

**A REGISTER OF THE CAVES OF TRINIDAD AND
TOBAGO**

(EDITION MAY 2009)

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Introduction

The aim of this register is to provide information on the location, history, access, scientific background and conservation status of the known cave systems of Trinidad & Tobago, so that the reader can easily find, visit and appreciate the caves in a sustainable manner. Information is provided on the literature describing the cave – this can be followed up using the accompanying bibliography. It arises out of a project, funded by the Research and Publications Committee of the University of West Indies, to locate sites with potential for palaeoclimatic reconstruction. The emphasis, therefore, is on true limestone (karst) caves, although others are mentioned in passing.

There are many caves on the two islands. Some have been alluded to by visitors in the past, some have been visited, described and mapped (but may have been lost or destroyed), whilst others have been discovered recently. The emphasis, therefore, is on the cave systems which are well known and recorded. If caves have been described in the past, but their present whereabouts are not known, they are included, as are unexplored caves whose locations are known. This leaves many caves out there which we know nothing about – this document is therefore a work in progress, and your help is sought to keep it updated.

Co-ordinates are given in three forms : original coordinates given in the literature (if available), GPS co-ordinates taken with a Garmin map 76CSx in decimal form, and approximate Google Earth co-ordinates in ordinate format. Due to system error there is a minor discrepancy between GPS and Google Earth co-ordinates when converted.

For ease of use the caves are grouped into geographical regions, starting with Tobago, then moving from west to east through northern and central Trinidad, thus:

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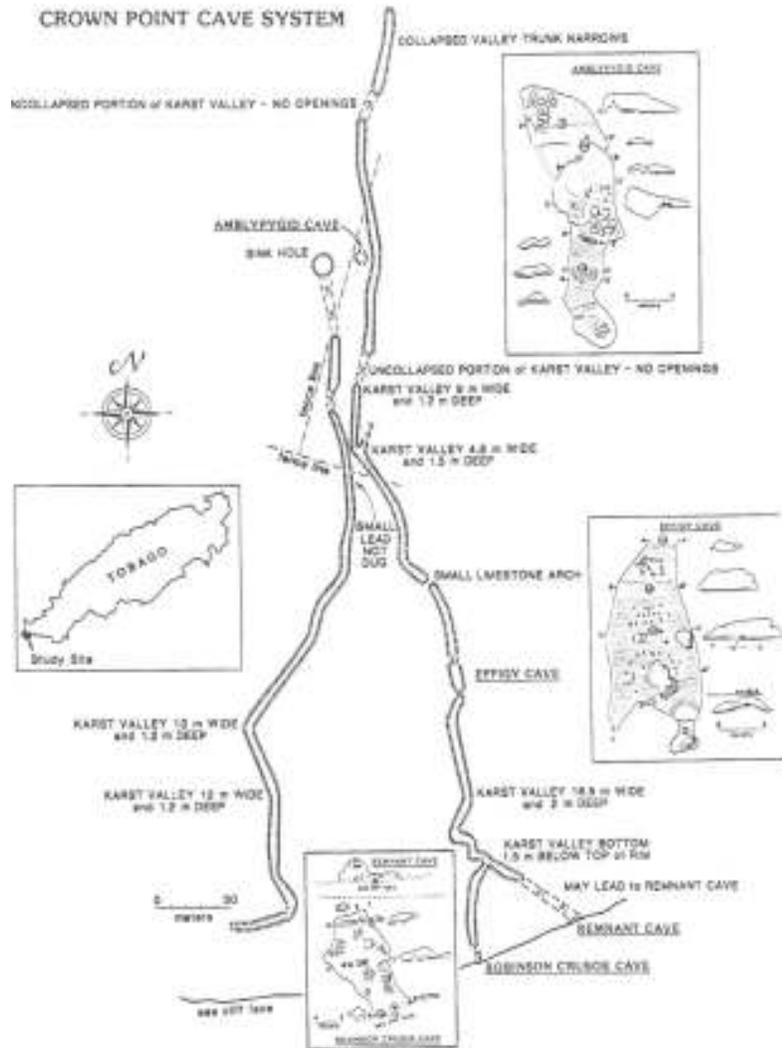
Acknowledgements: The UWI Research and Publications Fund for covering the costs of research. Thanks also to those who helped in the field, and with advice: Gary Aboud, Paul Comeau, Martin Gomez, Dr Victor Quesnel, Caesar Valentine, Dr Matt Wilson.

Section 1 : Tobago

Cave systems in Tobago are limited to the coralline limestone of the Crown Point area.

Name (s)	Crown Point Caves
GPS coordinates	Robinson Crusoe Cave : 11-08-69 N 060-50-27 W
Google Earth coordinates	11 ^o 8' 41.66"N 60 ^o 50' 16.95"W
Altitude	3 m ASL
Location/directions	Cave complex on SW coast of Tobago, of which only Robinson Crusoe Cave now accessible. Follow airport perimeter road to sign to Crusoe Villa, turn right, enquire at house.
Access	Robinson Crusoe Cave accessible down cliff face by steps and boarding.
Description	A series of caves which follow a shallow valley in the coralline limestone. Robinson Crusoe Cave a single horizontal chamber about 15 m depth, with 2 m entrance in cliff. Being actively eroded by sea. Remnant Cave in cliff 20 m to east – now just the remains of a back wall, which has retreated some 3 m since 1980. Effigy Cave (11-08-75 N, 060-50-30 W) a sinkhole below tree to NE of house. Now filled in to prevent animal injury. It is probably that most of the cave was destroyed by quarrying – the occupant of the house described it as about 20' long and high enough to stand, before quarrying encroached. Amblypygid Cave (11-08-87 N, 060-50-33 W) can be located in shallow valley close to well and fence line. Located by bearing of 330 ° from Woodhaven Villas sign, through thick bush to large tree with buttress roots. Remains of fence line pass through tree, with 10 m deep well to one side, and valley to other. No cave entrance remains.
References	Comprehensive description by Eshelman and Grady (1990), including map, following brief descriptor of Eshelman (1982). The caves and surface features were explored and mapped by a group from the National Museum of Natural History, Smithsonian Institute, in 1979 and 1981, producing a comprehensive description of the morphology of the system, and assessing its archaeological and palaeontological status. The authors raised concerns over the conservation status of the cave system – unfortunately their concerns were well founded; only one cave remains.
Geology	Quaternary coralline limestone. Clay on cave floors may represent underlying clay formation.
Sinter status	Some large, heavily corroded stalagmites in Crusoe Cave.
Conservation status	Eshelman & Grady (1990) commented on the value of the

	<p>amblypygids (whip scorpions) in the eponymous cave, the fire pits and pottery of Effigy Cave, and the fossils in Crusoe and Remnant Caves, which were thought to represent a pre-separation late Quaternary fauna. None of these are accessible any longer.</p> <p>Crusoe Crave is a minor tourist attraction. The cave has been defaced by visitors, and is undergoing marine erosion.</p>
<p>Scientific value</p>	<p>None, without further exploration and opening of cave remnants.</p>



THE NISD BULLETIN, JUNE 1991 - 17

From: Eshelman and Grady 1990

Section 2 : Marine Caves

Sea caves, caused by the marine erosion of steep rock faces, are a common feature of the coasts of north west Trinidad and the islands of the Bocas. Because they are non-karst only a brief description is given here

Name (s)	Marine Caves
GPS coordinates	Various - see text
Altitude	Sea level
Location/directions	North West Trinidad – including Las Cuevas, La Vache Bay, Point Rouge, east, north and west Monos, east and north Huevos, east Chacachacare.
Access	Mostly by sea, difficult in many cases.
Description	Sea caves, caused by the marine erosion of steep rock faces, are a common feature of the coasts of north west Trinidad and the islands, particularly on high energy coasts, or where anticlinal structures occur in the folded metamorphic rocks. All are single chambered features, with some collapsed into marine arch features.
References	Shaw (1993) gives a historical account of the exploitation of marine caves for Guacharo in the 19 th century, drawing on the works of Latham (1823), Bory de Saint-Vincent (1838), De Verteuil (1858), L'otard (1866), Kingsley, C.(1871), Ridgeway (1884), Kingsley, J. (1885), Chapman (1894), Williams (1922) and Carricker (1931). Some of these caves are difficult to identify from the descriptions, but it is probable that the caves described in the literature are located as follows: L'Anse Paua (10-42-30 N, 061-40-14 W), Monos (north east headland – 10-42-31 N, 061-40-62 W) and Huevos (north coast at junction of the two islands – 10-42-17 N, 061-43-03 W) Komisarcik (1979) mentions, with approximate coordinates, single caves at Chacachacacare, Huevos, Monos and L'Ance Paua, but it is likely these are drawn from the literature and not visited personally. Likewise Pawson (c1948) offers descriptions of the caves but admits to little success in gaining egress.
Geology	Miocene metamorphic strata : schists, phyllites
Sinter status	None
Birds	The caves mentioned above, and in particular the Huevos Cave, were occupied by <i>Steatornis carapensis</i> (the Oilbird or Guacharo) in the 19 th century. The birds seemed to have disappeared following exploitation in the 19 th and 20 th centuries, and are no longer found at these sites .
Conservation status	The caves on the islands form part of the Chaguaramas National Park.
Scientific value	None

Section 3 : Gaspar Grande and Point Gourde

The Areas composed of Laventille Formation limestone to the west of Chaguaramas, notably Gaspar Grande island and the Point Gourde peninsular, have a number of small caves at and above sea level. Most are unrecorded. Gasparee Cave, a show cave, is the most visited cave in the country.

Name (s)	Gasparee Cave, Gaspar Grande
GPS coordinates	N 10 39 89 W 061 39 75
Google Earth coordinates	10 ⁰ 39'54.05"N 61 ⁰ 39'44.70"W
Altitude	30 m
Location/directions	Land at Baleyne Point, Gaspar Grande. Follow concrete path to north side of island and CDA house.
Description	A large cave 100m x 50 m x 30 m height formed by the coalescence of a series of slumps and collapses. Contains a salt water lagoon with tidal effect. A 'show cave' with public access through Chaguaramas Development Authority (CDA). Artificially lit in places, with daylight through a series of surface sink holes. No survey map, despite its fame. Bathymetry of northern end indicates system extends downwards to >-45 m, with sinter to - 15 m. Cave system obviously developed at lower sea level, though origins primarily karst.
References	Pawson c1948, Shaw, 1993.
History of exploration	An account from 1858-59 (Stuart 1891), reported in Shaw 1993, represents the first visit to a Trinidad cave purely for tourist purposes. The cave was promoted as a tourist attraction by the early 1900s, and access improved by the addition of steps around 1936. Present system of walkways and steps in place since 1970-72. Pawson (c1948) describes the layout and speleothems.
Geology	Lower Cretaceous Laventille limestone
Sinter status	Extensive sinter development throughout, from roof through to submarine locations, suggesting rapid throughflow. Many sinter formations large, with massive collapsed blocks, probably during earthquake events. Most flowstones dirty (algae) and heavily corroded, amorphous in shape, with ripple marks indication surface flow. Calcite dominant.
Bats	Small colony of <i>Phyllostomus</i> . Samples of <i>Noctilio leporinus</i> , a fish-eating bat, were collected in 1934 (Ditmars 1935)
Fish	Blind fish reported. Species not known
Conservation status	Land owned by CDA, who control access. The cave has been heavily used over the years, with much damage by footstep erosion, vandalized sinter (especially blades) and grafitti.
Scientific value	Some potential for reconstructing the chronology of sea level

	rise. Sinter requires analysis – probably too corroded
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Name (s)	Precipice Cave, Gaspar Grande
GPS coordinates	N 10 39 39 W 061 39 38
Google Earth coordinates	10 ⁰ 39'54.06"N 61 ⁰ 39'54.31"W
Altitude	15 m
Location/directions	Gaspar Grande. As Gasparee Cave but take track opposite last white house for 20 m, to sink hole
Access	Rope required. CDA guides have taken parties there
Description	A steep, but not sheer sink hole to sea level, with passage to north ending in lagoon. No map or survey
References	Brief description in Pawson (c1948)
Geology	Lower Cretaceous Laventille limestone
Sinter status	Present, but not assessed
Conservation status	Belongs to CDA, but no controls on access
Scientific value	to be assessed

Section 4: Diego Martin to Maracas Valley

A number of small caves, karst and non-karst, have been reported over the years from the Diego Martin area, the Maraval, Santa Cruz, Gasparillo, Acono and Maracas Valleys. Some were visited and found to be very small (eg Pawson c1948), whilst others, such as the 'Diego Martin bat cave' visited by Ditmars and Bridges in 1934 (reported in Shaw 1993) have been destroyed by quarrying and the spread of urbanisation. It is unlikely that any cave system of significance now remains undiscovered in the area.

Section 5: Caura Valley

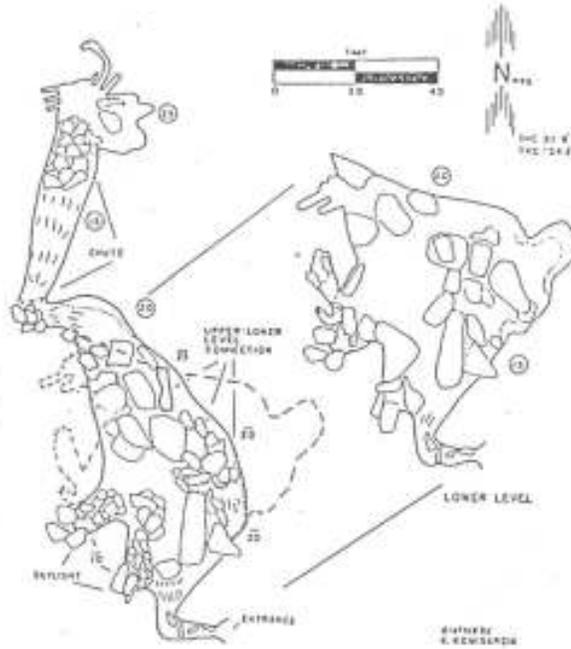
Several caves on the western side of the upper Caura Valley were described by Pawson (c1948), of which 'Cave 1' appeared to be an extensive system. Komisarčík (1979) and colleagues mapped a cave at Caura which may or may not be the one described by Pawson. When I relocated this cave in 2007 the local farmer, who guided the 1978 expedition, said that no-one had visited it since ! Much work remains to be done here.

Name (s)	Caura Cave
GPS coordinates	10 42 08 N 061 21 37 W
Google Earth coordinates	10 ⁰ 42'05.20"N 61 ⁰ 21'33.25"W
Previous coordinates	10 41 59 N, 61 21 43W (Komisarčík 1979)
Altitude	160 m
Location/directions	Go past Caura Recreation Park take right fork towards river. On bend road meets river with house on each side (10 42 067 N 061 21 368 W). Resident of house on left side visited cave back in 1970s with Komisarčík. Follow farm road to south of house until it meets forest, work left c 30 m to large <i>Cecropia</i> and follow faint trail uphill amongst limestone boulders. At cliff face work south and downwards to meet cave entrance.
Access	Narrow horizontal passage with boulder choke.
Description	Chambers on upper and lower levels, large numbers of boulders. Roof no more than 10m thickness.
References	Pawson c1948 has description of a cave. Komisarčík 1979 has map and description.
History of exploration	Surveyed by Komisarčík and colleagues in 1978
Geology	Massive limestone (formation unidentified).
Sinter status	
Bats	<i>Carolina</i> , <i>Natalus</i> , <i>Mormoops</i> reported
Conservation status	Cave has not been accessed for many years
Scientific value	To be assessed.

CAURA CAVE

TRINIDAD W. I.
10° 41' 59" N
61° 21' 43" W

DRAWN U.S.G. 10, 1978
BY
R. COOPER
R. KOMISARCIK
C. SPANGLER
W. WHITE

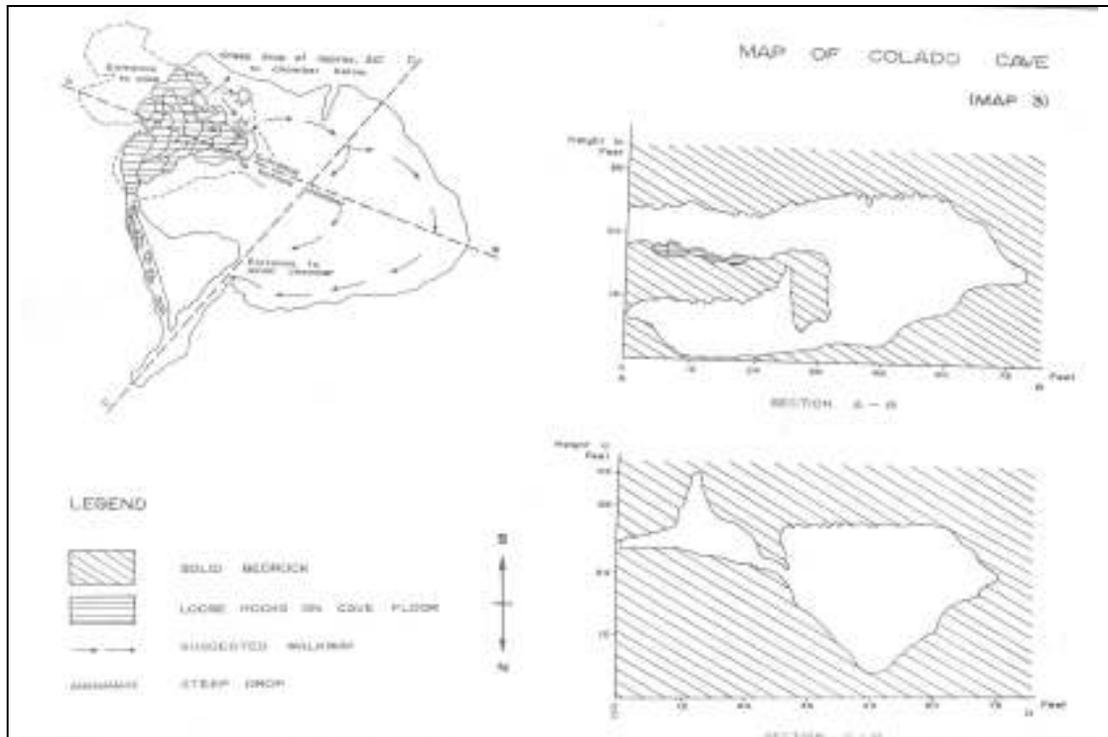


From: Komisarck 1979. Caura cave as mapped by Komisarck and colleagues in 1978

Section 6: Lopinot Valley

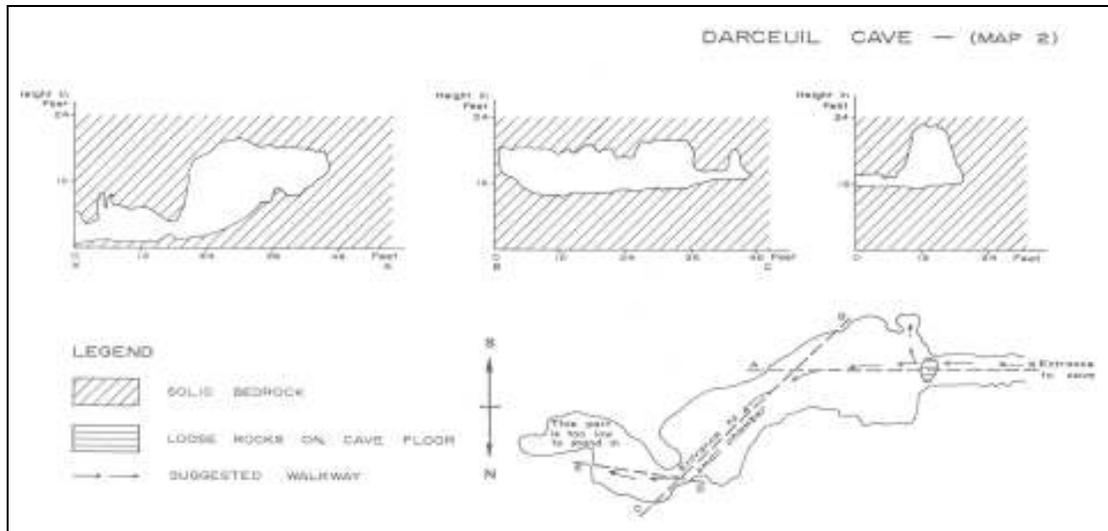
The caves of Lopinot are well known, though the number estimated has varied from 3 (Pawson c1948), 5 (Aqing 1974) to 9 (Herrera 2006). Aquing surveyed the caves in 1974 to assess their potential as a tourist attraction, though this has been proved to be of limited potential as the caves are small and sometimes difficult to access. However, they remain of great interest. Martin Gomez, now curator of the Lopinot Historical Complex, assisted Aquing in 1974 and remains a source of local knowledge.

Name (s)	Colado Cave. (also called Castilo Cave – Pawson c1948)
GPS coordinates	N 10 41 85 W 061 10 94
Google Earth coordinates	10 ⁰ 41' 44.06"N 61 ⁰ 19' 55.18"W
Altitude	302 m
Location/directions	Left fork in Lopinot by post office, procede to end of road and park. Follow trail for 0.5 km to steps cut on left (S) side leading to cave.
Access	Walk in
Description	Cave situated on moderately sloping hill, therefore roof has limited thickness. A medium upper chamber with large interlocking blocks at front, forming a ledge over a small lower chamber. Dry at time of visit, but can contain water flow which emerges, reputedly in stream down slope. Floor mostly compacted guano, with looser material in lower chambers. Bat ceiling pits.
References	Pawson c1948, Aquing 1974, Shaw 1993, Darlington 1991
History of exploration	Briefly visited by Pawson. Cave mapped by Aquing 1974.
Geology	Upper Jurassic Maraval Formation limestone
Sinter status	Two lines of stalagtites running across cave, now heavily corroded. Front line has major pillars both sides of cave entrance, green from algae. 3-4 stalgmities, corroded stumps to 50 cm ht.
Bats	Medium colony of <i>Phyllostomus</i> in pits. A single <i>Desmodus</i> Colony of unidentified insectivorous bats (<i>Natalus</i> ?).
Conservation status	Access to cave promoted by village council via sign and path clearance. Some litter.
Scientific value	Varied fauna and easy access make this cave suitable for ecological studies.



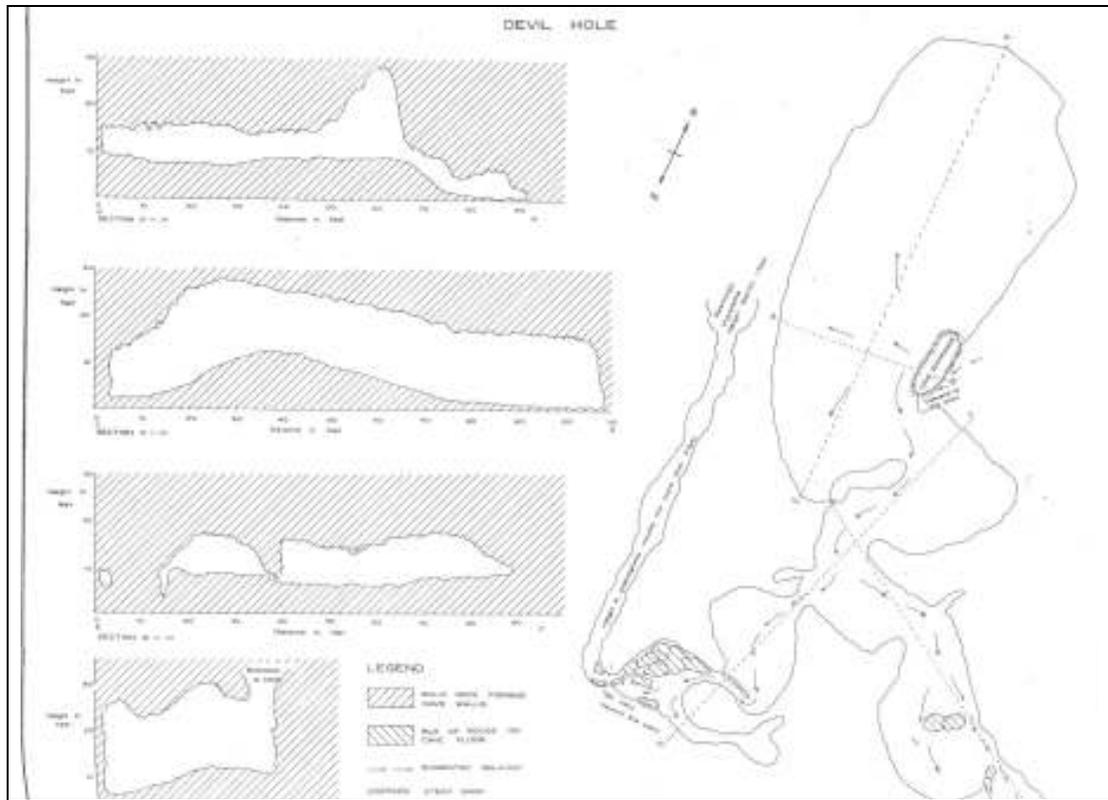
Colado Cave
From Aquing 1974

Name (s)	Darceuil Cave (also called Dakai or Janville Cave – Pawson c1948)
GPS coordinates	N 10 41 90 W 061 19 02
Google Earth coordinates	10 ^o 41'41.23"N 61 ^o 19'08.61"W
Altitude	324 m
Location/directions	La Pastora road, 50 m beyond Martin Gomez Cave turn, park in drive to right. Cross stream, past tin house, follow trail upslope through old cocoa plantation to intersection with contour trail going right (S). Trail heavily overgrown and took an hour to access. Guide essential.
Access	Cliff face with cave accessed from south side. A passage 2 m wide and min 40 cm high, which requires crawl. Entrance becoming increasingly blocked by guano, much reduced in size since mid-1990s.
Description	1 medium and 1 small chambers totaling 30 m. Horizontal, with small sub-horizontal blinds. Cave dry, with no evidence of drip or flow. Floor throughout dry bat guano.
References	Pawson c1948, Aquing 1974, Shaw 1993, Darlington 1991
History of exploration	Visited briefly by Pawson in 1940s..Mapped by Aquing 1974.
Geology	Upper Jurassic Maraval Formation limestone, fractured.
Sinter status	Quartz crystal formations reported, but not seen in 2007. Small areas of stalagmite growth which probably took place before cave became open system. Now corroded.
Bats	Light free conditions make this an ideal roost for insectivorous bats, numbering in thousands, <i>Mormoops</i> and others present.
Other organisms	Cockroaches present in large numbers, also other guano cycling invertebrates– should be published study from late 60s
Conservation status	Rarely visited, though known to local people.
Scientific value	Conditions in the cave replicate ‘the Deep’ of Tamana Main Cave, and are suitable for the study of insectivorous bats and high energy guano ecosystems.



**Darceuil Cave
After Aquing 1974**

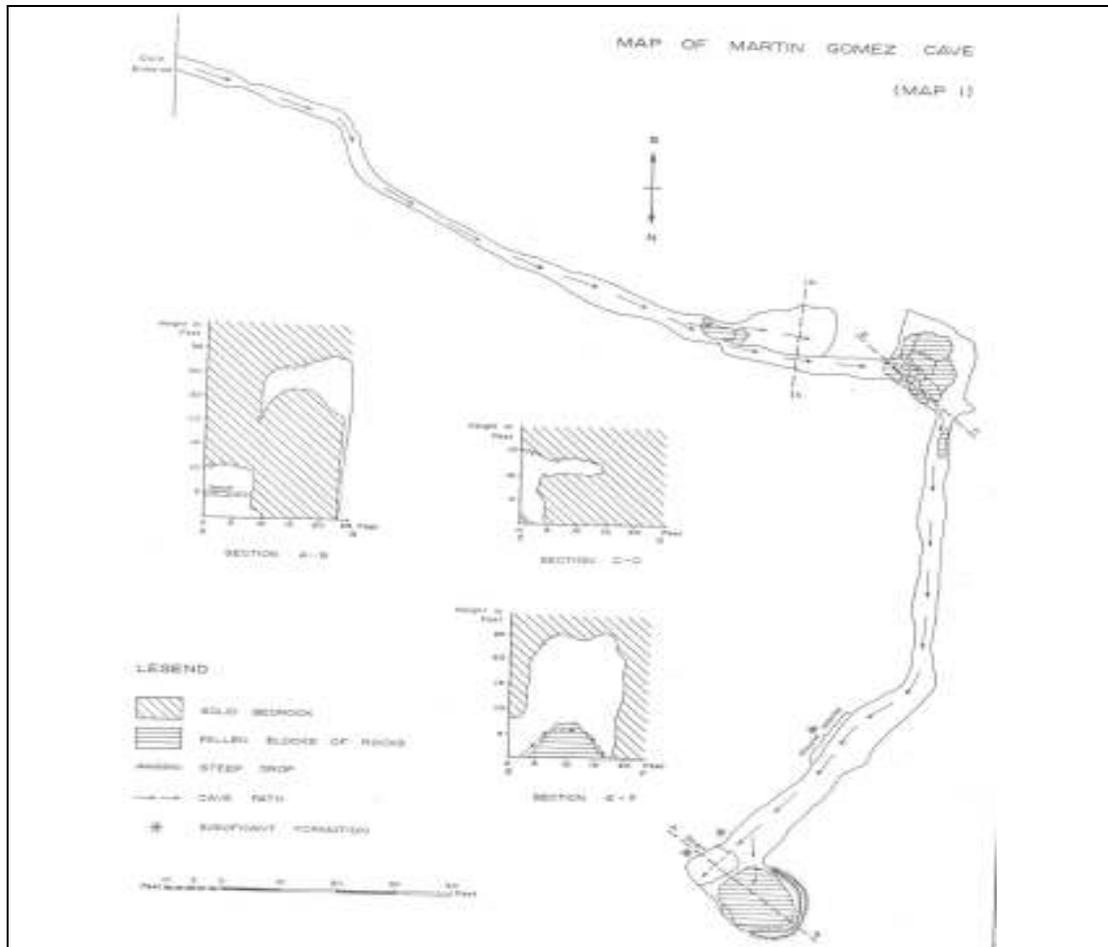
Name (s)	Devils Hole Cave
GPS coordinates	N 10 41 85 W 061 18 38
Google Earth coordinates	10 ⁰ 41'49.35"N 61 ⁰ 18'26.97"W
Altitude	615 m
Location/directions	Cemetery Road, fork right, then road under construction east towards Verdant Vale. 1 km past pink building on flat, with views to Verdant Vale quarry and Arima Valley. Gardens to both sides, with cave a wooded sinkhole adjacent to road on N side.
Access	5 m vertical, climbable, but very slippery. Rope advised.
Description	Sink hole with talus cone. Large chamber to S, series of smaller chambers to N. Lower level visible through boulder choke. Low passage mapped by Aquing no longer accessible as blocked by guano. Accumulation of guano and inwash (due to recent cultivation) now rapid. Roof thickness fairly thin, and high drip rate after 2 days of rain.
References	Pawson c1948, Aquing 1974, Komisarck 1979, Shaw 1993, Darlington 1991.
History of exploration	Described in detail by Pawson (c1948). Mapped by Aquing 1974.
Geology	Upper Jurassic Maraval Formation limestone, highly fractured. Some breccia.
Sinter status	Abundant sinter formations, esp stalactites and columns. Formation likely as closed system, now undergoing corrosion. Some stalagmites, but mostly buried in guano.
Bats	Plentiful. Medium colony of <i>Phyllostomus</i> with pits. Large colony of unidentified insectivorous bats (<i>Natalus</i> ?) and <i>Mormoops</i> . Others ?
Other organisms	Varied invertebrate fauna, inc cockroaches, other large invertebrates.
Conservation status	Generally good. Some sinter destruction attributable to natural causes. Large number of bottles thrown in over time. Future access via tarred road may make this cave liable to abuse.
Scientific value	High biodiversity with both dark and semi-dark ecosystems. Future access may make this a valuable study site. Sinter unlikely to be of value due to high corrosion rates.



Devil's Hole Cave
From: Aquino 1974

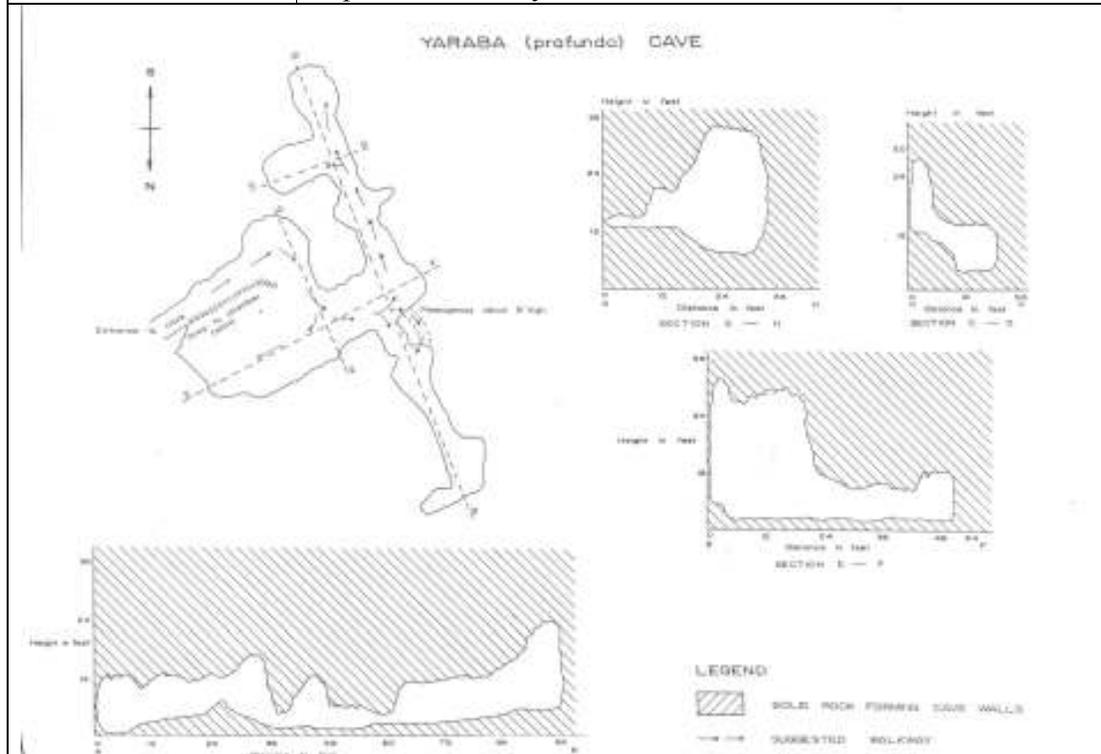
Name (s)	Joes Hole, Lopinot
GPS coordinates	N 10 41 93 W 061 19 04
Google Earth coordinates	10 ⁰ 41'43.55"N 61 ⁰ 19'08.80"W
Altitude	311 m
Location/directions	On trail 50 m to N of Darceuil, in bare area caused by nesting ants.
Access	Circular 1.5 m hole giving way to vertical shaft, requiring ladder.
Description	Vertical shaft
References	N/A
History of exploration	Attempts to access cave according to guide (Joe) but no exploration report. Unexplored.
Geology	Upper Jurassic Maraval Formation limestone

Name (s)	Martin Gomez Cave
GPS coordinates	N 10 41 89 W 061 19 38
Google Earth coordinates	10 ^o 41'45.34"N 61 ^o 19'24.25"W
Previous coordinates	N 10 42 1, W 61 24 43 (from Komisarčík 1979)
Altitude	210 m
Location/directions	Through Lopinot village towards La Pastora, 50 m to west of road, signposted
Access	Sub-horizontal passage, walk in
Description	Cave a narrow passage following a fault line, sloping gently downwards. Width limited to 2 m max throughout, length no more than 70 m. Some right angled turns, with rock falls. Cave has signs of water through flow and limited drip at present time.
References	Aquing 1974 provides a comprehensive description. Komisarčík 1979 and Shaw 1993 mention the cave
History of exploration	The cave was discovered by local guide Martin Gomez in the early 1970s, following quarry operations at the site. Mapped by Aquing in 1974.
Geology	Upper Jurassic Maraval Formation limestone
Sinter status	Small calcite stalactites throughout cave, mostly along actual fault. Little stalagmite development as cave floor composed of clay. Some small ones on ledges. Sinter rather dirty, some ripple marks
Bats	Small colony <i>Phyllostomus</i>
Other organisms	Cockroaches, cockchafers, bees
Conservation status	None – cave has public access and is regularly visited. This is encouraged by the village council. Some damage to stalactite blades. Litter present
Scientific value	None



Martin Gomez Cave
From: Aquing 1974

Name (s)	Yaraba Cave (aka Profundo Cave)
GPS coordinates	N/A
Altitude	Approx 600 m
Location/directions	Reported as '35 mins strenuous walking' from Lopinot (Aqing 1974), the trail to the cave has become obscured by forestry operations and is now 'lost'
Access	Walk in.
Description	Large opening chamber, 8 m in height, leading to 2 smaller, passage-like chambers at right angles, with a total length of around 30 m
References	Aqing 1974, Shaw 1993, Darlington 1991
History of exploration	Mapped by Aquing 1974
Geology	Upper Jurassic Maraval Formation limestone
Sinter status	Reported to be very limited



Yaraba Cave
From: Aquing 1974

Section 7 : Arima Valley

Limestone is quarried in the lower Arima valley, though no cave systems have been reported in it. The most famous cave in the valley is actually a river gorge, cut through metamorphic rock, at the Asa Wright Centre.

Name (s)	Dunstan's Cave (aka Arima Gorge, Spring Hill Cave, Asa Wright Cave – Darlington 1993)
GPS coordinates	N 10 42 92 W 061 17 95
Google Earth coordinates	10 ^o 42'53.96"N 61 ^o 17'49.74"W
Altitude	273 ± 20 m
Location/directions	1 km SW of Asa Wright Centre. Guide required.
Access	Walk in
Description	Not at true cave, but a narrow gorge cut by a stream. Some daylight throughout.
References	Pawson c1948, Darlington 1993, Shaw 1993, Day and Chenweth 2004.
History of exploration	A famous cave known for over 300 years, and extensively used by ornithologists for the study of <i>Steatornis caripensis</i> – the oilbird (eg Snow 1961, 1962)
Geology	Metamorphic phyllites and schists – no limestone present
Birds	Famous site for the conservation and study of Oilbirds. Numbers approximately 200 in 2008.
Conservation status	The cave is on the Asa Wright estate, and strict controls are applied to access – currently it can only be visited by two small parties per week, who approach the northern entrance. Contact the Asa Wright Centre for details.
Scientific value	High value ornithological site.

Section 8: Aripo Valley

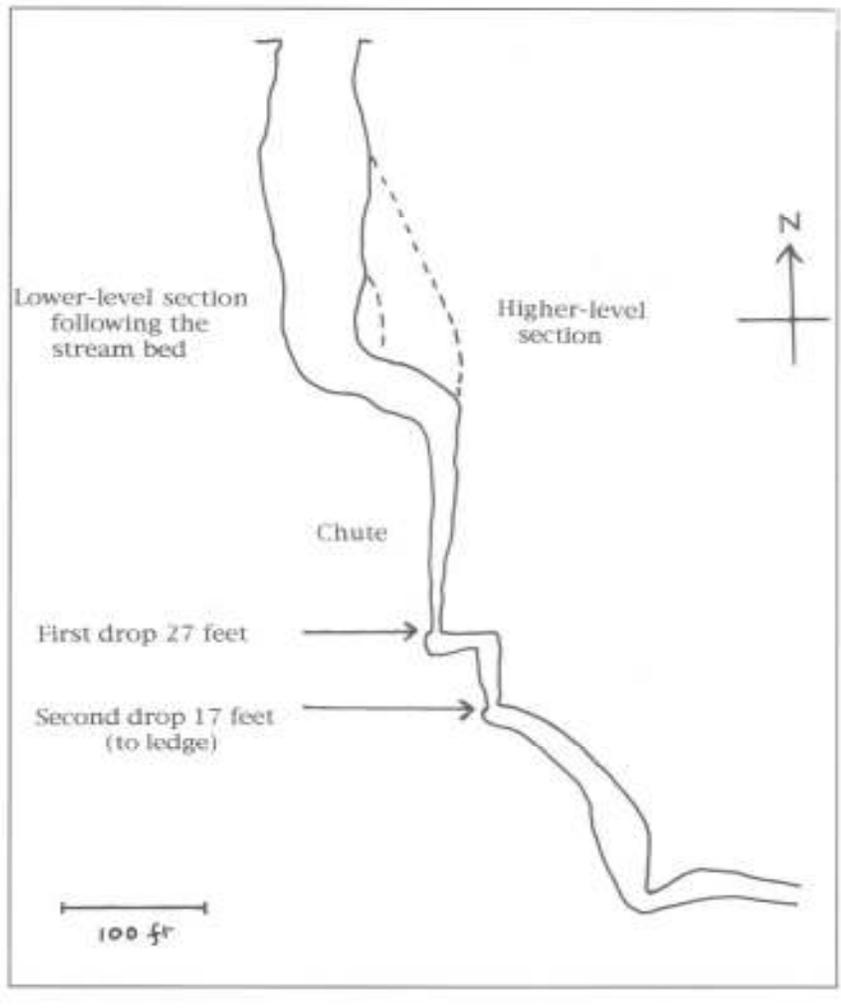
The upper Aripo Valley, between the peaks of el Cerro del Aripo and Chagramal, contains the largest known cave systems in Trinidad. These include the Aripo #1 (or Main) Cave, the linked Aripo #2 and #3 Caves and Soho Cave (discovered in 1990). 3 caves were described by Carricker in 1931, one of which has been relocated by Comeau in 1990, whilst a cave described by Sanderson in 1940 has been relocated by Quesnel in 2008. There remain descriptions of other caves by both Carricker and Snow, whose location is currently unknown. The areas around both Aripo caves and Soho/Carricker's cave contain numerous sinkholes that have not been investigated.

Name (s)	Aripo Cave #1 (aka Guacharo Cave, Shagramal Cave – Carricker 1931, Aripo Main Cave – Quesnel 1978)
GPS coordinates	N 10 43 10 W 061 14 31
Google Earth coordinates	10 ⁰ 43' 05.95"N 61 ⁰ 14' 18.70"W
Previous coordinates	10 43 39 N, 061 14 39 W (Komisarcik 1979)
Altitude	795± 20 m
Location/directions	Take Heights of Aripo road through Aripo Village to the last left hand bend (christophene farm) and park (GPS N 10 42 01, W 061 13 92). Walk up steep tarred drive to Millette's house and take track to left inside gate. Proceed up ridge to Y junction and take right path (left goes to Cerro de Aripo). Path descends to stream bed, walk upstream c 150 m then to steep, muddy path to right. After the path levels, just beyond large Bachac nest, is Y junction. Take left path (right goes to Soho Cave). This climbs steadily up the hill for about 40 mins, passing several large limestone outcrops, then levels out at the 'toilet' – a limestone boulder with a circular hollow. Beyond this the path drops sharply to left and descends steeply to a stream with a small tufa waterfall upstream (GPS N 10 42 93, W 061 14 36). Path continues on far side up steep slope of ridge, then drops right down to a boulder choked stream. Continue down stream to cave entrance. Total walk c 2 hours. A guide is advised.
Access	An inflow cave, approached down a steep boulder slope. Cave can be accessed without equipment as far as the first drop.
Description	862 m length – the largest cave system known in Trinidad. The cave is structured on a series of levels, chambers and tunnels, created by water flow under conditions of falling base level, thus the upper cave system is largely dry, even during heavy rains. Access to the upper part is by scrambling down a boulder slope to a stream bed, but access beyond is limited by vertical drops of 9.2 and 15.2 m. A crawlway, Low Ceiling, has to negotiated to reach the furthest section, comprising a waterfall, pool and terminal pot. Total vertical drop is estimated around 164 m.

References	Pawson c 1948, 1974, Komisarck 1979, Shaw 1993, Darlington 1995B Day & Chenoweth 2004, Herrera 2006.
Essential reading	Darlington 199B
History of exploration	Mentioned as early as 1860 (Shaw 1993) with visits by Latham in 1922 (penetrated to 610m) and Carricker 1931. Explored and mapped by Gunther 1940, but not published. Detailed descriptions by Pawson c1948 (published in 1974) and Komisarck 1979. Darlington (1995B) has mapped the cave further and published a preliminary list of fauna.
Geology	Upper Jurassic Maraval limestone
Sinter status	Large and heavily corroded sinter at the cave entrance, some contemporary dripstone, mostly stalactites, further in.
Bats	Bats roost further into the cave than the oilbirds. Species include <i>Anoura g geoffroyi</i> , <i>Chilonycteris rubiginosa fusca</i> , <i>Glossophaga s soricina</i> .
Birds	Guaracho (<i>Steatornis caripensis</i>). Variable numbers recorded since 1931. Regular surveys by T&TFNC of the oilbird chamber close to the entrance.
Other organisms	Darlington (1995B) has published a list of cave fauna, including 6 insect species first described from this cave.
Conservation status	Path to cave in good condition. Some minor littering in the vicinity of the cave. There are some concerns about sustainability of the oilbird colony should traffic increase.
Scientific value	High ecological value



Gunther's 1940 map of relationships between the 3 Aripo caves



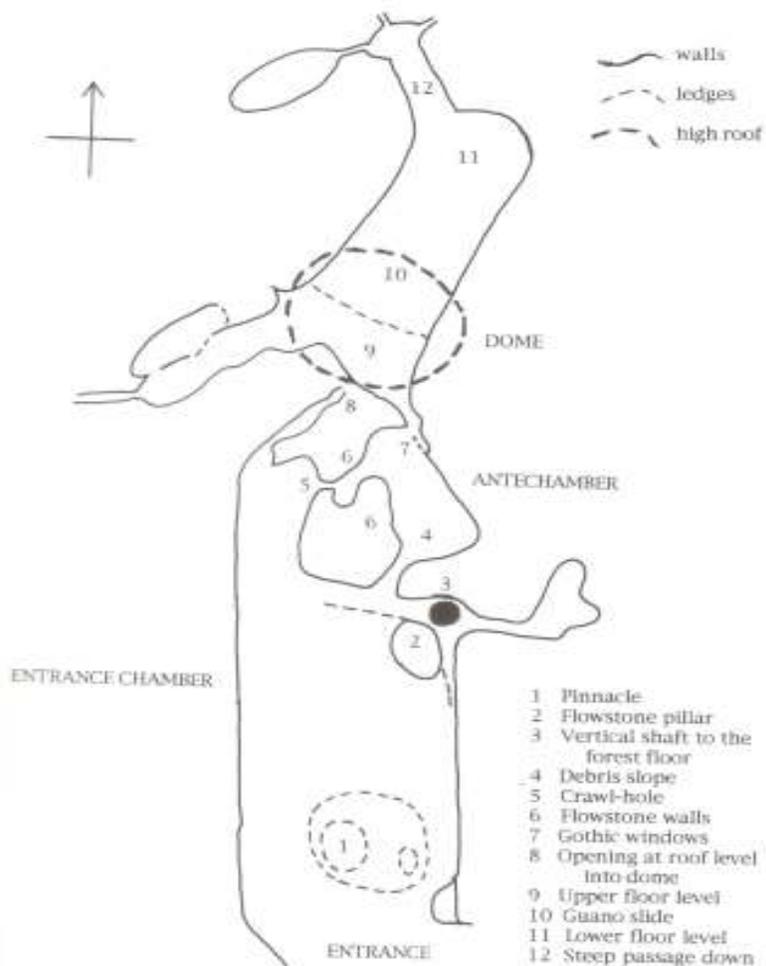
**Map of the upper part of Aripo #1 from Darlington 1995B
Survey by TTFNC 1975-78**

Name (s)	Aripo #2 and #3
GPS coordinates	Not available
Google Earth coordinates	10 ⁰ 43' 01.50"N 61 ⁰ 14' 16.25"W
Altitude	717 ± 20 m
Location/directions	As for Aripo #1 as far as the tufa waterfall. From here proceed down stream bed c 400m to caves.
Access	Main difficulty is traversing stream bed.
Description	Originally a single cave, now divided by a tributary of the Aripo River. Cave #2 runs south of the river, with a distance of 154 m and a drop of 25 m. It is gently sloping and terminates in a pot hole. The Aripo river diverts from its course to flow into the cave. Aripo #3 extends north of the river, sloping gently upwards as a horizontal passage for 305 m. It lies almost directly above the alignment of Aripo #1. The cave system lies very close to the surface of the hill.
References	Gunther 1940, Pawson c1948, Komisarčík 1979, Shaw 1993, Darlington 1995B.
History of exploration	Aripo #2 and #3, like Aripo #1, were explored by Gunther and Chenerey in 1940. Pawson described both caves in his 1948 manuscript, whilst Darlington (1995B) has provided additional material. Komisarčík (1979) mentions 3 caves to the SE of Aripo #1 (Middle Cave, Small Cave, Well Cave) but it is not certain how these match, nor are descriptions given
Geology	Upper Jurassic Maraval limestone
Sinter status	Limited stalactite growth.
Bats	No data
Birds	Oilbirds not recorded
Conservation status	Caves rarely visited

Name (s)	Sanderson's Cave
GPS coordinates	N 10 42 909 W 061 14 319
Google Earth coordinates	10 ⁰ 42' 59.67"N 61 ⁰ 14 17.29"W
Altitude	736 m
Location/directions	Follow instructions for Aripo #1 as far as the 'toilet'. 25 paces beyond this take the faint trail to the right. This drops over the edge of the ravine then swings left to the cave entrance – a distance of approx 40 m
Access	Walk in down a mud slope.
Description	A single large chamber approx 40m x 20m. Roof collapse to rear. A small chamber to right has fine sinter + a drip pool. To left a 45 ⁰ slope descends to lower chamber with two drip pools. Roof unsafe at entrance to slope.
References	Sanderson 1940, Darlington 1995B
History of exploration	Discovered by Sanderson, who referred to it as the Limestone Moloch. Subsequently lost, it was relocated by Victor Quesnel in 2008.
Geology	Upper Jurassic Maraval limestone
Sinter status	Fine collection of small stalactites, all corroded, but some active. Unusual 'grey' stalagmite to left caused by dolomite (?) intrusion. The presence of 3 sinter drip pools confirmed the identity of the cave
Bats	Small colonies of <i>Artebeus planirostris</i> and <i>Marmoops</i> . <i>Desmodus rotundus</i> reported
Conservation status	Some damage to stalactites, and litter beginning to accumulate.
Scientific value	Requires assessment - the 'luminous lizard' reported from this cave

Name (s)	Carricker's Cave and Soho Cave
GPS coordinates	N 10 43 09 W 061 13 27 (Soho)
Google Earth coordinates	10° 43' 05.16" N, 61° 13' 16.20" W (Soho) 10° 42' 56.24" N, 61° 13' 31.26" W (Carricker's)
Altitude	367 m (Soho)
Location/directions	The T&TFNC trail guide (2007) (Comeau et al 2007) provides a good 3 page description of the route to the cave, including waypoints. The route is as for Aripo #1 Cave as far as the second Y junction, where the right fork is taken. Thereafter the path meanders over undulating terrain and can be easy to lose – a guide is recommended. Distance about 5 hours return walk. The rest spot before the silk cotton tree (Comeau et al 2007 : 156) has GPS co-ordinates N 10 42 74, W 061 13 66.
Access	Carricker's Cave is difficult to access from the upstream end – best to back track from stream to ridge above cave. Soho is not visible from track – the first sign is a sink hole 1m in diameter adjacent to track. Back track 20 m and turn left leads to rubble slope leading into cave.
Description	Carricker's Cave – wide cave mouth with 45° descent into narrow tunnel. Length 30 m. Side tunnel with vertical shaft. Soho Cave – large entrance chamber in a karst depression, with horizontal passage to a series of down sloping chambers. A 20m vertical shaft to the surface. Total accessible length c50 m.
References	Carricker 1931, Snow 1962, Comeau 1991A, 1991B, Darlington 1995B, Comeau et al 2006
History of exploration	Carricker visited 3 caves on a ridge north of the Aripo complex in 1931 one of which was a large sinkhole some 20m in depth an 8 m in diameter. This was probably visited by Snow in 1962 and called Well Cave. Its location is now lost. Carricker's 2 nd cave, a vertical hole some 7 m deep, was rediscovered by Comeau in 1991 and renamed Carricker's Cave. It may match a cave described by Snow as Small Cave, but the identification is uncertain. Soho Cave was discovered by Comeau in 1989 and was mapped by Darlington in that year.
Geology	Upper Jurassic Maraval limestone
Sinter status	Soho has large and heavily corroded stalactites + a massive stalagmite at the cave entrance. No recent drip formation.
Bats	Not known
Birds	Guaracho (<i>Steatornis caripensis</i>) recorded in both caves
Other organisms	Darlington (1995B) has published a preliminary fauna list for Soho Cave

Conservation status	Caves visited infrequently. Little evidence of human activity.
Scientific value	Potential ecological value but needs assessment.



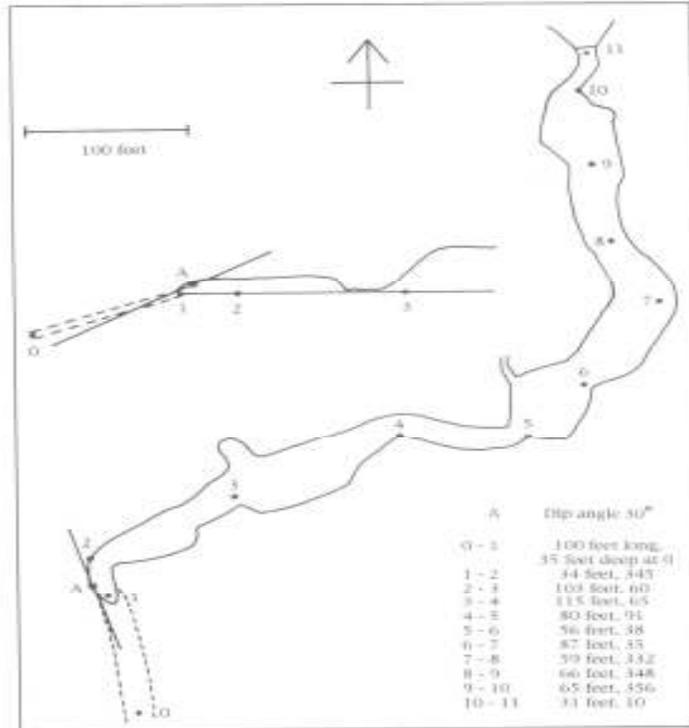
Soho Cave, after Darlington 1997B

Section 9: Oropuche Valley

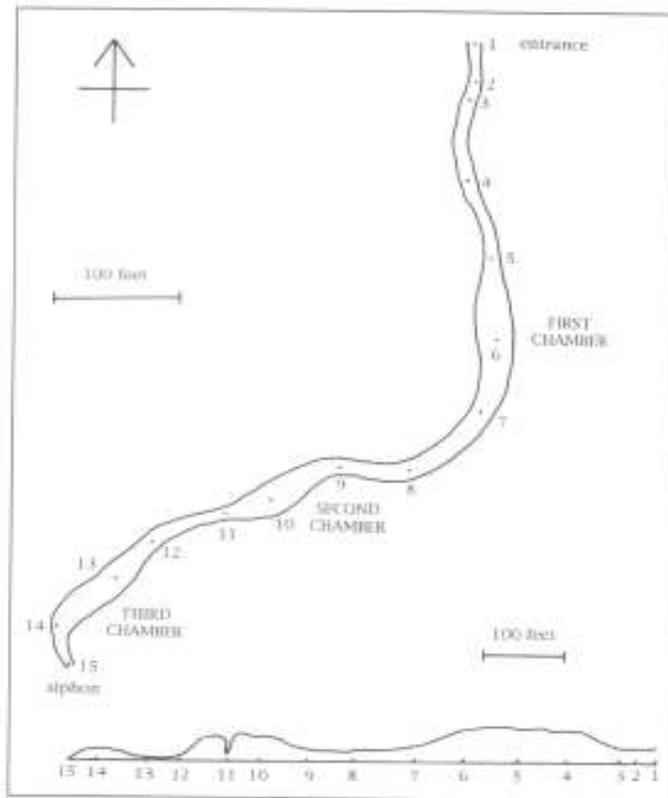
The Cumana Cave, source of the North Oropuche River, is the most important feature of this region, though other caves have been reported and subsequently ‘lost’, such as the Oropuche-Platanal Pot and three small caves in the upper part of the valley (Pawson c1948)

Name (s)	Cumaca Cave (aka Oropouche Cave, River Cave)
GPS coordinates	Not available
Google Earth coordinates	10 ^o 43’ 13.49”N 61 ^o 10’ 39.62”W
Previous coordinates	10 42 53N, 061 10 29W (Komisarcik 1979)
Altitude	200 m ± 20 m
Location/directions	<p>Directions to the cave have been published in Nature Trails of Trinidad (1982)(ed Quesnel, V.) and the T&TFNC trail guide (2007) (Comeau et al). Given changes to the trails these can be difficult to interpret, but the maps are useful for general orientation.</p> <p>Leave the Valencia-Toco road at 3.2 km from Valencia up the Cumaca Road, and proceed up to the quarry at 8 km. The road is currently being rebuilt to allow quarry access and quality is poor. A further 2.6 km to the Platanal Road sign. (point A on Quesnell’s map, point 5 on Comeau’s) Park and take trail up hill, past a christophene farm, and then the left fork at path junction onto bench trail. Follow this until trail fades out, with path downslope to the right. Take this, with further right branch after 100m to junction with the track coming up from the Oropuche River bridge and Cumaca Village. This is easily identified by an orange tree. Turn left and follow track, which dwindles to a trail after an area of forest clearance. It eventually arrives at the estate house. Total walking time about 90 minutes, mostly down hill.</p> <p>A track behind (westwards) the house leads through thick plantation forest to the Oropuche River where it leaves the cave. 15 minutes.</p>
Access	The horizontal cave contains running water, even in the dry season, so entry requires wading. The passage between the 2 nd and 3 rd chambers has a low roof, and may close off in heavy rain.
Description	The cave is an exit cave, the source of the fairly substantial North Oropuche River. It consists of 3 main chambers linked by passages, ending in a sump. Attempts to explore beyond this point ended with the deaths of two divers in 1964.
References	Urich (1895), Roosevelt (1917), Pawson (c1948), Quesnel (1976,1982), Komisarcik (1979), Darlington (1995C), Comeau et al (2006), Kenny (2008)
Essential reading	Darlington (1995C)
History of	A cave well known since the 19 th century, having been visited

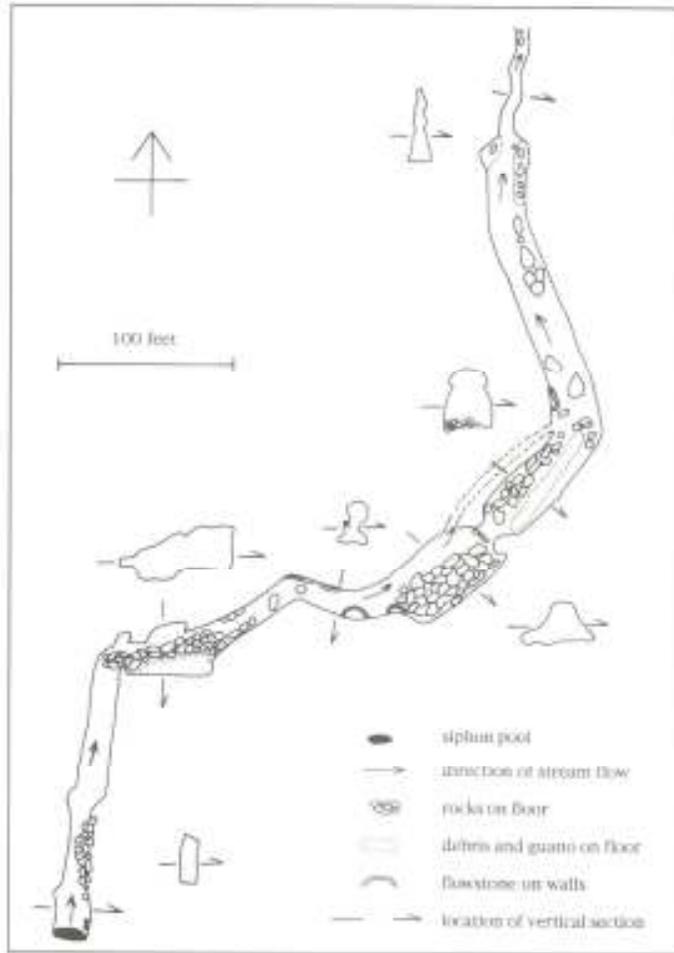
exploration	by Theodore Roosevelt in 1916, amongst others. The cave was visited by Pawson (c1948) and has subsequently been mapped by the Millers in 1960 (see Darlington 1995C), the T&TFNC in 1976 (Quesnel 1976) and a party led by Komisarčik (1979). They have estimated the length of the cave at 214, 225 and 215 m respectively. Darlington has published a review of the cave, including a preliminary list of fauna (Darlington 1995C).
Geology	Lower Cretaceous Laventille Formation
Sinter status	Massive stalactite formations, especially between the 1 st and 2 nd chambers. Stalagmite growth limited by stream activity.
Bats	Bats are present, but unlike other caves, are difficult to spot. Roosting takes place in side passages which are not accessible.
Birds	A well known Oilbird (<i>Steatornis</i>) colony, with counts varying from 200 upwards from 1962, with current numbers around 500. It is currently monitored on an occasional basis by the T&TFNC.
Fish	A blind white catfish reported (Norman 1926) originally thought to be a species (<i>Caecorhamdia urichi</i>) unique to the cave. It is now thought to be a cave-dwelling morph of the common catfish <i>Rhamdia quelen</i> .
Other organisms	Darlington (1995C) provides a list of the fauna of the cave, most of which are trogophiles. It includes a fly (<i>Erioptera troglodyta</i>) known only from Cumaca and Aripo #1 Caves, and a beetle (<i>Adelopsis brunneus brevicollis</i>) found only at this location
Conservation status	The cave is in private ownership and permission is required to visit it – for details contact the T&TFNC. The cave is in good condition, apart from some broken stalactite blades. There is evidence of oilbird poaching.
Scientific value	A cave of high ecological status



Cumaca Cave survey, after Miller 1960



Cumaca Cave survey, after Quesnel 1976



Cumaca Cave survey, after Komisarck 1979

Section 10: The Central Ranges

Limestone outcrops in the western part of the Central Range, around Mt Harris and Mt Tamana. Caves were reported in the vicinity of Biche (Pawson c1948) but their locations are no longer known. The best known cave system is found on the northern flank of Mt Tamana – the connected systems of Tamana Main and Tamana Dry Caves. These have undergone extensive ecological study since the late 1960s and are the best scientifically documented caves in the country. The sheer volume of bats occupying the caves, particularly in the dry season, make them a minor tourist attraction.

Name (s)	Tamana Main and Dry Caves, Mt Tamana
GPS coordinates	Shaft entrances 10-28-18N, 061-11-38W. Main entrance 10-28-17N, 061-11-37W, Dry Cave 10-128-15N, 061-11-39W.
Google Earth coordinates	10 ⁰ 28' 13.31"N 61 ⁰ 11' 04.49"W
Previous coordinates	10 28 10 N, 61 12 5 W (Komisarcik 1979)
Altitude	Shaft entrances c 165 m asl
Location/directions	Take Cunaripa turn entering Sangre Grade from N – 16km to Tamana Village. Follow degraded road 3 km S of Tamana Village sports ground, then R fork up vestigial tar road. Proceed 1km to sharp right bend by T&TEC pole 69. Park vehicle. (waypoint 10-28-33 N, 061-10-95W) Proceed up track ahead for c 300 m to group of breadfruit trees, (waypoint 10-26-29N, 061-11-20W) path to L up hill c300m to clearing with shaft entrances to Main Cave 10 m apart. Path between shafts goes uphill for c30m to the Main Entrance, whilst Dry Cave lies 30m to west along path and 10m to right.
Access	The Main Entrance is walk in over a series of buttress roots and down a rubble slope, although a crawl is necessary to access Dry Cave, and the Main Chamber. The other entrances are shafts with pitches of 4m (Main Cave west), 8 m (Main Cave east) and 5m (Dry Cave)
Description	The two cave systems are adjacent and linked, and are thus described together. A shallow dry system of chambers linked by narrow passages, with a total length of 130 m (Main Cave) and 50 m (Dry Cave). See maps. The distal sector (the Far Deep) has not been mapped and is believed to have elevated CO ₂ levels.
References	Main Cave described in full Darlington 1970, 1993, and 1995A and in brief by Pawson (c1948) and Komisarcik 1979. Mentions in King-Webster & Kenny 1958, Shaw 1993, Day & Chenowith 2004. Dry Cave described and mapped in full by Komisarcik 1979. Included in the ecological work of Darlington 1970, 1995A.
Key reading	Darlington 1995a offers the best, and most accessible, description of the cave and its fauna.

History of exploration	The only caves in Trinidad to have been systematically assessed from a scientific viewpoint. Main Cave mapped by Kenny in 1965, with the exception of the lower parts. PhD dissertations on microbiota (Hill 1969, 1981) and cockroach dynamics (Darlington 1970). A connection to Tamana Dry Cave was established in 1989 (Darlington 1991).
Geology	Miocene Tamana Formation - Guaracara reef limestone
Sinter status	Large fluted stalagmites, but heavily corroded.
Bats	11 bat species recorded, numbering up to 1.5 million with seasonal variations, and locations in dark and semi-dark parts of cave. <i>Ancoura</i> , <i>Phyllostomus</i> present in upper part. <i>Mormoops</i> in wet season, with moving location. <i>Chilonycteris</i> (2 sp), <i>Pteronotus</i> , <i>Glossophega</i> , <i>Carollin</i> , <i>Desmodus</i> , <i>Natalus</i> , <i>Myotis</i> also present.
Mammals	<i>Didelphis</i> (black eared-opposum) recorded
Reptiles and Amphibians	Gecko (<i>Gonatodes</i>) , Lizard (<i>Bachia</i>) , snakes (<i>Leimadophis</i> , <i>Peeustes</i>), frog (<i>Pyhlllobates</i>) reported by Darlington 1970.
Invertebrates	Over 100 invertebrates reported by Darlington 1970. New species include a tinied moth, a lygaeid bug, a ptiliid beetle and a cetaropogonid fly (Darlington 1991). Others remain undescribed.
Conservation status	A tourist attraction for bat watchers, who are unlikely to enter the cave. This is partially due to the oppressive nature of a closed space occupied by such an active ecosystem - Komisarck described it as: "... <i>one of the most dreadful places on earth.</i> " Despite its accessibility the cave and its surrounds are in good condition.
Scientific value	An important site for the study of bats and cave ecosystems. The depth of study, and the papers derived from it, are a benchmark standard for cave systems elsewhere in Trinidad.

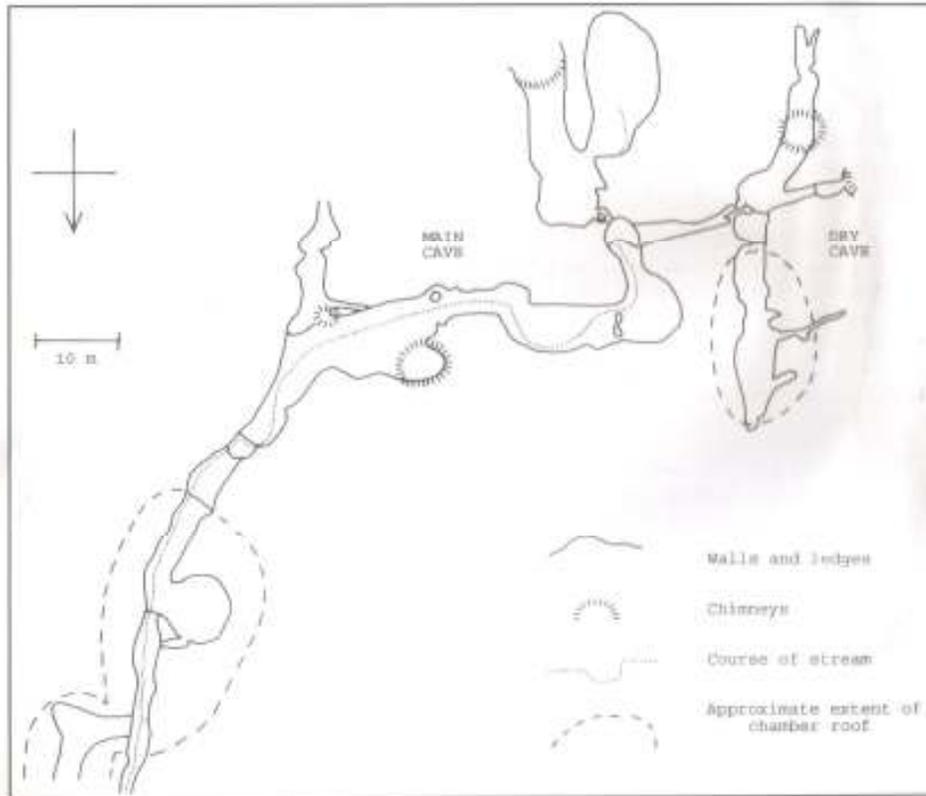
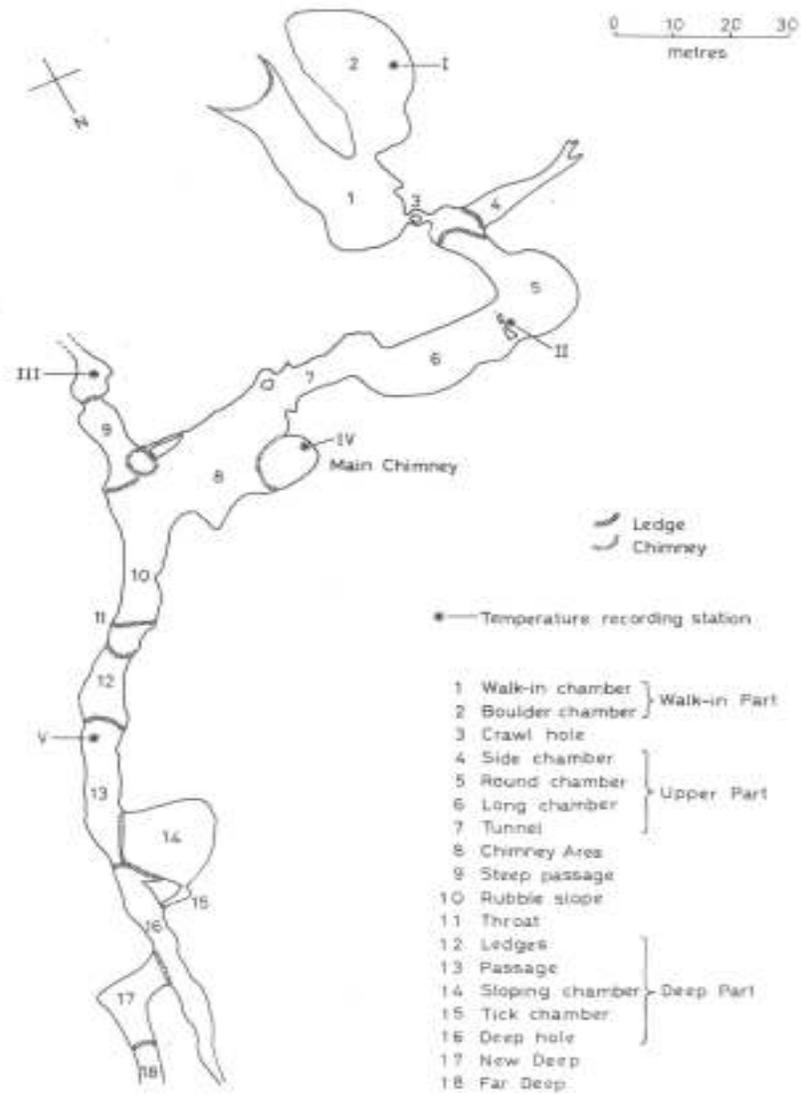


Fig. 1. Map of the Tamana Caves, Trinidad.

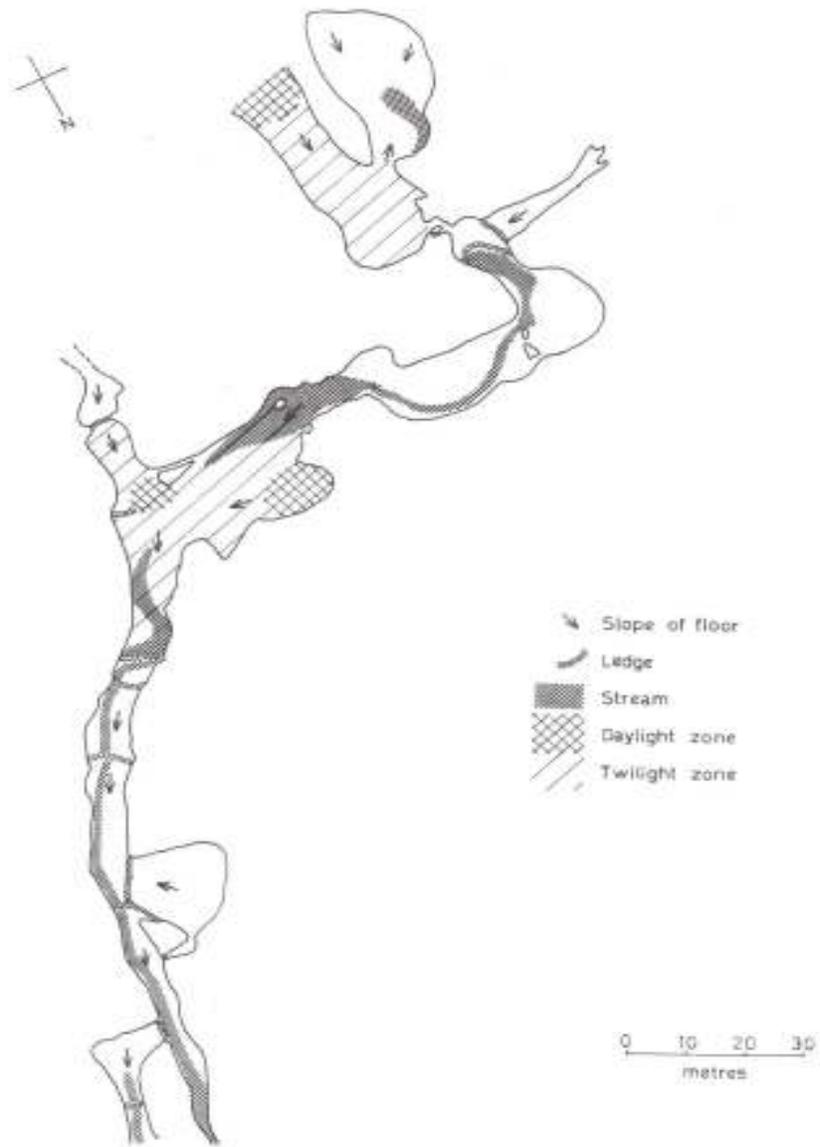
**The Tamana Caves showing linkages between Main and Dry Caves
From: Darlington 1995a**

FLOOR PLAN OF TAMANA MAIN CAVE



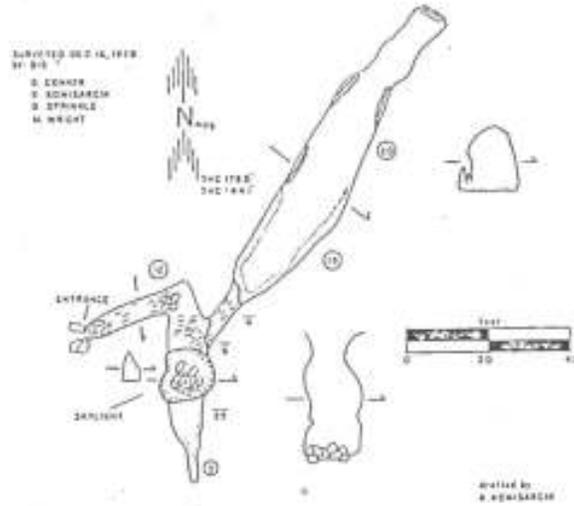
Survey of the Main Cave
From: Darlington J.P.E.C. 1995a

ENVIRONMENT IN THE CAVE



Environments within Main Cave
From: Darlington J.P.E.C. 1995a

TAMINA DRY CAVE
TRINIDAD W.I.
10° 28' 10" N
61° 12' 5" W



Survey of Tamana Dry Cave
From: Komisarck 1979