country to another.

Therefore, the records they made of pineapples being present in different places may be accepted as evidence of their establishment there before the country was invaded by these semicivilized Europeans.

The medicinal and other qualities attributed to the pineapple by the early travelers and colonists indicate a long-time association with the fruit to provide for the development of these beliefs—much longer indeed than the short period of sketchy European contact with the pineapple. These beliefs regarding the medicinal qualities of the pineapple must have been developed by the Indians through their long association with the fruit and passed on to the newly arrived Europeans, who then made these qualities a matter of record.

The area or place of origin of the pineapple, whence it was disseminated to other tropical American regions, is still a matter of some uncertainty, but opinion of botanists generally favors a region in South America near the middle part of the Parana River and the drainage of the Iguassu River, a region including southeastern Brazil, Paraguay, and Northern Argentina. This area also seemed to be indicated by the studies of the distribution of wild species of pineapple by Baker and Collins in 1938 and 1939.

In this region lived the Tupe-Guarani Indians in pre-Columbian times (some still do so), a hardy, intelligent, warlike people who migrated northward and westward until some branches of the tribes crossed the Amazon and reached the seacoast of northern South America. The Carib Indians who occupied northeastern Brazil continued the northward expansion and had extended into the islands of the Caribbean Sea before 1492. These tribes are believed to have carried the pineapple along with them and introduced it to other tribes in these new areas, and they in turn passed it on to their neighboring tribes. Thus, by a dual process of tribal migration and border trading between tribes, the pineapple was spread throughout tropical America.

We are somewhat puzzled as to the interpretation to be given three references indicating the possible presence of the pineapple in the Old World many centuries before the time of Columbus. These statements cannot be ignored in the present discussion of pre-Columbian pineapples and are accordingly included, together with the general opinion regarding them.

Layard and Rawlinson both describe some stone carvings on the walls of the ancient Assyrian city of Nineveh in which are shown different articles of food served at a banquet, including one that both

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writers listed as representing a pineapple. Rawlinson stated that “The representation is so exact that I can scarcely doubt the pineapple being intended.” Layard expressed some doubt about the Assyrians being acquainted with the pineapple but argued that “the leaves sprouting from the top proved that it was not the cone of a pine tree or fir.”

The third reference to the presence of the pineapple in the ancient civilizations of the Old World is that of Wilkinson in *Manners & Customs of the Ancient Egyptians*. He states that “Among the numerous productions of India met with in Egypt which tend to prove an intercourse with that country may be mentioned the pineapple, models of which are found in the tombs of glazed pottery. One is in the possession of Sir Richard Westmacott.” Wilkinson seems to believe that the pineapple was a product of India, but there is no evidence that it was grown in India or Asia during that period. Marco Polo, who visited India and Asia centuries later and who described with considerable accuracy many of the products of those countries, makes no mention of the pineapple.

The pineapple is so constituted for survival by its vegetative method of reproduction and the ability of these vegetative shoots to remain alive for long periods of drought or neglect that it is very improbable it could have disappeared completely from these countries had it existed there. Other food-supplying plants known to those regions have survived the passing of ancient civilizations. The fact that the pineapple was not handed down through successive generations and civilizations, along with such plants as wheat, dates, pomegranates, melons, etc., seems to be sufficient evidence that it had never existed there.

The pineapple belongs to the family of plants known as Bromeliaceae, which includes numerous species of terrestrial and epiphytic plants, all except one being native to America. This one species is indigenous to the west Coast of Africa.

Ames, in discussing the relationship of economic annual plants and the development of human cul-

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*Drawing of the pineapple called *Yayama* by Oviedo. One of the three varieties described by him in his history of the Indies. (From Bauhin, *Historiae Plantarum Universalis*, 1651.)*