THE SIPALIWINI ARCHEOLOGICAL COMPLEX OF SURINAM:
A SUMMARY

Since 1962 chipped stone implements and projectile points, dating from the Lithic times, have been found on various spots in the Sipaliwini savanna of southern Surinam. As yet, totally 29 surface sites are known, all presumably belonging to the same cultural assemblage, the Sipaliwini complex (BOOMERT 1975). Related Lithic workshops, camp sites, and individual finds have been discovered in Guyana and Venezuelan Guyana. The aim of this paper is to provide a brief description of the Sipaliwini industry, its distribution, cultural affiliations, and dating.

The Sipaliwini complex does not necessarily represent the earliest Amerindian culture in the Guianas. Another early Lithic stone industry has been reported from five sites in the neighbourhood of Tupuquén (Tupuken, Tupeken) near the confluence of the Cuyuni and Yuruari rivers in eastern Venezuela (cf. Map). According to CRUXENT (1971, 1972a, 1972b), the Tupuquén complex is characterized by numerous large, coarse flake artifacts, manufactured by battering pebbles at stone anvils. The implements are made of locally available stone material, basalt and quartz.

Though typologically different, CRUXENT suggests that the Tupuquén complex may be as old as the Late Pleistocene Camare and Manzanillo industries of north-west Venezuela. The Camare complex, represented by several sites on the highest terraces of the Río Pedregal in the Venezuelan state of Falcón, is marked by crude chopping tools and large trimmed flakes, knives or scrapers, made of quartzite (BRYAN 1973; ROUSE & CRUXENT 1963b). Artifacts

of fossil wood define the Manzanillo complex, named after a suburb of Maracaibo. They include coarse choppers, knives and scrapers (CRUXENT 1962, 1968, n.d.; ROUSE & CRUXENT 1963b). At the Rancho Peludo site charcoal from a disturbed layer with Manzanillo-type artifacts yielded a radiocarbon date of $13,920 \pm 200$ BP* (Y-1108-IV; cf. DEEVEY *et al.* 1967; STUIVER *et al.* 1963). Both chopper industries are thought to be ancestral to the Andean Biface Tradition, known from numerous sites in western South America, as far south as northern Chile and north-western Argentina (LANNING 1970; LANNING & PATTERSON 1967; SCHOBINGER 1969; WILLEY 1971).

Choppers as well as crudely flaked true bifacial tools, possibly knives, are found in what is considered to represent the earliest Biface complex of South America, Las Lagunas of the upper-middle Pedregal terraces (ROUSE & CRUXENT 1963b). Las Lagunas presumably predates the El Jobo complex of the lower-middle terraces. ROUSE & CRUXENT include Camara, Las Lagunas as well as El Jobo in the Joboid series. The El Jobo industry is characterized by choppers, knives, plano-convex scrapers, and lanceolate projectile points. Various radiocarbon dates are available for the El Jobo kill-sites, Muaco and Taima-taima in the same general region. They suggest a conventional date for the El Jobo complex between c. 14,000 and 12,000 BP (cf. CRUXENT 1958, 1967, 1970; CRUXENT & ROUSE 1956; ROUSE & CRUXENT 1957, 1958/1959; dates summarized by BRYAN 1973; BRYAN *et al.* 1978; LYNCH 1974; ROUSE & CRUXENT 1963a).

The El Jobo people appear to have been hunters of large mammals, such as the Mastodon, the Megatherium (a giant sloth), and the horse, which became extinct at the close of the Pleistocene. They probably also collected wild plant foods. Contrary to El Jobo, stone projectile points are lacking in the Camara, Manzanillo, and Las Lagunas industries. ROUSE & CRUXENT (1963b) suggest that wooden spears with fire-hardened points may have been used instead. If CRUXENT is right, and Tupuquén would constitute another complex in the same chronological range, spears like these

*BP = years Before Present, i.e. AD 1950.

must have been included in the toolkit of the earliest Guiana Paleo-Indians as well. However, as the Tupuquén material has only been mentioned in some short preliminary notes by CRUXENT, it is not possible to evaluate the evidence satisfactorily as yet.

▲ Tupuquén complex
● Sipaliwini complex

MAP OF THE GUIANAS, SHOWING LOCATIONS OF EARLY LITHIC SITES.
(Drawing by J.P. Boogerd, Instituut voor Prehistorie, Leiden.)

Legend Sipaliwini-complex sites:

1. Camp Jaguar, New River	8. Urequén, Kukenán river
2. Sipaliwini savanna	9. Morowhanna, Barima river
3. Pouso Tiriyo, Parú savanna	10. Cuyuni river
4. Jorka creek	11. Barima river
5. Palikúa creek	12. Rupununi river
6. Good Hope, Ireng river	13. Puruni river
7. Icabarú river	14. Semang river

CHARACTERISTICS OF THE SIPALIWINI COMPLEX

The Sipaliwini savanna (c. 63,000 ha) forms part of a larger, rainforest-bordered savanna complex, extending on both sides of the watershed and political border between Surinam and Brazil. The Brazilian part of this complex, the Parú savanna, is estimated to be 9 to 10 times as large as its Surinam counterpart. It is an undulating country, mainly between 275 and 375 m above sea level, covered with high grasses and scattered gnarled treelets, next to forest islands. Between the hills and mountains humid valleys are situated, often with periodically inundated swamps, in which characteristically Moriche palms grow. The underlying rocks include volcanics (chiefly rhyolites) and granites; the soil is loamy.

Already in 1962 the pedologist H. DOST found Lithic stone artifacts in the Sipaliwini savanna area (DOST 1962). Subsequently, the sylviculturalist F.C. BUBBERMAN surveyed the region in 1968, and together with the geologist J.J. JANSSEN in 1969 and 1972. They discovered a large number of archaeological remains, among which various Lithic camp sites and workshops (BUBBERMAN 1972, 1973, 1974). Furthermore, according to BUBBERMAN (pers. comm.), an individual find of the Sipaliwini complex was made by the late PROTÁSIO FRIKEL near Pouso Tiriyo in the Parú savanna.

As yet, systematic excavations have not been executed in the Sipaliwini region. The find spots are situated on the tops of a number of low, grass-covered hills, especially in the central part of the savanna. Due to erosion, here the raw materials for implements and weapons, quartz and rhyolite, are abundantly found on the surface. By far most of the finds are kept in the Surinaams Museum (Paramaribo). Apparently, they have been collected selectively, whereas adequate documentation with respect to their exact provenance is scarce. Consequently, the present description, based on the study of the finds in the museum during 1975, has to remain a preliminary one.

At the Sipaliwini-complex sites mainly waste stone flakes are found. Waste cores, hammerstones, and finished products are less well represented. Crude, heavy choppers, made by battering a piece of rhyolite with an oval or rounded hammerstone, are character-

istic. They are often bifacially worked, in cross section more or less oval, and up to 22 cm long. Percussion-made flake tools include relatively thin and flat, ovoid knives, which show some secondary trimming around the edges. Thicker but smaller flakes, provided with flat and smooth lower surfaces, may represent heavy scrapers. They are plano-convex in cross-section.

Smaller artifacts have been found as well. They comprise thin flake scrapers and knives, pointed pebbles, obviously small hammerstones, next to projectile points. The points encompass four different types. All are made of finely rechipped thin rhyolite or quartz blades. About 80% is triangular in shape and provided with somewhat convex sides and flat or concave bases. Their mean length is 5.5 cm. Stemmed spearheads are less numerous. They are about 7 to 8 cm long and provided with more or less contracting stems with flattened bases, pronounced shoulders and large, triangular blades. Some stemmed points even have small shoulder barbs (BOOMERT 1977).

Apart from the Sipaliwini-Parú area, individual finds of Sipaliwini-complex affiliation have been reported from several locations in Guyana and Surinam (cf. Fig. 1). They indicate that the Sipaliwini complex formerly extended far beyond the present savanna region, and probably was widespread throughout the Guianas during Lithic times. The Surinam finds include an unstemmed, triangular projectile point with hollow base, before 1949 found in the Jorka creek near Langa Tabriki in the Marowijne (Maroni) district, and a plano-convex artifact without secondary retouch, possibly representing a scraper, recently found at Camp Jaguar on the New River, about 10 km south of its confluence with the Coeroeni rier (pers. comm. by J.P. BERRANGÉ).

Stemmed spearheads of Sipaliwini type are known from various sites in Guyana: from Good Hope on the Ireng river (EVANS & MEGGERS 1960), and the Palikúa creek (ROTH 1929; EVANS & MEGGERS 1960), both in the Rupununi district, from the Cuyuni river (ROTH 1924, 1929; EVANS & MEGGERS 1960), and from the Semang river (WILLIAMS 1978), both in the Mazaruni-Potaro district, as well as from the Barima river in the North West district (ROTH 1924, 1929; EVANS & MEGGERS 1960). Moreover, LOVÉN (1935) describes a number of stemmed projectile points with 'rela-

tively long barbs' next to unstemmed points, apparently found in the neighbourhood of Morowhanna, Barima river area, which are kept in the British Museum, London. Finally, a projectile point from the Rupununi river, deposited in the Göteborg Museum, is mentioned by LINNÉ (1929), and a quartz one, found in one of the placer gold mines of the Puruni river, by QUELCH (1891). As far as known, the mentioned points from Guyana are made of jasper, chalcedony, or quartz. Stems are tapering and flattened or rounded at their bases, whereas the Palikúa and Morowhanna specimens are provided with shoulder barbs. Blades are more or less triangular; some have notched sides. The stemmed points from Guyana may be somewhat longer (up to 16 cm) than those from the Sipaliwini savanna.

Sipaliwini-like lithic objects are known from the adjoining Venezuelan territory (state of Bolívar) as well. DUPOUY (1956/1957, 1960) describes individual finds of plano-convex scrapers from the Icabarú river and from Urequén on the Kukenán river, next to stemmed projectile points from the Paragua and Chiguano rivers in Guayana. The artifacts are made of jasper, chalcedony or quartz. Moreover, a camp site or workshop of a closely related complex has been discovered by CRUXENT in a small savanna near Canaima in the upper Caroní river area. It is characterized by choppers, bifacially worked flat knives, plano-convex scrapers, hammerstones, and up to 7.5 cm long triangular projectile points with contracting stems. The artifacts are almost exclusively made of jasper (CRUXENT 1971, 1972a; ROUSE 1964; ROUSE & CRUXENT 1963b). The Canaima and Sipaliwini complexes appear to represent the same industry of core and flake tools, widespread in the Guianas and beyond during Lithic times. Apart from the shared range of artifact types, the sites are marked by the predominant use for implements and weapons of fine-grained, massive rocks with conchoidal fracture, such as rhyolite, jasper, and chalcedony (cf. BOOMERT & KROONENBERG 1977).

Without doubt the Canaima and Sipaliwini complexes are related to the Las Casitas complex, represented by a number of workshops on the lowermost Pedregal terraces in north-west Venezuela. According to ROUSE & CRUXENT, Las Casitas forms the latest complex of the Joboid series in Falcón. Typical artifacts include

choppers, knives, plano-convex scrapers, hammerstones, and projectile points of quartzite. Lanceolate, in cross-section lenticular, and 5 to 10 cm long El Jobo points with flat, rounded, or slightly concave bases predominate; c. 5 cm long stemmed projectile points of Canaima type are less well represented (BRYAN 1973; CRUXENT 1971, 1972a, n.d.; CRUXENT & ROUSE 1958/1959; ROUSE & CRUXENT 1963b).

Apart from Falcón, an individual find of an El Jobo point is known from Bejuma in the neighbourhood of the Lago de Valencia (DUPOUY 1952). The absence of El Jobo points in Venezuelan Guayana, Guyana and Surinam indicates that the Canaima and Sipaliwini complexes form a late, eastern offshoot of Las Casitas, starting around the time when the El Jobo points had died out. WILLEY (1971) includes Las Casitas in his concept of a Proto-Archaic 'Andean Hunting-Collecting Tradition', for the beginning of which he accepts a date between 9000 and 8500 BP. In the opinion of ROUSE & CRUXENT (1963b), Las Casitas and Canaima can be dated between 8000 and 7000 BP, but ROUSE & ALLAIRE (1978) seem to prefer earlier dates, i.e. between 10,000 and 8000 BP. However, radiocarbon dates are not available, either for Las Casitas or for Sipaliwini and Canaima.

In south-east Brazil stemmed projectile points of Canaima type appear to have been manufactured from c. 10,000 BP onwards (BELTRÃO 1974; NELKEN-TERNER & MACNEISH 1977; WILLEY 1971). The only Amazonian finds are represented by two projectile points with contracting stems and shoulder barbs from the middle Tapajós river area (SIMÕES 1976), and three unstemmed points from the lower course of the same river (KATZER 1901; cf. also LINNÉ 1929). The last-mentioned specimens remind of the small, triangular and unstemmed Sipaliwini points with concave or straight bases. Apparently, they functioned as arrowheads rather than spearheads. Points like these are conspicuously absent from the individual Lithic finds of Guyana, with the exception of those from the Barima area.

Arrowheads like these possibly indicate a final stage of the Sipaliwini complex, as yet unknown from Guayana and interior Guyana. Consequently, it would seem that there is some evidence that the Sipaliwini complex can be divided into an earlier phase, identical to

Canaima and widespread throughout the Guianas, and a later phase, as yet restricted to Surinam and coastal Guyana, both of which might have had Amazonian connections. On the other hand, stemmed points appear to have survived in coastal and eastern Venezuela long after c. 7000 BP. From a site near the Apure rapids in the upper Orinoco river stemmed points are known, accompanied by a number of sherds of an as yet unidentified style (ROUSE & CRUXENT 1963b), whereas a single stemmed point with triangular blade has been found at the Punta Gorda shell midden on Cubagua Island offshore Venezuela, associated with tools of the Manicuaroid Punta Gorda complex as well as Saladoid trade sherds (CRUXENT & ROUSE 1958/1959). The Punta Gorda complex may be dated between 2150 and 1450 BP (ROUSE & ALLAIRE 1978). Furthermore, individual finds of stemmed points are known from Margarita Island (DE BOOY, cited by OSGOOD & HOWARD 1943), and Fila de Indio, near Caracas (CRUXENT & ZUCCHI 1964).

ENVIRONMENT AND ECONOMY

The Canaima/Sipaliwini people appear to have been small-game hunters and collectors of wild vegetable foods, hunting and gathering in a more or less restricted territory. They probably lived as family groups or extended family bands in small camps, which were easily shifted (EVANS 1964; SANDERS & MARINO 1970). It has often been suggested that the Paleo-Indians and their immediate successors were adapted to open environments, dry savannas and savanna-woodlands (LATHRAP 1968; LYNCH, cited by COHEN 1977). Most of the site locations of the Canaima/Sipaliwini people point to a similar situation. If so, they may have been affected to a certain extent by the one or more changes in effective precipitation, which presumably took place in northern South America during the period of their existence.

Palynological, biological, and geomorphological research has shown that as the result of a repeated succession of relatively dry and wet periods at least during the Pleistocene the extent of the tropical forest has not constantly been the same. When relatively dry conditions prevailed, grass-savannas and savanna-woodlands could expand, whereas the forest was reduced to enclaves or

refuges. The reverse occurred during wet periods (cf. VAN DER HAMMEN 1974; MEGGERS 1974, 1975, 1977, 1979; MEGGERS & EVANS 1973; VUILEUMIER 1971; WYMSTRA & VAN DER HAMMEN 1966).

As yet, a satisfactory chronological framework of the climatic and vegetational sequence of South America is still lacking, however. Although changes in effective precipitation appear to have taken place in Amazonia and adjacent regions during the Holocene as well, it has not been proven as yet that they caused vegetational alterations as profound as during the Pleistocene (cf. ABSY 1979; WHITTEN 1979). Without such a generally accepted framework of the supposed vegetational succession in the mentioned area it seems unwise already to speculate about its possible implications for the aboriginal Lithic groups and their means of subsistence, i.e. the hunting fauna and available vegetable foods. Furthermore, the early Amerindians may have contributed themselves to the extension and maintenance of the savannas during dry and wet periods respectively by means of burning the vegetation in order to facilitate effective hunting, as is still done nowadays (JANSSEN 1974; cf. EDEN 1974).

An environmental factor which certainly has affected the Sipaliwini people of at least the northern part of the Guianas is the regular and rapid rise of the sea level during Early Post-Pleistocene times. According to various authors, the Early Holocene transgression terminated between c. 6500 and 6000 BP (BRINKMAN & PONS 1968; ROELEVELD & VAN LOON 1979). Although the evidence for habitation of the present coastal area of the Guianas during Sipaliwini times is not overwhelming, at least the stemmed and unstemmed spear- and arrowheads from the Barima river area, mentioned by ROTH and LOVÉN, point in this direction. It is true that south of Morowhanna and west of the Aruka river residuary hills are found (BRAMLEY 1961; MCCONNELL 1962), but most of the Barima-Kaituma area of north-west Guyana is characterized by vast eustatic peat swamps, underlain by pyrite-rich clays, which appear to have been deposited as early as the Mara period, thus during the Early Holocene sea level rise. In that period vertical sedimentation prevailed under an actively growing vegetation of brackish mangrove swamp forests, consisting of almost purely *Rhi-*

zophora mangle, to which the sea had easy access. However, it should be noted that north-west Guyana is still subjected to a strong subsidence, as a result of which the relative sea level rise continues up to present times in the region (BRINKMAN & PONS 1968; VAN DER HAMMEN 1963, 1966; PONS 1966).

If the Sipaliwini/Canaima people were indeed adapted to open vegetation types, it is reasonable to suggest that, as a result of the growing marine influence in the coastal area, they left this region entirely at some unspecified date during their existence. On the other hand, some groups may have adapted themselves to the changing environmental conditions in the coastal area. A kind of transhumance pattern, involving seasonal inland hunting next to coastal or lowland hunting and collecting, may have existed. However, it should be kept in mind that the only scraps of possible evidence for habitation of the present coastal area during Late Sipaliwini times are provided by not more than two individual finds: the unstemmed points from Morowhanna in coastal Guyana and from Jorka creek in north-east Surinam. Although this last site is not situated in the Surinam coastal plain, it is relatively near by it.

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