

EARLY ACCEPTANCE OF WATERMELON BY INDIANS OF THE UNITED STATES

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ABSTRACT.—Modern authorities agree that watermelon (*Citrullus lanatus*) is an Old World plant that probably originated in Africa. Watermelons were grown by the Spanish in the Southeastern United States before 1576 and their presence was noted 50 leagues inland and in the Southwest before the end of the sixteenth century. Over the next 100 years there is increasing historical evidence of their use by Indians over a wide area. Some early accounts indicate that more than one kind of watermelon was grown. It is suggested that there may have been multiple introductions and that the plant was readily accepted by the Indians because it could be successfully cultivated by the same methods used for the native squash (*Cucurbita* spp.)

Pioneer ethnobotanist Melvin Gilmore, writing in 1914 (1977:68-77), was so impressed by accounts of his Omaha Indian informants that they had known watermelon "from time immemorial" that he suggested it might have been present in America before the coming of Europeans. This possibility was reinforced for him by reading early historic accounts of the use of watermelons by Indians over a wide area in the United States and by documented instances of the plant's ability to volunteer.

Lyman Carrier (1923:67-78), an agronomist with the United States Department of Agriculture, was greatly impressed by the early historical evidence of watermelon in America, particularly by LaHontan's account of the late seventeenth century that this tropical plant had been adapted for cultivation as far north as Canada by the Hurons. Although he mentioned the possibility that seeds of watermelon may have been distributed from a Spanish introduction in the West Indies, he concluded that "At present the evidence favors the American Indian as the discoverer and domesticator of the edible watermelon".

Carrier was also of the opinion that the descriptions in the early herbals of "anguria" or "citrull", which are often claimed to be watermelon, really are those of the colocynth or bitter melon. He further claimed that the description of "Virginia Watermelons" in the revised edition of Gerard's Herbal, published in 1636, but written in 1621, "is unquestionably the true watermelon" (Carrier 1923:65-68). Carrier's argument was to help support his contention that the watermelon originated in America. It is mentioned here, without passing judgment, because it does give an indication of the approximate time when the watermelon became generally known and grown in Northern Europe.

Gilmore's and Carrier's historical research on the use of watermelons by the Indians is extensive and useful, but we have been unable to find publications by other botanists that agree with their conclusions. No direct relatives of the watermelon (*C. lanatus*) are known to be native to the Americas and, to our knowledge, there is no archaeological evidence of its presence there before Europeans reached the New World.

Modern botanical writers generally agree that the watermelon (*C. lanatus*) originated in Africa and that its use is of considerable antiquity. It has not yet been possible, however, to pin down a specific time and place of domestication (Harlan et al. 1976:14; David 1976:254; Purseglove 1976:294). Whitaker and Davis (1962:2) suggest that there appears to have been a strong secondary center of diversification in India. It may be no coincidence that *sandia*, the Spanish name for watermelon taken from the Arabic, refers to an origin in India. (Dozy and Englemann 1915:339).

At the risk of belaboring the point that watermelon is of Old World origin, it may be pointed out that seeds identified as *C. vulgaris* (now *lanatus*) were recovered in archaeological excavations from the Inyanga ruins in Africa which date from the eighth century or earlier (Shaw 1976:114).

In addition, the Moor D'Tbn-Al-Awam of Seville, Spain, in his *Book of Agriculture* written in 1158, describes six kinds of melons, one of which appears to fit two varieties of watermelon:

6. The melon in the *shape of a jar*, because it resembles this sort of vessel; the *melon of Palestine*, which is the melon of Constantinople, the melon of India or the Scinde, includes two varieties; the one has a black seed and the rind of this one is very dark green passing to black; the other one has a pure red seed and the green color of it's rind passes to yellow (Clément-Mullet, tr. 1864, Vol. I:17, 1866, Vol. II, Part 1:216). (Clément-Mullet's French translation from the Arabic will be found in Appendix I.)

Historical references in this paper are ones in which the English word "watermelon" or the Spanish *sandia* was used directly or in reliable translation. They also include cases where watermelon was clearly indicated by descriptive terms or statements such as "it is nothing but water". References in which there appears to be some doubt whether watermelon or some other cucurbit was intended have been omitted.

In 1576, a farmer named Juan Serrana testified in a Law court that the soil of Santa Elena Island was good for growing maize, pumpkins and watermelons (*sandias*) (Connor 1925:159).

In 1597, de Salas, a Spanish soldier, traveled 50 leagues inland to the Indian town of Cute and there found Indians growing watermelons (Serrano y Sans 1912:144). This was in the province of Ocute located on the lower reaches of the Ocmulgee River, a tributary of the Altamaha, which had been visited by de Soto (Swanton 1946:138). This indicates that the aboriginal cultivation of watermelon had already begun to move inland.

To the west, in Mexico near the border of the present state of Texas, Espejo in 1582, reported watermelons among the Indians of the Conchos nation (Bolton 1963:170). Sixteen years later in 1598, Oñate declared that watermelons were generally grown by Indians of the Pueblo area in the Southwest (Ibid. 1963:217). There is archaeological confirmation of the watermelon in the Southwest, sometime between 1626 and 1675, by Volney Jones's identification of two kinds of watermelon seeds recovered from the turkey pens excavated by Toulouse at Abo Mission, southeast of Albuquerque (Jones 1949:30).

It has been pointed out above that the watermelon began to be generally known in northern Europe in the first quarter of the seventeenth century. The earliest reference that we have been able to find for watermelons in the Northeast is the 1629 statement of Master Graves (1968:124) that in New England "we abound with . . . sundries sorts of fruits as musk-millions, water-millions . . .".

A 1634 report by Father Andrew White on his way to Maryland shows that ships from Europe enroute to the colonies sometimes stopped in the West Indies where watermelons had been previously introduced (Hall 1959:38). In the same year, it was reported in a *Relation of Maryland* that settlers had made trial of "Musk-mellons, Water-mellons, Cow-cumbers . . ." (Hall 1959:82). In a 1649 account of New Netherland, the writers remarked that watermelons could be grown in the fields, but in the Netherlands, they require particular attention in gardens (Brodhead 1856:277). By the period of 1665-1670 watermelons had reached the Great Lakes, for Perrot (1911:113) noted their use among the Heron at that time and, shortly after in 1673, they were reported among the Illinois by Marquette (1966:129).

From the seventeenth century and later there are historical references to the cultivation of watermelons by Indians from the lower Mississippi Valley north into Canada and from the east coast west to California. Kino, the explorer priest, reported in October

1700 that he saw watermelons growing "at the foot of a hill, from the top of which, California is plainly visible", while he was in the country of the Yuma Indians (Bolton 1919, Vol. 1:249). The watermelon appears to have been in use among the Natchez some time before the early part of the eighteenth century, when the French had regular contact with these Indians, for they called June "the watermelon moon" (LePage duPratz 1975: 338). (See also Appendix II for additional early historic references to watermelon in the United States.)

We have been unable to find any reliable mention of watermelon in the North and Northeast before the accounts given above of about 1629-1649, hence transmission to the Huron and the Illinois appears to have taken a relatively short time. The spread to the north was probably hastened by the method in use among the Huron described by Sagarde. Seeds of squash were sprouted by placing them in a box filled with rotted wood, which was moistened and suspended over the smoke of a fire (Kinietz 1965:19). A similar method was described by G. L. Wilson's Hidatsa informant as late as 1914 (Wilson 1977:68). Charlevoix (1763:237) observed that this method was also used for watermelons. He said, "Sun-Flowers, Water-Melons, and Pomkins are set by themselves; and before they sow the Seed, they make it shoot in Smoke, in light and black Earth".

Accounts of the seventeenth and early eighteenth century sometimes indicate that more than one kind of watermelon was grown. It will be recalled that Jones (1949:30) recovered two kinds of watermelon seeds at Abo Mission. Marquette (1966:129) said of the Illinois in 1673, "They also sow beans and melons, which are excellent, especially those that have red seeds". Some watermelon seeds are "reddish black" and some are "white, yellow, brown, green, black". (Whitaker and Davis 1962:38). Marquette's statement appears to indicate that more than one kind was grown by the Illinois. John Banister (1678-1692) spoke of "watermelons red, yellow and white meated" (Ewan and Ewan 1970:350). LePage duPratz (1975) described several kinds of watermelons grown in Louisiana that varied in shape from round to long and in size from 10 to 30 pounds. The seeds of "Some are black and others red" (1975:230, 231). There is, of course, no certainty that more than one variety reached all Indians or, if they did, that they continued to be grown.

Watermelon seeds could have reached the Indians by diffusion from Spanish settlements in Florida, Mexico or the Southwest, or possibly from traders or missionaries in the North or East. The priest Kino did distribute seeds, including those of the watermelon, while in the country of the Pima and the Papago (Castetter and Bell 1942:74), but we know of no documented instances of this practice by early missionaries or traders in the North. Incidentally, Kino found that the Indians already had watermelons, even those near the present day Cocklebur, Arizona, "although never in that village had there entered another white face or Spaniard" (Bolton 1936:398).

Among collections of plant remains recovered from archaeological sites sent to the Missouri Botanical Garden for identification were five that contained seeds of watermelon (*C. lanatus*) (Cutler and Blake 1976:13, 14, 45, 46). These are listed with measurements of seeds, cultural affiliation and dates in Table 1. A brief additional statement on each may be in order, however.

Zimmerman, located on the Illinois River opposite Starved Rock, was possibly the village visited by Marquette in 1673 (Brown 1975:2).

King Hill is located on the Missouri River bluffs in a residential area of St. Joseph, Missouri (Ruppert 1974:2-11).

Utz is on the south bank of the Missouri River north of Sedalia, Missouri. It was the home of the historic Missouri Indians until about 1714 (Berry and Chapman 1942; Bray 1978).

Rhoads is on a tributary of the Sangamon River north of Springfield, Illinois. It was occupied by Kickapoo Indians in close touch with the British (Klippel 1973).

Coal Pit, a village of the Little Osage near the western border of Missouri was probably the one visited by Pike's Lieutenant Wilkinson (Chapman 1974:120). While there on

TABLE 1. — *Watermelon seeds from five Midwestern historic and protohistoric archaeological sites (Carbonized, unless otherwise noted.)*

Site name	Zimmerman	King Hill	Utz	Rhoads	Coal Pit
Site number	11Ls3	23Bn1	23Sa2	11Lo8	23Ve4
Approx. period of occupation	A.D. 1673-1691	Ca.A.D. 1700	Ca.A.D. 1600-1714	A.D. 1760-1820	A.D. 1790-1820
Culture or tribe	Historic Kaskaskia	Late Oneota Kansa (?)	Late Oneota Hist. Missouri	Historic Kickapoo	Historic Little Osage
No. of seeds	52	2	2	7	5
Sizes of seeds (mm)	7.8 by 4.9 9.0 by 5.6 9.4 by 5.2 9.9 by 5.0 9.9 by 5.2	8.8 by 5.1 9.4 by 5.3	10.0 by 5.6	9.4 by 5.0 9.5 by 4.7 9.5 by 5.0 12.3 by 8.2 (*)	11.0 by 5.6

(*) Not carbonized.

18 August 1806, Wilkinson was given "watermelons about the size of a twenty-four pound shot, which though small, were highly flavored" (Jackson 1966, Vol. II:5). Since a 24 pound shot is only about 14 cm in diameter, these were quite small watermelons.

A small, round variety of watermelon has survived up to recent times among some Indian tribes. Gilmore (1977:68) described the old watermelon of the Omaha as "small, round and green, having a thin rind and red flesh, with small, black, shining seeds". Bohrer (1960:200) described a similar variety grown by the Zuni, which was 17.1 cm in diameter. Castetter and Bell (1942:119) also spoke of a small, spherical melon with pink flesh, 20.3 cm in diameter, which was grown by the Pima.

Reasons for rapid acceptance of the watermelon by Indians over a wide area, often with different cultures, appears to lie in the fact that methods of successful cultivation are similar to those of the native squashes (*Cucurbita* spp.) with which they were familiar. Also, the long, hot continental summers over much of the United States favored its growth. Contributing factors were the sweet and refreshing taste, which was probably particularly relished where the diet was monotonous, and the excellent keeping qualities of some varieties. Whiting (1939:92) mentioned an old Hopi type that kept until mid-February. Storage for winter use was noted by Robbins et al. (1916:112) among the Tewa and by Bohrer (1960:200) among the Zuni. Peter Kalm described methods used by the settlers in Pennsylvania to keep watermelons "during a great part of the winter" (Benson 1966:516).

Since watermelons appear to have been adopted by the Indians for use fairly early, and since they could be grown locally and did not have to be imported as did the usual trade goods, there would seem to be a good chance that watermelon seeds may turn up on sites where no trade goods are recovered. The increasing use of flotation techniques enhances this possibility. In any event, they should be of particular interest to archaeologists for they are as good an indication of the effect of European presence as glass beads and articles of brass or iron. Also, with a greater recovery of seeds, it may be possible to distinguish archaeologically a number of places where more than one variety was grown.

APPENDIX I

Clément-Mullet's French translation from the Arabic

6. le melon en *forme de jarre*, parce Qu'il reassemble à cette sorte de vase: *le melon de Palestine*, qui est le melon de Constantinople, le melon de l'Inde ou du Scinde, comprenant deux variétés; l'une a la grainè noire et (l'écorce) d'un vert très-foncé passant au noir; l'autre a la grainè d'un rouge pur, et la couleur verte de son écorce passe au jaune (Clement-Mullet 1866, Tome II, Pt. 1:216).

APPENDIX II

Additional early historic references to watermelon in the United States

Date	Reference
1663	John Josselyn noted watermelons in New England in the account of his second voyage (1865:60,101).
1679	John Banister wrote a letter in this year telling about watermelons in Virginia, (Ewan and Ewan 1970:41).
1687	Joutel was given watermelon to eat by the Arkansas and later by the Kaskaskia Indians (1962:143,146,156,163).
1690	De Leon saw watermelons near the present day town of Crocket in Houston County, Texas (Bolton 1963:415).
1691	Casanas noted watermelon among the Tejas and Asinai Indians of Texas (Swanton 1942:128,243).
1691	Espinosa mentioned that watermelons were grown in the province of Texas (Swanton 1942:243).
1697	Mange said that watermelons were grown at San Agustin de Oiar, which is near present day Tucson, Arizona (Burris 1971:215).
1697	Cadillac said that the harvest of the northern Indians included watermelons (1962:12).
1699	Penicaut was given watermelon to eat at the village of the Pascagoulas (McWilliams 1953:18).
1705	Liette said that the Illinois harvested "a great many fine watermelons . . . many of them as big as a water bucket" (1962:126).
1705	Beverly spoke of several varieties of watermelon in Virginia (1947:141).
1748-	Peter Kalm mentioned watermelons a number of times in noting their presence in Canada,
1749	eastern North America and in the Illinois Country (Benson 1966:59,508,509,515,516,617).

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