THE SALADOID OCCUPATION
OF WONOTOBO FALLS, WESTERN SURINAM

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Archaeological investigations at a site near the Wonotobo Falls in the Corantijn (Corentyne) river of Western Surinam have shown that the earliest Tropical Forest Indians arrived in the Guianas about the time of Christ. The remains of two subsequent ceramic complexes have been found at the Wonotobo Falls site. The lower part of the stratigraphy is characterized by the Early Wonotobo Complex which appears to be closely related to the Maritime Saladoid tradition of coastal Venezuela and the West Indies. Pottery of the strongly Barrancoid influenced Late Wonotobo Complex has been found on top of the Saladoid refuse. To date, Wonotobo is the earliest Maritime Saladoid habitation site east of the Orinoco river mouth. This paper aims to describe the Early Wonotobo pottery and to discuss its dating and cultural affiliation.

THE SITE

The Wonotobo Falls are situated ca 250 km South-South-West of the Corantijn river mouth, at about 4°23' N. Lat and 57°50' W. Long. Ascending the river it represents the first complex of rapids which cannot be passed, even when using corials. If one wants to travel further South, dug-out and cargo have to be carried five kilometers overland to a spot above the falls where the river is navigable again (see Zonneveld 1969). The Wonotobo complex consists of four main rapids, from East to West: the Dutchman Fall, the Blue Crane Fall, the Frenchman Fall, and the Englishman Fall. The name "Wonotobo" is of Amerindian (Cariban) origin. Schomburgk (1837) speaks of "mawari Wonoto-po." According to Ahlbrinck (1929), "mawari" is derived from "kumawari", the name for a crane species. The full name would signify "the place where the blue crane sleeps." Apparently, the present name of the Blue Crane Fall is an English translation of the original Amerindian name of the entire complex of rapids.

The former Amerindian settlement occupies the top of a 50 to 60 m high granitic hill, situated about 200 m North-East of the Dutchman Fall, close to a small creek (Fig. 1). A jeep trail connects the hill with a permanent camp of the Surinam Bureau of Waterpower Works to the West. The area is covered with equatorial rain forest; locally, many crabwood trees (Carapa guianensis) are found. Bamboo (probably Guadua glomerata) grows at the site itself, forming a massive, almost impenetrable, stand. The total area of the settlement can be estimated at about 160 x 250 m. Its centre is to be found on the highest part of the hill.

The Wonotobo Falls site (SUR-48) was discovered by D.C. Geijskes as early as July 1959. In September 1962, Geijskes returned to the site and excavated 22 1x1 m test pits, situated at distances of 20 m
from each other along two square axises which cross in the centre of the site. He obtained many pottery fragments (in all 161.55 kg of sherds), and a few stone artifacts (Geijskes, n.d.). Although Geijskes collected his material by 15 cm levels, after his retirement as director of the Surinaams Museum in 1965, the finds were stored in the museum irrespective of cut and level. In order to check the Wonotobo stratigraphy, F. Kruizinga and the author dug two 2x1 m cuts, controlled in 10 cm levels, in the centre of the site in January 1975.

Cut 1 yielded an occupation layer, consisting of black-coloured sandy clay, from the surface of the site down to a depth of 85 cm. It is speckled with potsherds; a few tiny charcoal particles were found between depths of 59 and 80 cm below the present surface. The soil becomes more clayey towards the bottom of the deposit. The upper 15 cm of the profile are characterized by many small bamboo roots; iron concretions and small pieces of quartz occur in its lower half. A thin horizontal layer of iron concretions was observed at a depth of 65 to 70 cm. Dark-yellow, sterile residuary clay, containing many quartz pieces and iron concretions, was recovered at a depth of 85 cm. Cut 2, dug 6 m to the West, showed black habitation earth down to a depth of only 30 cm. It should be noted that one of Geijskes' 1962 test pits, SW-4, yielded potsherds down to a depth of 135 cm below the present surface, and three other pits, NW-3, NE-3, and SW-2, down to depths of 105, 90 and 90 cm respectively (Geijskes, n.d.). All his other pits showed that here the thickness of the occupation layer was at most 45 cm.

Many petroglyphs and grinding grooves are to be found in the Wonotobo Falls area (Fig. 1). A total of 41 grinding grooves has been discovered. Their shapes vary from oval to almost circular. Mean length, width, and depth are 27.9, 11.6, and 1.7 cm, respectively. One almost circular groove measures 60x50x10 cm. In all, 33 petroglyphs are known, centred in six groups. The largest concentrations are situated opposite the Englishman Fall near the left bank of the Corantijn. Moreover, petroglyphs were discovered near the Frenchman Fall, the Blue Crane Fall, and on the Northern bank of the Wonotobo Falls basin, 1.2 km West-South-West of the archaeological site. These petroglyphs are extensively discussed by Dubelaar (in press). Several of the rock drawings belong to his so-called "elaborate type" (Dubelaar 1980).

THE FINDS

The four lowest levels of Cut 1 (50 to 85 cm below the present surface) yielded exclusively ceramics of the Maritime Saladoid Early Wonotobo Complex (Boomert 1977). Saladoid pottery still dominates the three middle levels (between 20 and 50 cm), but it becomes a minor ware in the two top levels. Pottery of the strongly Barrancoid influenced Late Wonotobo Complex, characterized by bowls with broad labial-flanged rims, decorated with broad-line incised curvilinear motifs — including spirals, ovals and circles — and complex modeled-incised bioromorphical adornos, represents a minor ware in levels 5, 4 and 3, but it dominates the two top levels. Cut 2 yielded only
Barrancoid pottery. The following discussion of the Early Wonotobo Complex is primarily based on the ceramics found in the four lowest levels of Cut 1. Apart from a polishing stone of quartz, some probable quartz flakes, and two metadolerite axe fragments, all finds consist of pottery.

The Early Wonotobo pottery is tempered with fine to medium-coarse quartz sand (mean grain size 1.5 mm), containing tiny mica and feldspar grains. This tempering material undoubtedly represents unsorted river sand, derived from decomposed granite. It is characteristic of the beaches along many of the rivers in Surinam's interior, including the Corantijn near the Wonotobo Falls. Sherds are red-brown to yellow in colour; cross sections are gray. Obviously, oxydation was far from complete. Fire clouds are visible on some sherds; surface treatment is even. Hardness of the sherds is 2 to 3 on Mohs' scale; medium thickness is 6.9 mm. Coil marks occur on the interior of a few sherds. Coils are up to 1.5 cm thick.

Several vessel shapes can be distinguished. Open bowls are most common. Many of them have up-curving walls with a direct or outward thickened rim triangular in cross section (Fig. 2: 1-2). This form comprises 17.3% of the rim sherds of levels 6 up to 9 of Cut 1. A minority (5.3%) shows the interior thickened rim and a slightly S-shaped profile (Fig. 2: 3). Concavo-convex, keeled bowls, with outsloping to almost vertical upper walls and outward rims either thickened and rounded or flattened and triangular, are predominant. Similar bowls with slightly restricted mouths occur as well (Fig. 2: 4-7). Together they include 48.4% of the rim pieces. Carinated bowls (15.1%) show direct or on the outward thickened rims with flattened or rounded lips (Fig. 3: 1). A rare variant, represented by one piece in the 1962 collection, is provided with a vertical neck (Fig. 3: 2). Constricted-mouth jars with direct rims include 13.7% (Fig. 3: 3). Finally, one plate sherd with an outward flattened rim and pedestalled base (Fig. 3: 5) and 11 manioc griddle fragments (Fig. 3: 4) were found. A unique, cylinder-like piece of pottery with a nearly closed top probably represents an "incense-burner" (Fig. 4: 1, 6: 1). Most bases are flat and show an angular or pedestalled junction to the vessel wall. Annular bases are a minority (Fig. 4: 2-4). Vertical strap handles which project above the vessel rim are typical. Many of them are decorated with a plain or punctuated round knob (Fig. 5: 1-4).

The vessels are decorated with painted, incised, modelled, and punctuated motifs. Seventy-five point five percent of the decorated sherds in levels 6 up to 9 of Cut 1 are white and/or red painted. White-on-red painted sherds include 32.1% in all, red-on-white painted pieces 8.3%; the rest is either white or red painted. White or red painted motifs mainly comprise broad horizontal zones or series of such zones, encircling the upper parts of the vessels. Geometric motifs consisting of white painted horizontal, vertical, and, less often, oblique lines also occur. Curvilinear motifs, such as white painted spirals, are rare (Fig. 8: 2-5, 6: 2-5). The interiors of some vessels are completely red or white painted. A minority of the white painted sherds shows geometric motifs, including rhombs, squares, and
spirals, obtained by either incising directly through the white paint with a pointed stylus or by rubbing out broader lines. (Fig. 6: 6-8 8:10). A few pieces are similarly decorated with incised and painted motifs, combined with rows of small punctuations.

Most white-on-red (WOR) painted sherds show geometric motifs consisting of horizontal white lines or zones, applied to a red background. Negative designs, obtained by rubbing out lines of white paint are less common. Other motifs include horizontal, vertical, and/or oblique white lines on a red background. Curvilinear designs, such as spirals, are rare (Fig. 5:6-8, 6:9-11, 7:1-4, 8:1-7). A minority of the WOR painted sherds shows also incised lines, which either delineate various painted motifs of form independent designs, including zoned crosshatching (Fig. 5: 9-10, 7: 5-6). WOR decoration is mostly confined to the upper parts of bowls with upcurving, carinated, or concavo-convex, keeled walls. Red-on-white painted designs mainly include horizontal, vertical, and/or oblique lines, which may be delineated by incised lines (Fig. 5: 5). One sherd shows part of a unique red painted, leaf-like, motif, bounded by incised lines, on a white background (Fig. 7: 7).

Incised sherds are a minority in levels 6 to 9 of Cut 1. Motifs consisting of rectangular zones of fine-line incised crosshatching, delineated by slightly wider and deeper lines (ZIC), are predominant. ZIC designs occur on the inside of the triangular thickened rims of concavo-convex bowls and plates, the exterior walls of constricted-mouth jars, the lower parts of carinated bowls, and the exterior of flat bases (Fig. 7:8-9, 8:8-9, 9:1). A few sherds show series of horizontal or oblique lines, applied with a rounded stylus, accompanied by rows of small punctuations (Fig. 7:10, 9:2-4). One sherd has two flattened rims, triangular in cross-section. One carinated bowl shows a series of short oblique parallel lines, bounded by horizontal lines, on upper interior wall (Fig. 8:6).

Modelled motifs are rare. Several sherds show triangular knobs — which may be provided with a central punctuation — on top of flattened or on the outward thickened rims (Fig. 9:5-7, 10:1). Some carinated bowls are decorated with triangular, horizontal flanges or round to triangular wall knobs, applied to the point of largest diameter. Many of these flanges and knobs are punctuated (Fig. 8:7, 9:8-9, 10:2-3). A white painted hollow geometric (rim?) adorno shows a series of curved lines, incised through the white paint (Fig. 10:4). Modelled biomorphic head lugs were not discovered in levels 6 to 9 of Cut 1. However, the 1962 Wonotobo collection includes a few Saladoid solid rim and wall adornos, showing incised and punctuated features (Fig. 10:5-7).

**DATING AND CULTURAL AFFILIATIONS**

Scattered fragments of charcoal collected at a depth of 55 to 100 cm in pit SW-4 of 1962, yielded a radiocarbon date of 1900 ± 40 B.P. (GrN-4551). In accordance with Geijskes' opinion, this C-14 date was published in Radiocarbon as obtained from charcoal, associated with "potsherds of Mabaruma phase or Barrancas style" (Vogel and Ler-
However, a comparison of the stratigraphy of Geijskes' pit SW-4 with that of Cut 1 of 1975 reveals that the C-14 date actually refers to the Saladoid occupation of the Wonotobo Falls site. Furthermore, Geijskes' short notes on his Wonotobo excavations (Geijskes, n.d.) indicate that pit SW-4 yielded pottery belonging predominantly to the Early Wonotobo Complex.

Early Wonotobo represents the oldest Tropical Forest complex in the Guianas known to date. Undoubtedly, its ceramic inventory is closely related to the Maritime Saladoid series of Venezuela, Trinidad, and the Antilles (Rouse, this volume). Apparently, the Saladoid people introduced agriculture, pottery making, and, probably, Proto-Arawakan not only to the West Indies, but to the Guianas as well. Rouse and Cruxent (1963) assume that they were pushed through the Orinoco delta to Trinidad and the Eastern Venezuelan coast by the Barrancoid peoples, who, after moving down the Orinoco river, developed a ceramic centre along its lower reaches as early as 2750 B.P. (Rouse 1978).

The Saladoid migration out of the Orinoco valley may have started shortly before the time of Christ. The available radiocarbon dates (Fig. 11) indicate that the Saladoid peoples settled in southwest Trinidad (Cedros) as early as ca 2200 B.P. A few centuries later, they crossed the Gulf of Paria to Gúiria (Early Irapa), Carúpano (El Mayal, El Cuartel, and Puerto Santo), from where they went to the islands of Curaçao (Punta Gorda) and Margarita (El Agua), off the coast of Venezuela. Saladoid-influenced pottery or trade wares have been found as far west as the Río Chico (Río Guapo), the Puerto Cabello (El Palito), and the Tucacas (Cerro Iguanas) areas of the Central and Western Venezuelan coast, as well as on the island of Aruba (Santa Cruz) in the Netherlands Antilles (Rouse and Cruxent 1963). Rouse and Allaire (1978) suggest that the Saladoid migration into the Antilles went from Trinidad, using the islands of the Lesser Antilles as successive stepping-stones. The Saladoid peoples settled in Antigua as early as about 1900 B.P., and in Puerto Rico ca 1850 B.P., suggesting that this northern trek started earlier than the western movement (Fig. 11).

Similarly, the Saladoid peoples must have migrated to the coast of the Guianas, and, ultimately, upstream the Corantijn river to Wonotobo at the time of Christ. It is perhaps significant that the Wonotobo Falls represent the northern most complex of rapids in the Corantijn which cannot be passed, even when using corials. According to Van Andel (1967), the Orinoco discharged only through its eastern most branch, the Boca Grande, until as late as ca 1000 B.P. Olsen (1974) suggests that, as a consequence, the Saladoid peoples must have inevitably been carried along with the Guiana Stream to Trinidad. The Wonotobo evidence indicates that they went to the Guyana coast as well, in spite of the strong current.

Generally speaking, Early Wonotobo shares most ceramic traits with the earliest Saladoid complexes of the Eastern Venezuelan coast, Cedros of Trinidad, and the "insular" Saladoid tradition of the Antilles. These traits include, for instance, vessel shapes such as the concavo-convex keeled bowls with the flattened and triangular or
rounded and thickened exterior rims, and the bowls with S-shaped profile. The Early Wonotobo carinated bowls are found only in Saladero and El Mayal (Cruxent and Rouse 1958/1959), Cedros (Harris 1978, n.d.), and Early El Cuartel (Vargas 1974, 1976, 1979). They do not occur in Puerto Santo (Vargas 1978), or Quebrada de Balerio (Oliver 1980). The absence of bowls with broad rim flanges, concavo-convex in cross-section, a noted Barrancoid trait, relates Early Wonotobo to El Mayal, Early Irapa, the El Mayal (?) trade material in the Punta Gorda Complex of Cubagua Island (Cruxent and Rouse 1958/1959), Cedros, Black Point, Grenada (Bullen 1964; Bullen and Bullen 1972, 1976), and Indian Creek 1, Antigua (Rouse 1976a, 1976b). Annular bases, another Barrancoid trait, are rare in Early Wonotobo. This, again, duplicates the situation at El Mayal and Cedros. Finally, the Early Wonotobo temper material, quartz sand, is predominant in all the Saladoid complexes mentioned above. Manufacture and thickness of the sherds seem to be comparable to those of the Saladero, El Mayal, El Cuartel, and Irapa ceramics, rather than to the Cedros pottery (Olsen 1974; Rouse 1947, 1953).

The red and/or white painted pottery of Early Wonotobo is related to the Saladoid series in general. Designs are less elaborate than those of the El Mayal, El Cuartel, and Pearls painted ceramics. Moreover, painted geometric motifs, bounded by thin lines in a different colour, are conspicuously absent. Incision through white paint, like that found in Early Wonotobo, appears to represent a late "Insular" Saladoid trait in the Windward Islands (Allaire 1973, Bullen and Bullen 1972). It occurs in El Mayal as well. Painted geometric motifs, separated by incised lines, are found in El Cuartel, associated with, for instance, a few bowls with concavo-convex rim flanges. This design element appears to be relatively late in the Antilles, restricted as it is to "Modified" Saladoid times (Allaire 1973; Bullen and Bullen 1972; Bullen and Mattioni 1972; Haag 1965). The general lack of sophistication in the Early Wonotobo painted decoration motifs recalls Saladero pottery (Cruxent and Rouse 1958/1959).

The Early Wonotobo incised designs show close similarities to the Maritimes Saladoid series. Pottery, decorated with "classical" ZIC motifs, occurs at all the Saladoid sites of the Venezuelan coast, as well as in Río Guapo, Early El Palito, the top levels of the Cerro Iguanas shell midden, and at the Santa Cruz site of Aruba (du Ry 1960/1961; Rouse 1969). It dominates Cedros incision and persists throughout the entire "Insular" Saladoid sequence in the Antilles. ZIC motifs predominantly occur on the upper interior of keeled bowls, though crosshatching on vessel bases is reported from El Cuartel. According to Cruxent and Rouse (1958/1959), the ZIC motif replaces in El Mayal the red painted crosshatching of Saladero. Painted and incised zoned-crosshatched designs occur together in, for instance, El Cuartel and Vivé I, Martinique (Bullen and Mattioni 1972). The ZIC-like incised motifs of Ronquín, illustrated by Sanoja and Vargas (1974), do not show the "classical" combinations of thin and narrow crosshatching bounded by wider and deeper lines (also Vargas 1980).

Incised motifs, consisting of horizontal zones filled with series of parallel, oblique or slightly curved lines, such as those rep-
resented in Early Wonotobo, occur as early as La Gruta and Ronquín times on the Middle Orinoco river (Howard 1943; Roosevelt 1980; Vargas 1974). They are found in El Mayal, El Cuartel, and Late "Insular" Saladoid as well (Bullen and Bullen 1972; Bullen and Mattioni 1972). The Early Wonotobo peg-topped vertical strap handles, the biomorphic punctuated-incised rim adornos, and the rim and wall knobs appear to represent general Saladoid traits. Finally, pottery incense burners like the Wonotobo specimen appear as late as "Modified" Saladoid times in the Lesser Antilles (Allaire 1973). Comparable "decorated cylinders" are known from a few Saladoid sites of coastal Venezuela, including El Cuartel (Vargas 1979) and La Cucaracha (Bullen and Bullen 1976). The Wonotobo evidence indicates that these incense-burners have been developed on the mainland of South America as early as El Mayal or "Insular" Saladoid times.

Apparently, the Saladoid peoples of Early Wonotobo were swidden cultivators of manioc, using the slash-and-burn method. They may have hunted and fished in order to supplement their diet with protein-rich food. Evidence of fresh-water shell collection, as in Saladero, has not been found. According to Sanoja and Vargas (1974, 1978), the El Cuartel peoples practised manioc cultivation and collected marine and fresh-water shells. They also hunted for terrestrial game and fished in coastal and estuarine waters. This "broad spectrum" economy undoubtedly reflects an ongoing process of adaptation of a basically Tropical Forest people to a coastal environment. Wing (1962, 1977) notes that Cedros subsistence was land oriented, in spite of the site's present proximity to the sea. This is in accordance with the fact that the earliest Maritime Saladoid sites in the Lesser Antilles are always located on the best agricultural lands, though close to the seashore (Rouse and Allaire 1978), whereas shell refuse is relatively scarce (Bullen 1964). The location of the Wonotobo site recalls those of the Riverine Saladoid sites on the Orinoco river, especially Cotua Island (Cruxent 1950).

THE MARITIME SALADOID TRADITION IN THE GUIANAS

If the Maritime Saladoid peoples colonized western most Surinam during Late Cedros times, as is suggested by the Early Wonotobo evidence, we would expect to find Saladoid settlement sites along the coast of Guyana and on the lower reaches of the Corantijn river. Such sites have not been discovered as yet, but suggesting the Maritime Saladoid occupation of coastal Guyana and West Surinam at least during Palo Seco times is available (Fig. 12).

Firstly, the majority of vessel forms, belonging to the Early Mabaruma Phase of Northwest Guyana (Evans and Meggers 1960, 1964; Lathrap 1964, 1966) show concavo-convex, thin rim flanges which appear to be closely related to Early Palo Seco of Trinidad (Harris 1978; Rouse 1947, 1953, 1978). Some Akawabi Incised and Modelled vessels, illustrated by Evans and Meggers (1960), are decorated with typically Palo Seco biomorphic rim adornos, surmounting rim flanges (for instance, Evans and Meggers 1960, Fig. 30:3). Evans and Meggers report also fragments of red painted flanged rims, a red-on-white
painted sherd, and a few pieces showing incised designs through white paint from Early Mabaruma. Finally, Cruxent and Rouse (1958/1959) note close similarities between Mabaruma Incised and Palo Seco flange incision. Evans and Meggers (1960) relate Early Mabaruma to Los Barrancos of the Lower Orinoco, or Classical Barrancas as Sanoja (1974, 1976, 1979) calls it. Los Barrancos is supposed to represent the source of the Barrancoid elements in Palo Seco as well (Rouse 1978; Rouse and Allaire 1978). This suggests that the Early Mabaruma Phase starts earlier in the Guianas than Evans and Meggers assume, probably about 1700 B.P. Furthermore, a Trinidad origin would then seem to be more likely than a derivation from the Barrancoid centre on the Lower Orinoco. Alternatively, however, we can hypothesize that, due to incomplete knowledge of the region, the earliest part of the coastal Guyana sequence is lacking as yet. The author would favour this last explanation.

Bowls with Palo Seco-like thin rim flanges occur also in the Abary Phase of the lower Berbice area in eastern coastal Guyana. According to Evans and Meggers (1960), the greater part of the Abary modelled-incised biomorphic adornos as well as most of the other Abary decoration motifs represent local copies of Late Mabaruma types. However, this is unlikely as several of these adornos show characteristic Saladoid features (for instance, Evans and Meggers 1960, Fig. 74:a-f, Pl. 39:c,e). Furthermore, a mammiform hollow adorno, illustrated by Evans and Meggers (1960, Pl. 39:d), resembles similarly modelled lugs, found at El Cuartel and Aeropuerto (Vargas 1979), and at the Wonotobo Falls site in 1962. These and several other Abary ceramic traits, including red painted rim flanges, incised-punctuated rim knobs, and several bowl rim forms, point to a relationship between Early Mabaruma, Abary, and Early Palo Seco of Trinidad (Boomert 1978).

Related mammiform modelled adornos were found by Versteeg (1978) at the Kauri Creek site in the Lower Corantijn region of Western Surinam. The Kauri Creek Complex is so far mainly characterized by a unique pottery decorated with appliqué fillets, forming various geometric patterns. One peg-topped vertical strap handle relates it to the Maritime Saladoid tradition. Finally, fragments of keeled bowls with thin, concavo-convex flanged rims, peg-topped vertical strap handles, and punctuated rim and wall knobs occur in the collection Vincent Roth made at a site located on a hill near the Karapa Creek, a tributary of the Mahaica river, in the eastern part of coastal Guyana. This collection also contains Barrancoid pottery comparable to Late Wonotobo. Roth (1944) notes that at the edge of the hill the midden deposit is capped with a 120 cm thick layer of "very sticky and camp clay, greyish-blue in colour". This clay probably represents marine sediments belonging to the Comowine transgression period (see Brinkman and Pons 1968). According to Roeleveld and van Loon (1979), the beginning of the Comowine depositional phase can be dated about 1250 B.P. This provides a terminus ante quern for the Karapa Creek site.

Bowls with Palo Seco-like thin rim flanges, concavo-convex in cross-section, appear for the first time in the middle part of the Wonotobo Falls sequence, together with other vessel forms and decoration motifs suggesting Barrancoid influence. One rim sherd in the 1962 Wonoto-
toboo collection shows such a flange, a horizontal row of small punctuations, and fine-line incised crosshatching in an irregular pattern. These traits indicate that during Palo Seco times the Wonotobo Falls settlement remained within the Maritime Saladoid oikoumenê, notwithstanding its eccentric location.

CONCLUSIONS

The Wonotobo Falls site shows a pottery sequence, comparable to the Cedros-Palo Seco-Los Barrancos/Erin continuum of Trinidad. The earliest settlement of Tropical Forest Indians in the Guianas can be dated back to Late Cedros times, during the first century A.D. Several ceramic complexes, including Early Mabaruma, are known from Guyana and Western Surinam, which are probably related to Palo Seco. So far Early Wonotobo remains unique in the Guianas because of its typically early Maritime Saladoid pottery, decorated with white-on-red painted and zoned-incised-crosshatched motifs in a fashion which perhaps illustrates the geographical position of the Wonotobo Falls site in the ultima Thule of the Saladoid interaction sphere.

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Figure 1. Location of the Wonotobo Falls settlement sites, Western Surinam. (1) creeks; (2) rapids; (3) petroglyphs; (4) grinding grooves; (5) contour lines. After 1:20,000 maps No. 32AP and 33M of the Centraal Bureau Luchtkaartering Surinam.
Figure 2. Early Wonotobo Complex pottery, Western Surinam.

Figure 3. Early Wonotobo Complex pottery, Western Surinam.
Figure 4. Early Wonotobo Complex pottery, Western Surinam.

Figure 5. Early Wonotobo Complex pottery, Western Surinam.
Figure 6. Early Wonotobo Complex pottery, Western Surinam.
Figure 7. Early Wonotobo Complex pottery, Western Surinam.
Figure 8. Early Wonotobo Complex pottery, Western Surinam.

Figure 9. Early Wonotobo Complex pottery, Western Surinam.
Figure 10. Early Wonotobo Complex pottery, Western Surinam.
Figure 11. Chart showing the available radiocarbon dates of the Maritime Saladoid tradition in coastal Venezuela, Trinidad, the Guianas, and the Antilles. Dates are given in radiocarbon years before present, i.e., in years before A.D. 1950. Dates obviously wrong and dates with mean values younger than 1450 B.P. are omitted. C-14 dates measured before 1962 have not been published in Science or Radiocarbon in years B.P. Mostly, the reference year of such a C-14 date is the year of measurement, but in several cases this has not been reported in the official date list of the laboratory concerned. In contrast to the editorial statement in Deevey, Flint and Rouse (1967), not all laboratories, publishing in this index, have corrected their dates according to the new accepted B.P. reference year. In accordance with the editorial policy of Radiocarbon all dates listed here are based on the Libby value for the half life of C-14, 5568 ± 30 years. The standard error is expressed in terms of ± 1 sigma. It should be noted that there is still one chance in three that the true date may be outside the reported limits, or one chance in 20 that it may be outside twice these limits. The extreme right column shows the relationship of radiocarbon years to the Christian calendar, according to the C-14 calibration curve of Mook (1978), based on seriate C-14 measurements of dendrochronologically dated wood. The chart shows the dates in geographical order, from Venezuela to Puerto Rico. Within each geographical area, the oldest Saladoid complexes have been placed first. Radiocarbon dates from the same site and cut have been placed in stratigraphical order, and have been connected by an interrupted line. Sample materials include charcoal (C), burned bone (B), and shell (S). A solid line has been drawn 50 years below the lowest standard deviation value of the oldest date of each geographical area. The C-14 value as published in Science or Radiocarbon and Deevey, Flint and Rouse (1967) has been taken as authoritative. Additional dates have been extracted from Chanlatte-Raik and Narganes (1980), Olsen (1974), Rouse (1976a, 1976b), Rouse and Allaire (1972, 1978), Sanoja and Vargas (1978), and Vargas (1978, 1979).
Figure 12. Distribution of the Maritime Saladoid and related sites in the Guianas mentioned in the text. (1) Wonotobo Falls; (2) Kauri Creek; (3) Tiger Island (Early Abary); (4) Karana Creek; (5) Koriabo Point (Early Mabaruma); (6) Hobodeia (Early Mabaruma); (7) Hosororo (Early Mabaruma); (8) Mabaruma Headquarters and Koberimo (Early Mabaruma).
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Notes

(*) Y-297 was originally published as 1795 ± 80 (Barendsen, Deevey and Grajenski 1957). This date has been computed from A.D. 1955 as reference year. Adjustment for the difference between A.D. 1950 and 1955 produces a date of 1970 ± 80 B.P.

(**) Y-290 was originally published as 1580 ± 40. This represents the average of the dates of three "independent preparations of fresh portions of the original sample". The individual dates are 1720 ± 50, 1485 ± 90, and 1350 ± 80 (Preston, Person and Deevey 1955). The laboratory reference year is not reported. As the sample was measured in 1954 or 1955, we assume that it has been computed from A.D. 1955. Adjustment for the difference between A.D. 1950 and 1955 produces a date of 1575 ± 40 B.P.