

CANGO CAVE, OUDTSHOORN DISTRICT OF THE CAPE  
PROVINCE, SOUTH AFRICA: AN ASSESSMENT OF ITS  
DEVELOPMENT AND MANAGEMENT 1780 - 1992

Short Title:

MANAGEMENT PROBLEMS AT CANGO CAVE

by

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in the

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at the

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December 1992

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DECLARATION

I, Stephen Adrian Craven, do hereby declare that the thesis entitled "Cango Cave, Oudtshoorn district of the Cape Province, South Africa: an assessment of its development and management 1780 - 1992" is my own unaided work, except for the extent stated in the acknowledgements.

I further declare that neither this thesis, nor any part of it, has been submitted in the past, and is not being submitted, for a degree of any other university.

No financial assistance has been solicited or accepted towards the costs of this research project.

S.A. Craven.  
December 1992.

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A. Vinnicombe Esq. kindly prepared the maps illustrating this thesis.

ABSTRACT

No detailed investigation has been previously made of the legal status, administration, history, management, finances, and conservation status of a show cave in South Africa. This study, using archival sources and field work, makes a thorough assessment of Cango Cave, a well-known show cave in the Swartberg foothills north of Oudtshoorn in the Cape Province of South Africa.

Repeated field trips to Cango Cave and to other caves in the area have confirmed the environmental deterioration of Cango Cave and its surroundings. This study has shown that such deterioration has been caused by human pressures on a non-renewable resource.

Reading of the extensive Government and other archives, supplemented by newspaper and other published material, has for the first time enabled the scientific, administrative and financial history of the Cave to be available in one document. Analysis of this assembled evidence, augmented by reading between the lines where the evidence is occasionally missing, has shown the reasons for the failure of successive Cave managements during the past two centuries to operate on a conservation basis. This failure to conserve Cango Cave has occurred despite the avowed policy of every political master of the Cape since 1820 that the Cave is a national asset which shall be conserved.

The thesis commences with a description of the location and topography of Cango Cave, followed by a review of cave conservation literature and a summary of the published information on the Cave. There follows a detailed account of the discovery and development of the Cave from 1780 until 1992, and an assessment of its financial status. The impact of humans on the Cave, and its conservation status, are examined in detail.

The above data are then discussed at length, and the reasons for the present unsatisfactory management structure identified. Having demonstrated the past and present management failures at Cango Cave, recommendations are made for better management structures and for the necessary applied research. Such research will provide the information which is essential for the future management of Cango Cave on a conservation basis.

Stephen Adrian Craven

University of Cape Town.

December 1992.



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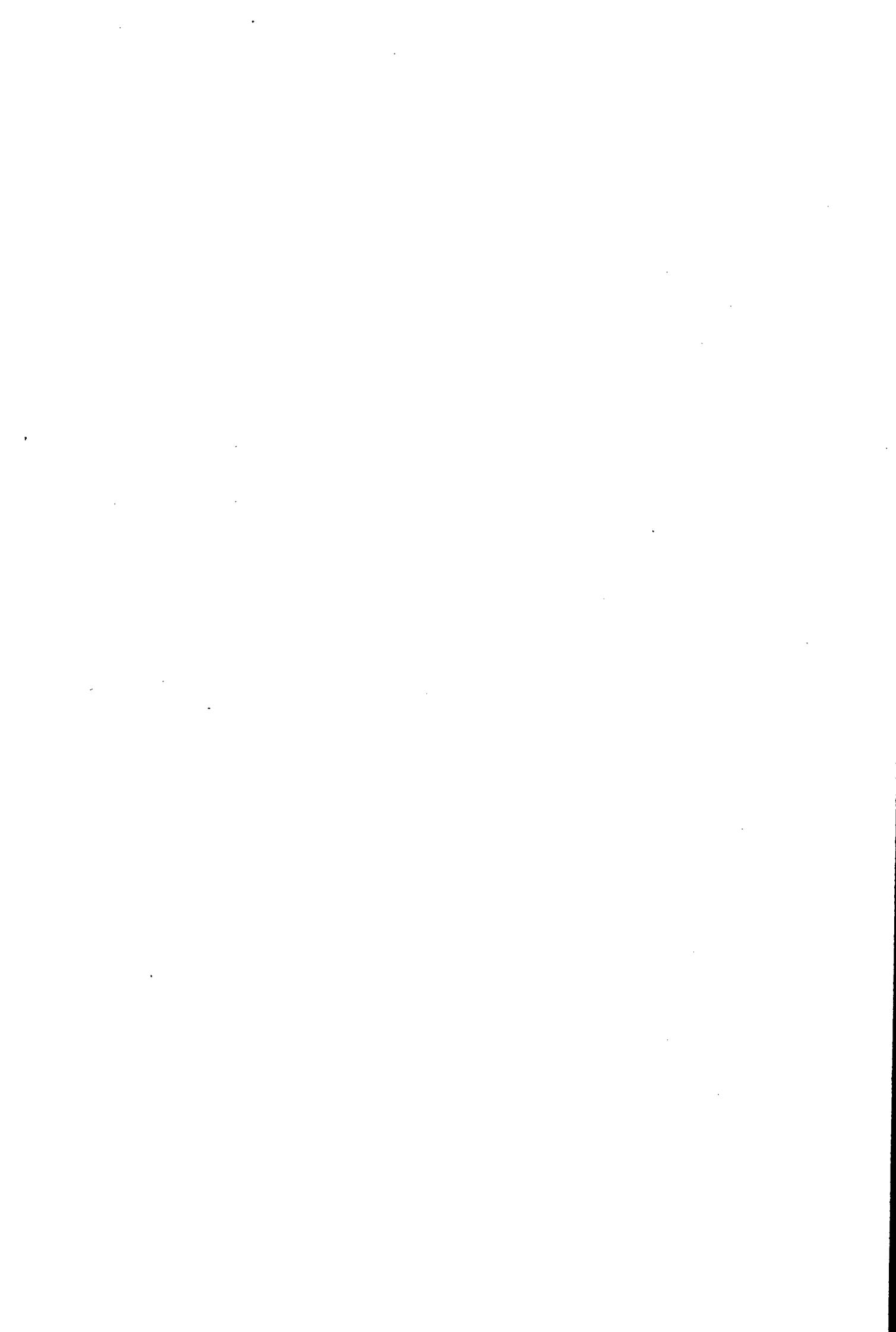
"Accurate and adequate information is the basis upon which all sound business decisions are made. The more complete and accurate that information, the better we are able to evaluate a situation and then to take appropriate action to best ensure a desired result. The same is true for cave management, which if dealt with properly, is a business. Whether planning to acquire a cave, or to develop and implement a management program, selecting an effective course of action will depend heavily upon how much is known about the cave."<sup>1</sup>

#### REFERENCE

- 
- 1 Nieland J. & Thornton J. (1985) "Spelean Resources Inventory and Evaluation Guide" ACCA Cave Management Series 1. (1), 1 - 2.

# **PART ONE**

# **INTRODUCTION**



CHAPTER 1

PROBLEM STATEMENT, HYPOTHESIS AND AIMS:  
THE PURPOSE AND SETTING OF THIS RESEARCH

KARST has been defined as 'terrain with distinctive hydrology and landforms arising from a combination of high rock solubility and well-developed secondary porosity'<sup>1</sup>.

A karst CAVE can be defined as any cavity formed by solution, and can vary in complexity and in length from a few metres to many kilometres. When used as a tourist attraction it becomes a SHOW CAVE, and can also be used for educational purposes.

Every cave and its environment is a natural, irreplaceable, asset. The CAVE ENVIRONMENT is almost totally dark, and is buffered from the climatic variations of the outside world. It therefore develops a buffered specific meteorological and biological environment which is vulnerable to change. Such change may be irrevocable. Cave conservation is therefore an essential part of cave management.

Of the thousands of natural caves in the world, very few have been modified to allow for public exhibition. The modifications, which facilitate easy access and illumination for the tourist, may vary in sophistication from the provision of candles and a few paths, through enlargement of passages, to the installation of electric lights and self-propelled vehicles such as light railways. One common feature of all show caves is the sturdy door or gate to prevent unauthorised access. The skill in managing show caves lies in the provision and maintenance of these facilities with minimal disturbance to the cave environment.

The selection of a cave for public exhibition depends on some outstanding and significant feature which sets the cave apart from the others in the same area. This is usually size and speleothems, but may be the presence of interesting artefacts or fauna (e.g. bats, glowworms). Some caves are so remarkable that they have received national recognition, and have been afforded some form of legal protection. Because most show caves are remote from the main centres of population, convenient access, such as a railway and / or good roads, is an important consideration for their promoters.

Tourists, whose numbers have been encouraged during this century by the provision of easy access and affordable transport, expect to be entertained. Therefore cave managers, with a view to maximising profits, concentrate on the superficial and pleasurable aspects of visits to their

caves. Visitors are normally exposed only to a superficial and cursory interpretation of the cave and its environment. Nevertheless, it is left to the cave scientist and naturalist to study, research and publish scholarly reports in scientific journals. Speleology is a relatively young scientific discipline with comparatively few devotees, most of whom are of amateur status. This is why, until recently, all show cave managements were concerned only with the numbers of visitors and the money they spent.

In keeping with the increasing environmental awareness of the past three decades, it has become accepted in many show cave circles overseas that such caves, especially in those which have National Park status, have a rôle to play in the environmental education of the public.

Show caves comprise a minute part of the total world tourist industry, but they can be of great local economic importance in that the surrounding community may be almost completely dependent on the cave. Some show caves have been overwhelmed by visitor pressure in excess of their carrying capacity. Such circumstances may cause unpleasant personal experiences for the visitors, and environmental deterioration of the cave.

Most major show caves of the world are government owned or controlled, and often have National Park status. Such caves have usually been attractions for many years, and have frequently suffered modifications which predate the present administration. In the light of modern knowledge, it is apparent that most show caves have outdated facilities. The need for conservation of these caves requires immediate recognition and attention if they are to be enjoyed by future generations of tourists and scientists<sup>2</sup>.

In this broad perspective Cango Cave is no exception; and it is therefore relevant to enquire if successive management policies for Cango Cave have been appropriate in terms of:

- 1) Development of Cango Cave as a tourist attraction;
- 2) Expenditure of the profits derived from the Cave;
- 3) Conservation of the natural Cave environment; and
- 4) Use of the Cave for scientific and educational purposes.

The HYPOTHESIS to be tested is that Cango Cave has been appropriately managed in all aspects of environmental and financial practice since its discovery in about 1780.

This THESIS aims to:

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

- 1) Summarise the history of the cave - its development and management, both administrative and financial.
- 2) Place that summary in the context of the socio-economic and political<sup>3</sup> history of the Cape Province, and of the development and management of some similar overseas show caves.
- 3) Assess the financial benefits derived from the management of Cango Cave, and ascertain the beneficiaries.
- 4) Assess the environmental changes which have occurred in Cango Cave, and their causes.
- 5) Make recommendations in principle for the future management of Cango Cave.

NOTES AND REFERENCES

- 1 Ford D.C. & Williams P.W. (1989) "Karst Geomorphology and Hydrology" (London: Unwin Hyman).
- 2 Gurnee R. (1989) "Development of show caves." Nat. Spel. Soc. News 47. (11), 278 - 279.
- 3 Throughout this thesis the word "political" is used in the sense "of (people) engaged in civil administration" (Concise Oxford Dictionary).

CHAPTER 2

CANGO CAVE: ITS LOCATION, DIMENSIONS AND EXTENSIONS

Cango Cave, a popular show cave in the Swartberg foothills 27 km. north of Oudtshoorn in the Cape Province of South Africa, is situated more or less in the centre of a 38 km. long, 1½ km. wide, belt of Cango Limestone extending east-west immediately south of, and contiguous with, the Table Mountain Sandstone of the Swartberg Range<sup>1</sup> (Figs. 2.1 & 2.2). The three entrances, in close proximity to each other, lie at an altitude of about 660 m. above sea level above a tributary valley of the Grobbelaars River, near the western boundary of the original farm No. 28, Kombuis<sup>2</sup>. The Cave extends in a 2400 m. long series of large phreatic chambers connected linearly by low passages and crawls (Figs. 2.3, 2.4 & 2.5). There is no possibility of any further linear development because the far end of Cango III is very close to the next valley to the north-west.

The extent of Cango Cave can be conveniently divided into three sections<sup>3</sup>:

CANGO I:

Cango I is the show cave as has been known since 1897 (i.e. from the entrances to the Banqueting Hall), and which has therefore experienced the greatest human impact. Immediately inside the entrance is a chamber containing model bushmen, a model of the show cave, and displays of speleothems and cave literature.

At 35 m. from the entrance there is a 20 m. pitch into Van Zyl's Hall which gives way to 700 m. of well-decorated chamber and passage of varying size terminating in the Devil's Workshop and Banqueting Hall. Intermittent electric lighting, concrete steps and paths, handrails and son-et-lumière have been installed for the convenience of visitors.

In 1964 a 5 cm. diameter hole was bored from the surface into the Devil's Workshop, with the intention of installing an electric ring-main. However, it has never been used, and has been fitted with an easily removable cover which is not air-tight.

CANGO II:

At the beginning of 1972 Cango Cave terminated in the Banqueting Hall, known since 1897, a low chamber at the bottom of the stope leading off the Devil's Workshop. At the far end of the Banqueting Hall two of the guides at Cango Cave, James Craig-Smith and Luther Terblanche, noticed

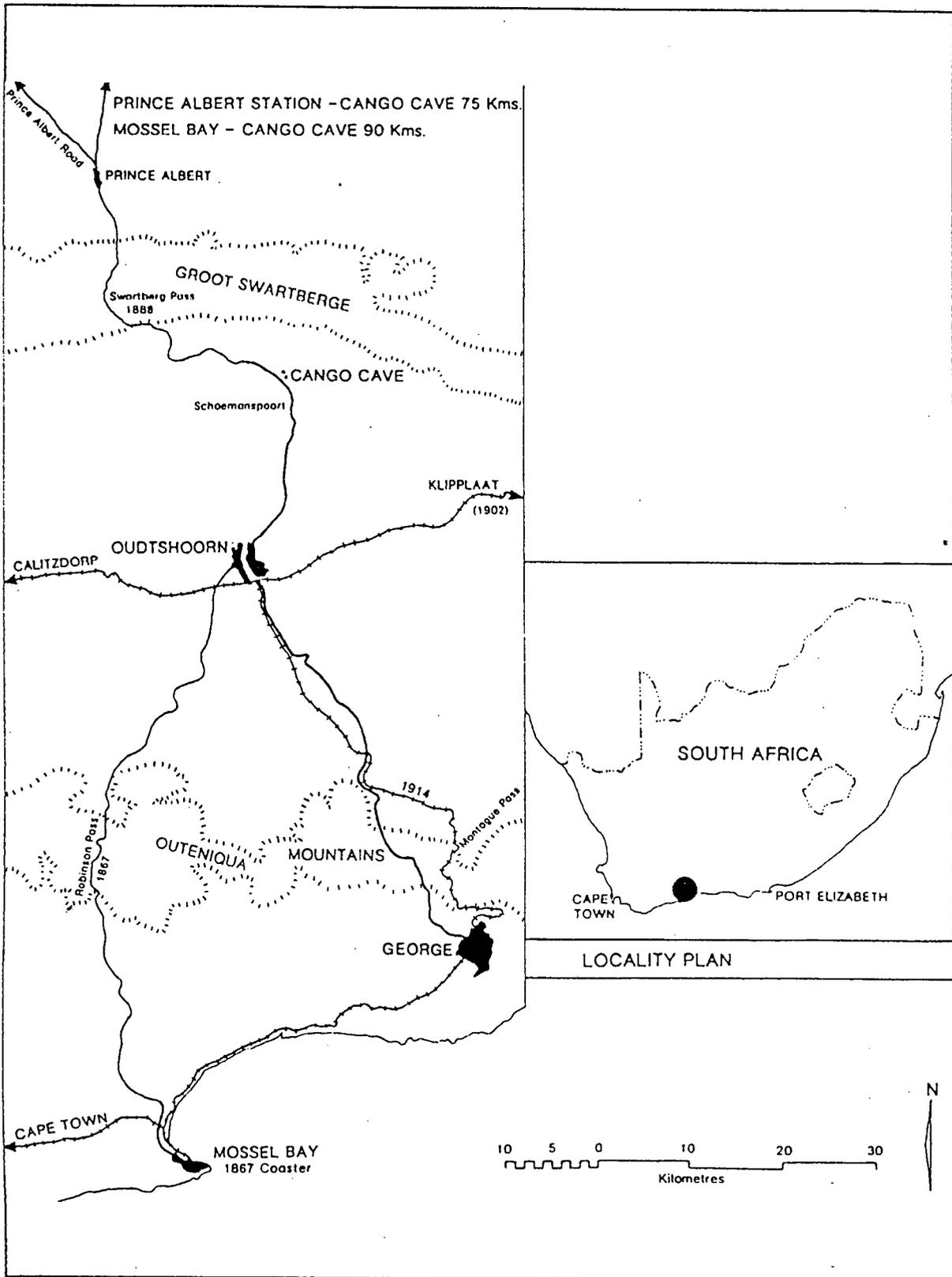


FIG. 2.1: THE POSITION OF CANGO CAVE IN RELATION TO THE SOUTHERN CAPE

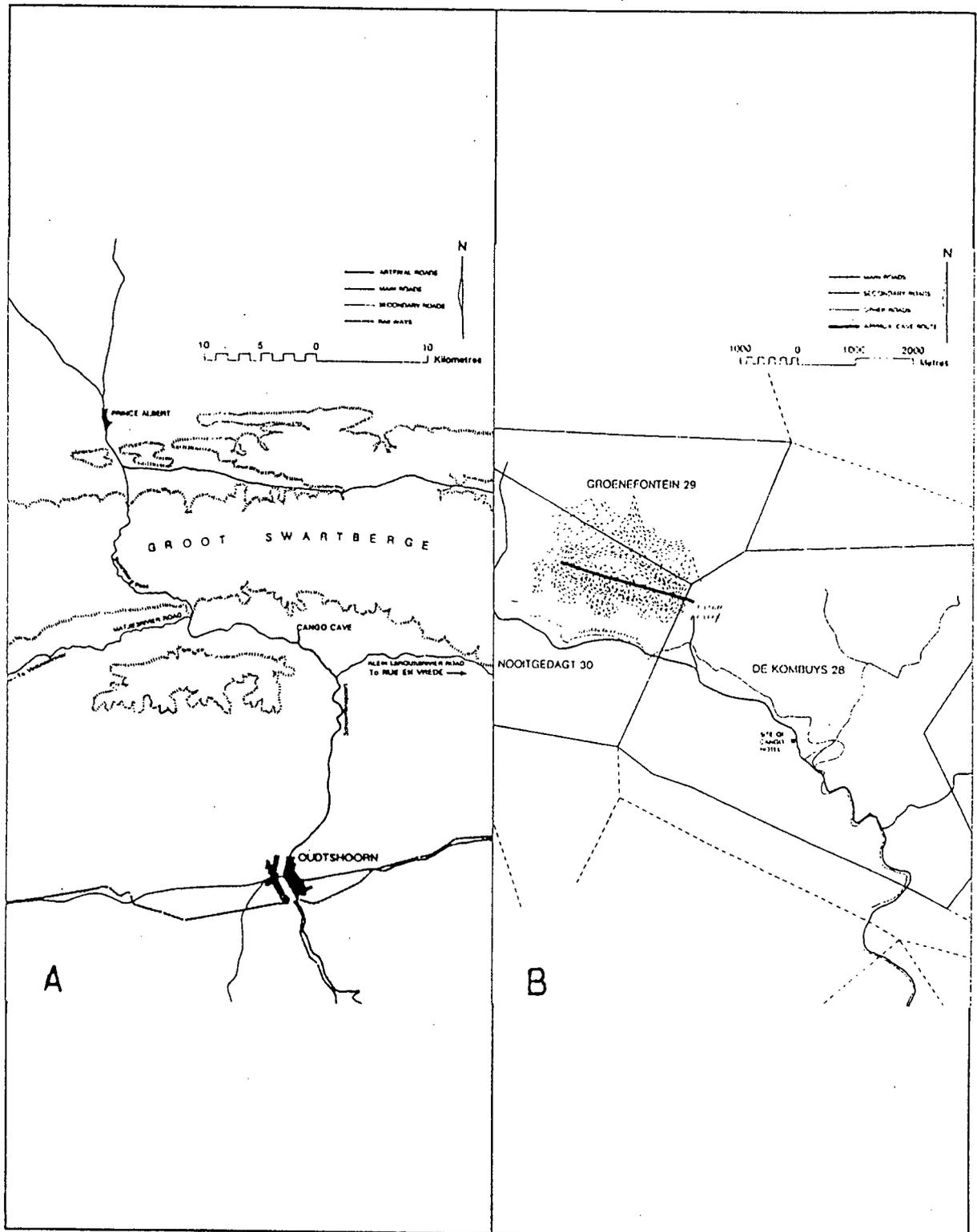
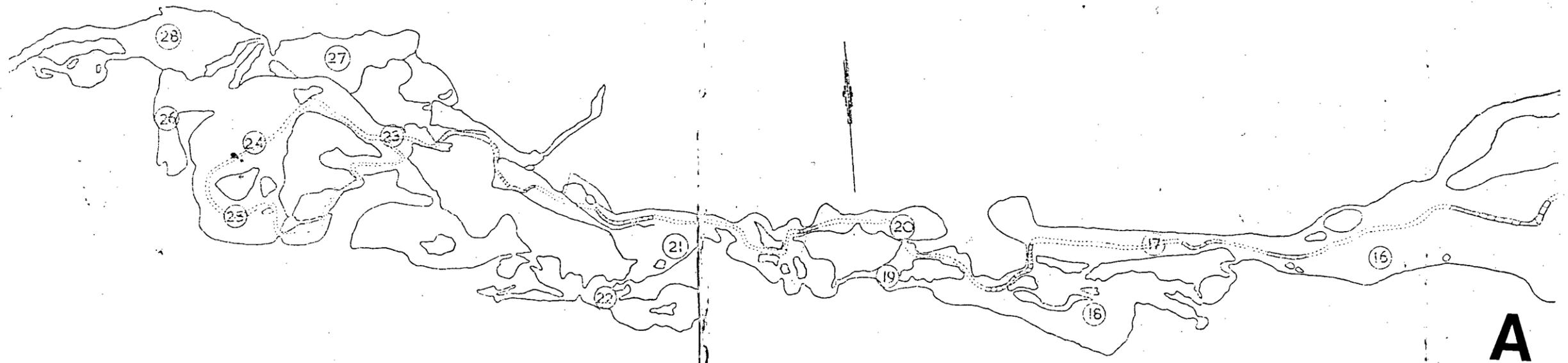
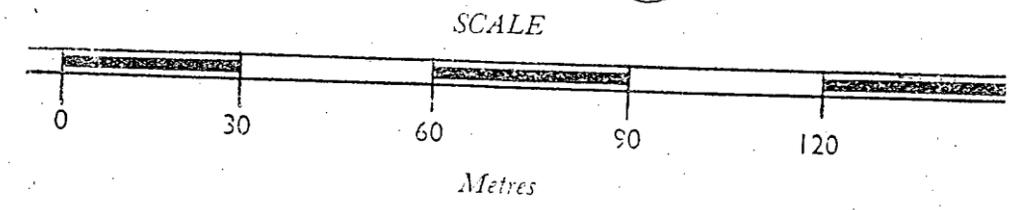


FIG. 2.2: CANGO CAVE IN RELATION TO:  
 (A) THE CANGO VALLEY: HACHURES INDICATE MOUNTAINS; AND  
 (B) THE ORIGINAL FARMS. THE RELIEF DEPICTED IS THE FORM LINES OVER CANGO CAVE.

**A**

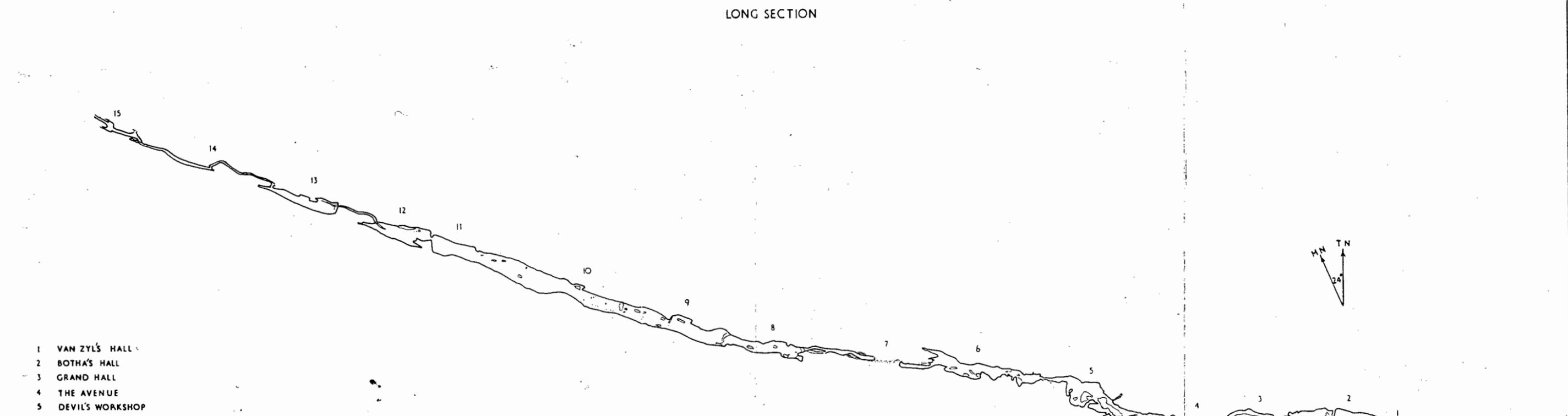
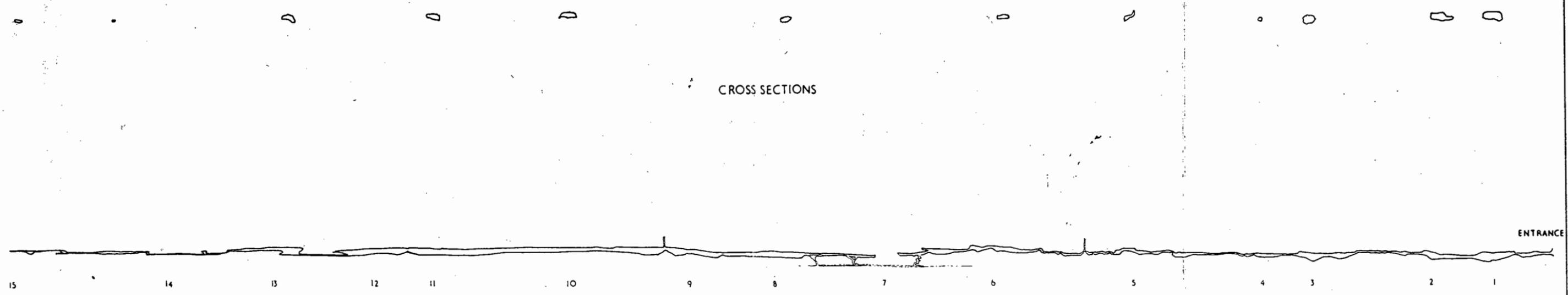


- [1] Entrance [2] Van Zyl's Hall [3] Botha's Hall [4] Throne Room
- [5] Rainbow Room [6] Vestry [7] Temple [8] Crypt [9] Catacombs
- [10] Bridal Chamber [11] Fair Palace [12] Fairy Hall [13] Drum Room [14] Grand Hall
- [15] Sand Rooms [16] Lot's Chamber [17] The Avenue [18] The Labyrinth
- [19] Crystal Chamber [20] Lumbago Walk [21] Crystal Palace
- [22] Crystal Forest [23] Ice Chamber [24] Devil's Workshop
- [25] Devil's Chimney [26] Vertical Shaft [27] Picture Gallery
- [28] Banqueting Hall.

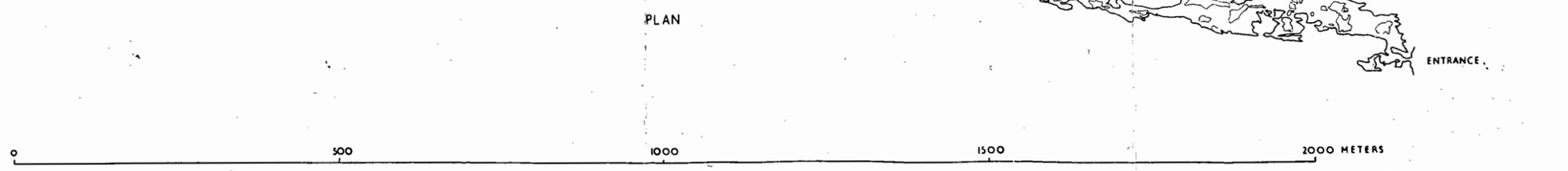


**A**

FIG. 2.3: CANGO I - IE 1956 SURVEY BY THE S.A. SPELAEOLOGICAL ASSOCIATION (CAPE SECTION). THE PLAN IS LINEAR, AND SHOULD BE JOINED AS MARKED AA. THE UPPER RIGHT PORTION IS THE ELEVATION IN RELATION TO THE OVERLYING HILLSIDE.



- 1 VAN ZYL'S HALL
- 2 BOTHA'S HALL
- 3 GRAND HALL
- 4 THE AVENUE
- 5 DEVIL'S WORKSHOP
- 6 CANGO 2: WONDER CAVE
- 7 STREAM PASSAGE
- 8 KRAKATOA
- 9 STONEHENGE
- 10 ICE PALACE
- 11 THE AMPHITHEATRE
- 12 THE CANYON
- 13 ISOLATION CHAMBER
- 14 PILGRIMS PASSAGE
- 15 FAA CHAMBER



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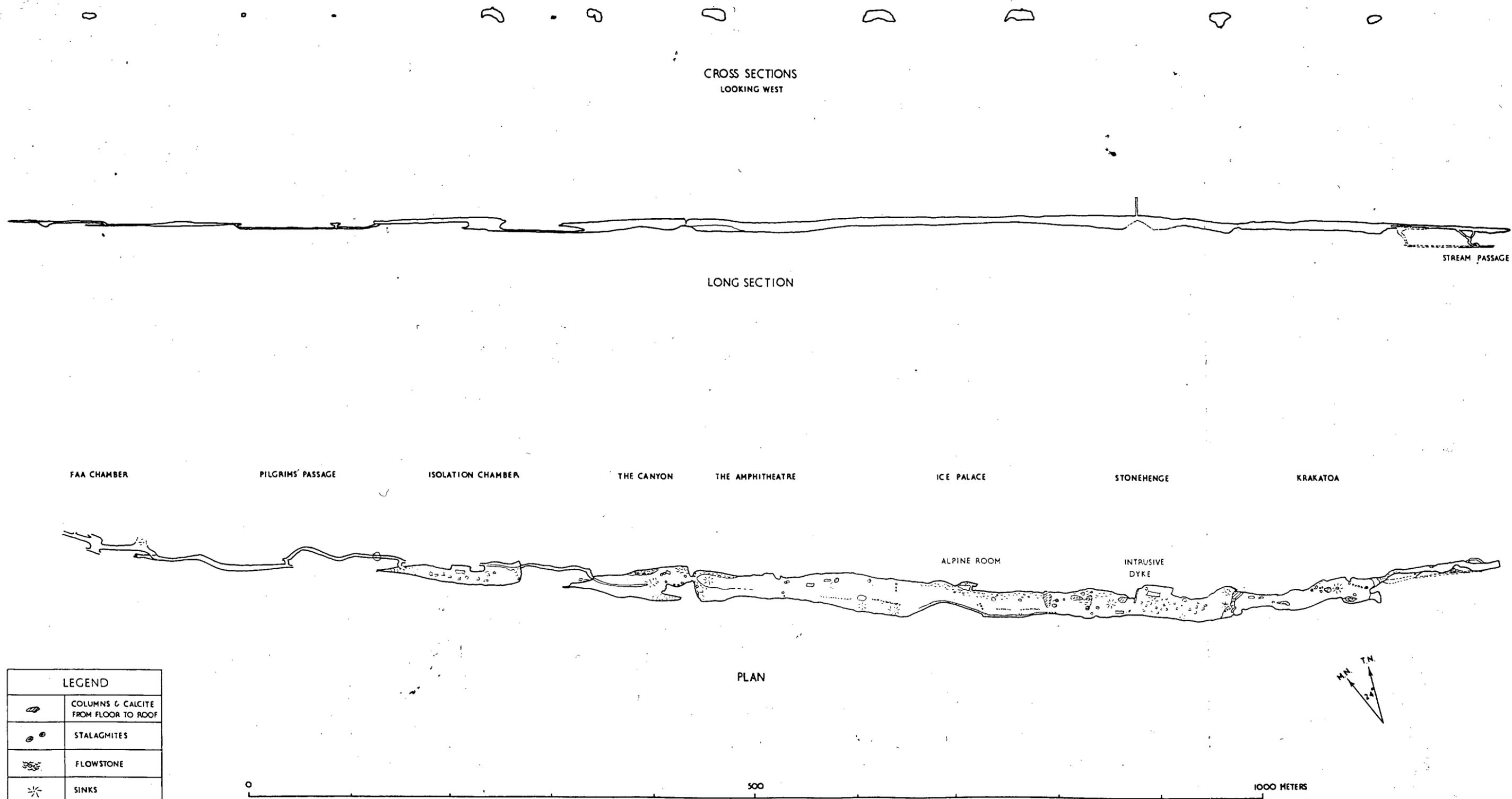


SURVEYED BY MEMBERS OF THE  
SOUTH AFRICAN SPELEOLOGICAL ASSOCIATION  
1956 TO 1978

FIG. 2.5: CANGO CAVE - THE COMBINED 1956 & 1978 SURVEYS BY THE S.A. SPELEOLOGICAL ASSOCIATION (CAPE SECTION)

SCALE 1/7100

CT 78/8



LEGEND	
	COLUMNS & CALCITE FROM FLOOR TO ROOF
	STALAGMITES
	FLOWSTONE
	SINKS
	BOULDERS

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LEADER : DAVE LAND  
 DEPUTY : CHARLES MAXWELL  
 DEPUTY : DIGBY ELLIS  
 SURVEYOR : DAVE CROMBIE  
 ASSISTANT : BRIAN RUSSELL  
 EQUIPMENT : COMPASS CLINOMETER & TAPE

DATE : DECEMBER 1977  
 TO  
 SEPTEMBER 1978

FIG. 2.4: CANGO III - THE 1978 SURVEY BY THE S.A. SPELAEOLOGICAL ASSOCIATION (CAPE SECTION).

SCALE : 1/3850

CT 78/7



CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

draught coming through the boulders and speleothems. Working in their spare time and assisted by labourers, between February and August 1972 they enlarged the passages using hammers and chisels until they were able to see a large decorated chamber from the top of a 10 m. pitch<sup>4</sup>.

Not having a ladder, they sought assistance from the members of the S.A. Spelaeological Association (Cape Section) whose members travelled from Cape Town on 16 September 1972 with the necessary equipment. The following morning they descended into a large beautifully decorated chamber about 300 m. long x 25 m. wide x 30 m. high. At the end of this chamber a descent through boulders on 09 October 1972 revealed a small stream. Progress upstream was immediately barred by a sump; that downstream was stopped by the crawl becoming too narrow after 130 m.<sup>5</sup>. It is still not known from whence the water comes, and to where it goes.

Shortly after this discovery, the Oudtshoorn Municipality extended the mains electricity to Cango II. However, only power points, and no permanent light, were provided.

### CANGO III

Detailed exploration and survey of Cango II by members of the S.A. Spelaeological Association (Cape Section) revealed that the most likely place to search for an extension was the upstream passage, for which assistance from divers would be essential.

Therefore on 01 June 1973 Messrs. Ben de Kock, Charles D. Maxwell and Hercules J. Viljoen of the Atlantic Underwater Club, supported by Messrs. Peter Breedt and David Land of the S.A. Spelaeological Association (Cape Section) tried to force the upstream passage. They penetrated about 17 m. before returning because of poor visibility and a narrow passage<sup>6</sup>.

If the sump could not be dived, perhaps it could be drained? Initial unsuccessful attempts were made by members of the Spelaeological Association to bale and hand-pump water out of the sump faster than it accumulated. Installation of a 12-volt pump which could move 15000 l. of water per hour reduced the water level after 20 minutes sufficiently to reveal a strong draught. The battery then failed, causing the water level to rise. Further exploration was therefore abandoned in the interests of safety.

The next visit to the sump was at Easter 1975 when a transformer and rectifier were attached to the pump, enabling it to be run from mains electricity. Although the water level was lowered, foul air prevented complete exploration.

It was the weekend of 26 - 27 July 1975 when the members were able to return to the sump. They found their way from the stream, up a mud slope, through a low passage and thence into a massive beautifully decorated chamber known as Cango III - up to 18 m. wide and 12 m. high<sup>7</sup>. After about 900 m. this fine chamber terminates in a 500 m. crawl leading to two low chambers, Isolation Chamber (or Cango IV) and Faa Chamber (or Cango V). The survey, done during a 5-day underground camp from 30 August to 03 September 1978 showed that the far end of this crawl is not far from the surface on portion 44 of farm No. 30, Nooitgedacht<sup>8</sup>.

The main aesthetic attractions, and therefore tourist appeal, of the Cave lie in the large size of many of the chambers, and in the spectacular speleothems. The narrower passages, especially the Devil's Chimney, at the far end of Cango I provide a further attraction for the tourist who enjoys some physical exertion. Access to Cango I is available to anyone who presents himself at the ticket office and pays the prescribed fee. There is no restriction on the numbers of visitors who are admitted. Access to Cango II and to Cango III is limited to infrequent small organised parties (maximum 12 people) which make prior arrangements with the Oudtshoorn Town Clerk.

The surrounding Cango Valley is an arid area with an average annual precipitation of only 382 mm. at the Cave<sup>9</sup>. The low rainfall, and the absence of other naturally occurring entrances further into the Cave, ensure that Cango Cave is a LOW ENERGY cave. There is entering the Cave very little naturally occurring energy which could dissipate the energy brought into the Cave by the visitors<sup>10</sup>. In contrast, the Skocjan Cave in Slovenia is a huge 2 km. long stream passage in which flows a substantial river. There the energy brought into the cave by the visitors in the form of heat, carbon dioxide and water vapour is negligible in comparison to that brought in by the river in the form of winds and water. Furthermore, the passage of the river and the series of doline windows ensure dissipation of the visitor energy and pollution<sup>11</sup>.

At the present time Cango Cave is a 2400 m. long linear cave on basically one level. The show cave is restricted to the first 750 m. part as far as the Devil's Workshop.

In the next chapter is summarised the literature pertaining to cave management with particular reference to Cango Cave.

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CHAPTER 3

LITERATURE PERTAINING TO CAVE MANAGEMENT  
WITH PARTICULAR REFERENCE TO CANGO CAVE

During the past three decades there has developed a large world speleological literature commensurate with the increasing popularity of cave exploration overseas. The latest edition of the speleological literature service "Current Titles in Speleology" lists 2998 papers arranged by continent, country and topic<sup>1</sup>. Perusal of these annual listings provides entry to the world speleological literature, though many of the periodicals and books listed are difficult to obtain in South Africa.

3.1: LITERATURE PERTAINING TO KARST RESEARCH

Inspection of the abstracts indicates that most of the world's speleological literature is concerned with cave descriptions. There is, however, literature concerned with cave and karst research which is being undertaken mainly in Europe and north America. Secondary access to this literature is through the review edited by Bosák<sup>2</sup> and through the book written by Ford & Williams<sup>3</sup>. Recent karst literature can also be found in the pages of such periodicals as Cave Science (England), Bulletin of the National Speleological Society (USA), International Journal of Speleology (Italy) and Spelunca (France).

3.2: CAVE CONSERVATION LITERATURE

The literature on cave conservation is of comparatively recent origin. Being relevant to the effects of man on caves, it is essentially about applied cave research.

In the USA. cave management symposia have been organised during the past two decades<sup>4</sup>. Of the 7 volumes of Cave Management Symposia Proceedings consulted only 24 (i.e. 11%) out of a total of 228 papers concerned show caves.

In 1985 the American Cave Conservation Association (ACCA.) commenced publication of its "Cave Management Series" which, in 1986, changed its title to "American Caves". The ACCA. concentrates mainly on wild caves, but has on occasion motivated for show cave conservation, notably for Mammoth Cave near its headquarters<sup>5</sup>. Cave conservation articles also feature occasionally in the National Speleological Society News (USA.), Cave Science (England), and Studies in Speleology (England).

In 1987 the Australasian Cave and Karst Management Association (ACKMA.), a cave conservation organisation, was formed, and has published a Newsletter since 1988.

The common theme of all these conservation papers is the damage done to caves by man. Some papers merely document the damage by cave or by region. Other papers discuss ways of preventing and minimising this damage, whether by individuals, proprietors or government agencies. Some authors describe the work of volunteers in removing litter, graffiti and other artefacts from caves. Both show and wild caves are covered, but the emphasis is on wild caves.

### 3.3: SHOW CAVE LITERATURE; OVERSEAS AND SOUTH AFRICA

South Africa has five karst show caves: Cango (Cape), Sterkfontein (Transvaal), Sudwala (Transvaal), Echo (Transvaal)<sup>6</sup> and Kromdraai (Transvaal)<sup>7</sup>. Of these Cango is the largest and most popular, and the only one which is controlled by a Municipality on behalf of the National Government. Sterkfontein is owned by the University of the Witwatersrand; and the remaining three are privately owned.

Speleology is traditionally an interest of city dwellers<sup>8</sup>. Most South African caves are situated away from the main centres of Cape Town and the Witwatersrand in which are situated the caving clubs, and have consequently received less attention than karst areas overseas. There is therefore comparatively little South African literature on the subject. Thus the latest edition of the abstracting service lists 2998 world references, of which only 15 refer to South Africa<sup>9</sup>. Of these 15 references, only one is about show caves and two about cave conservation. There are listed 108 papers about "conservation and access" elsewhere in the world, this being the abstracts' classification.

The bulk of the South African caving literature can be found in three periodicals (Table 3.1):

<u>ORGANISATION</u>	<u>TITLE</u>	<u>FREQUENCY</u>
Free Cavers:	The Free Caver	Quarterly
S.A. Spelaeological Association (SASA):	Bulletin	Annual
Cave Research Organisation of S.A. (CROSA):	Bulletin	Quarterly

The S.A. Spelaeological Association is the only national spelaeological organisation, with branches in Cape Town and the Transvaal. The Association was founded in 1954, and has published its Bulletin more or less regularly since 1956. At present it appears annually. It has published articles on cave exploration, cave science, cave conservation and caving techniques in southern Africa.

Despite the national status implied in its title, the Cave Research Organisation of S.A. is a Transvaal club founded in 1967 which publishes a quarterly Bulletin. Although this club has a reputation in the Transvaal for its conservation work, only one Bulletin article since 1985 has been listed under "conservation and access" in Current Titles in Speleology. Most papers in the Bulletin deal with club meets, exploration and speleo-politics. Nevertheless CROSA. has been actively involved in Transvaal show cave management - at Wolkberg<sup>10</sup> and at Kromdraai<sup>11</sup>. The former cave was not commercially developed.

The Free Cavers are an informal group of friends who have caved together in the Transvaal since the 1970s. They published the quarterly Free Caver from 1978 until 1987. This was a largely speleo-political publication which nevertheless published articles on cave exploration and cave history.

The most exhaustive work on cave conservation in South Africa is Frances Gamble's (née Niven) "The Management of Karst Cave Ecosystems in the Transvaal" which was accepted for a PhD. degree at the University of Natal<sup>12</sup>. In this thesis Gamble examined the uses of, and environmental disturbances to, Transvaal karst cave ecosystems, and cites twenty of her previous publications. She then emphasised the necessity for sound scientific management of karst cave ecosystems, and prepared flexible guidelines for their optimal use. The theme of her thesis is Transvaal karst in general. Although show caves feature little in the thesis, the principles of wise management are similar for all caves. Nevertheless, Gamble makes the following three points which are relevant to this thesis:

- 1) Irrespective of the care which is taken, visitors to caves cause environmental deterioration to a greater or lesser extent.
- 2) Problems of disturbance are greatest where commercial gain from sales and tourists is involved.
- 3) Show caves represent a necessary compromise in terms of cave management.

Inspection of Current Titles in Speleology since 1985 reveals only 9 papers about South African show caves other than Cango, only one of which is about conservation<sup>13</sup>. The topics covered are rescue (4), geology (1), topography (2), conservation and access (1) and physics (1). It is therefore evident that there is very little literature about South African show caves and their conservation.

One topic of potential importance to the management of Cango Cave, and which has received minimal attention in the

South African literature, is that of alpha radiation in caves. Limestone and dolomite contain small quantities of uranium - an unstable radioactive element which decays via radon to lead. Radon is a gas which emits alpha rays, and which can accumulate in the atmosphere of poorly ventilated, low energy, caves. Alpha rays, in common with all ionising radiation, are potentially carcinogenic and mutagenic.

Gamble has measured levels of alpha radiation in 12 Transvaal caves, of which three, Echo, Sterkfontein and Sudwala, are show caves<sup>14</sup>. She concluded that there is no danger to casual tourists, speleologists and cave scientists. However there may be some danger to cave guides who are continuously exposed to the high radiation levels in Echo Cave. A symposium on radon in caves has been recently published<sup>15</sup>. No such work has ever been done in the Cape Province.

Because there is a lack of South African show cave conservation literature, the overseas literature must be examined. In some overseas countries with Government controlled show caves, there is an increasing awareness of the necessity for show cave conservation.

Show cave topics covered in this literature include cave interpretation, scientific research, reinstatement of paths and steps, training of guides, bats, electrification schemes, cave management and management plans.

In Australia was held in 1973 the first Australian Conference on Cave Tourism at which were presented papers about the various Australian show caves and their problems<sup>16</sup>. By 1985 the sixth conference had widened its terms of reference to include New Zealand<sup>17</sup>.

In 1988 was held in Yugoslavia an international symposium on Cave Tourism at which were presented 42 papers about show caves in Australia, Austria, Belgium, China, Czechoslovakia, Hungary, Germany, Great Britain, Greece, Italy, Switzerland, USA. and Yugoslavia<sup>18</sup>. Only 7 (i.e. 17%) were about show cave conservation.

International Speleological Congresses are organised every four years, the tenth having been held in 1989. Their Proceedings are another source of cave conservation literature. At the 1989 Congress were presented 7 papers about "problems of protection of show caves", 6 on "caves and the environmental pollution", and 5 on "impact of cave tours on cave conditions"<sup>19</sup>.

In 1989 was founded the International Show Caves Association under the auspices of the Department of Protection and Management, Union Internationale de Spéléologie<sup>20</sup>. The Proceedings of the inaugural meeting suggest that the aim of the Association is to encourage

visitors to the caves while endeavouring to minimise the damage which those tourists can do to a cave<sup>21</sup>.

In the Caribbean, management plans have been prepared for caves before being opened to tourists. In 1978 a team of cave experts from the USA. examined Harrison's Cave, Barbados, and made recommendations for its tourist development with minimised impact on the cave<sup>22</sup>. A similar report was prepared a decade later by the same organisation for the Ensueno Cave, Puerto Rico<sup>23</sup>. A neighbouring cave, Rio Camuy Cave, was developed by the same cave conservation experts and later sold to the Government<sup>24</sup>.

However, it appears that many of the overseas ideas on show cave conservation have not yet been published. In 1987 the Mammoth Cave National Park, Kentucky USA., prepared for private circulation a management plan for the entire park, including a separate plan for the caves<sup>25</sup>. The input for this report came from all interested disciplines viz. management, geology, hydrology, radon specialist, park ranger, biology, speleology, private show cave operator, and hotelier. Although the Mammoth Cave National Park is Government owned, opinions were solicited from both Government and private experts.

The purpose of the plan is to identify problems, to provide solutions, and to prepare a 5-year plan which *"considers every phase of cave management in the park including impacts originating outside the park ... In short, this plan focuses upon cave resources in the park and their management, and encompasses both natural and cultural resources. The plan is comprehensive, dealing with all park caves, not just the major systems."* The plan goes on to list all the caves with their speleological, archaeological and historical resources, their present condition, the effect of tourists, mining, sewage disposal et al., and recommends action to research and mitigate their effects.

Similar reports have been prepared for the Carlsbad Caverns National Park in New Mexico, USA.<sup>26</sup>, and for Wind Cave National Park, South Dakota USA.. That for Wind Cave emphasises the importance of ensuring that the guides interpret the cave accurately and entertainingly to the tourists<sup>27</sup>.

In New Zealand the Waitomo Cave, after completion of the necessary research<sup>28</sup>, has since 1974 been managed on a conservation basis with limitation of numbers of visitors. Any visitors in excess of the quota are diverted to a nearby sacrificial cave, i.e. to a cave of lesser importance, the deterioration of which is deemed to be an acceptable price to pay for the conservation of the more important cave. In 1978 there was appointed a Caves Manager with a degree in the Earth Sciences. His post was created to: "... put the

*management of the caves on a more scientific foundation and try and balance better the dual roles of presentation and preservation."*

In Australia, the Jenolan Caves of New South Wales were recognised in 1961 as being unwittingly damaged by visitors who were responsible for soiling of the speleothems by dust and lint<sup>29</sup>. Since then realisation of the need for conservation has led to the preparation of a management plan for the caves reserve<sup>30</sup>.

The lack of awareness of the need for show cave conservation in South Africa may be attributed to two factors. It may reflect the customary time lag between overseas ideas being adopted in South Africa, and also apathy and ignorance among those who are in a position to introduce changes to the practice of cave management in South Africa.

### 3.4: PUBLISHED INFORMATION ON CANGO CAVE

The literature about Cango Cave consists of accounts of occasional geological, biological and archaeological observations and collections, topography, and meteorological observations. There has been no long term research project on the Cave nor on the changes which have occurred over the years.

#### 3.4.1 Survey & Description

Secondary sources suggest that the first plan of Cango Cave was probably done by P.H. Polemann during or before 1816, but the survey is lost<sup>31</sup>. The earliest surviving survey of the Cave is an elevation dated 1816 by the Rev. George Thom who can be considered to have been South Africa's first geologist and speleologist<sup>32</sup>. The first "modern" survey of Cango Cave as far as the Banqueting Hall was prepared in 1897 by Luttman-Johnson, a geology student at the South African College<sup>33</sup>.

The members of the newly-founded S.A. Spelaeological Association (SASA.) in 1956 commenced a detailed and accurate survey of Cango I using a prismatic compass, theodolite, Abney level, chains, and hydrogen balloons<sup>34</sup>. This survey shewed that the previous estimates of the length of the Cave had been greatly exaggerated. In 1978 the survey was extended by the SASA. members to the end of Cango III<sup>35</sup>.

#### 3.4.2 Geology and Speleogenesis

Thompson<sup>36</sup>, who had no scientific training, understood very elementary speleogenesis but realised that speleothems took a very long time to form. His writings indicate that he was familiar with the ideas of Cuvier<sup>37</sup>, and brought them

to the attention of Cape readers only 15 years after they were published.

Gisbrook, in writing on the geology of southern Africa, mentioned that Cango Cave is noted for its speleothems of "crystalline carbonate of lime"<sup>38</sup>.

Krauss, in 1839, was the first man to describe the thickness and dip of the limestone: 3 to 5 m. thick with 60° - 70° dip to the east<sup>39</sup>.

Sherwill was the first man in the Cape to realise that a broken speleothem deteriorates rapidly outside the Cave<sup>40</sup>.

Freeman visited Cango Cave in 1849, and realised that some speleothems were still being actively formed (i.e. were 'alive'), while others were inactive (i.e. 'dead')<sup>41</sup>.

Corstophine gave the first detailed geological description of the Cave. He mentioned the 250 m. thick beds of weathered blue limestone, their relation to the other Swartberg rocks, and referred to the damage which had been done to the bushman artefacts by the visitors<sup>42</sup>.

King wrote in detail on the geology of Cango Cave and surrounding area, and compared it to the Transvaal caves in the light of theories of speleogenesis developed overseas<sup>43</sup>.

Although du Plessis had written about cave speleothems in general<sup>44</sup>, it was A.G. Couper of the British Museum who first described specimens of calcite crystals from Cango Cave. He reported that crystals were in the form of acute rhombohedrons, the biggest being 470 x 160 mm.<sup>45</sup>

An assessment of the development of the entire Cave system was published in 1975<sup>46</sup>.

In 1981/82 the National Physical Research Laboratory dated the base of a 280 cm. stalagmite removed from Cango II using radio-active carbon-14 as 47000 years Before Present. Serial examination of proximal parts of the stalagmite shewed that no carbonate deposition took place between 16000 and 6000 years Before Present. Oxygen isotope measurements on the same stalagmite shewed that the coldest period in the Little Karoo occurred between 20000 and 16000 years Before Present when the average annual temperature dropped 5.5C° below the present value<sup>47</sup>.

In December 1984 Martini visited Cango and other adjacent caves in the Cango Valley. This enabled him to collect specimens, to publish the first comprehensive list of the various minerals found, and to discuss their implications for the speleogenesis of Cango Cave. He concluded that enlargement of joints in depth may not occur evenly, and that on the walls of the cracks may develop

micro-pockets which eventually coalesce to create a cave passage<sup>48</sup>.

### 3.4.3 Archaeology

The first archaeological report from Cango Cave appeared in 1888 when Stephens and Rudd of Oudtshoorn found a wooden figure, pottery and bones which were attributed to bushmen<sup>49</sup>.

While excavations for the foundation of the engine house were being done in March 1928, a "large number" of fossils was unearthed. During the following month, a fossilised tooth was found by a visiting dentist at the entrance to the Cave. These specimens were inspected on 12 July 1928 by Prof. T.F. Dreyer of Bloemfontein who found that they were all of a modern type of fauna with no historically extinct type appearing<sup>50</sup>.

On 19 September 1929, L'Abbé H. Breuil visited Cango Cave and discovered within 100 m. of the entrance a rock painting of an elephant, several small animal engravings, and a few ancient fireplaces with bone remains. He excavated in a small side-passage about 100 m. inside the Cave because it was the nearest point to the entrance that had not been disturbed and covered by a concrete path. He also discovered finger marks which shewed where the early inhabitants had obtained fine white clay for their paintings; and concluded that Cango Cave had been entered, if not inhabited, by Later Stone Age peoples<sup>51</sup>.

Prof. A.J.H. Goodwin, of the Archaeology Department of the University of Cape Town, visited Cango Cave in 1925 and recovered from near the entrance ostrich shell beads, and a single red china bead with blue lines on a white ground. Shortly afterwards the site was destroyed by road builders. He returned in September 1929 with L'Abbé Breuil et al.; and again at the beginning of February 1930 with Prof. E.D. Mountain of Grahamstown, to continue where the Abbé had finished. Part of the site had been disturbed by guano diggers; and little crude material was recovered. The deposit was found to contain mainly clay, some ash, a few teeth, fragments of pottery and other artefacts<sup>52</sup>.

In June 1961 Municipal workmen, while digging through clay, rock and sand in the Fern Room to create the several metre long artificial entrance, unearthed some fossilised bones and teeth which were identified by Prof. R.R. Inskeep as belonging to an unknown species of buck. During the same week, the Town Clerk discovered a bushman painting of a huge buck on a wall of the chamber. Further fossil discoveries were made at the same site in September 1961<sup>53</sup>.

3.4.4 Biology

The first biological collection from Cango Cave was made by Purcell of the S.A. Museum, and is summarised in Appendix I<sup>54</sup>.

A visiting entomologist from Norway, E. Ellingsen, later described in Purcell's Cango Cave collection a blind Chthonius contractus Tullgren, and a new species - *Chelifer walliskewi*<sup>55</sup>.

The next biological collection was made by Messrs. J.S. Harington and Ivor J. Lewis in May 1949<sup>56</sup>. They found in van Zyl's Hall eight specimens of *Phanotea peringueyi* which were first recorded in 1896<sup>57</sup>, and were still present despite the large numbers of visitors, removal of guano, and alterations to the Cave. Towards the far end of the show Cave, in a short passage not frequented by tourists, they found a previously undescribed Leponetid spider, *Cangodermes lewisi*<sup>58</sup>.

Towards the end of 1949, Boris Malkin of San Francisco collected at Cango Cave using baited traps. He commented on the large bat population which had deposited on the floor 10 cm. of guano in which he found thousands of minute ptilid beetles adapted to cave life<sup>59</sup>, later confirmed as being a new genus called *Malkinella cavatica*<sup>60</sup>. He also collected from the guano over 300 minute blind Coleoptera, Pselaphidae and Scydmaenidae which were sent to the California Academy of Sciences. However, they do not yet appear to have been examined and described<sup>61</sup>.

In September 1956 members of the S.A. Spelaeological Association investigated the insect life of Cango Cave<sup>62</sup>. In his report Grindley<sup>63</sup> gave an easily accessible introduction to cave biology. He also commented that although there might be a diurnal temperature variation of up to 24 C° outside the Cave, the maximum range inside was never more than 0.6 C°. Both soil and air temperatures inside varied little from 18.0°C. compared with 18.4 to 18.9°C. recorded by Corstophine. The fauna collected are listed in Appendix I.

Grindley concluded that there was little animal life in Cango Cave. He attributed this to pollution inside the Cave, and to the absence of influent streams which could bring food material into the Cave from outside.

Inside Cango II, during 1972, was found a 45 cm. long unidentified quadruped skeleton perfectly preserved under a layer of calcite, believed to be bones of a genet which had crawled in and died<sup>64</sup>.

In Cango II in 1973 were found four small unidentified animal skeletons<sup>65</sup>; and in 1974 a praying mantis was found

in Cango II<sup>66</sup>, and a live frog (*Rana grayi*) in the Devil's Workshop<sup>67</sup>.

#### 3.4.5 Meteorology

During one of their visits to Cango Cave in September 1956, members of the S.A. Spelaeological Association (Cape Section) recorded maximum and minimum temperatures, wet and dry bulb temperatures, soil temperatures and barometric pressures in various parts of Cango Cave (Appendix I). They admitted that these observations were of limited value because of their short duration and lack of recording instruments<sup>68</sup>.

In April 1980 six members of the S.A. Spelaeological Association (Cape Section) spent four days in Cango III recording body temperatures, pulse rates, atmospheric carbon dioxide levels, air temperatures and relative humidities. Their body temperatures and pulse rate changes were unremarkable. Carbon dioxide "volume percentages", as would be expected, increased from 1.35 at the beginning of their sojourn to 1.74 at the end; that outside the Cave was 0.029. Air temperatures varied from 17.9°C. to 20.6°C; and relative humidity from 95% to 100%. No oxygen level was determined; but it was noted that candles and stoves burned with difficulty, and that the cavers suffered from dyspnoea, fatigue and headaches - all of which can be attributed to raised CO<sub>2</sub> levels<sup>69</sup>. This suggests that the low energy of Cango Cave cannot dissipate the CO<sub>2</sub> produced by relatively few people even in the large chamber of Cango III.

This brief summary shews that very little cave research has been done in Cango Cave. The reasons for this include the distance of the Cave from research centres, lack of suitably experienced research workers, and lack of funds for speleological research - even though the profits of Cango Cave during the past 25 years could easily have supported such research.

### 3.5 OTHER RESOURCES UTILISED IN THIS THESIS

The administrative and historical record appertaining to Cango Cave is remarkably complete. Much of the findings reported in the next section of this thesis is based on archival research for which, in particular, there is available a complete set of the Provincial Secretary's files from 1906 to the present day. The archives consulted, and the few missing records, are listed in Appendix II.

#### 3.5.1 Published Resources Used In This Thesis

The Oudtshoorn Newspapers have been systematically searched from the first issue in 1879. The only newspaper to have appeared regularly is the Oudtshoorn Courant. This is a particularly valuable source of information about Cango

## CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

Cave until the 1950s because successive Editors were aware of the deficiencies in the management of the Cave. They therefore gave much publicity to the Cave in the hope of increasing the numbers of visitors and of persuading those in authority to spend money on the Cave. Until the end of the 1920s the Oudtshoorn Courant reported the debates of both Town and Divisional Councils in great detail. This newspaper therefore supplements the Council minute books, which merely record the decisions reached.

Other newspapers and periodicals have been read only if there was reason to believe that a story about the Cave had been published.

The books by all the 18th. and 19th. century travellers to the Oudtshoorn district have been searched for items about Cango Cave. All the South African speleological publications have been systematically searched, but contain disappointingly few conservation articles.

### 3.6 METHODOLOGY USED IN THIS THESIS

This thesis is largely based on archival sources and published work. It has been supplemented by numerous visits to, and observations at, Cango Cave, adjacent caves and Oudtshoorn between 1975 and 1991. The following major overseas show caves have been inspected: Han (Belgium), Baradla (Hungary), Postojna and Skocjan (Slovenia). All the South African show caves have been visited. The author has had thirty years speleological experience, mainly in England and South Africa.

Having mentioned the literature relevant to Cango Cave and to cave conservation, it is now possible to summarise the history of Cango Cave.

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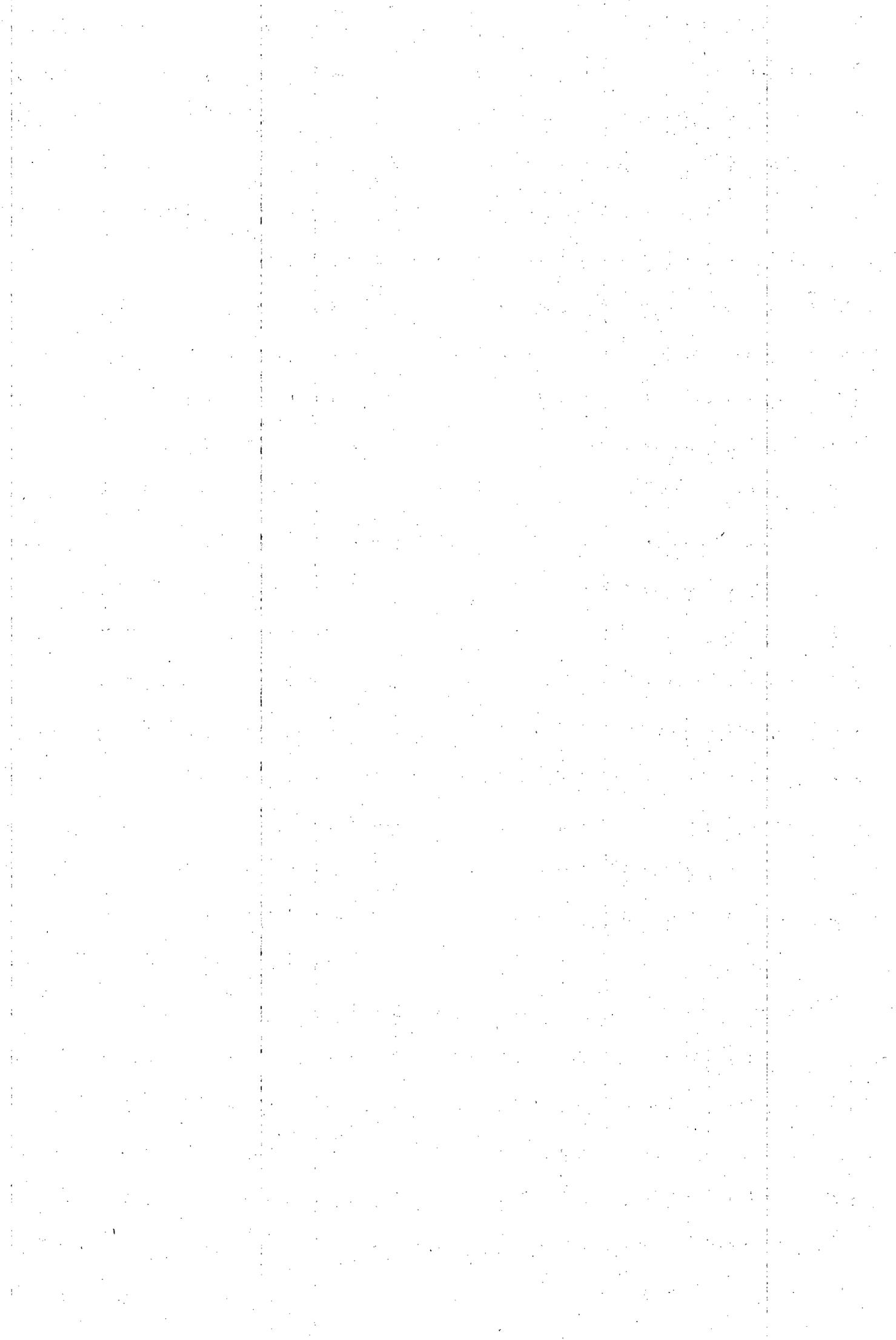
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# **PART TWO**

## **DATA PERTAINING TO CANGO CAVE MANAGEMENT**



CHAPTER 4

THE HISTORY OF CANGO CAVE: ITS DISCOVERY AND DEVELOPMENT

4.1: 1780 - 1921 (pre-Oudtshoorn Municipal Management)

Cango Cave was discovered in about 1780, probably by the local foreman roadmaker while searching for road metal<sup>1</sup>. At that time the Cango Valley was sparsely populated by tenant farmers who had been in the area for only two decades. All the land in the valley, and therefore the Cave itself, belonged to the Dutch East India Company. Its management would by default have been left to the tenant farmer who provided only lights and a ladder for the descent into Van Zyl's Hall. Communications were so bad that visitors must have been few. The first recorded visit was made in 1806<sup>2</sup>. A plan, which has not survived, was made by Pieter Heinrich Polemann before 1816<sup>3</sup>; and an elevation was prepared by the Rev. George Thom in 1816<sup>4</sup>. This elevation shows that in 1816 the known Cango Cave extended only 350 m. from the entrance as far as the Drum Room (Fig. 4.1).

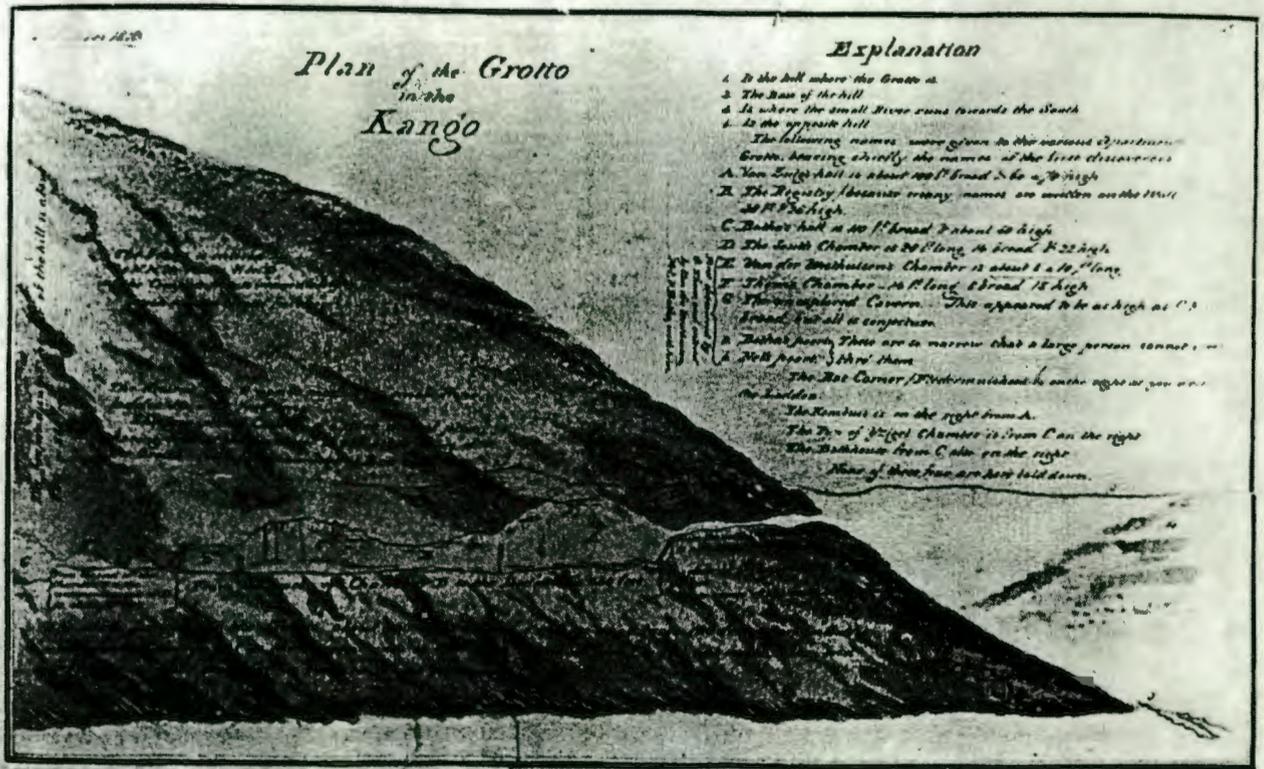


FIG. 4.1: CANGO CAVE - 1816 ELEVATION BY THE REV. GEORGE THOM (CAPE ARCHIVES: AG 16144)

The political changes of 1795 (First British Occupation) and of 1803 (Batavian Republic) had no effect on the tenant farmer and on Cango Cave. However, following the Second British Occupation of 1806 changes were made to the system of land tenure. Tenant farmers were permitted to buy their land; and on 20 January 1820 Pieter van der Westhuizen acquired title to the 2551 morgen farm Kombuis. He did not acquire title to the Cave because the following servitude was written into the deeds<sup>5</sup>:

*"... on condition that he (van der Westhuizen) and the future proprietors of the place Combuis shall have no right whatever to that part of the ground where the Mouth of the Grotto is situated; that the same shall be left perfectly free and undisturbed and be considered as public property; that he shall at any future period suffer a road to be cut across the land to the said Grotto ..."*

The motive of the Governor in insisting on this servitude was clearly conservation. This is evident from the handwritten comment, most probably by the Colonial Secretary, Colonel Bird, on the back of the diagram<sup>6</sup>:

**"The grant, when it takes place, should exclude the grotto particularly and a road to it must be secured. The Landdrost must be desired to take the Grotto under his special protection and frame such regulations for the preservation of this natural curiosity as he shall deem advisable."**

It is therefore apparent that at this early stage in the history of Cango Cave there was an awareness at the highest level of Government of the need for conservation of Cango Cave.

The Colonial Secretary instructed the Magistrate at George, in which district Cango Cave then lay, to inspect the Cave, and to prepare **"regulations for their preservation"**. Eighteen months later the Magistrate appointed the local Field Cornet *ex officio* Caretaker of Cango Cave, and made provision for substantial fines for visitors who might damage the cave and specifically discharge firearms and damage speleothems. Visitors were required to seek permission to enter from the Field Cornet to whom the entrance fee was to be paid<sup>7</sup>. This 1820 servitude is believed to be the first attempt in the world to legislate for cave conservation. A claim to this effect was made, and not challenged, at a speleo-history congress in Italy<sup>8</sup>.

However, for the next six decades successive Field Cornets lived three hours ride away at Vinknestrivier, and would therefore have been unable to supervise the visitors properly had not close family successively owned a half-share in the surrounding farm from 1848 until 1873.

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The property increased in value by 117% during the 23 months before purchase in 1848, giving some idea of the value of the monopoly to the Field Cornet's family<sup>9</sup>.

Despite its inaccessibility, Cango Cave did attract visitors, one of whom, George Thompson, gave the Cave much publicity with the first popular description and illustrations<sup>10</sup>. Further publicity for the Cave came from the gubernatorial visits of Sir George Grey in 1860<sup>11</sup> and of Sir Henry Barkly in 1873<sup>12</sup>.

Some time before 1890, probably during the previous year, Cango Cave was extended by about 150 m. from the Drum Room to the Grand Hall which was visited in 1890 by the Acting Administrator of the Cape Colony, Lt.Gen. Henry Augustus Smyth<sup>13</sup>. He was so impressed with the Cave that he donated an iron ladder to improve access to the new chamber.

As communications improved and population increased, the numbers of visitors to Cango Cave increased although no accurate figure is available. The opening of the Swartberg Pass in 1888 enabled travellers to reach Cango Cave within 48 hours of leaving Cape Town. They would take the train to Prince Albert Road, thence on horseback across the Karoo to Prince Albert and over the Swartberg Pass<sup>14</sup>. The members of the Oudtshoorn Divisional Council, who were responsible for the maintenance of the road to Cango Cave, were aware of the entrance fees accruing to the Field Cornet in lieu of salary. They made several unsuccessful attempts during the next two decades to have the control and management of the Cave, and therefore the entrance fees, transferred from the Colonial Government to the Council<sup>15</sup>. The Councillors and their Clerk were however so inarticulate that, although they needed the fees to increase their income, they initially failed to state this or provide any other motivation in their application. The Government was unwilling to entrust the management of Cango Cave to the Oudtshoorn Divisional Council because it believed that the Council did not have sufficient financial resources to provide the necessary facilities such as electricity, water, toilets, and restaurant. Meanwhile the Council was required to maintain the access road although it has never received any revenue from the Cave.

Although the Divisional Council failed to gain control of the Cave, its motivation prompted the Government in 1890 to instal a substantial gate at the entrance (Plate 4.1.1) and to transfer responsibility from the Field Cornet to the surrounding farmer at Grootkraal, 1 km. away from the entrance and on the access road<sup>16</sup>.

In the farmer's letter of appointment, it was made quite clear that the intention of the Government was conservation of the Cave:

"You are also required to guard strictly against any damage being committed within the caves, that being the essential object of the erection of the gate and your appointment. To effectuate this, you should post up one or more notices within the gate entrance advising visitors that they will be prosecuted for any wilful injury to the stalactites or other natural formations within the caves."

The farmer received no salary for this duty. He also was entitled to keep the reduced entrance fees, thereby perpetuating the failure to accumulate, in a dedicated Cango Cave account, a capital fund from which the expenses of further improvements might have been met. Motivation had to be made to Cape Town for every item of Cave expenditure, in competition against all other requests for funds from all districts of the Cape Colony.

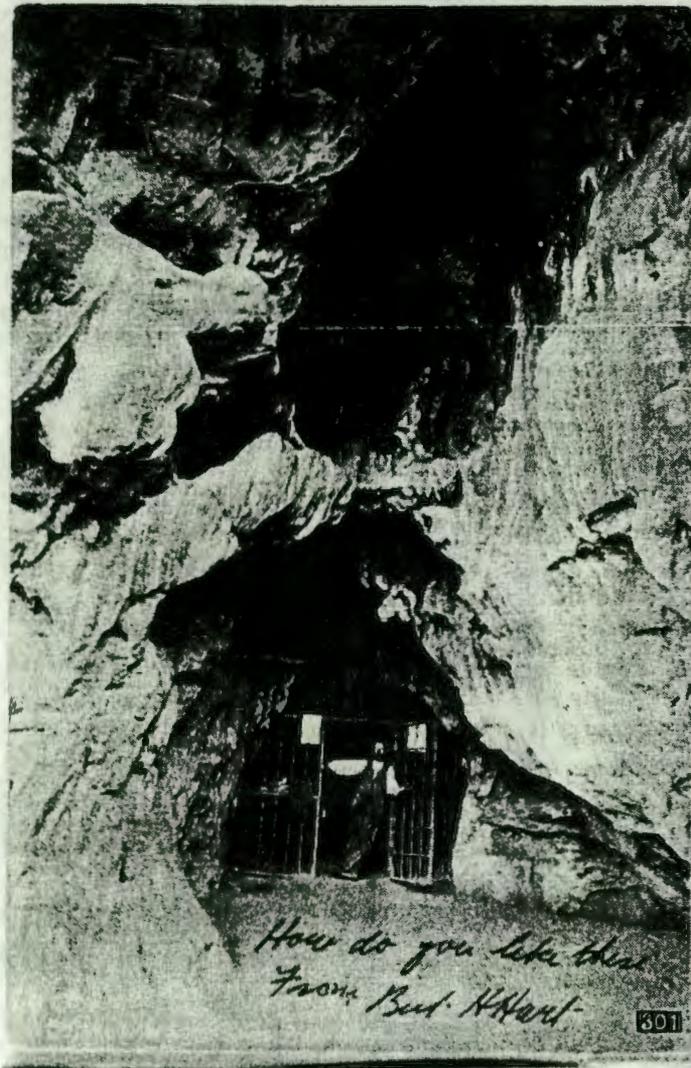


PLATE 4.1.1: CANGO CAVE - THE ORIGINAL 1890 GATE. THE PHOTOGRAPHER IS UNKNOWN. TAKEN FROM A POSTCARD PUBLISHED BY BUDRICKS' ART GALLERIES, CAPE TOWN

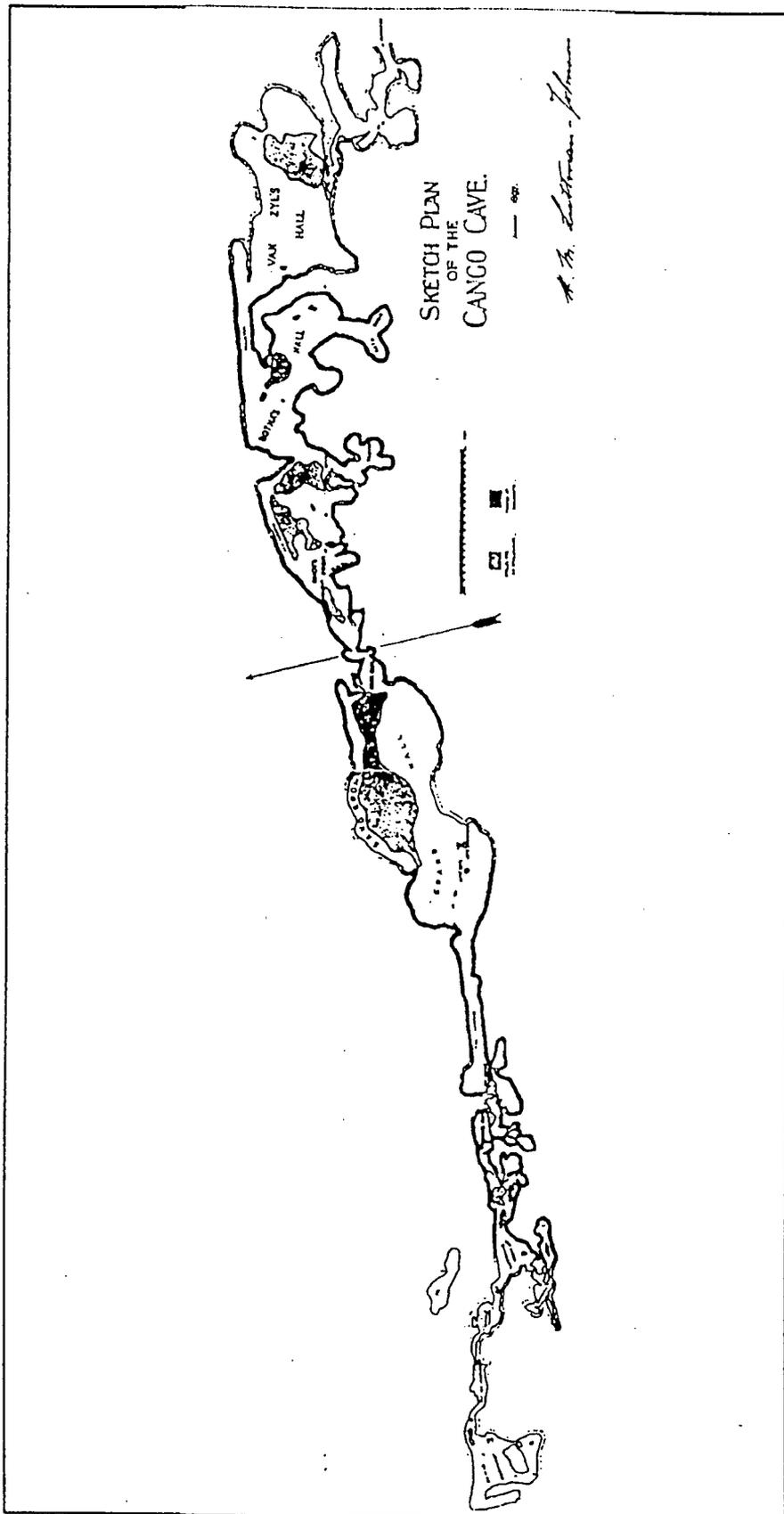


FIG. 4.2: CANGO CAVE - 1897 SURVEY AFTER CORSTOPHINE (1897)

The year 1897 was an eventful year for Cango Cave. New discoveries extended the Cave by about 200 m. from the top of Gen. Smyth's ladder to the Banqueting Hall<sup>17</sup>. The Cave was surveyed shortly afterwards by the Government Geologist (Fig. 4.2)<sup>18</sup>. Towards the end of the year a gubernatorial visit by Sir Alfred Milner<sup>19</sup> was responsible for further publicity and for the expenditure of £100 on improved access inside and outside the Cave<sup>20</sup>.

In an attempt to recover its £100, the Government imposed an additional fee of 6d. on all tourists who visited the New Chambers. This was collected by the Guide and paid to the Magistrate at Oudtshoorn for credit to General Revenue. Those visitors who did not wish to inspect the New Chambers were left unattended at the bottom of Gen. Smyth's ladder. While unsupervised, these tourists were wont to remove speleothems and to write graffiti<sup>21</sup>.

The arrival of the railway at Oudtshoorn in 1902 was responsible for a further increase in the numbers of visitors to the Cave. No accurate figure is available because the Caretaker had a vested interest in under-reporting the numbers of visitors. If he had been seen to be making a large income from the Cave, the Government could have been expected to have terminated the agreement and to have appointed a salaried Manager.

The passing of the Trekpaths Act in 1908 presented another opportunity for the Divisional Council to claim control of the Cave. That Act vested in the appropriate Divisional Council all "*trekpaths, resting places, watering rights and other servitudes in favour of the public, existing over private property*". The Divisional Council claimed that Cango Cave was included in the definitions of the Act. The Government disagreed, and procrastinated until the passing of the South Africa Act of 1909 ensured that the servitude would be vested in the Union Government in Pretoria after 31 May 1910.

Although the Union Government may have regarded the Cave as a remote nuisance, it was similarly of the opinion that the Divisional Council was not a suitable body to be entrusted with the responsibility. It therefore in 1913 asked if the Cape Provincial Administration (CPA.) would accept responsibility for development and management of Cango Cave. Because the CPA. was well aware of the necessity for improvements to be effected, it refused to accept the responsibility because it did not have available the "roughly estimated" £1050 which was required<sup>22</sup>.

Meanwhile in Oudtshoorn the business community had realised the economic potential of Cango Cave. The Oudtshoorn Land Development Co. Ltd. was prepared to provide the necessary improvements. In order to protect its proposed investment, in 1911 it had applied to the

appropriate Union Government official, the Secretary of Lands, for a 50 year lease of the Cave. This prompted the Union Government in 1912 to prepare legislation to re-define the status of Cango Cave (Appendix III).

The wording of this Bill, and especially that of paragraphs 2, 4 & 5, suggests that the Union Government was not prepared to sacrifice the conservation of Cango Cave to the shareholders of a property development company. However because of the pressure of more important business, this Bill was not pursued and was NEVER passed.

Reading between the lines, it appears that the directors of the Oudtshoorn Land Development Co. Ltd., having failed to secure the desired lease, brought pressure to bear on the Oudtshoorn Town Councillors for the Municipality to apply for the control and management of Cango Cave. The Town Councillors were much better educated, more sophisticated and more articulate than their Divisional counterparts. They persuasively motivated to the CPA. that they should acquire control of Cango Cave, even though the Cave was situated well beyond the Municipal boundary, at no cost to the CPA. and Union Government. Even though the financial position of the Oudtshoorn Municipality was even worse than that of the CPA., both Union Government and CPA. accepted the motivation. Control and management of Cango Cave were entrusted to the Oudtshoorn Municipality, from 1921 in terms of Provincial Ordinance No. 18 of 1921<sup>23</sup> with the following stipulations:

- 1) Control is vested in the Oudtshoorn Municipality,
- 2) which may develop the Cave and expend the profits provided that the prior approval of the Administrator of the Cape Province has been obtained; and that
- 3) all tolls and charges shall be paid into Municipal General Revenue (Appendix IV).

There is nothing in this Ordinance which required the Municipality to keep a separate Cango Cave account, although in practice this was done until 1979; and there is no stipulation that all the revenue from the Cave shall be spent only on the Cave.

There is also nothing in this Ordinance which required the Oudtshoorn Municipality to manage Cango Cave with a view to conservation. It is, however, clear from the relevant Provincial files that it was the intention of the Administrator of the Cape that Cango Cave should be conserved.

These failures to write the conservation and financial policies into the Ordinance were responsible for their being

unknown to later generations of Provincial servants who were required to approve the Oudtshoorn Municipal management of the Cave. The policies were available in some of the relevant Provincial files but, as the files became thicker and more numerous, became increasingly difficult to find.

The Oudtshoorn Municipality acquired the control of Cango Cave, subject to the approval by the Administrator of the Cape Province of the admission fees and all expenditure. In other words, the initiative for any change and expenditure at the Cave would come from the Municipality, with approval by the Administrator before being effected. The Municipality was hampered in its efforts to improve the Cave by a shortage of funds, and by its inability to acquire land surrounding the entrance on which could be erected a car park, toilets, tea room, and generator house for the proposed electrification scheme.

4.2: 1921 - 1967 (Oudtshoorn Municipal management)

The management of Cango Cave by the Oudtshoorn Municipality was subject to several legal, financial and practical restrictions:

- 1) All expenditure and admission fees had to be approved by the Administrator of the Cape Province, or by his deputed official on his behalf.
- 2) The Municipality owned no land at the entrance to Cango Cave, and was therefore dependent on the goodwill of the surrounding landowner and farmer for the provision of facilities for visitors.
- 3) No financial assistance was available from any Union Government or Provincial source for improvement of the facilities at the Cave.

The Municipality acquired the right to manage about 500 metres of cave passage, much of which was wet, low, muddy and contained deposits of bat guano. There was no electricity, tea room, ablution facility or good access road. The only facility for visitors was a primitive toilet. Visitors changed their clothes in the first chamber past the entrance gate; and travelled 4 km. down the road to the Cango Hotel to refresh themselves.

The Cango Caves Ordinance No. 18 of 1921 imposed the following cumbersome administrative procedure for Cango Cave on the Municipality. This was in keeping with the statutory requirement of the Province to approve all local authority expenditure:

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- 1) The Cango Caves Committee of the Oudtshoorn Municipality decides to spend a certain sum of money on a specific project.
- 2) The recommendation of the Cango Caves Committee is submitted to a meeting of the Oudtshoorn Town Council. If approved
- 3) The Oudtshoorn Town Clerk writes to the Provincial Secretary or (in later years) to the Director of Local Government seeking permission to proceed.
- 4) The application is received by a junior official in the Provincial Administration. If he is unable or unwilling to make a decision, he passes the matter to higher authority i.e. in ascending order Head of Section, Head of Department, Provincial Secretary, Administrator, Member of the Provincial Council, Executive Committee. Consultation may occur within and without the Provincial Administration.
- 5) The decision is conveyed to the junior official, who intimates the answer to the Town Clerk.

If the decision is unfavourable to the Oudtshoorn Municipality, the matter is referred back to the Cango Caves Committee. If that Committee decides to appeal against the decision, procedures (1) - (5) are repeated.

- 6) In due course the Cango Cave annual accounts are submitted by the Town Clerk to the Provincial Auditor. If, as frequently happens, the Municipality overspends, the Provincial Auditor informs the Provincial Secretary.
- 7) An official in the Department of the Provincial Secretary asks the Oudtshoorn Town Clerk to explain the overexpenditure.
- 8) The Oudtshoorn Town Clerk apologises and motivates for condonation of the overexpenditure.
- 9) Process (4) is repeated; and the overexpenditure is always condoned with or without reprimand.
- 10) The official in the Provincial Secretary's Department conveys the decision to the Oudtshoorn Town Clerk and to the Provincial Auditor.

The first overexpenditure occurred in the 1920s when a £241 vote for improvements was exceeded by 61%. It is clear from the files of the Provincial Secretary that such overexpenditure, on items both relevant and irrelevant to

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the Cave, continued at least until 1985 when R50000 voted for a local outdoor pursuits centre was exceeded by 5%.

In 1921 the Oudtshoorn Municipality, with the approval of the Province, fixed the admission fees at 2s. per head, minimum 8s. per party. The surrounding farmer, H.W.J. van der Veen, was appointed Caretaker and Chief Guide, and received 50% of the admission fees in lieu of salary. Out of these fees he was required to pay the *de facto* guide, J.W. van Wassenaer and his assistants<sup>24</sup>. Although it had been the policy of the previous managements to conserve the bat guano and to forbid its removal, the Municipality immediately advertised its sale to the local farmers thereby commencing the destruction of the flora and fauna which the guano must have supported<sup>25</sup>. On the other hand its removal considerably improved the conditions for the visitors.

The Municipality concentrated its initial expenditure on improvements at the entrance and inside the Cave, and on publicity which increased the number of visitors from 1283 in 1921 to 6506 in 1925. This was sufficient to support salaried staff. Therefore in May 1926 the Municipality terminated its agreement with the surrounding farmer, and appointed full-time guides under the supervision of the Town Engineer. The only qualification demanded of the guides was bilingualism<sup>26</sup>, but by 1937 matriculation was required<sup>27</sup>. Although the requirement to conserve the Cave was written into their job description:

*"Removing any portion of stalagmites or stalactites, carving initials or other device within or at the entrance of the Caves, or blackening the roof or sides of the interior with smoke is strictly prohibited, and renders the person liable to prosecution."*

speleothems continued to be removed, and magnesium ribbon continued to be used occasionally for illumination<sup>28</sup>.

Until Cango Cave was electrified in 1928, the methods of illumination were candles, flaming torches and magnesium ribbons that produced clouds of soot which settled all over the Cave to the detriment of the speleothems. All previous attempts to electrify Cango Cave had failed for lack of finance, despite representations having been made from influential sources<sup>29</sup>.

One possible solution to the problem of financing the electrification of Cango Cave came in 1926 from the S.A. Railways & Harbours which had the necessary financial, technical and publicity resources to develop Cango Cave into the popular attraction which overseas show caves enjoyed. In that year the Railways had an engineer surreptitiously inspect the Cave, following which its Board recommended in principle that it acquire control and management of the

Cave, and that it share the revenue with the Municipality<sup>30</sup>. This proposal provoked so much opposition from the residents and Municipality of Oudtshoorn, which feared that the revenue from the Cave would accrue to the Railways with little benefit to Oudtshoorn, that it never reached the stage of negotiation. The Administrator of the Cape refused to entertain the Railway Board's proposal, of which nothing more was heard<sup>31</sup>.

After much negotiation with the Provincial Secretary and with the Electricity Supply Commission, the Municipality received permission in 1927 to spend £5000 on a diesel-powered electrification scheme. The accumulated surplus at 31 July 1925 being only £89, the Municipality solicited loans. After a major life insurance company had refused to lend, thereby confirming the poor financial status of the Municipality, the latter advertised for loans at 5½% interest over 5 years. Only four applications were received, and accepted, leaving a shortfall of £2330 of which £2000 was borrowed from Councillor J.W.C. Anderson. The electrification scheme was switched on in September 1928.

The Cango Cave account therefore acquired the following annual liabilities (Table 4.1.1):

Interest on £4670 at 5½% per annum	£ 256-17-0
Contributions to sinking fund over 5 years	£ 934-00-0
TOTAL	£1190-17-0

to which had to be added the running costs and maintenance of the plant, contributions to a renewals fund, and the salary of the electrician / driver (£204 x 15 = 249).

To pay for this, the admission fees were, with the approval of the Executive Committee of the Cape Province on 28 February 1928, increased to 10s. for a solitary visitor, and 5s. each for two or more visitors. Conditions imposed were that the increase be enforced only after the electrification was completed, and that if in any one calendar year the income should exceed the expenditure for the same period by more than 10% the Municipality should submit a reduced scale of charges for approval. The Councillors were not satisfied with the 10% limit, and considered that it was insufficient to reimburse the Council for the expense involved in entertaining visitors at the Cave, and in the extra wear and tear of the town's streets due to the tourist traffic. The 1920s and 1930s were times of depression and drought, followed by World War II from 1939 to 1945. Therefore it was not until 1953 that the loan was eventually repaid<sup>32</sup>.

Although the Municipality had succeeded in electrifying the Cave in 1928, it had incurred a large debt at a time of local, national and international depression. Further capital expenditure therefore had to be met from income.

It was not only the lack of money which inhibited development at Cango Cave, it was also lack of land. Successive owners of the surrounding land refused to sell, even at inflated prices, because they themselves wished to erect the tea room and ablutions at some unspecified date in the future. The Municipality had no legal right to expropriate land beyond its boundary; and the Administrator refused to "interfere with the rights of private ownership". The difficulty in finding a site for the engine house was overcome by building within the 8 m. road reserve. That for the tea room was overcome in 1930 by building underneath the overhang at the entrance - technically it was inside the Cave (Plate 4.1.2).



PLATE 4.1.2: CANGO CAVE - ORIGINAL TEA ROOM AND ENGINE HOUSE; LATE 1930s. THE PHOTOGRAPHER IS UNKNOWN. PUBLISHED BY THE S.A., RAILWAYS & HARBOURS.

The Divisional Council refused to permit the toilets to be erected on the road reserve<sup>33</sup>; therefore they remained inside the first chamber before the steps into van Zyl's Hall. Water was carried to the Cave in a galvanised tank drawn by a donkey.

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The period of the Great Depression affected the numbers of visitors. Numbers were lower than the Municipality had anticipated and for which the Municipality had budgeted. Despite this, the Municipality continued an intermittent correspondence with the CPA. during which it attempted with partial success to transfer the Cave profits from the Cango Cave account to General Revenue, and to secure cheaper admission fees for Oudtshoorn schoolchildren with a view to increasing the numbers of visitors. This was the start of a war of attrition which has been waged between the Oudtshoorn Municipality and the Provincial Administration from 1921 to the present day. Oudtshoorn had never been a wealthy town since the decline of the ostrich feather industry at the beginning of the twentieth century. Therefore the Councillors regarded the Cango Cave as a source of revenue which should be applied to the reduction of the rates:

- 1) The Municipality tries by some administrative or legal device to extract more revenue from the Cave to be spent on items which may or may not be directly relevant to the Cave.
- 2) The Province may or may not oblige with the desired permission.
- 3) If permission is refused, the Municipality either appeals, or reapplies the following year.

Not surprisingly, the Oudtshoorn Municipal Councillors found these restrictions to be troublesome, and wished to have them abolished. A possible opportunity for their abolition presented itself in 1935 when the Historical Monuments Commission (HMC.) decided to proclaim Cango Cave, and sought the permission of the Oudtshoorn Municipality. Proclamation would not have dispossessed the Town Council, but would have provided legal safeguards against wilful destruction<sup>34</sup>. The Council was of the opinion that it had rescued the Cave in 1921 from a state of vandalism, and that "in practice it will be found that the powers of the Commission will conflict with those of the Council which were conferred on it by the provisions of Ordinance No. 18 of 1921". Therefore it refused to agree to proclamation, and wrote a letter to the relevant Minister in Pretoria complaining about the interference of the HMC. in Municipal affairs.

The HMC. changed its tactics in February 1938, and assured the Oudtshoorn Municipality that if the Cave was proclaimed, "then the restrictions imposed by the Provincial Ordinance will disappear, and the Town Council will get full benefit from its control of the Caves." The HMC. added that it was planning an advertising campaign for its monuments, from which Cango Cave would benefit<sup>35</sup>. This possibility of release from the Provincial restrictions prompted the

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Council to agree to proclamation provided that it was given an assurance that:

"(a) in consequence of such proclamation the provisions of Act No. 4 of 1934 as amended, will over-ride the Cango Caves Ordinance No. 18 of 1921, and that the control and management of the Cango Caves will thereafter no longer be subject to any supervision of the Provincial Administrator.

"(b) in accordance with the provisions of Section 6 (11) (1) bis of Act No. 9 of 1937, the Minister of the Interior will give Council the necessary authority for the sole management and financial control of the said Caves."<sup>36</sup>

These two desired assurances confirm that the Oudtshoorn Municipality and the Provincial Administration were at loggerheads over the management of Cango Cave.

The letter of 11 May 1938 intimating this decision was referred by the HMC. to the Secretary for Justice for an opinion. That Secretary replied on 02 June 1938 that proclamation by the HMC. would not over-ride Ordinance No. 18 of 1921, but warned that "care should be exercised that conflicting tariffs are not provided for under that section (6 of Act 9 of 1937), and under section 3 of the Ordinance. Otherwise there is no reason why the Ordinance and the Act should not operate together."<sup>37</sup>

On 31 August 1938 the Cave was proclaimed a Historical Monument because of its "natural and scientific value", with no concession to the Municipality<sup>38</sup>.

The early years of the Second World War had little effect on the numbers of tourists to the Cave, but after petrol and tyre rationing was introduced in 1942, the numbers of visitors, and therefore income, fell dramatically. Recovery was, however, so rapid after 1946 that the limited facilities for the visitors soon became hopelessly inadequate<sup>39</sup>. The surrounding landowner still refused to sell the land adjacent to the Cave entrance because he himself wished to develop it<sup>40</sup>. Although he was granted planning permission by the Divisional Council<sup>41</sup>, no development was done; and the Municipality expropriated the necessary land in 1955<sup>42</sup>. In the meantime, minor improvements had been made to the tea room, and to the dressing rooms inside the Cave.

The Municipality then turned its attention to the provision of facilities sufficient for the increasing numbers of visitors. These were dependent on the co-operation of the National Roads Board which had been persuaded to construct the access road to National Road standards<sup>43</sup>, and on the Electricity Supply Commission which would be required to supply mains electricity. During the

next 15 years plans were discussed, amended, discarded and resurrected until the new cave-mouth building, car parks, steps, paths and mains electrification were officially opened by the Prime Minister on 3 March 1967<sup>44</sup>.

4.3: 1967 - date (post-development scheme)

By 1971 the Municipality had found that a financial year end of 31 December was inconvenient. At the same time the Province had noticed that much of the profit from Cango Cave had been spent on items with no direct relevance to the Cave. Some of the Provincial officials were of the opinion that the Administrator, in approving such expenditure, might have been acting *ultra vires*. Therefore on 1 June 1971 the second Cango Caves Ordinance No. 5 was passed by the CPA. (Appendix V), the important features of which are:

- 1) There is still no requirement for the Oudtshoorn Municipality to manage the Cave on a conservation basis.
- 2) All revenue from the Cave has to be paid into a separate Cango Cave account.
- 3) The revenue from the Cave may, with the approval of the Administrator, be spent on any item which may or may not be relevant to the Cave.

Immediately after the discovery of Cango II in 1972, the Oudtshoorn Municipality voted R2300 for "essential expenditure" on this discovery. The electric cable was taken through to Cango II; the access crawls were enlarged; and fixed iron ladders installed to facilitate entry. However, no permanent lighting was installed; only power points were provided into which a portable floodlight could be plugged. The survey was done the following year<sup>45</sup>.

The discovery of Cango III occurred immediately before the 1975 International Symposium on Cave Biology and Cave Palaeontology which was held in Oudtshoorn the following week. The news therefore received much publicity<sup>46</sup>. The Town Council subsequently voted R350 for the provision of a more reliable mains operated electric submersible pump, and R1350 to extend the electricity cable to the beginning of Cango III. However, no electric light has been installed. Because of the logistics involved, the general public has never been admitted to Cango III.

Very little change and development has occurred at Cango Cave since 1975. Racial segregation was abolished in 1983<sup>47</sup>; and the restaurant and curio shop were privatised in 1986.

In the next chapter are described the financial implications of Cango Cave management.

NOTES AND REFERENCES

- 1 There is no contemporaneous documentary evidence for the date of discovery, and for the identity of the discoverer, of Cango Cave.

Spaarman A. (1975 & 1977) "A Voyage to the Cape of Good Hope" 2 Vols. (Reprinted Cape Town: van Riebeeck Society. This traveller was in the Oudtshoorn district in 1776, and made no mention of Cango Cave.

Lichtenstein H. (1811) "Reisen im südlichen Africa in den Jahren 1803, 1804, 1805 und 1806" 1. (Berlin: Salfeld). This author did not visit Cango Cave, but did mark its position on his map 40 km. west of its true position.

Therefore the oral tradition that the Cave was discovered in 1780 is not unacceptable. This theme is expanded in:

Craven S.A. (1987) "The early days of the Cango Caves from the late eighteenth century until 1820" William Pengelly Cave Studies Trust Ltd. Newsletter (50), 25 - 28.

- 2 (Faure P.S.) (1824) "Uitreksel van ein reisverhaal van een Kaapsch Meisje, naar de spelonk in het Cango's gebergte" Nederduitsch Zuid-Afrikaansch Tydschrift 1. 446 - 452.

- 3 Holman J. (1834) "A Voyage round the world" 2. 318.

- 4 The original is missing. Contemporaneous copies are available in the:

Cape Archives AG 16144 and Library of Parliament.

- 5 Cape Deeds Office (1820) George Quitrents 3. (1), 28.

- 6 Cape Archives (1883) LND 2/10 L.4025 d. 4 Oct. 1883. The diagram has subsequently been repaired, and this comment lost.

- 7 The relevant document is attached to:  
Cape Deeds Office: George Quitrents 3. (1), 28.

- 8 Craven S.A. (1991) "The Proto-speleo-history of the Cape Province, South Africa" pp. 323 - 329 in Simposio Internazionale sulla Protostoria della Speleologia; Città di Castello 13-14-15 Settembre 1991 (Sezione Speleologica CAI-SSI Città di Castello).

- 9 Cape Deeds Office: Transfers Nos. 60 d. 18 Jan. 1847 & 99 d. 14 Dec. 1848.
- 10 Thompson G. (1827) "Travels and Adventures in Southern Africa" (London: Henry Colburn.)
- 11 Cape Argus (1861) 01 Jan. p. 3.
- 12 Standard & Mail (1873) 25 Oct. p. 3. (Cape Town)
- 13 Oudtshoorn Courant (1890) 14 Jan.
- 14 Access to Cango Cave is discussed in detail in:  
Craven S.A. (1989) "Access to the Cango Caves (Part 1)" Quart. Bull. S.A. Lib. 44. (2), 46 - 55.  
Craven S.A. (1990) "Access to the Cango Caves (Part 2)" Quart. Bull. S.A. Lib. 44. (3), 104 - 111.
- 15 The detailed negotiations are discussed in:  
Craven S.A. (1987) "How the Oudtshoorn Municipality came to control the Cango Caves" J. Spel. Hist. 21. (1), 17 - 31.
- 16 Cape Archives LND 2/10 L.4025 reprinted and discussed in:  
Craven S.A. (1985) "The Gate at the Cango Caves - Speleobureaucracy III" Free Caver (22), 11 - 15; reprinted: Bull. S.A. Spel. Assn. (1986) 27. (1), 6 - 8.
- 17 Oudtshoorn Courant (1897) 25 Jan., 4 & 8 Feb.  
Oudtshoorn Times (1897) 24 Sep. p. 5.
- 18 Corstophine G.S. (1897) "The Cango Caves" First Annual Report of the Geological Commission, Cape of Good Hope, for 1896 pp. 34 - 36 (quarto.) or 42 - 45 (octavo).
- 19 Cape Argus (1897) 23 Sep. p. 5.  
Cape Times (1897) 24 Sep. p. 5.
- 20 Cape Archives LNR 1/435 L. 4025  
LND 1/435 L. 4025  
LND 1/619 L. 4025  
PWD 1/2/54 B. 42  
PWD 2/5/316 (U.2)  
reprinted and discussed in:  
Craven S.A. (1986) "The Cango Caves, Oudtshoorn District, of South Africa - in 1897" William

Pengelly Cave Studies Trust Ltd. Newsletter (49),  
11 - 24.

- 21 Oudtshoorn Courant, 21 Oct. 1909.
- 22 Cape Archives (1915) PAS 2/1041 75/A/79.
- 23 The relevant ordinance is reprinted verbatim in Appendix IV. The details of the negotiations which resulted in the transfer of control of Cango Cave to the Oudtshoorn Municipality are discussed in:
- Craven S.A. (1987) "How the Oudtshoorn Municipality came to control the Cango Caves" J. Spel. Hist. 21. (1), 17 - 31.
- 24 Oudtshoorn Courant (1921) 18 July.
- 25 Oudtshoorn Courant (1921) 20 July p. 5.
- 26 Oudtshoorn Courant (1926) 24/26 & 28 May, 07 June.
- 27 Oudtshoorn Courant (1937) 09 Nov.
- 28 Oudtshoorn Courant (1941 ) 07 Oct. p. 3.  
Oudtshoorn Municipal Lighting, Cango Caves and  
Publicity Committee Report 15 Sep. 1941.
- discussed in:
- Craven S.A. (1989) "Conservation at the Cango Caves"  
Bull. S.A. Spel. Assn. 30. 57 - 74.
- 29 Oudtshoorn Courant (1917) 26 Apr.
- S.A. National Society Minute Book (1913 - 1914) (3)  
(S.A. Library, Cape Town.)
- 30 Transvaal Archives, SAS 581 G4/4/33.
- 31 Transvaal Archives, SAS 581 G4/4/33.  
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PAS 4/262 75/A.79.  
3/OHN 41 1658.  
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Oudtshoorn Courant 08 Jan. 1926 p. 2.  
22 Feb. 1926 p. 2.  
03 May 1926 p. 2.  
07 May 1926 p. 5.  
10 May 1926 p. 2.  
09 June 1926 p. 2.  
18 June 1926 p. 4.  
09 Aug. 1926 p. 2.

11 Aug. 1926 p. 3.  
08 Sep. 1926 p. 2.  
10 Sep. 1926 p. 5.  
13 Sep. 1926 p. 2.  
15 Sep. 1926 p. 3.  
26 Nov. 1926 p. 2.  
14 Dec. 1926 p. 3.  
17 Dec. 1926 p. 2.  
32 Dec. 1926 p. 2.  
01 Feb. 1927 p. 2.  
02 Sep. 1927 p. 2.  
16 Sep. 1927 p. 8.  
18 Oct. 1927 p. 2.  
22 Nov. 1927 p. 2.  
21 Feb. 1928 p. 4.  
31 Aug. 1928 p. 2.  
11 Sep. 1928 p. 2.  
18 Sep. 1928 p. 2.

All these references have been summarised in:

Craven S.A. (1987) "Electrification of the Cango Caves"  
William Pengelly Cave Studies Trust Ltd.  
Newsletter (51), 25 - 36.

- 32 Cape Archives 3/OHN 35 101 & 101 A F1.
- 33 Oudtshoorn Municipal Lighting and Cango Caves Committee  
Report for 23 Feb. 1931.
- 34 Oudtshoorn Courant (1935) 09 Aug.
- 35 Oudtshoorn Courant (1938) 22 Feb.
- 36 Oudtshoorn Courant (1938) 10 May.
- 37 National Monuments Council, 20/4.
- 38 Government Gazette (1938) 9 Sep. No. 1456, p. 809.
- 39 Oudtshoorn Courant (1946) 16, 19 & 30 Jan.
- 40 Oudtshoorn Courant (1949) 13 Apr. & 15 June.
- 41 Oudtshoorn Courant (1949) 06 Apr.
- 42 Cape Deeds Office: Transfers Nos. 4403. 4404 and 4405  
d. 30 March 1955.
- 43 National Road Board (1936) "Five year scheme of works  
framed in pursuance of Section 15(1)(f) of the  
National Roads Act, 1935" S.A. Lib. 44. (3),  
104 - 111.
- 44 Argus (1967) 18 Nov.

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- 45 (Land D.) (1973) Bull. S.A. Spel. Assn. pp. 3 - 5,  
6 - 9.
- 46 Oudtshoorn Courant (1975) 06 & 16 Aug.
- 47 Weekend Argus (1983) 29 Jan. pp. 3 & 10.

CHAPTER 5

ECONOMICS AND FINANCING OF CANGO CAVE

*"Unfortunately most of the potential benefit (of tourism) has so far been missed, owing to the concentration of so much of the resulting revenue in the hands of ignorant and uninterested commercial or local government bodies."<sup>1</sup>*

5.1 EARLY MANAGEMENT 1780 - 1921

Before 1921 the entrance fees accrued to the caretaker in lieu of salary. There was no separate Cango Cave account; and the income from the New Chambers after their discovery in 1897 was paid into Colonial Government General Revenue. Therefore the financial management of Cango Cave before 1921 when the Oudtshoorn Municipality was given responsibility cannot be assessed because no record was kept.

5.2 LATER MANAGEMENT 1921 - 1967

After the Oudtshoorn Municipality acquired control and management of the Cave in 1921, it was required in terms of the relevant Ordinance to keep proper accounts, and to submit them annually for scrutiny by the Provincial Auditor. There is therefore available an almost complete 70 year financial record from 1921 to the present day.

The terms of this 1921 Ordinance (Appendix IV) did not specify that a separate Cango Cave account had to be kept, but in practice this was done. The second Cango Caves Ordinance of 1971 (Appendix V) stipulated that a separate Cave account must be kept. Similarly there was no clause in the 1921 Ordinance preventing the Municipality from spending funds from General Revenue on the Cave. The only condition was that all entrance fees charged, and expenditure of the revenue, had to be approved in advance by the Administrator of the Cape Province. In 1937 the (Provincial) Executive Committee resolved that the Cave profits be paid into a separate account, and be used only in connection with the Cave<sup>2</sup>. The 1971 Ordinance, by insisting on the separate Cave account, eliminated the possibility that the Oudtshoorn Municipality might have had to spend money from General Revenue on the Cave. When the Director of Local Government in 1979 overruled the Ordinance by approving the amalgamation of the Cave and General Revenue accounts, he may well have been acting *ultra vires*.

The Oudtshoorn Municipality at the time of the first Ordinance was not wealthy. In that respect it was probably

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no different from any other South African municipality in those inter-war years of drought and depression. There was no money available from Municipal General Revenue for the Cave. Therefore all capital expenditure on the Cave had to be financed from income or from loans. The Municipality had great difficulty in raising a £5000 loan to pay for the electrification scheme in 1928, and had to wait until 1953 before it was able to repay that loan.

In an attempt to recover its expenditure on the electrification scheme, the Municipality applied to the Administrator for permission to raise entrance fees to 10s. for a single visitor, and to 5s. per head for parties of two or more. This was approved on condition that if in any one calendar year the income should exceed the expenditure by more than 10%, the entrance fees should be reduced<sup>3</sup>. The Councillors were dissatisfied with the 10% limit, and considered that it was insufficient to reimburse the Council for the expense involved in entertaining visitors at the Cave, and in the extra wear and tear on the town's streets due to the tourist traffic.

In 1934 there appeared the first evidence that the Oudtshoorn Councillors regarded the Cave as a local asset to be exploited for the benefit of the ratepayers. The Provincial Auditor commented to the Mayor of Oudtshoorn on the "*comparatively high amount*" being charged to the Cango Cave account for administration by the Council officials, and on the "*rather generous*" amounts being set aside for renewal purposes. The Council defended these contributions on the grounds that the Guides were incapable of doing paper work, and that the generator would have to be replaced long before the 25 year period of the loan would expire. In November 1934 the Provincial Auditor pointed out that in 1933 the Cave shewed a profit of £400-5-0 on an income of £2266-4-10 i.e. 17.7% after allowing for the payments which included (Table 5.2.1):

<u>Year</u>	<u>Administration(£)</u>	<u>*Publicity Room(£)</u>	<u>Renewals(£)</u>
1928	100		
1929	400	70	?
1930	450	120	?
1931	450	120	?
1932	450	40	?
1933	450	40	150
1934	<u>450</u>	<u>40</u>	<u>150</u>
	2750	430	1582-19-2

\* The Publicity Room was the then equivalent of a Tourist Information Bureau.

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On 04 February 1935 the Provincial Secretary asked the Council for an explanation, and suggested that the Council should submit for approval a reduced tariff of admission fees. The Council replied on 17 May, pointing out that the revenue included income from sales of guano and postcards, and from the rent of the tea room; if these were deducted from the total revenue, the nett profit would not exceed 10%. The Province then realised that the Municipality could evade the 10% rule by increasing payments from the Cave account to General Revenue for administration, publicity room rent, and renewals. In July 1937 the (Provincial) Executive Committee therefore closed this loophole:

*"RESOLVED that the Municipality of Oudtshoorn be informed that, since the income from the Caves has exceeded the expenditure by a large amount every year since 1933, the Executive Committee is of the opinion that the tariff should be reduced for single visitors and parties of two or more. Also that the Executive Committee has resolved that in the future an amount of not more than 10% of the income shall be paid to General Revenue, and that the excess of income over expenditure shall be paid into a separate account and used only in connection with the Caves. Also that the existing payments to the Municipality for administration, renewals, publicity room etc. shall not be increased without the consent of the Administrator."*<sup>4</sup>

This statement in 1937 was the first time that the Province clearly stated that the profits were to be applied only to the Cave, and were to be paid into a separate account.

To this decision the Municipality replied that the entrance fees were kept high not to make excessive profits, but to discourage undesirable visitors. The (Provincial) Executive Committee responded in September 1937 by permitting the Municipality to spend the income in excess of the 10% limit on publicity, not just for the Cave, but for the Oudtshoorn district<sup>5</sup>. Thus much of the Municipal publicity expenditure came to be debited to the Cave account. This was justified on the grounds that publicity for Oudtshoorn could be expected to attract visitors to the town, and that those visitors could then be expected to visit the Cave.

After further negotiations with the Municipality, the (Provincial) Executive Council in November 1937 resolved that payments for administration and publicity room rent should not be increased above those for 1936 without consent of the Administrator, and that the annual surplus should be used only for publicity, or for the Cave, with the consent of the Administrator<sup>6</sup>.

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By 31 December 1938 Cango Cave had accumulated surplus funds amounting to £853-2-3. The Municipality therefore applied to the Administrator on 17 August 1939 for permission to spend £150 on enclosing part of the Western Commonage to establish a veld reserve for the conservation of indigenous plants, and £100 on widening part of the road to the Municipal Waterworks farm, Rus-en-Vrede. It was argued that a veld reserve would be very attractive to the thousands of tourists which visited Oudtshoorn and Cango Cave each year, and that the widened road would facilitate access to the Rus-en-Vrede waterfall which was also visited by the tourists. This was approved by the (Provincial) Executive Committee<sup>7</sup>, thereby establishing a precedent which was further exploited by the Municipality in later years.

However, not every plan proposed by the Municipality was approved by Province. On 07 November 1941 the Town Council, after much debate, resolved by a majority of 7 to 5 to spend £1000 on a new golf club house<sup>8</sup>. The Golf Club was a private club which rented its course and premises from the Municipality. Arguing that a new club house would attract tourists to Oudtshoorn, the Town Clerk on 08 December 1941 asked the Administrator for permission to take the money from the Cango Cave accumulated surplus. Councillor G.A.A. Olivier of Oudtshoorn wrote to the Administrator on 12 November 1941 pointing out that the money would be better spent on improvements at the Cave. Three hundred and five Oudtshoorn citizens, organised by another dissident Councillor, signed a petition to the Administrator objecting to the expenditure of public money on a private club. The Provincial Secretary therefore on 28 January 1942 refused permission. It is significant that in this instance there was no unanimity within the Council Chamber, a factor which must have influenced the Provincial Secretary in his decision.

Although Cango Cave was profitable, and its designated account shewed a healthy surplus, the same was not true of the Municipal General Revenue account which shewed an accumulated deficit of £18308-19-3 at 31 December 1947. The Council therefore wrote to the Provincial Secretary on 11 November 1948, pointing out that the amounts paid by the Cave to the Council for administration, hire of the publicity room and services of the Electricity Department had not been increased since they were fixed in 1941; the costs of these services had increased considerably since then. Council therefore applied for permission to transfer £1100 from the Cango Cave accumulated surplus to reduce the accumulated deficit in the General Revenue account. In his recommendation to the Administrator that the application be refused, the Acting Provincial Secretary confirmed the Provincial policy that the Oudtshoorn Municipality was not to make a profit from the Cave:

"The charges made for admission to the Cango Caves were intended to cover the cost of maintaining the necessary staff and facilities for viewing the caves. It was not intended that a profit be made from the caves, but rather that as soon as the surplus had accumulated to a reasonable amount, the charges would be reduced so as to enable a wider section of the public to view the caves. If the Council is authorised to use the surplus for general revenue purposes, it will never reduce the charges, but will tend to increase them, especially as this Council is usually in financial difficulties owing to the poorness of the majority of the ratepayers. The caves are a national asset handed to Oudtshoorn Municipality to control for ease of administration, and not so that it can make a profit to relieve its General Revenue Account."

The (Provincial) Executive Committee concurred on 10 February 1949, and refused the application<sup>9</sup>.

Later in 1949 the Province approved a minor reduction in fees for parties of students, and confirmed its policy that payments for administration, publicity room etc. were not to be increased beyond those paid during 1936. It also confirmed that 10% of the receipts be paid into General Revenue, and that the surplus be paid into a separate account and used "only for the benefit of the caves or for other publicity purposes, which will be to the advantage of Oudtshoorn, provided that the Administrator's consent shall be obtained each time before any amount is so spent."<sup>10</sup>

Expenditure from the Cango Cave account on items with no apparent direct connection with the Cave is listed below in Table 5.2.2.

Early in 1950 the Oudtshoorn Town Councillors had an audience with the Administrator during which they discussed their problems at Cango Cave. They pointed out that:

- 1) The surrounding landowner, Mr. van der Veen, had had plenty of time to build the long-awaited toilets, ablutions and restaurant at the Cave, but had failed to do so. Therefore the Council wished to provide those facilities itself; and that

EITHER

- 2) The Council wished to apply once a year for approval for all its Cango Cave expenditure by inserting all its proposals into the estimates, which would be submitted annually; and
- 3) The Council wished to spend £500 on publicity for Oudtshoorn and the Cave, including public entertainment at the Cave, during the coming year.

OR

- 4) The Council proposed that 20% (instead of 10%) of the revenue from the Cave be paid into General Revenue, from which account all future publicity for Oudtshoorn would be paid<sup>11</sup>.

Table 5.2.2: CANGO CAVE - EXPENDITURE ON NON-CAVE PROJECTS 1950 - 1982

<u>Year</u>	<u>Item</u>	<u>Estimated</u>	<u>Actual</u>
1939	Enclosing western commonage	£ 150	£ 213
1939	Widening road to Rus-en-vrede	£ 100	£ 137
1950	Donation to C.P. Nel Museum	£ 50	£ 50
1951	Oudtshoorn Agricultural Society	£ 100	£ 100
1958	Municipal tourist camp	£2700	£2700
1958	Arbeidsgenot (annual grant)	£ 265	£ 265
1958	Publicity Association (grant)	£ 325	£ 325
1959	Pedestal for Langenhoven bust	£ 50	£ 50
1959	Extensions to tourist camp	£ 200	£ 200
1959	Louis Trichardt memorial garden, Lourenço Marques	£ 100	£ 100
1959	More bungalows & furniture for municipal tourist camp	£ 800	£ 800
1960	Improvements to tourist camp	£1236	£1236
1960	Bridgton Training College choir	£ 35	R 171
1961	Improvements to tourist camp	£1471	R2942
1961	Coloured tourist camp	£ 465	R 930
1962	Tourist camp extensions	R 300	R 300
1963	Tourist camp improvements	R 500	R 500
1973	Tourist camp near Raubenheimer dam	R1500	R1500
1982	Repairs to Melville House (adventure training centre)	R1130	R1130

The Council early in May 1950 decided that the (Provincial) Executive Committee was more likely to agree to annual approval of estimates rather than to an increase to 20% of the income paid to General Revenue. Therefore on 13 May 1950 the Town Clerk wrote to the Provincial Secretary asking permission to have expenditure from the Cango Cave accounts approved in advance with the annual estimates, instead of having to seek approval for each item of expenditure "each time before any amount is so spent".

To this request the Provincial Secretary replied favourably on 28 June 1950, thereby simplifying the administration of the Cave.

The expenditure on the C.P. Nel Museum, Arbeidsgenot Museum and the Agricultural Society for its annual show, was defended on the grounds that they attracted to Oudtshoorn tourists who could be expected to inspect the Cave at the same visit. That for the Louis Trichardt memorial garden at Lourenço Marques was defended on the grounds that Trichardt

had been born near Cango Cave. No motivation was submitted for the pedestal for the Langenhoven bust; and the expenditure was not queried by the Province.

In 1958 the Municipality applied to the Province for an increase in admission fees to cover the cost of the proposed Development Scheme. To this the (Provincial) Executive Committee agreed on 21 February 1958<sup>12</sup>, confirming previous financial policy, and insisting on stricter financial control with respect to overspending:

"(a) such tariff may be reviewed at any time and shall in any event be reviewed at the expiration of five years from the date of this approval;

"(b) in December of each year the Council shall submit for the approval of the Administrator, detailed estimates of all revenue and capital expenditure to be incurred in connection with the caves for the ensuing year; and the estimates of expenditure approved by the Administrator shall not be exceeded without the prior consent of the Administrator. The Council shall also submit each year a detailed estimate of the revenue to be derived from the caves;

"(c) the payments, from the revenues derived from the caves, to the General Account of the Municipality, in respect of administration shall not be increased beyond the amounts paid for the year 1936, without the consent of the Administrator; and

"(d) the annual surplus on the working of the caves, after 10% of the revenue from admission charges has been deducted and paid into general revenue, shall be used only for undertakings connected with the caves."<sup>13</sup>

It would have been difficult to comply strictly with the requirements of Condition (b) because of the impossibility of estimating in advance the numbers of visitors.

Condition (d) was imposed "in order to prevent the Council from charging all possible expenditure to the Cango Caves Account and to force the Council to build up a sufficient reserve to meet the cost of certain necessary amenities at the Caves which are long overdue. ... Unless a sufficient surplus is accumulated in the Cango Caves Account to meet a substantial portion of the capital cost of the proposed improvements the Caves Account will not be able to bear the interest and redemption charges on the loan for the balance."

The Municipality was dissatisfied with condition (d) recommended by the Provincial Secretary, which denied it permission to spend money from the Cave account on

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publicity. It wrote on 25 March 1958 to the Provincial Secretary to have the authority for publicity expenditure reinstated. This was refused by the (Provincial) Executive Committee on 29 April 1958<sup>14</sup>.

The expenditure on tourist camps was defended on the grounds that visitors to Cango Cave needed somewhere to stay, there being insufficient level ground at the Cave for a camp site. Therefore in 1958 the Municipality voted £2700 from the Cango Cave account for the development of the West Bank tourist camp with rondawels. This proposal met with opposition from the Oudtshoorn hoteliers on the grounds of unfair competition, but was approved by the Province<sup>15</sup>. Since then three other tourist camps, and an outdoor adventure centre (Melville House), have been financed from the Cango Cave revenue. By order of the Administrator, because they have been financed by the Cave account, the profits accrue to that account and not to General Revenue.

### 5.3 RECENT MANAGEMENT 1967 - DATE

The Development Scheme was officially opened in 1967, and cost R488803, much more than the £39000 (R78000) budgeted in 1951. The cost increase can be attributed partly to inflation. The finished scheme was much more extensive than originally planned, and was financed as follows (Table 5.3.1):

Total cost:	R488803
<u>less</u> : contribution from Cave	
accumulated surplus:	<u>R163640</u>
	R325163
<u>less</u> : contribution from Cave	
repairs & renewals fund:	<u>R 34163</u>
	R291000
<u>less</u> : 25 year loans:	<u>R290800</u>
	R 200

The following loans have been approved against the Cango Cave Trust Account for items unconnected with the Cave (Table 5.3.2).

The Cango Cave Development Scheme made provision for a restaurant and two curio shops, which the Municipality wished to operate for its own account. It proposed to the Province that 25% of the nett profits be paid into General Revenue to cover the increased administration costs, and that the remaining 75% be paid into the Cango Cave Trust Account, and be "*specifically ear-marked for the development of cultural presentations in closest collaboration with the Cape Province Performing Arts Board and the Provincial Administration as yet another means of providing a parallel*

*Tourist Attraction and in turn boosting the Cango Caves Admission Fees."*

The Municipality argued that it already sold postcards and other publicity material; therefore no one would tender satisfactorily for the restaurant and curio shops which would compete with the Municipality on the same site. The Municipality estimated that the restaurant and curio shops would yield R5000 per annum if rented; on the other hand it estimated that by running the enterprise itself, the nett surplus at the end of the first year would be R8080.

This proposal, if approved by the Province, would ensure that 75% of the profits from the restaurant and curio shops would be diverted from the Cango Cave account and the restrictions imposed by the Administrator. The remaining 25% would subsidise the rates because it would be paid into General Revenue. If the restaurant and shops had been let to the highest tender, the rent would have been paid into the Cango Cave account and thus been unavailable to the Municipality.

Although the Province was doubtful if the Municipality was capable of running the undertaking at a profit, it agreed to the proposal on 24 June 1965 for a trial period of two years, providing that audited accounts were submitted for scrutiny, that the actual cost of services supplied by the Municipality be paid, and that full allowance be made for the interest and redemption charges on the restaurant and shops. This decision was responsible for another complaint to the Province from an Oudtshoorn entrepreneur that the Municipality was competing unfairly with private enterprise. The complaint was rejected by the Province two years later. The Municipality has not formally applied for renewal of this trading permit. It has submitted annual trading account estimates for approval by the Province; and these have been approved by default. However, for reasons which are not available, all trading at the Cave was privatised in 1986.

The profits from the trading account were paid into the Cango Cave Cultural Development Fund; but the Cape Performing Arts Board was never advised of this potentially valuable source of revenue<sup>16</sup>. Culture is defined as: "improvement by (mental or physical) training; intellectual development"<sup>17</sup>; and this wide definition has enabled the Municipality, with Provincial approval, to finance the projects listed in Tables 7.4.1 and 7.4.2. This expenditure is discussed in Section 7.4.

The interest on, and redemption of, loans to finance some ambitious Municipal enterprises were, with Provincial approval, charged to the Cultural Development Fund (Table 7.4.2). None of these items can be considered as being of benefit to the Cave, and are discussed in Section 7.4.

Table 5.3.2: LOANS RAISED AGAINST THE CANGO CAVE ACCOUNT

<u>Year</u>	<u>Item</u>	<u>Amount</u>
1978	Purchase of non-white camp site in Klein Le Roux River valley	R 14500
1978	Toilets at site below Raubenheimer dam	R 7000
1981	20 rondawels at N.A. Smit Tourist camp	R150000
1981	Bird boxes for N.A. Smit Tourist camp	R 4000
1982	Toilets and fireplaces at site below Raubenheimer dam	R 8500

After the completion of the Development Scheme with its attendant publicity, the revenue and profits began to increase. Despite a temporary fall in the numbers of visitors during the petrol restrictions of 1974 - 1980, the gross income and accumulated surpluses have tended to rise exponentially (Fig. 5.3.1), as have the payments to General Revenue (Fig. 5.3.2). These payments to General Revenue do not appear to be excessive considering that they will pay the salaries of three or four clerks, and that they are intended to pay for the cost of administration at the Cave, four tourist camps and the Arbeidsgenot Museum.

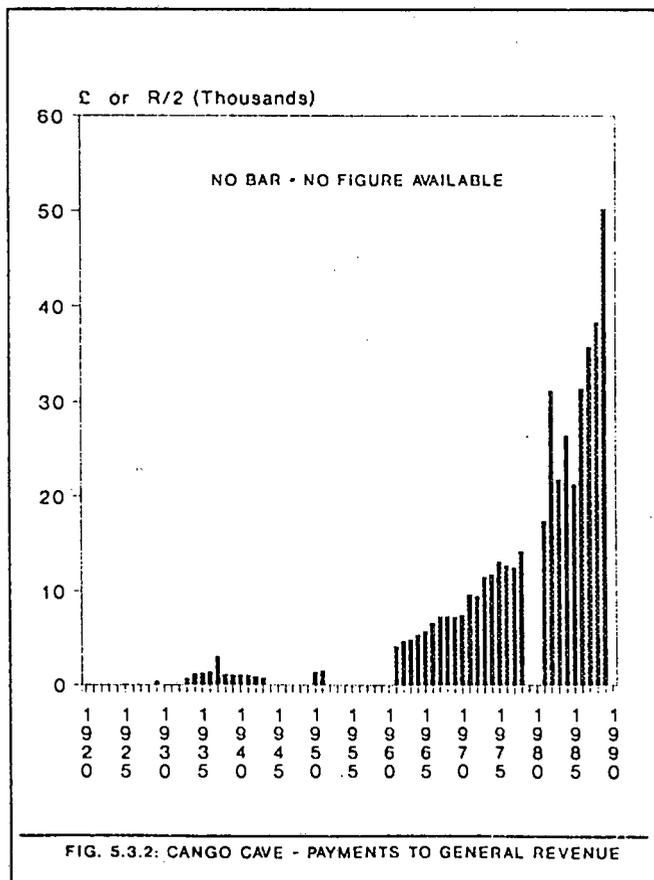
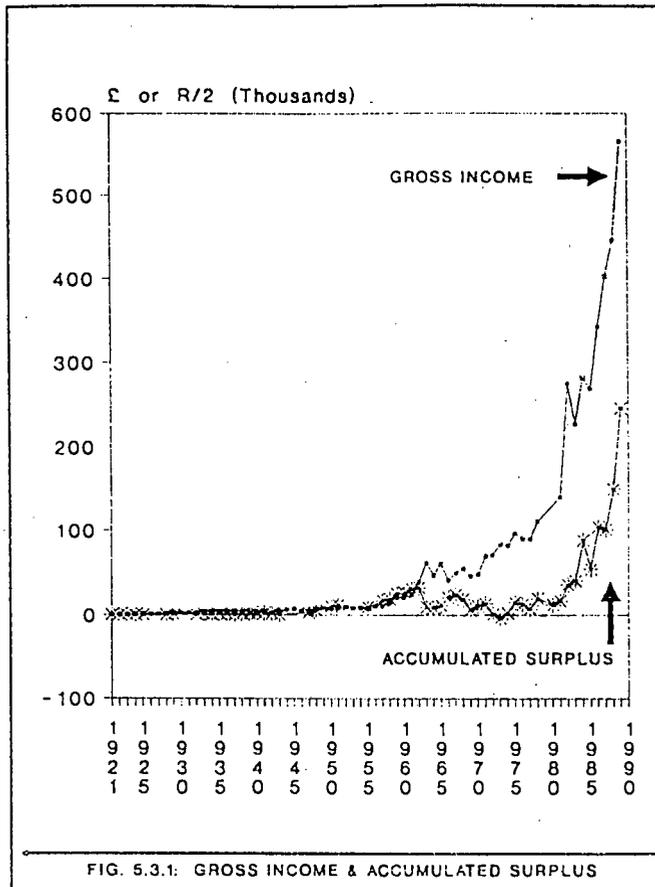
In his estimates for 1969 and 1970, the Town Treasurer stated that the Council should attempt to have the percentage of the profits of the Trading account which accrue to the General Revenue increased from 25% to 50%. Therefore on 17 November 1970 the Town Clerk applied to the Director of Local Government for permission to:

EITHER pay the first R10000 nett profit from the Trading account into the Cango Caves Cultural Development Fund; and the remainder of the surplus into General Revenue;

OR apportion the nett profit on a 50-50 basis between the Cango Caves Cultural Development Fund and General Revenue.

The Town Clerk continued that R10000 per annum was sufficient for the needs of the Cultural Development Fund, and that each ratepayer was effectively a 25% shareholder in the Cango Cave Trading account! This division of profits would benefit the General Revenue account, and lead to the "greater satisfaction" of the ratepayers.

The Director of Local Government was not impressed with this specious argument. He was aware that the Municipality was not supposed to make a profit from the Cave, and realised that the General Revenue would receive from Cango Cave during 1970 an estimated R14000, which would pay for the services of a full-time "very well qualified and capable manager / accountant". He also noted that much of the profits from the Cave had not been spent on the Cave, and



therefore "much of the present arrangements in regard to the disbursement of profits is apparently illegal", and declined to approve the request.

The Municipality had another major administrative problem at Cango Cave because the financial year end was 31 December when the Cave was at its busiest and most of the staff wanted leave. Therefore stocktaking was very difficult. To accommodate the Municipality's request for an alteration to the end of the financial year, and to end the apparently illegal expenditure of the profits from the Cave on projects irrelevant to the Cave, the Provincial Administration decided,

*"To amend the Cango Caves Ordinance, 1921, to provide for the payment of all income from or in respect of the Cango Caves into a special account distinct from the accounts of the Municipality of Oudtshoorn; the purposes on which the moneys in such account may be expended; the proper keeping of books of account in respect of such special account; the preparation of estimates of income and expenditure on and balance sheets in respect of such special account; the submission of copies of such estimates and balance sheets to the Director of Local Government; and auditing of the aforementioned books of account and balance sheets by the Provincial Auditor and to provide for matters incidental thereto." (sic)*

This new Ordinance (Appendix V) benefitted the Oudtshoorn Municipality in three ways. It altered the financial year end to avoid the holiday rush; it enabled the profits to be spent on any project with the approval of the Administrator; and it removed the possibility that the Municipality might have to spend money from General Revenue on the Cave.

Although paragraph 4(1) of the Cango Caves Ordinance No. 5 of 1971 stated quite clearly that all moneys received at the Cango Caves must be paid into a separate Cango Caves Account, the Town Treasurer claimed that this arrangement caused a lot of unnecessary work. He applied to the Director of Local Government on 23 May 1975 for permission to consolidate the Cango Caves and Municipal General Revenue accounts. Because of the possibility of the misappropriation of Cango Caves funds for general Municipal purposes, the Director refused the application on 27 January 1976. However, a repeat application on 15 June 1979 was approved by the Director of Local Government.

On 24 November 1970 the Town Clerk, having realised that the Council had exceeded the approved estimates of expenditure for 1969, applied to the Director of Local Government for condonation of the excess expenditure. This included R1522-21 (original estimate R1000-00) for "entertainment", and was supported by a detailed list of all

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the beneficiaries (including the Director of Local Government and two of his senior officials), and of the amounts spent on them. Some of the beneficiaries appeared to be justified, e.g. travel agents; but others seemed somewhat dubious, e.g. the officials of the Circuit Court, and the Mayor's chaplain, who could hardly be concerned with publicity or other benefit to the Cave. This was appreciated by the Director who, on 06 January 1971, asked the Town Clerk how each item of expenditure related to publicity purposes for the Cave.

Following discussions with officials of the Department of Local Government on 26 February 1971, the Town Clerk replied on 08 March 1971 agreeing that all future entertainment expenditure would relate to publicity for the Cave, and that there would be no further exceeding of the estimates. To prevent future embarrassment he agreed to introduce tighter control over entertainment expenses, and asked for approval for a personal, general, entertainment allowance of R300-00 per annum. Although the Town Clerk's explanations were "not very satisfactory", the Administrator on 25 June 1971 condoned the overexpenditure.

Despite this undertaking, the R1000-00 entertainment vote for 1971 had already been overspent by November that year. The Town Clerk therefore discussed the matter on 04 November with the Director of Local Government, and the following week submitted a long and detailed motivation for the entertainment vote to be increased to R1500-00. To this the Administrator agreed on 08 December 1971, and stated quite clearly that the entertainment expenditure from 1972 must not exceed R1000-00 per annum. The R300-00 personal entertainment allowance for the Town Clerk was approved by the Administrator on 14 December 1971.

Although the Administrator had insisted that future entertainment expenditure be limited to R1000 per annum, the estimates for January/February 1972 and 1972/73 provided for R250-00 and R1500-00 respectively under this vote. Therefore the Director of Local Government on 22 February 1972 asked that these votes be amended to R500 and R1000 respectively, making a total of R1500-00 from 01 January 1971 to 29 January 1972.

In August 1974 the Town Clerk, being the licensee of the bar at the Cango Cave, paid a R40 admission of guilt fine for technical infringements of the Liquor Law No. 30 of 1928<sup>18</sup>.

These irregularities in the entertainment expenditure and administration of the Liquor Laws may or may not have been responsible for some members of the Oudtshoorn Ratepayers' Association complaining in 1974 to the S.A. Police at Oudtshoorn that in their opinion:

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- 1) the Congo Cave funds were not spent correctly;
- 2) such funds were wasted on junketing, ostensibly for publicity for the Caves;
- 3) these funds should be applied to the reduction of the rates;
- 4) the Congo Cave funds should not have been spent on the construction of the new indoor sports complex in Oudtshoorn;
- 5) Municipal officials enrich themselves unlawfully by virtue of their position; and
- 6) the Town Clerk refused to discuss the financial statements of the Cave with the Ratepayers.

The complaint was investigated in detail by the S.A. Police (Commercial Branch) at Port Elizabeth, which entered into lengthy correspondence with the Provincial Auditor and with the Director of Local Government. The files were forwarded to the Attorney-General of the Cape who, in April 1975, decided not to proceed in the matter. Although the files of the Attorney-General are not available for inspection, it would appear that the complaint was dismissed for two reasons:

- 1) All the entertainment and other expenditure had been approved, and overexpenditure condoned, by the Administrator. Therefore it was, as far as the Oudtshoorn Municipality was concerned, legal.
- 2) It had always been the policy of the Provincial Administration, as confirmed in the Congo Caves Ordinance No. 5 of 1971 that the profits should not be applied to the general reduction of the municipal rates.

Because this thesis is concerned with conservation, a detailed analysis of the Cave accounts is not indicated. Tables 5.2.1, 5.2.2, & 5.3.2 summarise the expenditure on items not directly connected with the Cave, and the payments to General Revenue. They indicate the increasing prosperity of the Cave since the completion of the Development Scheme 25 years ago, which is confirmed by the (latest available) 1989/90 audited accounts (Table 5.3.3).

It is impossible to estimate the indirect benefits which the Oudtshoorn community has derived from the money which the visitors to the Cave spend in the town. It must be considerable because the following privately owned tourist enterprises have appeared during the past 15 years

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at the sides of the road from Oudtshoorn to the Cave (Table 5.3.4).

Table 5.3.3: CANGO CAVE ACCOUNTS 1989/90 SUMMARY

Total income:	R1130262-94
Operating surplus for the year:	R 192952-91
Accumulated surplus:	R 491474-42
Accumulated surplus Cultural fund:	R 146946-13
Book value of Cave and tourist camps:	R1875459-95

Table 5.3.4: TOURIST ENTERPRISES BETWEEN  
OUDTSHOORN AND CANGO CAVE

- 1) A crocodile ranch.
- 2) A cheetah park.
- 3) An overnight lodge.
- 4) A pottery.
- 5) An angora rabbit show farm.

and the Riempe Motel has been upgraded and changed its name to the Kango-Protea Inn.

By any standards this represents an excellent return to the ratepayers from an enterprise which has required no capital investment and involved no commercial risk.

In the next chapter is discussed the effects of development on the conservation of Cango Cave.

NOTES AND REFERENCES

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- 2 ExCo. Minute 7.821 d. 09 July 1937.
- 3 ExCo. Minute 33.424 d. 28 Feb. 1928.
- 4 ExCo. Minute 7.821 d. 09 July 1937.
- 5 ExCo. Minute 8.364 d. 07 Sep. 1937.
- 6 ExCo. Minute 9.508 d. 22 Nov. 1937.
- 7 ExCo. Minute 16.590 d. 29 Aug. 1939.
- 8 Oudtshoorn Courant (1941) 11 Nov.

- 
- 9 ExCo Minute 673/1949 Item 229.
  - 10 ExCo. Minute 677/1949 Item 231.
  - 11 Oudtshoorn Courant (1950) 06 May.
  - 12 Oudtshoorn Courant (1958) 09 Apr.
  - 13 ExCo. Minute 519/1958 (Item 65) 449.
  - 14 Oudtshoorn Courant (1958) 06 Sep.  
ExCo. Minute 1021/1958 (Item 185) 765.
  - 15 ExCo. Minute 1021/1958 (Item 185) 765.
  - 16 CAPAB (1988) Letter d. 09 Feb. to S.A. Craven.
  - 17 Fowler H.W. & Fowler F.G. (eds.) (1975) "The Concise Oxford Dictionary" p. 297 (OUP.: 5th. ed. reprinted).
  - 18 Oudtshoorn Magistrates' Court (1974) Summons 552.

CHAPTER 6

THE DETERIORATION OF CANGO CAVE ENVIRONMENT

*"Though every prospect pleases,  
"And only man is vile."*

These famous words from one of Bishop Reginald Heber's missionary hymns<sup>1</sup> well illustrate the inevitable fact common to all conservation issues, that the only way to preserve any natural feature is to deny access to man. This approach is of course unrealistic. Conservation is more flexible in its approach. It attempts to reconcile all the divergent opinions and to ensure that the limited numbers of caves available are used to the best possible advantage for the community at large<sup>2</sup>.

In discussing the environmental damage to Cango Cave and the causes thereof, it is important that the events of yesteryear are not judged by the standards of the present day. Therefore negligence is not necessarily implied in any criticism of successive managements of the Cave.

Gamble<sup>3</sup> has prepared a long list of the various external and internal factors which can affect the cave environment, many of which are inapplicable to Cango Cave. Those relevant to Cango Cave are listed in Table 6.1:

Table 6.1: ENVIRONMENTAL FACTORS WHICH MAY AFFECT CANGO CAVE	
EXTERNAL FACTORS:	
1) Pollution:	Sewage Agricultural runoff Sinking streams Smoke
2) Air:	Ventilation changes
3) Hydrological modifications:	Roads & car parks Buildings Agriculture Groundwater pumping
4) Vibration & noise:	Blasting

INTERNAL FACTORS i.e. Human visitors:

- |                          |   |
|--------------------------|---|
| 1) Physical disturbance: | Footprints<br>Scratches<br>Ladders<br>Passage enlargement<br>Noise  |
| 2) Materials introduced: | Air circulation<br>Micro-fauna and flora<br>Lampenflora<br>Faunal transport<br>Lighting systems<br>Litter, including food scraps<br>Human waste<br>Graffiti |
| 3) Materials removed:    | Guano<br>Scientific samples<br>Speleothems<br>Excavations   |

6.1 EXTERNAL FACTORS

6.1.1 Sewage

Until the modern cave mouth building was opened in 1967, all sanitation at Cango Cave used the bucket system; and the contents were dumped in the veld<sup>4</sup>. In 1967 a water-borne septic tank system was introduced, the effluent being pumped to a settling pond 350 m. above and 450 m. WSW. of the Cave entrance. Although this effluent is above the Cave and could contaminate it, there is no visual or olfactory evidence that this occurs.

6.1.2 Agricultural runoff and other changes

Although agricultural practices above and upstream from Cango Cave can theoretically affect the Cave, there is no evidence that this has occurred. The overlying terrain, expropriated by the Municipality after the discoveries of Cango II and III in the 1970s, is undeveloped hill land which shews no evidence of having been disturbed other than by fencing and by a rudimentary track. All the surrounding irrigated arable land is below the level of the Cave, and cannot therefore have affected the Cave.

6.1.3 Sinking polluted streams and water tracing experiments

The only running water in Cango Cave is the stream between Cango II and Cango III. It is not known from whence it comes nor where it rises. No pollution testing or water tracing experiment has been done.

6.1.4 Smoke

Smoke is detrimental to the cave environment because it is deposited on the speleothems which lose their glistening appearance and can become discoloured. Externally derived smoke comes from veld and other fires, but there is no evidence to suggest that it has ever made a major contribution to the deterioration of Cango Cave.

Internally derived smoke has been an inevitable pollutant of Cango Cave from its discovery until 1928, when electricity was supplied. Before then the only methods of illumination were flaming torches, candles and magnesium ribbon. After electrification this pollution was greatly reduced. However, despite electrification, magnesium flares were occasionally used for ciné-photographic purposes<sup>5</sup>, probably because the power of the generator was too low to provide sufficient light for the cameras, and because the film was not sufficiently sensitive to the red end of the spectrum produced by tungsten lamps<sup>6</sup>.

Tobacco smoke is a more subtle pollutant of caves. Smoking in Cango Cave was officially banned in 1926, and again in 1972 on the recommendation<sup>7</sup> of the S.A. Spelaeological Association (Cape Section). Unfortunately this ban is often not enforced by the Guides, some of whom do not set a good example to the visitors<sup>8</sup>.

6.1.5 Buildings, Roads and Car Parks

The building for the diesel generator was constructed in 1928<sup>9</sup>; and that for the original tea room was built in 1930 under the overhang at the entrance<sup>10</sup>. Both were constructed from the local limestone. Contemporary photographs show them to have been inconspicuous buildings in harmony with their surroundings (Plate 4.1.2). The engine house was demolished when mains electricity was installed in the 1960s, thereby transferring the noise and dirt pollution to a distant power station. The tea room survives as a curio shop. On the other hand, the large, modern, cave mouth building is constructed from concrete, glass and Table Mountain Sandstone in a style appropriate to a city. It is not in keeping with the rural vernacular architecture of the Cango Valley and, by modifying the natural environment, does nothing to enhance the attractions of the Swartberg foothills.

Construction of buildings, roads and car parks can divert water sources, increase runoff, reduce infiltration, encourage pollution by the people who use them, and destroy ecosystems. Because these constructions are below the entrance to Cango Cave, they are unlikely to have had any direct effect on the Cave. On the other hand, aesthetically they are visible from several kilometres down the valley, and are not in keeping with the local surroundings.

#### 6.1.6 Pumping of Groundwater

Pumping of groundwater can be expected to lower the water table, and may therefore affect the stream between Cango II and Cango III. Traditionally, water was carried from the Grobbelaars River to the Cave. In 1953 a borehole, which delivered 4500 litres of water per hour from a depth of 50 m., was sunk 100 m. from the Cave entrance<sup>11</sup>. This supplied the Cave with water until 1979 when water was pumped from the Raubenheimer Dam, 9 km. downstream from the Cave. The bottom of the borehole is about 100 m. below the stream between Cango II and Cango III. There has been no obvious effect on this stream from the abandonment of the borehole<sup>12</sup>.

#### 6.1.7 Vehicles

Although motor vehicles produce exhaust fumes, and theoretically can cause vibration, there is no evidence that such exhaust and vibration damage has occurred at Cango Cave.

#### 6.1.8 Blasting and Quarrying

In 1972 the Cape Lime Co. Ltd. wished to quarry limestone about 1 km. from Cango Cave, but the Municipality alleged that blasting in the quarry would damage the speleothems in the Cave. With support from the National Monuments Council and the Director of Local Government, the Municipality persuaded the quarry company to abandon its plans<sup>13</sup>.

#### 6.1.9 Earthquakes

Although earthquakes do occur from time to time in South Africa, there is no evidence of recent earthquake damage to Cango Cave. However, there are present in Cango Cave some large fallen speleothems lying on their sides. Some of these are in Cango II and III, access to which has been closely supervised since their discovery. This damage cannot therefore have been caused by vandalism. The only other possible causes are earth tremors.

### 6.2 INTERNAL FACTORS

Internal factors have had the most significant impact on Cango Cave, and will therefore be discussed in much greater detail.

#### 6.2.1 Physical Disturbance

Any visit to a cave involves some physical disturbance, if only a few unwitting footprints and scratches. The larger the numbers of visitors, the greater is the damage, including vandalism, which can be expected. The problem

with show caves, including Cango, is that if great care is not taken of the Cave, the tourists may well damage and destroy that which they come to see. Any modification of a cave to facilitate access for visitors will inevitably attract more visitors. Such modification can include provision of paths, steps and ladders, enlargement of passages, and removal of fill.

Although there is no detailed record of all the modifications to Cango Cave, it is known that a ladder descent into van Zyl's Hall was provided very soon after its discovery<sup>14</sup>. As the Cave was extended during the nineteenth century ropes were provided to facilitate the negotiation of pitches. In 1890 a ladder was donated to facilitate access to beyond the Avenue. In 1897 the ladder into van Zyl's Hall was replaced by stone steps; and other improvements for the comfort of visitors were made<sup>15</sup>.

Similar minor improvements were made during the following six decades as and when finances permitted; but the major changes came with the Development Scheme of the 1960s. In 1956 the Municipality arranged for members of the S.A. Spelaeological Association (Cape Section) to prepare an accurate and large scale survey of Cango I "with special reference to a separate entrance and exit"<sup>16</sup>.

This survey enabled the Municipality to plan for the enlargement of certain passages inside Cango I, and for the cutting of an artificial entrance immediately to the north of the natural entrance. Although the artificial entrance was cut to comply with the requirements of the Separate Amenities Act i.e. to make separate provision for non-white visitors, in common with the other modifications it enabled more visitors to view the Cave in unit time. Cango Cave, being a single-entrance cave, has always, and to a lesser extent still does, suffer from congestion when departing visitors meet incoming visitors in the narrow sections. One-way traffic can be expected to reduce that congestion, and therefore to increase the numbers of tourists which can be conducted through the Cave in unit time. Therefore, assuming that the numbers of guides are not increased in proportion, there can be expected to be reduced efficiency in the supervision of the visitors.

This difficulty of supervising large parties of visitors was recognised by the Caretaker as early as 1909. Those who then wished to visit the New Chambers were required to pay an additional 6d. and were conducted therein by the Guide. Those who did not visit the New Chambers remained behind, unsupervised, and were wont to damage the speleothems and to write graffiti<sup>17</sup>. Ever since then it has been impossible to supervise all the visitors all the time.

### 6.2.2 Noise

Noise in a cave can come from the voices of the Guides and of the visitors; and such noise, being of natural origin, cannot be considered to be offensive. Another inoffensive source of noise, inapplicable to Cango I, is that of running water. The only running water in Cango is between Cango II and Cango III, and is of such low flow as to be almost inaudible.

By 1957 the numbers of visitors to Cango Cave had risen to the extent that tourists at the rear end of large parties had difficulty in hearing the Guide at the front. Therefore the Municipality experimented with a loudspeaker system<sup>18</sup>. There being no mains electricity, the following year the Municipality purchased a battery operated portable loudhailer for the use of the Guides<sup>19</sup>.

Another source of noise in a cave is music. At Cango, van Zyl's Hall will seat 2000 people, and has been used intermittently for concerts and other cultural events since 1960<sup>20</sup>. Although the noise from these concerts is unlikely to damage the Cave, the presence of 2000 people in the audience, and the heat from the stage and other lights, will deleteriously affect the cave temperature and humidity as discussed later in sections 6.2.5 and 6.2.6.

After the Development Scheme was opened in 1967, a son-et-lumière apparatus was installed in van Zyl's Hall. This plays loud recorded music, and attempts to re-create the discovery of the chamber by van Zyl. Although the noise can be heard at the entrance to the Cave, and well into the Cave beyond van Zyl's Hall, there is no reason to believe that it has physically damaged the Cave. This loud recorded music and voices do destroy the natural quiet ambience of the Cave. The reconstruction of the discovery of the Cave by van Zyl is part of the history of the Cave. There is therefore an argument in favour of its incorporation into the Cave tour. The music is an irrelevant intrusion into the Cave environment.

### 6.2.3 Lighting

The 1928 diesel generator was underpowered, and was able to illuminate only one third of Cango I at any one time. The present mains electricity was installed as part of the Development Scheme opened in 1967 and, with the structural alterations inside the Cave, enabled many more visitors to inspect the Cave in unit time. In van Zyl's and Botha's Halls there are powerful floodlights which are part of the son-et-lumière apparatus. The use of coloured lights destroys the natural appearance of the Cave and its speleothems. Electric lighting also causes the lampenflora which are described in the next Section 6.2.4.

6.2.4 Lampenflora

Most electrified show caves, and Cango is no exception, have powerful lamps which remain switched on for long periods every day. This source of light energy, which is usually aimed at the same place all the time, tends to raise the temperature, and to encourage over the illuminated rock or speleothem the growth of photosynthetic green micro-organisms which consist of mixed bacteria, fungi and algae, and occasionally of small ferns. This growth, called lampenflora (or maladie verte), is also encouraged by the introduction of organic substances (e.g. lint, pollen, breath, sweat, desquamated skin and urine). The major contributing factor is the light; without the light there can be no photosynthesis and therefore no lampenflora. Three zones can be distinguished, but not clearly demarcated, around the lights:

- 1) In the zone nearest to the lamp the irradiated, conducted and convected heat is sufficient to kill all plant life, and to induce an area of barren, dry rock and earth.
- 2) In the intermediate zone there is sufficient warmth, light and moisture to support photosynthetic algae and occasional ferns. These in turn may support the growth of saprophytic bacteria and fungi.
- 3) The outer zone consists of red and green algae which spread out into the darkness.

Lampenflora were observed in Cango I in 1956, in the days of the diesel generator: "*ferns and lilies ... growing under a powerful light*"<sup>21</sup>. Today they are to be seen in many places in Cango I.

Lampenflora are aesthetically undesirable because they do not exist under natural cave conditions. They also secrete soil acids which corrode the underlying rock and speleothems<sup>22</sup>.

6.2.5 The Cave Atmosphere

Cango Cave was, and effectively still is, a single-entrance cave. In 1964 the 5 cm. capped borehole drilled from the surface into the Devil's Workshop was intended for installing an electrical ring main. In the same year a 5 m. tunnel was dug from the outside into the Fern Room to create the former non-white entrance. This theoretically converted Cango into a multiple-entrance cave. However the two entrances are very close to each other; and the uncovered gate at the artificial entrance will probably compensate to some extent for the modern fibreglass cover over the 1890 gate. It can therefore be expected that there

has been little change in the flow of air in Cango Cave as a result of these modifications.

As explained in Chapter 2, Cango Cave is a low energy cave. No natural through air flow occurs which could dissipate the heat, water vapour and carbon dioxide introduced into the Cave by the visitors and the heat caused by the electric lights. The absence of natural ventilation will ensure that the energy introduced by the visitors and electric lights will tend to increase the temperature, relative humidity and  $p\text{CO}_2$ . The limited work done by du Plessis<sup>23</sup> and by Maxwell<sup>24</sup> (Appendix I) suggests that this in fact happens at Cango.

The  $p\text{CO}_2$  in a cave can affect the speleothems. If the  $p\text{CO}_2$  rises, its solubility in any water on the speleothems will rise and tend to dissolve the speleothems. Conversely, if the  $p\text{CO}_2$  should fall, the water will lose some of its  $\text{CO}_2$  and the calcium carbonate in solution will tend to be precipitated and to form speleothems<sup>25</sup>.

James has listed the sources of  $\text{CO}_2$  in caves<sup>26</sup>:

- 1) Diffusion of gaseous  $\text{CO}_2$  through soil and rock;
- 2) Evolution of  $\text{CO}_2$  from cave waters;
- 3) Production of  $\text{CO}_2$  by micro-organisms;
- 4) Respiration by animals;
- 5) Burning of hydrocarbons e.g. candles, tar torches;
- 6) Volcanic gases.

In Cango I there is minimal cave water seepage and no volcanic activity. Because there has been no disturbance of the overlying rock and soil, the contribution of gaseous  $\text{CO}_2$  can be expected to have remained constant. The removal of the guano will have reduced the micro-organism population, and therefore will have tended to reduce the  $\text{CO}_2$  content. The burning of candles and torches, common practice before electrification in 1928, will have tended to increase the  $\text{CO}_2$  content of the Cave atmosphere at that time; but this activity has now ceased.

It is the  $\text{CO}_2$  exhaled by the tourists which may be expected at present to have a major influence on the Cave atmosphere. James has shown that one man in a  $1000 \text{ m}^3$  closed chamber will raise the  $p\text{CO}_2$  by 0.3% per 24 hours, and states that in the wild cave context this contribution is negligible<sup>27</sup>. However, the dimensions of van Zyl's Hall in Cango are roughly 99 m. x 50 m. x 16 m. high, giving a volume of approximately  $80,000 \text{ m}^3$ <sup>28</sup>. A quick calculation indicates that if, for example, 200 people were to stay in van Zyl's Hall for 12 hours, and if van Zyl's Hall were considered to be sealed, the  $p\text{CO}_2$  would increase by:

$$\frac{200 \times 0.3}{800 \times 2} = 0.38\%$$

i.e. by a negligible amount. In practice, the real rise in pCO<sub>2</sub> can be expected to be much less because van Zyl's Hall is not sealed, and some of the CO<sub>2</sub> will therefore escape both to the outside and to elsewhere in the Cave. It therefore appears that CO<sub>2</sub> may not be an environmental problem in the large chambers at Cango. On the other hand, personal experiences of hyperventilation in the proximal end of the Devil's Chimney suggests that the pCO<sub>2</sub> does rise in restricted parts of the Cave on busy days<sup>29</sup> and on less busy days<sup>30</sup>. It may be that the raised pCO<sub>2</sub> on quiet days reflects the inability of the low energy Cave to recover, in the time available at night, from the pCO<sub>2</sub> which has increased during busy days.

#### 6.2.6 Temperature

Air temperature is an important variable in a single-entrance low-energy cave because it contributes to natural air interchanges within the cave itself, and between the cave and the exterior<sup>31</sup>.

Two factors can be expected to raise the temperature in Cango Cave: heat from the electric lights and from the tourists (Plate 6.2.1.). Heat from the electric cables is negligible. Heat from the electric lights can be reduced by replacing incandescent bulbs by the more efficient fluorescent lights, and by switching off when the lights are not required. The only way to reduce the heat from the tourists is to limit the numbers of tourists.

#### 6.2.7 Sweat

Although not mentioned by Gamble<sup>32</sup>, sweat may well contribute to the deterioration of the cave environment. Its pH can vary from 1 to 14, being highest at high secretion rates<sup>33</sup>. Sweat contains, inter alia, bicarbonate, chloride, sulphate, bromide, fluoride, iodine, potassium, sodium, calcium, magnesium, iron, nickel, zinc and trace elements. The halide and sulphuric acids can dissolve the limestone.

This phenomenon is well seen at the Devil's Chimney, where sweaty palms have polished the rock and speleothems above the floor level. Because limestone is much harder than skin, such erosion cannot have occurred by mechanical means alone.

#### 6.2.8 Litter and other refuse

Litter is not only aesthetically offensive, but its organic content disturbs the ecosystem by encouraging the appearance of alien species in the Cave. This is also encouraged by lint, human urine, faeces, sputum and other waste which is undoubtedly present in Cango I.

Litter bins are provided inside and outside the Cave, but much of the rubbish is deposited elsewhere by the tourists. Labourers regularly sweep inside and outside the Cave; and all solid refuse is carted away to the Municipal tip.

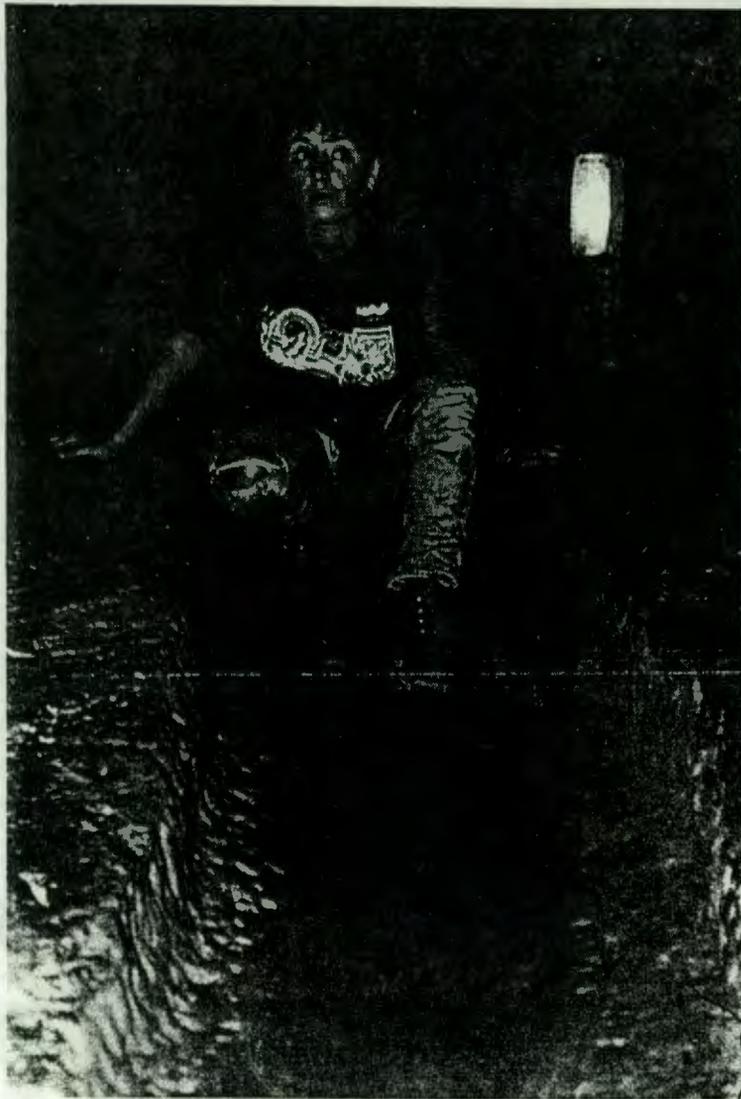


PLATE 6.2.1: A LARGE, INEFFICIENT, HEAT-GENERATING ELECTRIC LIGHT. NOTE ALSO SWEAT - POLISHED LIMESTONE ABOVE THE MECHANICALLY ABRADED PATH IN CANGO I. PHOTO: T.F. TRULUCK

#### 6.2.9 Graffiti

The writing of graffiti is one of the oldest methods of cave vandalism, the earliest example being dated 9th. century BC<sup>34</sup>. Cave paintings have a much longer history<sup>35</sup>. This leads some people to believe that graffiti represent valuable historical records<sup>36</sup>.

The writing of graffiti in Cango Cave occurred after the earliest explorations at the end of the eighteenth century. By 1816 they were so numerous that the first chamber beyond van Zyl's Hall had been named The Registry<sup>37</sup>. This practice continued unabated until well into the twentieth century; and the methods used included scratching, lamp smoke, pencils and (rarely) paint<sup>38</sup>. Many of the graffiti written on the speleothems have become covered by a thin layer of calcite. Little, if any, attempt has been made to remove the graffiti, which are readily visible all over the Cave.

### 6.3 MATERIALS REMOVED FROM THE CAVE

#### 6.3.1 Guano

It is clear from the many early descriptions of Cango Cave that at its discovery it contained a large colony of bats which had deposited much guano on the floor. This guano was removed gradually until 1948 when none remained<sup>39</sup>. Although its removal will have destroyed the ecosystem which it supported, it will have made conditions much more pleasant for the tourists.

#### 6.3.2 Excavations

Most of the excavating inside Cango Cave has been done to enlarge the passages for the convenience of visitors. Such digging will have disturbed the archaeological record at the entrance, disturbed the ecosystem and, if dumped outside, despoiled the exterior environment. The major earthworks undertaken for the modern cavemouth building and car parks will have irretrievably destroyed the archaeological record at Cango.

#### 6.3.3 Scientific sampling

Responsible, selective and limited collection of samples for laboratory investigation has probably had little effect on the Cave environment (Section 3.4).

#### 6.3.4 Speleothem collecting

The removal of, and damage to, speleothems from Cango Cave has as long a history as the writing of graffiti, and has continued until well into the present century<sup>40</sup>. The first recorded incident occurred in 1808 when a calcite curtain was removed to facilitate exploration<sup>41</sup>. The practice has continued intermittently at least until 1959 when speleothems were removed for decorations at the Oudtshoorn Show Ball<sup>42</sup>.

The removal of speleothems for scientific research has occurred very infrequently viz. in 1958 for the S.A. Geological Survey<sup>43</sup>, in 1972 for the British Museum (Natural

History)<sup>44</sup> and in 1981 for the National Physical Research Laboratory<sup>45</sup>. The damage done to the Cave by this scientific collecting is negligible compared with that done by the vandals.

#### 6.4 PRESSURE ON THE CAVE ENVIRONMENT BY TOURISM

To summarise, there can be no doubt that Cango Cave has deteriorated markedly during two centuries of tourism. The major effects of tourism are listed in Table 6.4:

Table 6.4: DELETERIOUS EFFECTS OF TOURISM ON CANGO CAVE

Aesthetic deterioration at the entrance.  
Increased temperature and relative humidity.  
Speleothems: theft, destruction, damage and desiccation.  
Departure of the bats, and removal of their guano.  
Graffiti.  
Lampenflora.  
Noise: Son-et-lumière, music.  
Odours: Sweat, urine, faeces, tobacco smoke.  
Litter.

In the next chapter is discussed all the preceding evidence with a view to accepting or rejecting the original hypothesis.

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# **PART THREE**

# **MANAGEMENT CONSIDERATIONS**

CHAPTER 7

DISCUSSION OF FINDINGS

*"Planning is an essential requirement in the development of any commercial venture but when that development involves one of our most fragile natural environments the developers take on an awesome responsibility, for a cave once modified can never be returned to its natural state."*<sup>1</sup>

At the beginning of this thesis the hypothesis was posed that Cango Cave has, since its discovery in about 1780, been appropriately managed in all aspects of environmental and financial practice.

The history of Cango Cave, including its logistical and financial development, has been presented in Parts I and II. It is therefore now possible to discuss the findings in order finally to accept and / or to reject the hypothesis.

The discussion commences with comments on the legal status of Cango Cave, and on the restrictions which this status imposed on the raising of the capital necessary for its development as a tourist attraction. There then follows discussion about the physical and economic development of the Cave as a tourist attraction, expenditure of the Cave profits, the conservation of the Cave environment, and the use of the Cave for scientific and educational purposes including the guiding service and conclusions reached.

7.1 PROBLEMS ARISING FROM THE LEGAL STATUS OF CANGO CAVE

Although the cave was first reported in 1808 and is believed to have been discovered as early as 1780 or thereabout, the legal status of, and Government interest in, Cango Cave was first defined in 1820. In that year Governor Lord Charles Somerset, having had his attention drawn to the Cave, insisted on a servitude being written into the title deeds of the surrounding farm Kombuis. This servitude reserved the Cave to the Government in perpetuity, and provided for a public right of way to the Cave. The Governor also decreed a conservation policy, but was recalled to London before that policy could be implemented. Indeed his biographer states clearly that Somerset was a conservationist, but makes no mention of his involvement with Cango Cave<sup>2</sup>.

The Magistrate at George, on being instructed in 1820 to inspect the Cave and to prepare "Regulations for their preservation", took the line of least resistance. He appointed the Field Cornet, who was the local Government

agent, Caretaker ex-officio. To avoid having to motivate for extra funds to pay for this extra duty, he permitted the Field Cornet to keep the entrance fees in lieu of salary. The Magistrate had carried out his instructions to the letter. His regulations for the preservation of the Cave, having been approved by the Governor,<sup>3</sup> were, and still are, attached to the title deed of the farm<sup>3</sup>. They were therefore not easily available to successive generations of civil servants who were required to implement this policy before control and management was vested in the Oudtshoorn Municipality in 1921.

Civil servants are, by nature, conservative. It is easier to maintain the status quo than to effect change. If no decision is made, the wrong decision cannot be made. It is therefore unrealistic to expect civil servants to have sought extra work by motivating for change at Cango Cave. The Governor who issued the instructions, Lord Charles Somerset, had by then been recalled. No further action was taken because his successors either failed to appreciate the inadequacy of the arrangements, or did not have them brought to their attention. The inadequacy of these arrangements is discussed further in Section 7.2.

By definition, Governors rule by decree; and no other Governor was aware that Cango Cave should be conserved and developed. Lord Charles Somerset was followed by 13 different Governors until internal self-government was achieved in 1872, the longest-serving of which was in office for only 8 years<sup>4</sup>. Only one, Sir George Grey in December 1860, took the trouble to visit the Cave<sup>5</sup>.

In 1872 the Cape Colony was granted responsible government; i.e. elected representatives to Parliament then made the internal policy decisions. This enabled the enfranchised residents of Oudtshoorn to motivate, through their Member of the Legislative Assembly (MLA.), for funds to be spent on Cango Cave. By that time the Cave was already an established tourist attraction. Although there is no record of the numbers of visitors before the twentieth century, it is clear that the Cave could have been busy on public holidays and when prominent persons visited Oudtshoorn<sup>6</sup>. When Governor Sir Henry Barkly visited the Cave in October 1873, about 500 people accompanied him<sup>7</sup>.

Therefore facilities at the Cave, such as toilets, ablutions, restaurant, hotel, lighting and more internal paths and steps, were already required during the nineteenth century. Cango Cave was a tourist attraction despite the poor facilities and the lack of a good access road. Pressure from the electorate resulted in £445 of Government money being spent on the Cave between 1872 and 1910 on a gate, ladder repairs, internal paths and steps, and improvements to the access road. These items were minor compared with those which were needed.

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

At that time no one in Oudtshoorn or in Cape Town motivated for the voting of the substantial sum of money which would have been required for the provision of the necessary tourist facilities. It is not clear whether there was a lack of foresight to appreciate the necessity for these facilities, or whether it was believed that no Government money would be forthcoming. An alternative possibility is that the Oudtshoorn business community may have hoped eventually to acquire control of Cango Cave, and therefore did not press for large sums of Government money to be spent on the Cave. If Government money had been invested in the Cave, either Government might have refused to sell or the asking price might have been beyond the resources of the Oudtshoorn businessmen.

In 1911 the Directors of the Oudtshoorn Land Development Co. Ltd. applied to the Union Government for a 50 year lease of the Cave, stating in their motivation that they intended to spend a "*very considerable sum of money*" to provide the necessary facilities. Such a lease would have required an Act of Parliament to remove the servitude from the title deed of the surrounding land. It is clear from the wording of the draft Bill (Appendix III) that the Union Government was not prepared to abdicate its responsibility for conserving the Cave to the directors of a property development company, who could be expected to be concerned only with short-term profits. Pressure of more important business ensured that the draft Bill was never actually published in the Government Gazette nor debated in Parliament.

Government could have ensured that the necessary facilities were provided at Cango Cave, at no cost to Government, by the simple procedure of appointing a full-time salaried Caretaker, and by granting that Caretaker a medium-term monopoly for the provision of accommodation, food and perhaps public transport to and from Oudtshoorn. A full-time Caretaker would have had no other interest to divert his attention from the Cave. Such security of tenure would have ensured that privately financed development took place at the Cave without Government losing control. Such a policy succeeded well at the equally remote Jenolan Caves in New South Wales where accommodation and other facilities were provided by private enterprise in 1880. The foresight and leadership of a particular New South Wales Member of the Legislative Assembly as early as 1867 was responsible for this development<sup>8</sup>. Indeed, the New South Wales Government surveyed and developed several other show caves in that colony at that time<sup>9</sup>. There was no such interested legislator in the Cape; and therefore nothing was done by Government to promote, develop and conserve Cango Cave.

After Union in 1910, the relative political influence of the Oudtshoorn voters was reduced because of the increased numbers of Members from the other three provinces.

There was therefore even less chance of Union money being voted for the Cave than there had been of Cape Colonial money. In terms of the South Africa Act of 1909, at Union in 1910 the Cango Cave servitude was vested in the Union Government, which appeared to have had little interest in the Cave. The Union Executive Council in 1915 passed responsibility for the servitude to the Cape Provincial Administration (CPA.). By Ordinance No. 18 of 1921 (Appendix IV) the CPA. transferred control and management of the Cave to the Oudtshoorn Municipality. The Oudtshoorn Divisional Councillors had been outmanoeuvred by the more articulate Municipal Councillors, and thereafter abandoned their attempt to obtain control of the Cave. The initiative for any change at the Cave would then come locally from the Oudtshoorn Municipality; but the entrance fees and all expenditure of income and profits had to be approved by the CPA.

In theory, local management of the Cave could have been expected to have resulted in better management of the Cave. The argument, currently fashionable in many political circles in South Africa and overseas, is that local people are best able to assess and solve local problems. This is because they are nearest to the problems and the lines of communication are much shorter. With the benefit of hindsight the local management policy did not work at Cango Cave because the Province and Oudtshoorn Municipality had incompatible ideas for the Cave. As will be discussed in Section 7.4, Province regarded Cango Cave as being a national asset to be conserved, while the Municipality regarded it as a local asset to be exploited for the benefit of the local economy.

Having discussed the legal restrictions which govern the management of Cango Cave, it is now possible to discuss management at, and economics of, the Cave.

## 7.2 CANGO CAVE MANAGEMENT AND ECONOMICS

The successful management of a show cave requires that the following infrastructure be provided for the benefit of the visitors:

- 1) Adequate access i.e. railway and / or good road with public transport.
- 2) Facilities at and near the entrance which are not specific to a show cave:
  - a) Convenient accommodation;
  - b) Restaurant and bar;
  - c) Toilets and ablutions;
  - d) Changing rooms;
  - e) Stabling (early) or car parks (later);
  - f) Curio shop;

- g) Crèche;
  - h) Dog kennels.
- 3) Facilities inside the cave:
- a) Suitable paths and passages;
  - b) Adequate illumination;
  - c) Good guide service; discussed in Section 7.6.2.1
  - d) Information displays; discussed in Section 7.6.2.3

All facilities require the investment of capital, which has to be spent before any return can be expected. The raising of capital for the development of Cango Cave proved to be very difficult because the Cave has always been Government owned. This ensured that private entrepreneurs were reluctant to invest their funds; and very little Government money was voted. Government and Province have always been reluctant to invest in the Cave, there being (to Government and Province) more important projects to which the available funds should be applied. Until 1921 there was no dedicated Cango Cave account. Therefore no early provision was made for the accumulation of a capital fund from which improvements could be financed.

#### 7.2.1 Management pre-1921

From 1780 until 1820 the tenant farmer was subject to termination of his lease, and would therefore have been unwilling to invest in the Cave. From 1820 the surrounding landowner has never had title to the Cave; and the income accrued to the local Field Cornet until 1891. The Field Cornet, who was subject to dismissal, similarly had no long-term financial commitment to the Cave. All that was provided at the Cave at that time was a few ladders which could have been removed if their owner had so desired.

The Field Cornet was entitled to charge visitors 10 Rix-dollars in lieu of salary. In 1827 a Cape Town artisan commanded a salary of about  $3\frac{1}{2}$  rix-dollars per day plus subsistence and lodging allowances<sup>10</sup>. The entrance fee was therefore approximately  $2\frac{3}{4}$  days disposable income. Assuming that a Cape Town artisan earns R150 per day in 1992, and that half of this is spent on food and accommodation, the 1827 entrance fee would be equivalent to about R200 of today's money. It is therefore apparent that the Field Cornet had acquired a potentially very valuable monopoly; but it must be remembered that visitors at that time were not very numerous.

The system whereby the admission fees accrued to the Field Cornet and, after 1891, to the surrounding landowner, in lieu of salary, ensured that Government did not know exactly how many tourists were visiting the Cave. Visitors were required to sign a visitors' book; but there is no evidence that this was enforced before 1919<sup>11</sup>. The then management structure ensured that the numbers of visitors

would have been under-reported. If the Field Cornet and landowner had been seen to be making a large income from the Cave, it is not unreasonable to assume that the Government might have appointed a salaried manager, and have kept the income for itself. In December 1915 the Oudtshoorn Magistrate was well aware of these unsatisfactory financial arrangements, and recommended to the Union Government that a "registering turnstile" should be installed so that a reliable check could be made on visitor numbers and therefore on revenue<sup>12</sup>. However, no action was taken. Even if Government had wished to plan for improvements at the Cave, the essential information of visitor numbers would have been unavailable.

The legal status of Cango Cave required Government to take the initiative for any development. No legislator and civil servant with the necessary time, knowledge and foresight to motivate for the tourist development of the Cave existed. If it had not been for the visit of Governor Sir Alfred Milner, the £100 would not have been spent in 1897 on improvements<sup>13</sup>. Table 7.2.1 indicates that Government expenditure was so very limited that Government did not or could not take this initiative:

Dutch East India Company	1780 - 1795	Nil
First British Occupation	1795 - 1803	Nil
Batavian Republic	1803 - 1806	Nil
Second British Occupation	1806 - 1872	Nil
Cape Colonial Government	1872 - 1910	
Gate:		£ 18
Improvements:		£100
Access road:		£300
Ladder repairs:		£ 27
Union Government	1910 - 1961	Nil
Republic of South Africa	1961 -	Nil
Cape Provincial Administration	1910 -	<u>Nil</u>
TOTAL		£445

For the first hundred years after its discovery the facilities inside the Cave were rudimentary (Section 4.1.1). A few ladders and ropes were provided by the surrounding tenant farmer, landowner or Field Cornet, being all they were prepared to invest given their lack of title to the Cave. Little attempt was made to enlarge passages and to provide steps. Visitors grovelled in the mud and guano of the Cave which was essentially in the same physical condition as when it was discovered. There was no designated route which the visitors were required to follow. Therefore the tourists tended to wander, and to damage the

whole of the Cave. Certainly many old graffiti are to be found well away from the official paths.

Overnight accommodation has never been provided at the Cave, although during the last century there was an unofficial outspan. Even if money had been forthcoming for the erection of an hotel, the hilly nature of the land at the entrance would have made large-scale construction very difficult. Private enterprise in the late 1880s provided the Cango Hotel 4 km. to the south nearer Oudtshoorn, where the land is less hilly<sup>14</sup>. That site would have been selected to attract trade both from the Cave, and from the Swartberg Pass which connected Mossel Bay and Oudtshoorn with the railway at Prince Albert Road and with the towns of the Great Karoo. There is now no trace of the Cango Hotel. It probably went out of business in the late 1930s or early 1940s. The Hotel had a reputation for high charges and poor service. With improving communications and declining trade, it may have failed to compete successfully during the Second World War with the better-managed hotels in Oudtshoorn.

#### 7.2.2 Oudtshoorn Municipal Management: 1921 - 1967

Although it might have been expected that transfer of control and management of the Cave in 1921 to the local municipality would have stimulated development, the financial status of the Oudtshoorn Municipality was poor. The ostrich feather industry, on which Oudtshoorn's prosperity had flourished before the 1914 - 1918 War, had ceased to exist. The following quarter century, being a time of drought, depression and Second World War, was a time of financial stringency. The poor financial status of the Oudtshoorn Municipality can be gauged by the refusal in 1927 of a £5000 loan from a major life insurance company for the electrification scheme. Only three local residents, and a local trust fund, were prepared to lend the money; and the £2000 shortfall was borrowed from an Oudtshoorn Councillor. All other development until the 1960s was of necessity financed from limited income. The Municipality has never had sufficient funds to spend money from General Revenue on the Cave. By the 1960s the financial status of the Oudtshoorn Municipality and of the Cave had markedly improved. There was then no difficulty in financing the Development Scheme plans from the accumulated surplus and from 25-year loans.

Cango Cave has the misfortune, from the point of view of its promoters, to be situated in the rural Cape Province about 500 km. from the nearest conurbation of Cape Town, and 27 km. from Oudtshoorn (Table 7.2.3). However this remote position is not peculiar to Cango; all the world's major show caves are remotely situated. Communications were poor until the National Road was constructed in the early 1960s. Initially visitors had to travel by ox wagon or on horseback. The opening of the Robinson Pass in the 1860s

enabled a visitor to take a coaster to Mossel Bay, thence a Cape cart to Oudtshoorn and the Cave. In 1888 the Swartberg Pass enabled the tourist to take the train to Prince Albert Road Station, and then ride 75 km. to the Cave. The railway arrived at Oudtshoorn in 1904 from Klipplaat - a very circuitous route from Cape Town via De Aar and Graaf Reinet. This route was shortened in 1913 when the more direct line from George was opened over the Montagu Pass<sup>15</sup>.

Difficult access and low population density ensured that visitors were insufficient to justify the expenditure of Government money on the Cave.

A willing source of indirect Government money, in the form of investment by the S.A. Railways and Harbours, was available but firmly rejected by the Oudtshoorn Councillors and ratepayers. A precedent for this type of investment had been established in 1907 when the New Cape Central Railway purchased the Montagu Hot Springs, modernised and advertised them<sup>16</sup>. In 1926 the S.A. Railways & Harbours, having heard of the Oudtshoorn Municipality's difficulty in raising the necessary capital for the electrification scheme, offered to take over control and management of Cango Cave, invest the necessary capital, and develop it to international standards. The Oudtshoorn councillors and tradesmen objected to this proposal because they believed that the S.A. Railways & Harbours would merely transport the tourists between the station and the Cave. At that time the S.A. Railways organised tours of the Union which stopped, inter alia, at Oudtshoorn. These Railway tourists ate and slept on the trains. Some of the scheduled services arrived in the middle of the night. Even though the Railway passengers had to pass through the town on their way to the Cave, the Oudtshoorn tradesmen complained, with some justification, that the visitors would spend little time, and therefore little money, in the town. Political pressure was successfully brought to bear on the Minister of Railways; and no more was heard of this attempted change of management<sup>17</sup>.

The National Parks Board attempted to obtain control and management of Cango Cave in 1962<sup>18</sup>. In its motivation the Board pointed out that all the world's major show caves, except Cango, enjoyed National Park status. The Board was aware of the successive Government conservation policies, and of the planned Development Scheme, and was of the opinion that it was able to develop and manage the Cave in the best interests of conservation, education and scientific research<sup>19</sup>. Nothing more was heard of this proposed change of management, presumably because of the Oudtshoorn Municipality's political connections in Pretoria.

New South Wales is similar to the Cape in that it was a British colony which enjoyed internal self-government.

There was also similarity to the remoteness and accessibility of their major show caves<sup>20</sup> (Table 7.2.2):

	<u>CANGO</u>	<u>JENOLAN</u>
Discovered	1780	1841
Reserved by Government	1820	1866
Electrified	1928	1880
Distance from capital city	520 km.	200 km.
Distance from railhead	29½ km.	58 km.
Railhead established	1904	1868
First guide book	1912	1889
Tea room opened	1931	1879
Visitors in 1914	1352	10467
Visitors in 1925	6506	75568

The New South Wales Government-owned railways had realised very early that a thriving tourist industry would generate traffic for the Railway. There was therefore a close association between the Railway and the Jenolan Caves. In 1905 package tours were advertised from Sydney to the Caves. The Railway catering contractor also leased the Caves Hotel; and the Railway advertised in the Caves guide<sup>21</sup>. These arrangements doubtless benefitted all three parties, and may well have contributed to the earlier development at Jenolan (Table 7.2.2).

If the S.A. Railways & Harbours had acquired control and management of Cango Cave, development would have taken place much sooner. The Railways & Harbours administration had readily available more than capital. It had a well-organised publicity department which could have advertised the Cave throughout southern Africa and overseas. Such publicity would have attracted many visitors to Oudtshoorn, which would in turn have stimulated the establishment of other tourist enterprises in the district. On the technical side, the Railways & Harbours had flourishing civil and electrical engineering, and catering, departments which would have been able to provide the necessary improvements at the Cave. Indeed, if the Railways & Harbours had acquired control and management of Cango Cave in the 1920s, Oudtshoorn's tourist industry might well have expanded half a century before it actually did.

Communications have improved greatly during the two centuries since the Cave was discovered (Table 7.2.3):

Table 7.2.3: TRAVELLING TIME BETWEEN  
CAPE TOWN AND CANGO CAVE

<u>YEAR</u>	<u>ROUTE AND / OR METHOD</u>	<u>TIME</u>	<u>VISITORS</u>
1812	Ox wagon	1 month	Unknown
1867	Mossel Bay coaster, Robinson Pass	5 days	Unknown
1888	Prince Albert Road, Swartberg Pass	48 hours	Unknown
1904	Railway via Klipplaat	48 hours	Unknown
1914	Railway via George & Montagu Pass	24 hours	1352
1930	Dirt roads	Unknown	11457
1956	Old road via George & Montagu Pass	9 hours	51437
1980	Modern road and private cars	5 hours	149697

The Oudtshoorn Divisional Council was, from 1858, legally responsible for the maintenance of the road to Cango Cave, even though it received no revenue from the Cave. The Council was therefore unwilling to spend much money on the road. This reluctance to maintain the access road caused much friction between the Town and Divisional Councils, which ceased only in 1936 when the road to Cango Cave was designated a National Road<sup>22</sup>. This transferred the financial responsibility for the construction and maintenance of the access road to the Union and Republic Governments; but it was not until 1963 that the road was realigned and tarred to National standards by the Provincial Roads Department. Its maintenance is also the responsibility of the Provincial Roads Department, acting as agent for the State<sup>23</sup>.

The cost of construction and maintenance of this modern road, less that of construction and maintenance of the road to farm standards, should be regarded as a subsidy by Government to Cango Cave. The continuing, and steeper, rise in the numbers of visitors after 1960 suggests that the improvement of the access road may have contributed towards this rise (Fig. 7.2.1).

On the other hand, the attendance figures for Postojna Cave in Slovenia parallel those for Cango with a fall in visitors during the Second World War, steep rise in the 1950s and 1960s, and fluctuations in the 1970s and 1980s.<sup>24</sup> (Fig. 7.2.1).

There is no other similarity to Cango Cave, the political history, administration, location and topography being entirely different. It may be therefore that it is not facilities and ease of access which govern attendance at show caves. The shapes of the attendance graphs suggest that the following factors may control attendance at show caves:

- 1) Wars tend to reduce attendance.
- 2) Unreliability of petrol supplies, and the rapidly increasing cost thereof, discourage visitors.

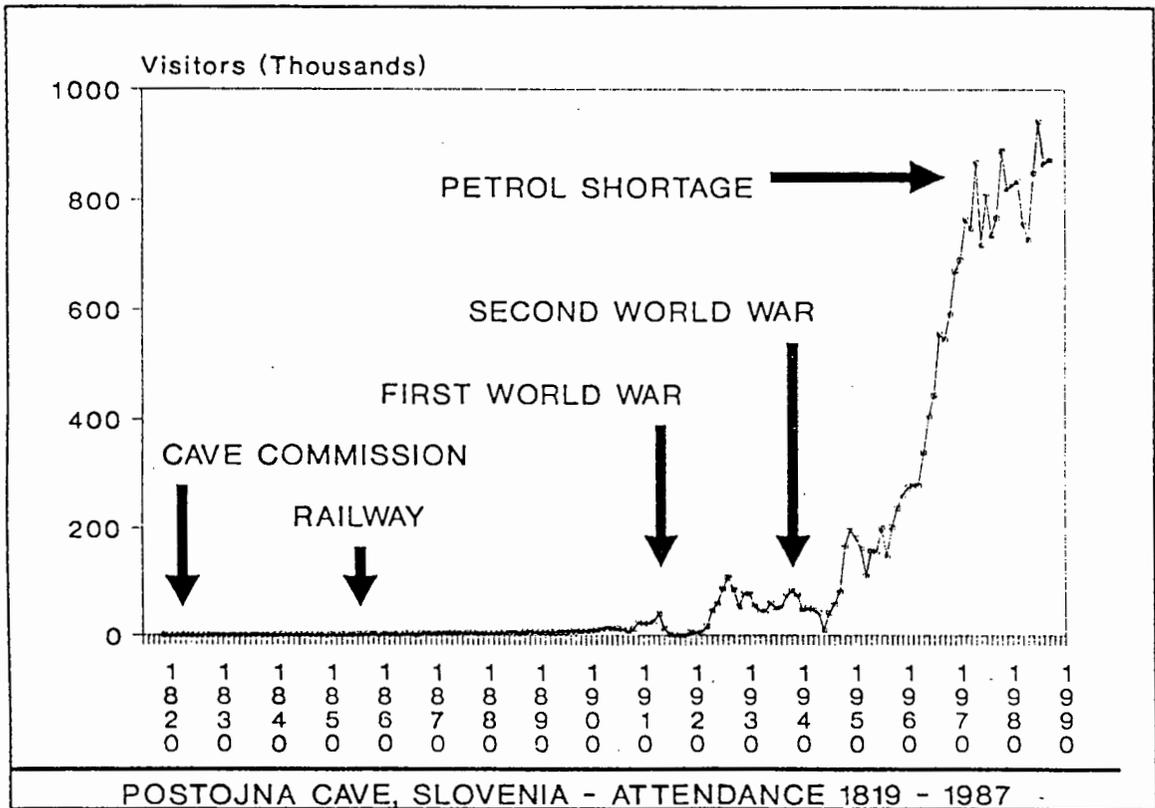
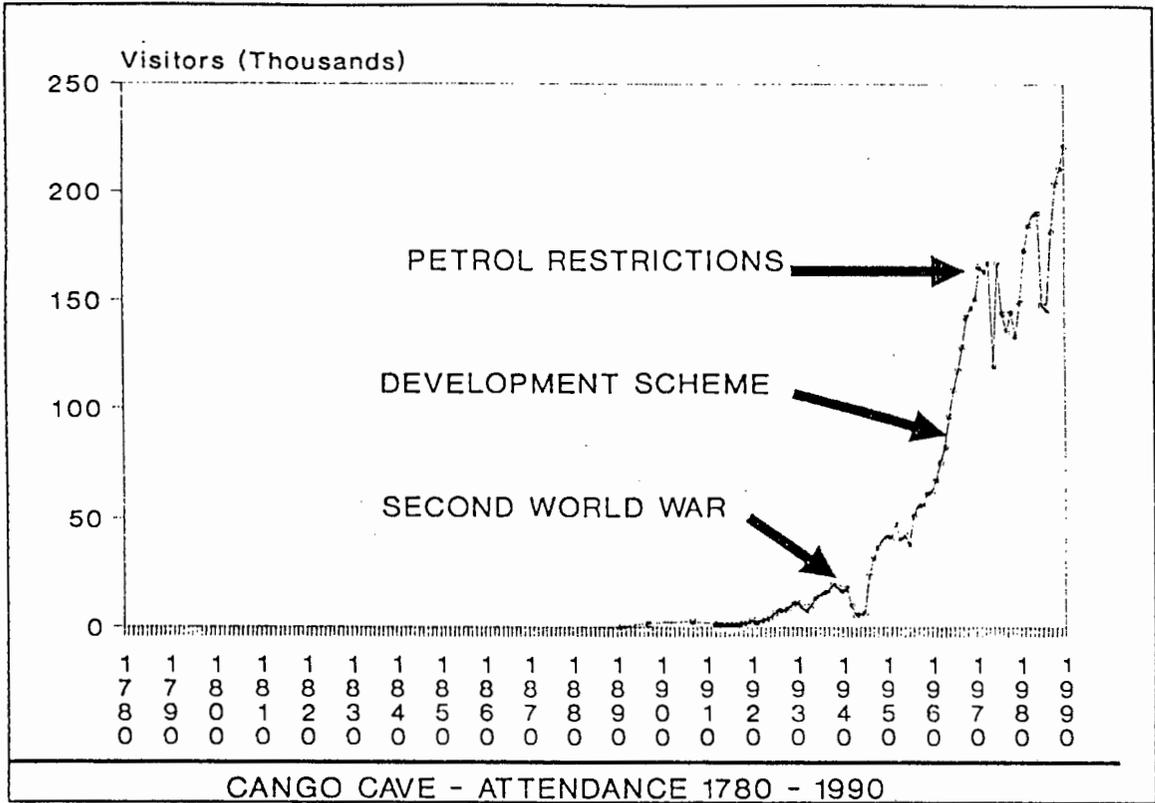


FIG. 7.2.1: CANGO CAVE ATTENDANCE 1780 - 1990 COMPARED WITH POSTOJNA CAVE, SLOVENIA, ATTENDANCE 1818 - 1987

- 3) The increasing prosperity of the First World in the 1950s and 1960s encouraged visitors to show caves.

The failure to provide facilities for visitors at the entrance to the Cave continued even after Municipal control was achieved in 1921 because the Municipality owned no land at or near the entrance. The Municipality acquired only the right to manage the Cave and the right of access to the Cave. The surrounding landowner refused to sell because he himself wished to provide those facilities when his financial situation permitted. His finances never sufficiently improved; and therefore the Municipality eventually expropriated the surrounding land in 1955.

Until 1930 the only facilities for visitors were primitive wash-hand basins and bucket latrines inside the Cave. The Divisional Council refused to permit toilets and ablutions to be built within the road reserve; and thus all ablution facilities had to remain within the Cave. Water was carried from the Grobbelaars River. Those tourists who desired food, accommodation, and more sophisticated toilets and ablutions had to travel 4 km. down the road towards Oudtshoorn and patronise the Cango Hotel. The Municipality was able to avoid the restrictions imposed by the land shortage by building the 1928 generator house for the Cave within the 8 m. road reserve, and the 1930 tea room underneath the overhang at the entrance to the Cave - technically it was inside the Cave. Both were inconspicuous buildings constructed out of the local limestone (Plate 4.1.2).

By the mid-1950s the finances of the Cave had improved sufficiently for the Municipality to consider upgrading the facilities. By then they had become inadequate for the increasing numbers of tourists which could rise to 1700 on a busy day<sup>25</sup>. Plans were prepared, discussed, altered, rejected and prepared again. Eventually the present cavemouth building, with its car parks, restaurant, cafeterias, bars, toilets, ablutions, bank, kennels and crèche was opened in 1967.

There was no official Cave revenue before Oudtshoorn Municipality acquired control in 1921. All subsequent expenditure was subject to approval by the Cape Provincial Administration. Discussion of the validity of this expenditure must occur in relation to the relevant ordinances and (Provincial) Executive Committee decisions. The Ordinance of 1921 stated merely that the Municipality may spend its revenue on the Cave, and subject to the approval of the Administrator of the Cape Province (Appendix IV).

The Provincial Administration's Cango Cave files shew that it has always been the view of the Oudtshoorn Municipality that the Cave is primarily a local asset which

shall be exploited for the benefit of the Oudtshoorn ratepayers, and secondly a national asset to be conserved. In contrast, it was the policy of the Provincial Administration that the Municipality was not to make a profit from the Cave; control had been vested in the Municipality solely for reasons of administrative convenience. Unfortunately this policy was not written into the Ordinance, and was therefore not readily accessible to successive generations of Provincial officials who were required to monitor the Municipal management of the Cave. A further factor inhibiting access of the Provincial servants to the official policy is the sheer bulk of the relevant files. Between 1906 and 1985 the Province accumulated 19 separate files (Appendix II). Although at the present time the files are complete and in logical order, the illogical numbering indicates that in the past they have become mislaid, and that new files have been opened in their temporary absence. It is clear that many decisions have been taken at Provincial level in ignorance of stated policy and previous precedents.

This supervision of Cango Cave involved the Provincial Administration in a great deal of paperwork. Fig. 7.2.2 gives some idea of the administrative burden which fell upon the Provincial Secretary's department. Especially during the past three decades, the documents tended to increase in thickness as well as in number. Although the files of the Provincial Auditor are not available for inspection, it can be expected that they will have increased in thickness if not in number. The unknown and incalculable cost of this administration must be taken into account in any cost / benefit assessment of Cango Cave.

During the first decade of Municipal management the small operating surplus was spent on improvements and publicity. However in 1934 the Provincial Auditor commented to the Mayor of Oudtshoorn on the "comparatively high amount" being charged to the Cango Caves account for administration by the Council officials, and on the "rather generous" amounts being set aside for renewal purposes. The Council defended these contributions on the grounds that the Guides were incapable of doing the paper work, and that the generator would have to be replaced long before the 25 year period of the loan would expire. Negotiations between Municipality and Province continued for the next three years, until in 1937 the (Provincial) Executive Committee, in an attempt to close the loopholes, explicitly resolved that:

*"... in the future an amount of not more than 10% of the income shall be paid to General Revenue, and that the excess of income over expenditure shall be paid into a separate account and used only in connection with the Caves. Also that the existing payments to the Municipality for*

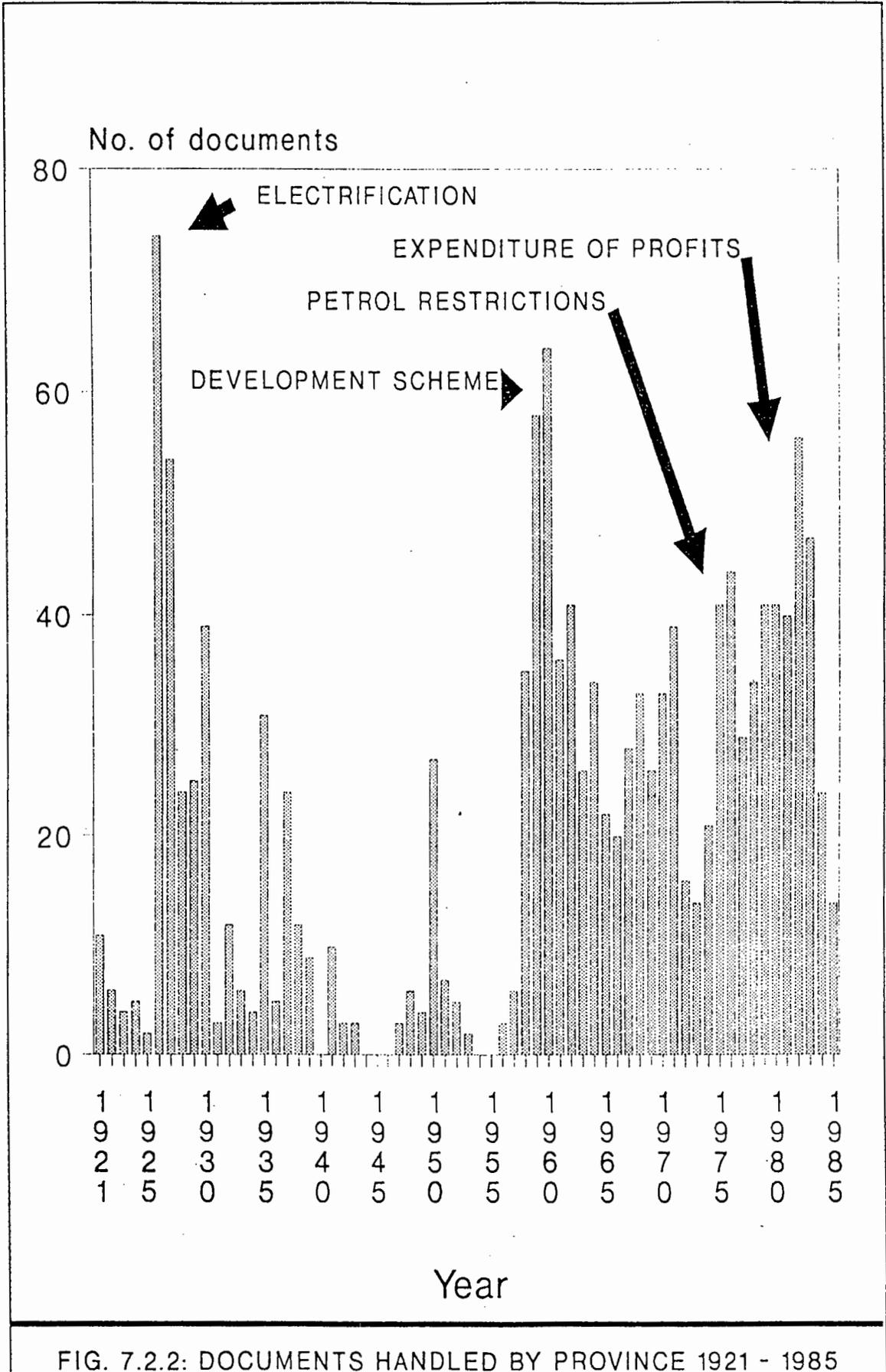


FIG. 7.2.2: DOCUMENTS HANDLED BY PROVINCE 1921 - 1985

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

*administration, renewals, publicity room etc. shall not be increased without the consent of the Administrator."*<sup>26</sup>

Although the Municipality had operated a separate Cango Cave account since 1921, it was not until this occasion that the Province had insisted on a separate account.

Arguing that Oudtshoorn had much to offer visitors apart from the Cave, the Municipality persuaded the Executive Committee three months later to agree to the expenditure of profits exceeding 10% of income "for publicity to the advantage of Oudtshoorn"<sup>27</sup>

This was the beginning of a continuous war of attrition between the Municipality and the Provincial Administration in which the Municipality attempts to divert as much money as possible from the Cave account to General Revenue, or to charge to the Cave account expenditure which by any other Municipality would have been debited to General Revenue.

Accepting that the Cave profits may be legitimately spent on inexpensive campsite accommodation for Cave visitors, Table 5.2.2 lists other expenditure of the Cave profits on items which appear to be unconnected with the Cave.

The pedestal for the Langenhoven bust was presented to the House of Assembly, and was motivated on the tenuous grounds that Senator Langenhoven had been a famous Oudtshoorn resident. The donation to the Louis Trichardt memorial garden at Lourenço Marques was defended on the grounds that Trichardt had been born near the Cave. All the other items were claimed to be of benefit to tourists who might visit the Cave, or to attract to Oudtshoorn visitors who would then visit the Cave. The western commonage was a wild flower reserve; and Rus-en-Vrede is a perennial waterfall, both of which attracted tourists. The C.P. Nel Museum, situated in the centre of Oudtshoorn, is a popular attraction. Arbeidsgenot, the home of the late Senator C.J. Langenhoven, is a place of pilgrimage for devotees of the Afrikaans language. It is, however, difficult to comprehend the connection between a local choir and the tourist value of Cango Cave, unless the choir intended to perform in the Cave.

It is also difficult to accept that most of the items listed in Table 5.2.2 have been "used only in connection with the Caves" or to have represented "publicity to the advantage of Oudtshoorn". Therefore the Administrator, or his subordinates, in approving this expenditure, may well have been acting *ultra vires*, an irregularity which was eventually realised by the Province.

Province made no attempt to rectify these errors of administration, but merely passed a new Ordinance (No. 5 of

1971: Appendix V) which permitted the Cave profits to be spent on "such other purposes as the Administrator may, either generally or specifically, from time to time determine."

7.2.3 Oudtshoorn Municipal Management: post-1967

The modern flat-roofed cave-mouth building is constructed into the hillside in sandstone and reinforced concrete on four levels (Plate 7.2.1). It is not in keeping with the traditional vernacular architecture of the Cango Valley, and is conspicuously visible from several kilometres down the valley.

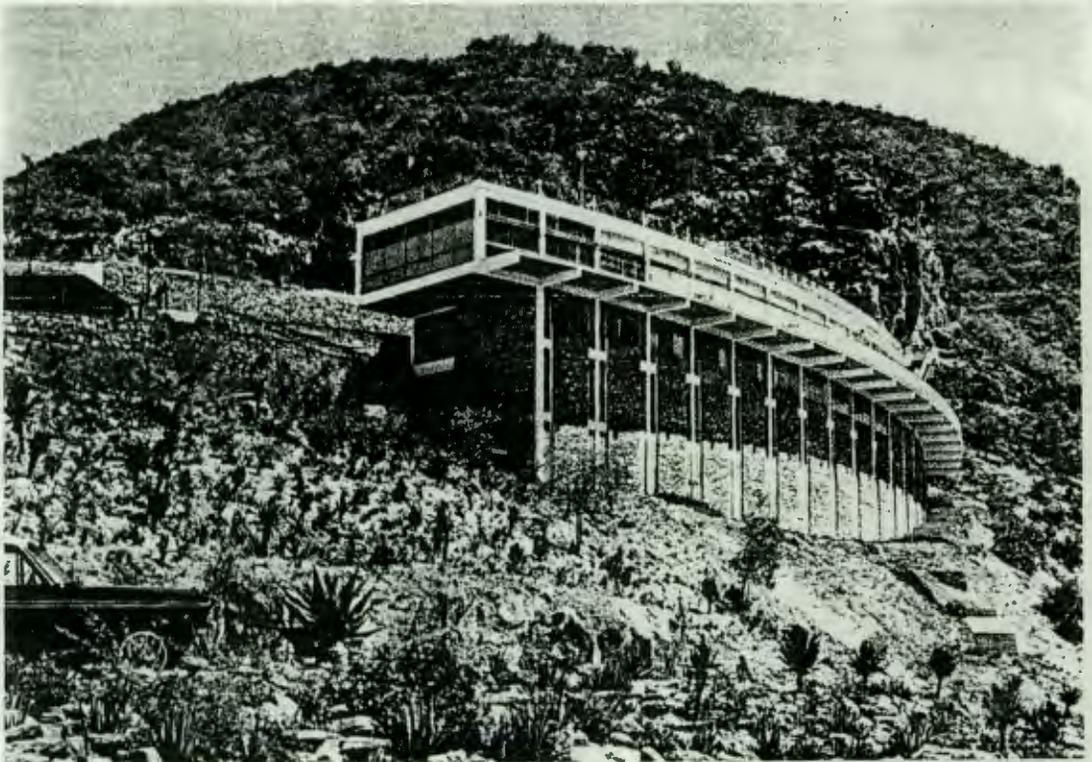


PLATE 7.2.1: CANGO CAVE - MODERN CAVE MOUTH BUILDING.  
PHOTO. PUBLISHED BY ARTHUR ENGLISH COLOUR PRINTS

To be fair to the architect, it must be stated that he originally specified that the local limestone should be used to be in keeping with the environment. He was overruled by the Town Councillors; but there is no record of the reason for their choice. It may have been that they were more

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

familiar with sandstone, which is the traditional building material in Oudtshoorn.

It is not only the cave-mouth building which is an eyesore. The terraced car park which commences in the valley bottom and which rises about 20 metres to the cave-mouth building is equally conspicuous and not in keeping with its environment. Its large expanse of tarmac increases surface run-off, and therefore contributes towards flooding downstream in the Cango Valley. Aesthetically it would have been preferable to have built the car park upstream, and behind the cave-mouth building which would have hidden it from the view of approaching tourists.

The tarred car parks have 251 designated spaces for cars and 5 for busses, making a total for estimation purposes of 256 vehicle spaces. Tours last between 1 and 2 hours depending on numbers of visitors. On busy days the Devil's Chimney is closed and tours last one hour. Allowing a further hour for waiting, eating, drinking and shopping time, each vehicle can therefore be expected to stay 2½ hours at the Cave. In the busy season the first tour is at 0800 hours and the last at 1700 hours. Therefore the car park can be expected to be in use from 0730 hours until 1900 hours i.e. for 11½ hours per day. The estimated daily capacity of the car park is therefore:

$$\frac{11.5 \times 256}{2} = 1472 \text{ vehicles}$$

A count taken on 16 December 1991 revealed an average of 3.94 people in each vehicle. The car parks can therefore be expected to serve a maximum of

$$1472 \times 3.94 = 5800 \text{ tourists per day.}$$

Observation on 16 December 1991, not the busiest day of the year, revealed that the car parks were fully utilised. Many vehicles were parked at the side of the road and on the adjacent veld. It is therefore clear that the car parking facilities at the Cave are now insufficient to cope with the demands of 5800 or more tourists on busy days. The surrounding veld is deteriorating because of the erosion caused by the informally parked cars.

Despite its aesthetic unattractiveness, the modern cavemouth building has eventually provided the facilities which are necessary for the comfort and convenience of the day trippers.

The provision of inexpensive accommodation undoubtedly encourages tourists to stay overnight in Oudtshoorn, and therefore to spend money at the Cave and in the town. During the past quarter century large amounts of money (R186 630) have been spent from the Cave funds on Municipal tourist

## CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

camp sites in and around Oudtshoorn. This expenditure was defended by the Municipality on the grounds that visitors to the Cave needed somewhere to stay, but prompted much opposition by the local hoteliers. Although these hoteliers had never provided camp sites, they complained of unfair competition, not being prepared to accept that the camping and hotel markets are distinct. The profits from these camp sites accrue to the Cango Cave account. Therefore it can be argued that the expenditure on these sites is to the benefit of the Cave, and is a legitimate call on the Cave funds.

### 7.3 CANGO CAVE AS A TOURIST ATTRACTION

#### 7.3.1 Access inside the Cave

The facilities inside a show cave require much more careful planning than those outside because the inside of a cave is a very fragile environment. The low energy status of Cango Cave makes it especially prone to damage and deterioration by the visitors.

Between 1921 and the 1950s access inside the Cave was improved as and when funds permitted (Section 4.2). Passages were enlarged, steps provided, and mud and guano removed; but there is little record of exactly what was done and when. Most of the present visible improvements was effected during the course of the Development Scheme of the 1960s. Nowadays visitors have no difficulty in traversing the Cave until they reach the bottom of the ladder leading to Lumbago Walk. It appears from the correspondence between the Province and the Oudtshoorn Municipality that both parties, while these improvements were being planned, took no cognisance of the expectation that improved facilities would attract more visitors, and that more visitors would accelerate the deterioration of the Cave. No attempt was made to assess this deterioration, nor to take steps to reduce it.

The enlargement of passages and the creation of parallel passages affects the natural ventilation inside the Cave (Section 6.2.5). They will also increase the numbers of visitors which can inspect the cave in unit time, and therefore contribute to the wear and tear which the visitors inflict on the Cave.

#### 7.3.2 Lighting

Until electricity became available towards the end of the nineteenth century, the only feasible methods of illuminating caves were candles, flaming torches and magnesium ribbon and flares. At best they produced clouds of soot and smoke which were deposited on the speleothems, thereby contributing to their becoming dull in appearance (Section 6.1.5). At worst they encouraged visitors to write their names on the walls using the candle smoke. Although

in the 1890s the Colonial Government was aware of this unsatisfactory method of illuminating the Cave, it lacked both funds and technology to improve the situation. The only alternative technology then available was 'gasoline' lighting, which was not installed because of the danger of explosion and because of the expense<sup>28</sup>.

Although electricity generators became more widely available in the early twentieth century, Cango Cave was not electrified until 1928. There being insufficient perennial water for hydro-electricity production, a diesel generator was provided at the entrance. This exchanged the smoke pollution inside the Cave for noise and diesel exhaust pollution at the entrance. The generator was underpowered, being able to illuminate only a third of the Cave at any one time. Therefore magnesium flares continued to be used occasionally until mains electricity was installed in the 1960s. The supply of mains electricity transferred the pollution from the generator at the Cave entrance to remote power stations which supply the National Grid.

The installation of electric lighting introduced its own problems. The heat emanating from the light bulbs tends to raise the temperature inside the Cave and therefore to dry the speleothems. The heat and light energy, aimed constantly at the same part of the Cave, encourages the lampenflora which disfigure much of the Cango showcave (Section 6.2.4). At present many of the lights are switched on for much of the working day - up to 10 hours in the busy season - irrespective of the presence of tourists. The Oudtshoorn Municipality has done little to control these lampenflora. Control can be effected by using low energy and low level lighting for the paths and steps, and by reserving the floodlights only for special places of interest when tourists are present. The Guides should be instructed to watch closely for lampenflora, and to remove them at their first appearance using 5.25% sodium hypochlorite sprays<sup>29</sup>.

It is therefore apparent that although tourist facilities have now been provided at Cango Cave, they could and should have been commissioned at least fifty years earlier. These facilities have been installed with no thought, both before and after their provision, for their effect on the Cave and surrounding environment. The cave-mouth building should have been constructed from the local limestone in a more appropriate style; and the car parks should have been placed much less conspicuously behind the building. All the electrical installations should have been concealed, or camouflaged if concealment was not possible.

Having discussed the development of Cango Cave, it is now relevant to discuss the financial

benefits which those visitors have brought to the Cave and to Oudtshoorn.

#### 7.4 EXPENDITURE OF PROFITS DERIVED FROM THE CAVE

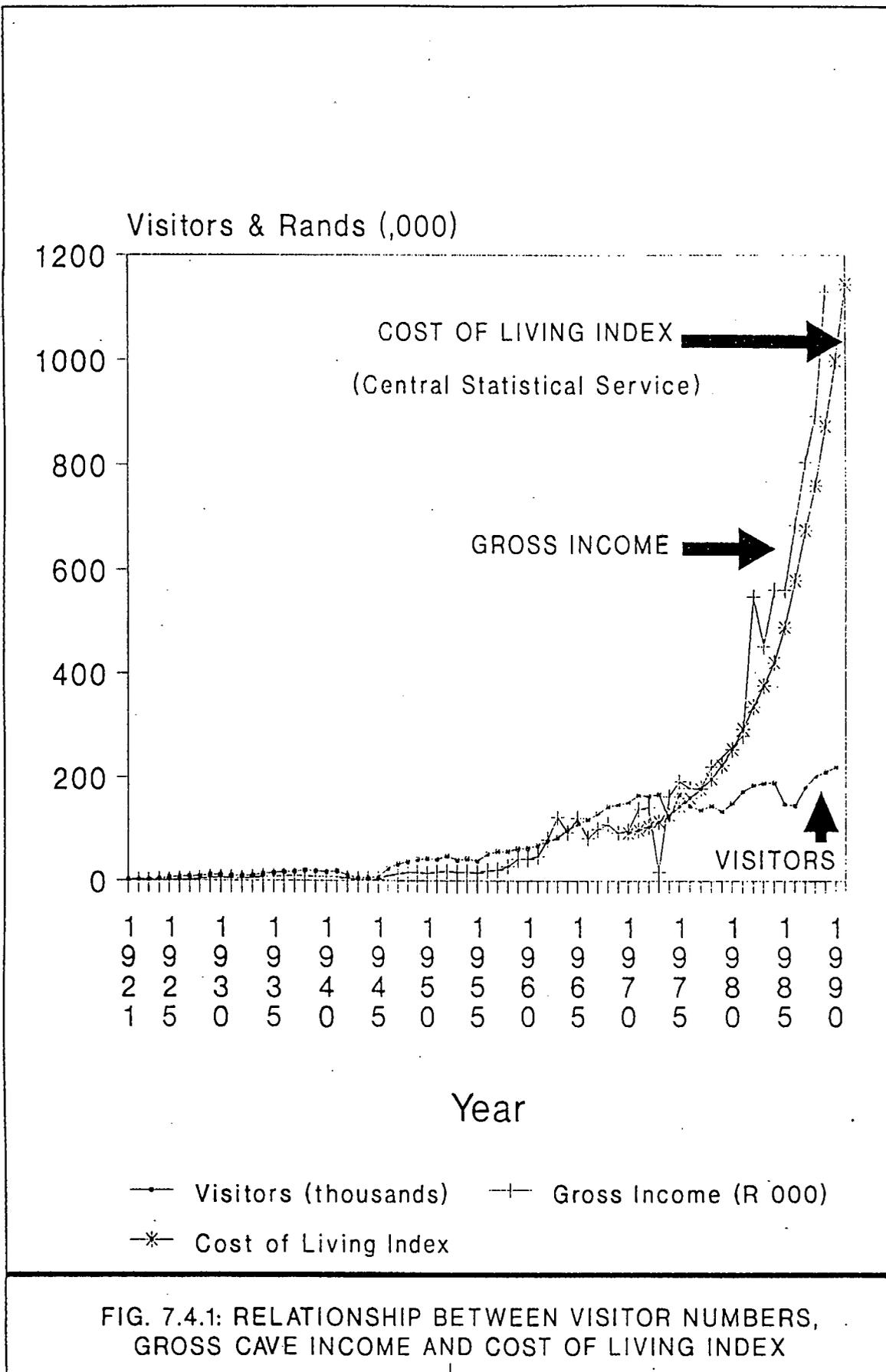
It is difficult to quantify the monetary benefit to Oudtshoorn and the surrounding district of Cango Cave as a tourist asset. The accounting does not facilitate analysis. In later years, as the turnover of the Cave and its camp sites increased, the accounts became accordingly more complex. However it is possible to extract the total revenue of the Cave from all sources (gross income), and to compare this with the numbers of visitors and the cost of living index obtained from the Central Statistical Service (Fig. 7.4.1).

This gross income is mostly recycled in the Oudtshoorn district, being applied to salaries and wages, repairs and renewals, and materials. It has always been Municipal policy that, wherever possible, Municipal money should be spent with local entrepreneurs.

Another way of interpreting the accounts is to extract that part of the gross income which was paid into Municipal General Revenue, as is displayed in Fig. 5.3.2. This is intended to recompense the Municipality for services rendered to the Cave by the Town Clerk, Town Treasurer, Town Engineer, Town Electrical Engineer, Parks Department and Health Department. Because the Municipality appears not to have costed these services, it is not known whether the sums paid were precisely calculated and whether the Municipality made a profit on the services provided. The impression gained from the relevant Provincial files is that the Municipality charged as much as it believed the Province would permit.

A third way of interpreting the Cave accounts is to express the money spent on the Cave as a proportion of gross income. This method has the advantage of being independent of inflation, but suffers from the difficulties of extracting the information from increasingly complex accounts. The more complex the accounts, the easier it is to lose small amounts in larger items. Thus the accounts for 1921 are very simple and explicit: 3 lines with £34-1-1 spent on "improvements". In contrast, the accounts for 1989/90 fill nine pages. In many years it is not clear how much of the repairs and renewals vote was spent inside the Cave and how much on the outside of the Cave. Nevertheless, where the information is available, it is presented in Fig. 7.4.2.

This shews quite clearly that as the years of Municipal administration have passed, a lower proportion of the gross income has been spent on the Cave. In other words, although



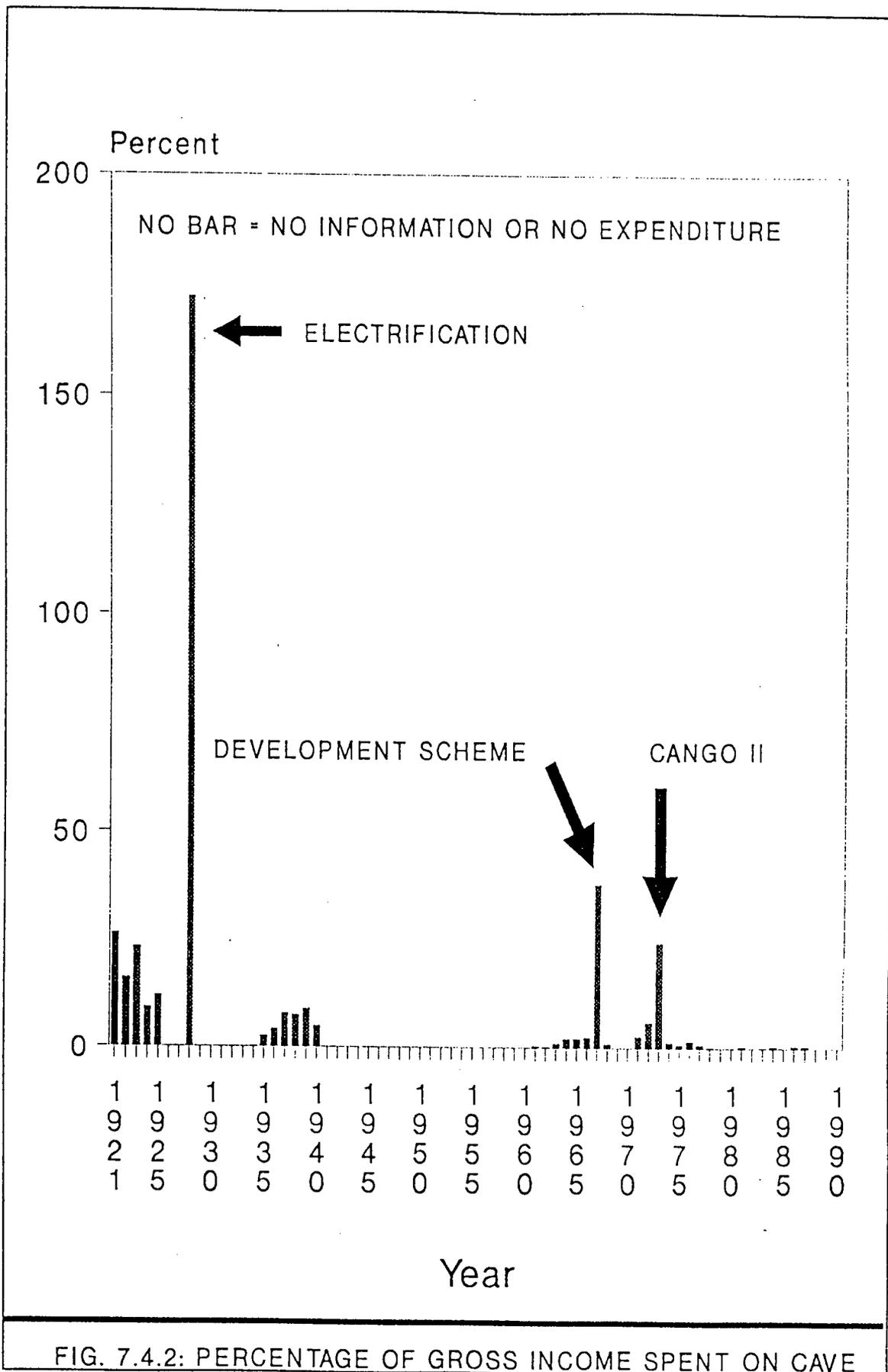


FIG. 7.4.2: PERCENTAGE OF GROSS INCOME SPENT ON CAVE

increasing numbers of visitors can be expected to increase the wear and tear on the Cave, a lesser proportion of their entrance fees has been returned to the Cave. This practice, if not reversed, will ensure the continuing deterioration of the Cave environment. This trend is unlikely to be due to economies of scale. Cango Cave, like most tourist attractions, is a labour intensive enterprise. There is no scope for mechanisation, and therefore little scope for reducing per capita maintenance expenditure by increasing the numbers of visitors.

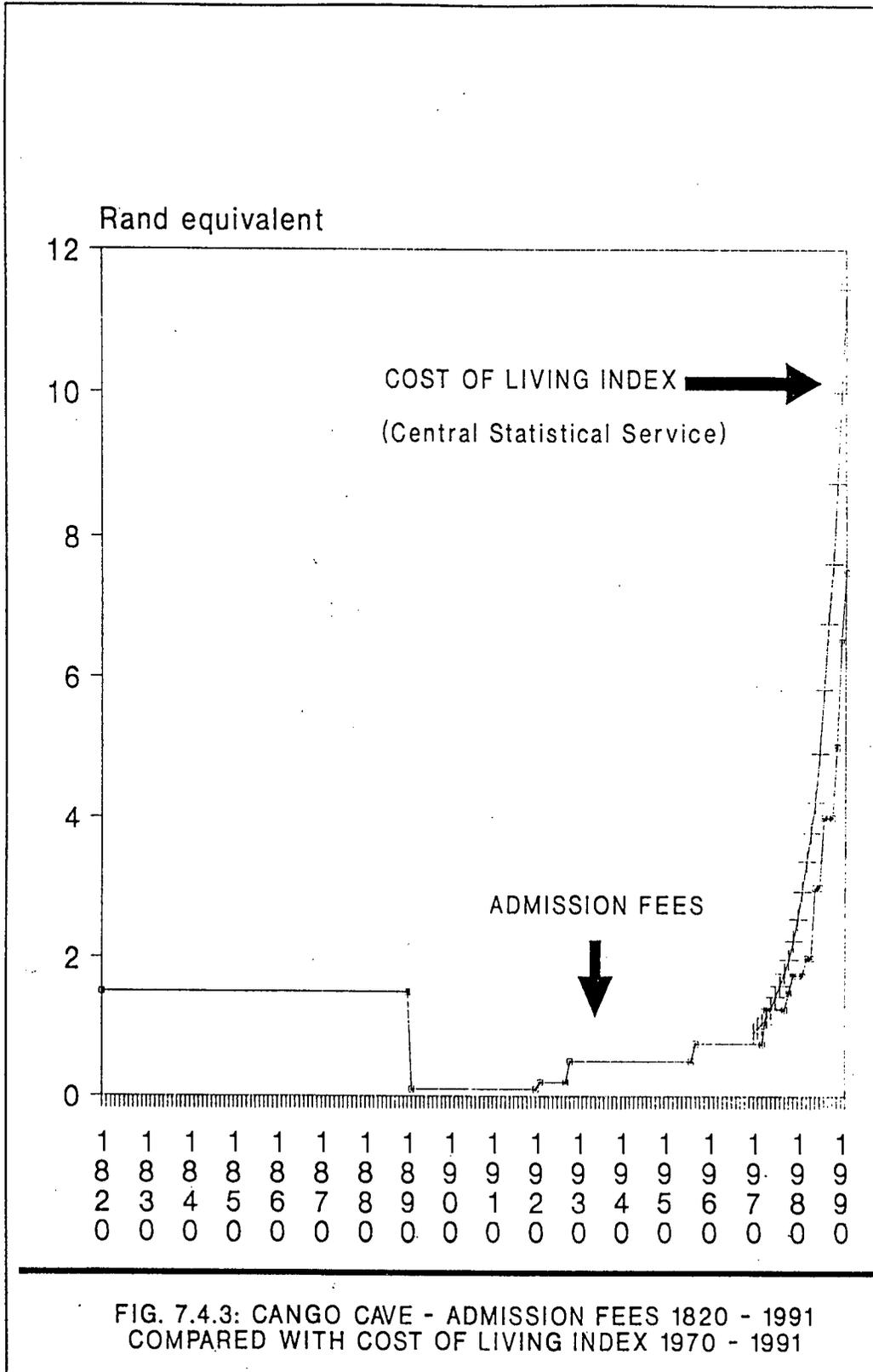
From 1820 until 1897 the only source of Cave revenue was the entrance fees. These fees were paid to the caretaker, and were therefore available for recycling in the Oudtshoorn district. From 1897 until 1921 the basic entrance fees continued to accrue to the caretaker. However, the extra 6d. payable for entry to the New Chambers was paid to the Oudtshoorn magistrate, and was "lost" in the central government's General Revenue account. It was therefore unavailable for the local economy.

In the early days of Municipal management, the major source of Cave revenue was the entrance fees. From 1921 until 1926 these fees were shared equally with the Caretaker, but nevertheless were available for recycling in the Oudtshoorn district. The relationship between the entrance fees payable, and the cost of living index for the past two decades, is depicted in Fig. 7.4.3.

This shews that the increase in fees during the past two decades has been in keeping with the inflation rate. In other words it has probably never been cheaper, in real terms, to visit the Cave. This cheapness has also probably contributed to the recent large increase in the numbers of visitors.

The completion of the cavemouth building, with its restaurants, bars and curio shop, in 1967 provided another major source of revenue for the Municipality which wished to operate these facilities for its own account. Anticipating that this proposal would not be favourably received by the Province, the Municipality proposed to the Province that 25% of the nett profits be paid into General Revenue to cover the inevitable increased administration costs. The remaining 75% would be paid into the Cango Caves Cultural Development Fund, and be "... specifically ear-marked for the development of cultural presentations in closest collaboration with the Cape Province Performing Arts Board (CAPAB.) and the Provincial Administration as yet another means of providing a parallel tourist attraction and in turn boosting the Cango Caves admission fees." (Section 5.3).

In spite of the opposition of the Oudtshoorn Chamber of Commerce, the Province approved in June 1967 both the Municipality's intention to trade at the Cave, and the



distribution of the profits. CAPAB. was never informed of this potential source of revenue<sup>30</sup>; and little money found its way from the Cave to CAPAB.

The Concise Oxford Dictionary defines culture in very wide terms:

*"Improvement by (mental or physical) training; intellectual development"*

The inclusion of both "physical" and "mental" improvement in this definition has enabled the Oudtshoorn Municipality to finance the electorally popular projects listed in Table 7.4.1 from the Cultural Development Fund since its inception in 1967. Loans have been raised, the interest and redemption on which are debited to the Cango Cave Cultural Development fund (Table 7.4.2).

Of these 24 items, only the catering and toilet improvements of 1983 directly benefitted the Cave. The motivation for the stage and 500 chairs for van Zyl's Hall was straightforward - they were needed for the proposed theatrical presentations in the Cave. Although superficially for the benefit of the Cave, they will increase the numbers of tourists which can be accommodated in the Hall. The deleterious effects of this on the Cave atmosphere have been discussed in Section 6.2.5. Therefore these chairs cannot be considered to be of benefit to the Cave. Despite the R2000 annual donation to the C.P. Nel Museum in Oudtshoorn, there is still no speleological display in that museum.

The payments to CAPAB. and to the Oudtshoorn Choir were intended to subsidise performances in Oudtshoorn and in van Zyl's Hall. The Municipality successfully argued that tourists who patronised such presentations would also visit the Cave. It is, however, doubtful if a tourist would visit Oudtshoorn with a view to attending the theatre. Such performances are of a much higher standard in the big cities where the auditoria are better designed and maintained, and where there is a larger population from which better support and theatrical talent can be drawn. These donations should therefore be regarded as a subsidy to those Oudtshoorn theatregoers who would be attracted to the Cave by the cultural presentations, and as an attempt to encourage country residents to patronise the theatre.

As mentioned above, the late Senator C.J. Langenhoven was an Oudtshoorn resident who achieved fame as an Afrikaans writer and politician. All the expenditure on items relevant to Langenhoven, including the library, was therefore defended on the basis of culture and Langenhoven's connections with Oudtshoorn. However, Langenhoven had no connection with the Cave; and it is therefore difficult to justify the expenditure of R2856-50, and an annual debit of R4281-22 for the library, on the memory of this man. This

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expenditure benefitted some residents of Oudtshoorn, but not the tourists who had indirectly paid the bills.

Year	Item	Amount	
		Estimated	Actual
1968	Oudtshoorn Choir	R 50-00	R 50-00
1969	CAPAB (annual R720 payment until 1983) Total payment:	R 10800-00	R 10800-00
1972	500 chairs for van Zyl's Hall	R 1031-70	R 1031-70
1972	Langenhoven centenary stationery	R 176-00	R 176-00
1973	Langenhoven cultural festival	R 680-00	R 680-00
1976	Transport of Langenhovenalia	R 300-00	R 300-00
1979	Synthetic athletic track	R 50000-00	R 50000-00
1980	Pauline Smith memorial	R 650-00	R 1557-20
1980	Bronze statue outside army camp	R 10000-00	R 12091-71
1980	C.P. Nel Museum (annual donation R 2000-00) Total:	R 24000-00	R 24000-00
1981	Bronze statue at police station	R 20000-00	R 33534-21
1981	4 Veld and Vlei courses	R 708-00	R 708-00
1981	Duplicate elephant head mosaic: Langenhoven character	R 300-00	R 300-00
1982	Pauline Smith centenary	R 1250-00	R 1250-00
1982	Langenhoven festival videotape	R 220-50	R 220-50
1982	Book prizes (annual commitment R58-50) Total payment:	R 643-50	R 643-50
1983	*Improved catering and toilet facilities at the Cave	R 25510-00	R 25510-00
1983	3 statuettes (annual commitment R1032-60) Total:	R 10326-00	R 10326-00
1984	Cultural bursary	R 1000-00	R 1000-00
1984	Conversion of Melville House to adventure centre	<u>R 50000-00</u>	<u>R 52694-37</u>
TOTAL:	at least:	R207645-70	R226873-19
1984	Half salary of Deputy Head, adventure centre (annually)	R 12000-00	

\* Justified expenditure relevant to the Cave.

Year	Purpose	Amount	Annual debit
1975	Langenhoven memorial library	R33250	R 4281-22
1976	De Jager sports complex	R50000	R 5489-73
1981	Athletic track pavilion roof	R65000	R10466-19

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Pauline Smith was another author, who was born in Oudtshoorn and who featured Oudtshoorn and district in her books. The expense of a memorial plaque for her house, and on a display cabinet in the C.P. Nel Museum, was therefore defended on the grounds of favourable publicity for Oudtshoorn. Nevertheless, she had no connection with the Cave; and the expenditure will have benefitted only those tourists who visit the museum.

The cultural bursary was established to finance an Oudtshoorn resident to study music, singing, painting or sculpture for 2 years at any South African institution of tertiary education. Although there can be no doubt of its cultural nature, it benefitted only one Oudtshoorn resident, and offered no benefit for the Cave.

The bronze statues were provided to mark the "long and cordial" relationship between the S.A. Defence Force and the S.A. Police, and the Oudtshoorn Municipality. The miniature statuettes were presented annually to the most diligent Oudtshoorn policeman, and every 6 months to the best trainee infantryman at the army camp. This large expenditure, while cultural in the sense that sculpture is an art form, did nothing for the Cave, and nothing to attract tourists to Oudtshoorn. The only person to benefit was the sculptor. Although it could be argued that the visitors to the conscripts at the army camp may visit the Cave, it must be remembered that the conscripts have no choice about their stay in the town. The Cave does not attract them to Oudtshoorn; and therefore Cave money should not have been spent on the army camp and on the police station.

The annual subsidy to the C.P. Nel Museum should have been spent on a speleological display; but it is not known if the Town Council stipulated that the money be spent on a speleological display. Despite this 12-year subsidy, there is still no such display at the Museum. If a speleological display was intended, the money has been misappropriated. If there was no such decision, the money has been unwisely spent.

The book prizes are presented to the winners of an essay competition for Oudtshoorn schoolchildren. This is undoubtedly cultural - but irrelevant to the Cave.

The Oudtshoorn Municipality did not neglect the physical aspect of culture when spending the proceeds of the Cultural Development Fund. Four Oudtshoorn boys have been sponsored for a residential Veld & Vlei course. Large amounts of money have been spent on a synthetic athletic track and its pavilion, an outdoor adventure centre, and an indoor sports centre. These sporting and recreational facilities will undoubtedly attract to Oudtshoorn visitors who may subsequently visit the Cave.

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The cave-mouth building in which trading is conducted was financed by the accumulated surplus of the Cave, and by the loans raised against the Cave account. Therefore the trading profits at the Cave should have been paid into the Cave account, and used for the benefit of the Cave. The division of the trading profits between General Revenue (25%) and the Cultural Development Fund (75%) ensure that all the profits will effectively find their way into General Revenue and therefore subsidise the rates - in direct contravention of the traditional policy of the Cape Provincial Administration (Section 7.2).

All the expenditure from the Cave funds, on items which are irrelevant to the Cave, should have been debited to Municipal General Revenue. Every other municipality in the Cape Province would either not have spent the money on such projects, or would have been required to debit it to General Revenue.

It is clear from the audited accounts that during the past three decades the trading at the Cave has been much more profitable than the Cave itself. This situation may well change in 1992 when the R290 800 Development Scheme loan will have been repaid. The Cave account will then no longer have to carry the interest on, and repayments for, that loan. Having been relieved of that burden, the Cave can be expected to become very much more profitable. This impending profitability is well-timed because much money needs to be urgently spent on repairs, maintenance, education and conservation at Cango. This theme is developed further later in this chapter, and in Chapter 8 - Recommendations for Future Management.

It is clear that the Municipality has been very successful in persuading the Province to overlook its policy that the Municipality is not to make a profit from the Cave<sup>31</sup>. Although the Municipality decides how the profits shall be spent, this expenditure must be approved by an appropriate Provincial official and is subject to Provincial audit. The reasons for this failure to enforce policy have been discussed above in Section 7.2. As will become apparent during the discussions on the scientific, educational and conservation aspects of the Cave, these profits should have been returned to the Cave to finance pure and applied research, and an educational programme. The benefit to the Oudtshoorn traders and ratepayers should have been only indirect viz. from the money which the Cave visitors spent elsewhere in the Oudtshoorn district.

Although there is no obvious indication in the Provincial files why the Province has been unable or unwilling to enforce its policies on the Oudtshoorn Municipality, it appears that Province has abrogated its responsibility towards the Cave. Province was not required to take any initiative in the management of the Cave.

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Successive Provincial servants had little, if any, knowledge of speleology. If these servants were busy with, to them, more important matters, it would have been easier to agree to the Municipal requests than to refuse. Refusal would have invited more correspondence in connection with an appeal. As discussed in Section 7.2, it is most likely that lack of time, knowledge and interest would have prevented the Provincial servants from looking back through their voluminous files to remind themselves of the Provincial policies and precedents set.

It is therefore apparent that although Cango Cave has become profitable during the past 25 years, those profits have not been spent to the best advantage of the Cave.

### 7.5 CONSERVATION OF THE CANGO CAVE ENVIRONMENT

The objectives of conservation in general are to use all natural resources for the best long-term advantage of as many people as possible. Conflicting vested interests have to be resolved. Cave conservation is a particularly complex subject because of the fragile nature of the environment.

The only method of perfectly preserving a cave is to exclude humans entirely. This approach is unrealistic and unenforceable. The aim of cave conservation is to balance the conflicting demands of preservation and presentation so that the cave resource is used to its best advantage. Mismanagement of a cave can occur deliberately, by default, and through ignorance. Deliberate mismanagement includes removal of speleothems for non-scientific purposes, and destruction of pre-historic artefacts. Default mismanagement can include failure to take steps to prevent deterioration, such as not limiting visitor numbers to those commensurate with the carrying capacity of the cave, and not controlling lampenflora. Ignorance mismanagement includes failure to read the relevant literature, and therefore inability to learn from the experience of show cave managements elsewhere.

The first recorded visitor to the Cave removed some speleothems to facilitate exploration<sup>32</sup>. Since Faure's party was the first to visit Cango Cave in over a year, the low numbers of visitors at that time must have had little impact on the Cave. Their action is questionable since speleological circles still debate whether it is justified to remove speleothems in the expectation of finding more and better speleothems beyond<sup>33</sup>. There can be no excuse for removing speleothems for purposes other than for exploration and for scientific research.

The deleterious effects, both direct and indirect, of tourists on Cango Cave have already been described in Chapter 6, and are summarised in Table 6.4.

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It is now relevant to discuss how this damage could have been minimised or prevented.

The major environmental change in Cango Cave has been the departure of the bats<sup>34</sup> and removal of their guano. The early visitors commented on the large numbers of bats which roosted in the Cave; and it was the policy of the Cape Colonial Government that removal of the guano would detract from the natural state of the Cave<sup>35</sup>. Subsequently the increasing numbers of visitors have disturbed the bats which may have moved to other roosts; and the Oudtshoorn Municipality has removed the guano, both to raise revenue and to facilitate access for the tourists. Only an occasional bat may now be seen in Cango Cave.

The loss of the bats and their guano will have been responsible for the loss of the biomass which would have been supported by the guano. On the other hand it makes conditions inside the Cave much more pleasant for visitors. Departure of bats is inevitable from any roost which is visited regularly by humans and, if the bats are frugivorous, will be welcomed by the local fruit farmers. However, inspection of the bat guano in the caves of the Cango Valley indicates that their bats are insectivorous<sup>36</sup>. Any reduction in the population of insectivorous bats can be expected to result in an increase in the surrounding insect population, and therefore an increase in the insect pest population of the surrounding farms. The farmers may then spray their crops with insecticide - thereby reducing the food supply of the remaining insectivorous bats and indirectly poisoning them. There is in the Cango District no known cave of a size which even approaches that of Cango I, and which can be used as an alternative roost on the same scale. Despite this inequality of cave size, a recent bat survey recorded only one bat from Cango Cave, and 38 from the other caves in the Cango Valley<sup>37</sup>. It can therefore be argued that the bat population of the Cango Valley has been reduced during the past two centuries by the development of Cango Cave.

During the early years of the twentieth century there existed the South African National Society, a voluntary conservation organisation with influential members and officials. Its aims were the preservation of those buildings and natural features which were considered to be of cultural importance to the Union of South Africa. It enjoyed no statutory power, and relied only on the influence of its membership with Government and other officials.

Following a letter from a member who complained about the writing of graffiti using candle smoke, the Society in May 1913 wrote to Senator Edmund Powell who asked the Minister of the Interior whether it was practicable for the Government "... to take steps properly to preserve this object (Cango Cave) of national interest"<sup>38</sup>. The Minister

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replied that the damage was old, and that arrangements were in hand to transfer responsibility to the Cape Provincial Administration<sup>39</sup> - thereby evading his statutory responsibility for the conservation of the Cave. There is no further mention of damage to Cango Cave in the Society's Minute Book. The S.A. National Society failed to conserve the Cave because it lacked the legal power to enforce its recommendations. Either it had insufficient influence with Government; or its Committee was satisfied with the Minister's reply; or the Committee members lost interest.

After local control took over in 1921, better management practices should have been expected because of the need of the Oudtshoorn Municipality to protect what it hoped would become a valuable source of revenue for the district. However, the Oudtshoorn Municipality has been an active desecrator of the Cave, as listed in Table 7.5.1<sup>40</sup>:

Table 7.5.1: OUDTSHOORN MUNICIPAL DELIBERATE CAVE DAMAGE

<u>Year</u>	<u>Incident</u>
1928	Visitor encouraged by Guide to remove speleothems
1929	Speleothems displayed in the Publicity Bureau
1938	Stalactite removed for the Ossewa monument
1941	Magnesium flares used for ciné-filming purposes
1951	Speleothems on stage at the Municipal ball
1958	Speleothems sent to Geological Survey for display
1959	Speleothems on stage at the Municipal ball
1964	Cutting of artificial entrance

It is not known whether the speleothems used for display purposes had been previously broken and removed from the floor, or were deliberately removed from their original positions. It is similarly not known if the same speleothems were used, or if new specimens were collected, on each occasion. The damage to the Cave would have been much less if broken speleothems had been removed from the floor and reused, than if fresh speleothems had been collected each time.

The cave conservation cause in South Africa acquired further legal status by Act No. 4 of 1934 which established the Historical Monuments Commission (HMC.). The Commission was empowered to recommend to the Minister of the Interior the proclamation of, inter alia, "... any ... cave, grotto ... of aesthetic, historical, archaeological or scientific value or interest ... and any anthropological or archaeological contents of the ... caves, rock shelters ...."

Such proclamation confers the following protection on a Historical Monument:

"9.(2) No person shall, without the written consent of the Commission, destroy, or damage any monument or relic or make any alteration thereto ...."

Cango Cave was declared a Historical Monument in 1938<sup>41</sup>, thereby confirming the legal protection conferred by Governor Lord Charles Somerset in 1820. The Oudtshoorn Municipality was strongly opposed to such proclamation because it feared outside interference with its management of the Cave.

It is not clear why the Historical Monuments Commission failed to take action against the Oudtshoorn Municipality over the last six incidents listed in Table 7.5.1. Because, with the exception of the 1964 artificial entrance, they are not mentioned in the Commission's files, it is likely that they were not brought to the attention of the Commission. Its office at that time was in Johannesburg, too far away from the Cave for its staff to have access to the Oudtshoorn Courant's stories about the damage to the Cave. Most readers of the Oudtshoorn Courant would probably not have known the address of the Commission. Perhaps the main reason for the failure of the Commission to be informed about vandalism at the Cave was the nature of the reporting in the Oudtshoorn Courant. All the incidents listed in Table 7.5.1, with the exception of the 1964 artificial entrance, were reported as fact with no criticism of the Cave management.

Even though graffiti writers are often easily identified, no one has ever been prosecuted for damaging the Cave. One possible reason for this failure to prosecute may have been that graffiti writing was not regarded at that time as seriously as it is today. Another reason may have been the eminence of some of the graffiti writers who would have had friends in high places (Table 7.5.2):

Table 7.5.2: SOME EMINENT NINETEENTH CENTURY CANGO CAVE GRAFFITI WRITERS

<u>NAME</u>	<u>POSITION</u>
E. Anderson	Magistrate, Prince Albert
P.T. Blant	Oudtshoorn schoolteacher & Town Clerk
G. Edmeades	Oudtshoorn Divisional Councillor
J. O'Hare	Oudtshoorn medical practitioner
J. Russell	Oudtshoorn medical practitioner
S.J. Wiggett	Oudtshoorn Town Councillor

The Cave was inspected in February 1939 by Prof. S.H. Haughton, a geologist, on behalf of the Historical Monuments Commission. He commented briefly on recent graffiti, and therefore recommended the erection of a notice appealing to visitors not to damage the Cave. He also recommended the provision of steps and handrails inside the Cave, and

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improved facilities for visitors outside the Cave. However, the Oudtshoorn Municipality did not have available funds for the recommended improvements; and only the warning notice was erected at the expense of the Historical Monuments Commission.

Complaints about the poor facilities at, and damage to, the Cave were received by the Historical Monuments Commission in 1949 and 1950. The Commission was realistic about the poor financial status of the Oudtshoorn Municipality, and noted that "*supervision is as sound as Oudtshoorn can afford*". The Commission had no money to spend on the Cave. Because the Cave management was similarly impecunious, the Commission was in no position to enforce its desire for improved facilities for, and better supervision of, visitors.

Because it was dissatisfied with the Oudtshoorn Municipal management of the Cave, in 1961 the Historical Monuments Commission had a meeting with the National Parks Board. The Historical Monuments Commission had no speleological expert, and hoped that this expertise would be forthcoming from the Parks Board. The only result of this meeting was an unsuccessful attempt by the Parks Board to obtain management of Cango Cave<sup>42</sup>.

In its motivation, the Parks Board stated that it managed other outstanding natural features such as the Kruger Park, Addo Elephant Park, and the Kalahari-Gemsbok Park, and was therefore well able to balance the conflicting demands of preservation and presentation. It continued that it was a member of international tourism and conservation organisations, and that many unstated overseas show caves had been declared National Parks<sup>43</sup>.

The National Parks Board by then had enjoyed 36 years experience of managing areas of outstanding natural importance as tourist attractions, but it had no experience of cave management. However, unlike the Oudtshoorn Municipality it had overseas connections, and the financial resources to pay for the necessary improvements. It is therefore probable, but by no means certain, that the National Parks Board would have been able to manage Cango Cave more successfully on a conservation basis, and at the same time manage the surrounding and overlying land. However, nothing further was heard of this attempt by the Parks Board to control and manage the Cave.

If the National Parks Board had succeeded in its bid to manage Cango Cave, it would have given the Cave National Park status, similar to that which has been enjoyed for many years by major show caves overseas such as Baradla (Hungary), Yarrangobilly (Australia), Jenolan (Australia), Waitomo (New Zealand), Mammoth (USA.), Carlsbad (USA.) and Wind Cave (USA.). With this legal status comes the

requirement to manage the cave on a conservation basis, and to return the profits to the Cave to finance research and to provide appropriate facilities for visitors.

The National Parks Board was established by Act. No. 56 of 1926 for the propagation, protection and preservation of wild animal life, wild vegetation and objects of **geological**, ethnological historical or other scientific interest for the benefit, advantage and enjoyment of the inhabitants of the Union. The Act was passed 5½ years too late for the Board to have been entrusted with the management of Cango Cave in preference to management by Oudtshoorn Municipality. The failure of the Board to shew an interest in Cango Cave before 1961 probably reflects the failure of the Trustees to appreciate the speleological and geological importance of the Cave, or that the Board was already overcommitted. However, in 1992 the Parks Board is again negotiating for control of Cango Cave<sup>44</sup>. On the other hand, its management of the Knysna Lagoon is a "drain on the board's limited resources"; and the Board wishes to be relieved of this financial liability<sup>45</sup>. This suggests that the National Parks Board's current interest in Cango Cave lies in the Cave's liquid assets and income, rather than in its conservation.

As required by Law, the Historical Monuments Commission was approached for its comments on the proposed 1960s Development Scheme. Inter alia, this scheme, in deference to the Separate Amenities Act, made provision for separate facilities for white and non-white visitors. This required the cutting of a separate, artificial, entrance for the non-white visitors - even though once inside the Cave all racial groups mixed freely. The Historical Monuments Commission approved this alteration to its Historical Monument without demur. Even though the Commission claims that it is concerned with aesthetics, it also approved the erection of the cavemouth building in the alien sandstone, and in a style which is not in keeping with the vernacular architecture of the Cango Valley. It may have been that the Separate Amenities Act was superior to the Historical Monuments Act.

In December 1961 the Historical Monuments Commission complained to the Provincial Secretary that the Oudtshoorn Municipality was exploiting the Cave for financial gain, and paying too little attention to its conservation. In particular the Historical Monuments Commission complained about the provision of a concert hall in the Cave, the unspecified effect of the visitors on the speleothems, flora and fauna, and about the frivolous attitude of the guides. It demanded a Commission of Enquiry - a demand which was refused by the Cape Provincial Administration<sup>46</sup>.

Although the Historical Monuments Commission, and its successor, the National Monuments Council, have the legal

powers to prevent the deterioration of Cango Cave, it has never been prepared to make a determined stand against the Oudtshoorn Municipality. The Commission knew that the Oudtshoorn Municipality had been able to resist successfully take-over bids by the S.A. Railways and Harbours, and by the National Parks Board. It is probable that the Commission realised that it stood no chance of winning a political battle with the Municipality, and therefore decided against confrontation. It is apparent that, even though the Municipality has never been able to secure direct Government and Provincial subsidies for the Cave, it is sufficiently well connected to resist successfully any political threat to its vested interest in the Cave.

Although the Cave has been significantly altered during the past two centuries, such changes have not necessarily been detrimental to the Cave. Thus the provision of steps and paths concentrates the visitors at specific parts of the Cave, and facilitates their supervision. Damage away from the designated path can therefore be expected to be reduced.

On the other hand electric light, while eliminating pollution from the candles and flares, encourages the growth of lampenflora and tends to raise the temperature inside the Cave as shewn in sections 6.2.3 and 6.2.4).

Although removal of speleothems probably does not occur nowadays, the numerous tourists continue to contribute to the deterioration of the Cave in more subtle ways. Their litter can be removed; but their exhaled water vapour and wet clothes will raise the relative humidity; and their body heat will raise the temperature. Both temperature and relative humidity affect the speleothems as described previously in sections 6.2.5 and 6.2.6).

Having discussed the expenditure of the profits derived from the Cave, it is now relevant to discuss the use of the Cave for scientific and educational purposes.

## 7.6 USE OF THE CAVE FOR SCIENTIFIC AND EDUCATIONAL PURPOSES

### 7.6.1 Scientific Purposes

*"Speleology is ... a science in which all the other scientific disciplines are in some aspects applicable to caves or their contents."*<sup>47</sup>

*"... speleology is a recognised scientific study that touches all aspects of caves, karst, and cave life; and thousands of papers, books, and photographs have been published around the world."*<sup>48</sup>

Although speleologists were absent from the Cape before the 1950s, the traditional basic sciences have been well-represented in the universities and other research institutions of South Africa<sup>49</sup>. Such scientists, and more recently enthusiastic amateurs, have done occasional sampling at Cango Cave; but no long-term applied research, especially about the effects of the visitor pressure on the Cave, has been done. Pure cave research requires areas where disturbance by visitors has been minimised; Cango I therefore is manifestly unsuitable for pure research, but is ideal for applied speleo-environmental research. Cango II and III, being relatively undisturbed, could be used for pure research. The financing of such pure and applied research would be in keeping with the policies of the Cape Provincial Administration which require the profits to be spent on the Cave. Such expenditure would therefore be a legitimate call on the Cango Cave funds.

Although no research on the effects of tourists on the Cango Cave environment has been done, similar work has been done at overseas show caves, and published during the past three decades<sup>50</sup>. The information gained from these publications can be summarised as follows:

- 1) All caves are different, but have fragile environments in common.
- 2) Low energy caves are more prone to damage than are high-energy caves.
- 3) Visitors damage caves; and tourists damage show caves.
- 4) Therefore show caves should be managed on a conservation basis.
- 5) An environmental impact assessment should be done on every show cave, so that the damage done to that cave by the visitors can be identified.
- 6) Only then can steps be taken to repair damage (if possible), clean the cave and minimise future damage.

In this literature can be found detailed accounts of conservation work done in overseas show caves, from which can be obtained ideas for similar work at Cango.

The present Director of Cango Cave has travelled widely, visiting overseas show caves and attending international speleological congresses (Table 7.6.1).

Although his expenses have often been paid out of the Cave profits, there is little evidence of the impact of his knowledge of overseas show cave managements on his management of Cango Cave. No pure and applied research has been or is being done. It is doubted if much speleological

literature is being received by the Director. Although some changes have been made to the arrangements outside the Cave, there has been no significant change inside the show Cave since the 1967 development scheme.

Table 7.6.1: CANGO CAVE DIRECTOR'S OVERSEAS SPELEOLOGICAL VISITS

<u>YEAR</u>	<u>VENUE</u>
1962	Belgium, England
1965	Austria, Germany, Italy, Spain, Switzerland, Yugoslavia
1969	Austria, Czechoslovakia, England, France, Italy, Lebanon, Switzerland
	Germany: International Speleological Congress
1973	Czechoslovakia: International Speleological Congress
1977	England: International Speleological Congress
1981	USA.: International Speleological Congress
1986	Spain: International Speleological Congress

There are two inter-related reasons why cave research has not been carried out on a continuing basis in South Africa in general, and at Cango in particular, viz. lack of funds and therefore lack of suitable researchers. The requirement of the Province in 1937 that "the excess of income over expenditure shall be paid into a separate account and used only in connection with the Caves" could eventually have provided the necessary funds to attract speleologists and their expertise to Oudtshoorn. This could have been done either by contract researchers or by Cave employees, and through a university or by an independent research institute.

The failure of the Cango Cave management to support Cave research probably reflects its ignorance of the long-term benefits of such research. The only research which it has commissioned has been for projects which will enable more tourists to view the Cave in unit time, and which will generate publicity for the Cave. Thus the 1956 survey of Cango I produced the map and section that enabled the management to plan for enlarged and new passages within the Cave. The support given by the management to the exploration and survey of Cango II and III resulted in much publicity for the Cave, and provided information which could be used to consider the desirability and feasibility of opening the newly discovered extensions to the public. Although the members of the S.A. Spelaeological Association (Cape Section) were responsible for the 1956 and 1978 surveys of the Cave, and for the discovery of Cango III, they have been refused access to Cango III for five years. Some Transvaal Section members were admitted for geological research in 1984 and 1985<sup>51</sup>. In 1992 scientific staff of the Geological Survey were refused access to Cango II and Cango III, because the electric pump which facilitates

access to Cango III was faulty<sup>52</sup>. However, no pump is required for access to Cango II.

The importance of the relationship between cave tourism and cave research was recognised in Postojna, Slovenia, as early as 1929 when, under the Italian administration, the Istituto Italiano di Speleologia was founded<sup>53</sup>. After the political changes of 1945, this Institute continued as the world-famous Karst Research Institute which flourishes today<sup>54</sup>.

Although the profits from Cango Cave before the 1960s could have supported very little scientific research, there has been adequate money available for modest research and education programmes since then. The failure to finance speleological research could be explained in part by the policy of the Municipality to apply as much of the profits as possible to the immediate benefit of the ratepayers. Money voted by the Cango Caves Committee for research would not have been available for electorally popular amenities such as the synthetic athletic track. It is presumed that alternative reasons could include ignorance of the necessity for research, and unwillingness to make the necessary effort to do or to commission the research. The part-time nature of the Director's position does not encourage the undertaking of research. This is discussed further in Section 8.1 below.

As indicated in Section 6.2, there is no doubt that the Cango Cave environment has deteriorated markedly during the past two centuries. The maintenance of a cave ecosystem requires research, and planning based on research. Such applied cave research, into the effects of the visitors on the Cave environment, can be expected to produce long-term benefits for the conservation of the Cave. If the Cave is permitted to deteriorate further, it may well cease to attract visitors and their money to Oudtshoorn. The Cave Director, during his overseas trips, should have been made aware of the need for conservation management. He also should receive cave conservation literature to ensure sound management and an educational basis for the guides. He and his Cave Committee members must attempt to understand the importance and significance of applied cave research.

#### 7.6.2 Educational Purposes

*"Guided tours can provide education about caves ... and create a pool of non-cavers who are enlightened as to the value and importance of caves. Tours also provide the opportunity to educate people as to how to behave in caves and thus protect the fragile environment and ecosystems. Educating people ... seems to be the ultimate answer to cave protection."<sup>55</sup>*

The traditional function of a show cave is to entertain the visitors, and therefore to make a profit for the proprietor. This is well illustrated by the "cave wars" which were fought during the 1920s and 1930s between the various show cave proprietors in Kentucky, USA.. The Kentucky show caves could be so profitable that less successful operators would litigate for a share of their neighbours' proceeds<sup>56</sup>. The entertainment function is still very important because, if the cave tour is not pleasurable, the tourists will not return. However in addition, especially during the past half century, it has been realised by many overseas show cave managements that caves can, and should, also be used for education and for scientific research. They should also be presented to the tourists with the least possible disturbance to the caves and their surroundings. In the present era of diminishing global resources and increasing human population, it is essential that the concept of conservation be imparted to as many people as possible, and at as an early age as possible. The non-renewable nature of a cave, and the large numbers of visitors of all ages which a show cave can attract, ensure that a well-managed show cave could become a powerful force in the informal conservation and educational field. A show cave should be used for environmental education.

Although education is defined as "systematic instruction"<sup>57</sup>, current practice recognises the importance of informal education by which people can learn by experience and at their own speed. A visit to a show cave can therefore, if suitably organised, teach the tourist something about geology, speleology, local history and environmental conservation.

There are three ways in which visitors to a show cave can be informed about the cave:

- 1) The spoken word i.e. that which is said by the guides and broadcast over public address systems.
- 2) The written word i.e. guide books and other easily available literature.
- 3) Diagrammatic representations i.e. museum displays.

#### 7.6.2.1 The Guiding Service (i.e. the spoken word)

*"The central element which determines the quality of the visitor experience in caves is virtually always the quality of guiding. A good guide can make a badly lit cave exciting, while a bad one can make the finest sights utterly boring."*<sup>58</sup>

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

A cave guide has five important functions; and to perform them adequately he must receive appropriate training and support from the cave management<sup>59</sup>.

- 1) Conservation.  
The guide must closely supervise the tourists, and ensure that they do not damage the cave in any way.
- 2) Accident prevention.  
The guide must ensure that the cave is at all times safe for the visitors. He must also have a good knowledge of first aid and cave rescue techniques so that he can provide effective and immediate assistance to anyone who may sustain an injury.
- 3) Interpretation.  
The guide must have a good knowledge of his particular cave, and of the speleological sciences in general. He must be articulate, and flexible in his approach, so that all visitors learn from their experience.
- 4) Comfort.  
The guide must be sufficiently extrovert and tactful so that the visitors leave feeling good about their experience. Satisfied tourists tend to return, and to encourage their friends to visit.
- 5) Marshalling.  
The guide must ensure that the visitors assemble in suitable numbers at the appropriate place, and proceed through the cave at the speed determined by the management.

Selection of Guides

The selection of cave guides must therefore take into account the skills required for the above functions.

The successive sources of Cango Cave guides are summarised in Table 7.6.2:

Table 7.6.2: SOURCE OF CANGO CAVE GUIDES	
1780 - 1820	Surrounding tenant farmers at Kombuis
1820 - 1891	Local Field Cornets
1891 - 1926	Surrounding landowners at Grootkraal
1926 - date	Salaried Municipal employees supplemented by temporary guides at busy periods.

It has already been shewn that until 1967 the facilities for the visitors to Cango Cave left much to be desired; and the same was largely true for the staff. Although the Cave is remotely situated, no accommodation has ever been provided for the guides. There had been no

available land until expropriation in 1955. Only in 1967 was a tea room designated for the guides.

Until 1891 the official caretaker lived well away from the Cave, which was therefore inadequately supervised. However, from 1848 until 1873 close relatives of the Field Cornets owned a half-share in the surrounding farm Grootkraal<sup>60</sup>, an arrangement which may have facilitated closer supervision. From 1891 until 1926 successive caretakers lived at Grootkraal, 1 km. away on the access road. These caretakers were part-time officials who had their own farms, and therefore did not require accommodation.

From 1926 full-time salaried guides were employed, who were required to work a 13-day fortnight. These long hours led to some dissatisfaction in 1930<sup>61</sup>. At that time of Depression, the Municipality received so many applications for the few vacancies at the Cave that it did not have to improve conditions of service. Guides were expected to lodge with neighbouring farmers. One employee and his family lived in the engine house - but it is not clear whether this reflected lack of suitable lodgings or the cost thereof.

These conditions of service were probably no worse than those elsewhere in South Africa at the time. There is no evidence that disgruntled guides were responsible for any major deterioration of the Cave - though one guide was dismissed for embezzlement<sup>62</sup> and, on another occasion, a guide did encourage visitors to remove speleothems<sup>63</sup>.

There is no record of what the Guides told the visitors, but there is no reason to believe that it was anything other than a very superficial account. Although the farmer at Grootkraal was responsible for the guides between 1891 and 1926, in practice he delegated this duty to his Farm Manager and junior employees who would probably have regarded their cave duties as being subordinate to their farm duties. Certainly they were not always available as guides<sup>64</sup>.

In 1926 the only qualification demanded was bilingualism<sup>65</sup>. The guides were required "to make up good stories about the Caves"; but there was no insistence on historical and scientific accuracy. In 1937, after a lengthy debate, the Town Council decided to insist on a matriculation certificate for appointment as guide<sup>66</sup>. The facts that the guide book "Cango" ran to four English and only two Afrikaans editions between 1958 and 1970, and that the 1985 guide book "Kango" was published only in English, suggest that English speaking visitors may far outnumber Afrikaans speakers. On the other hand it may be that English speakers are more likely to pay the extra money for a guide book. Certainly the guides should be fluently

bilingual. In the not too distant future competence in other African and European, and perhaps Oriental, languages may be necessary. Such linguistically segregated tours are offered at Han (Belgium) and Postojna (Slovenia).

No knowledge of the earth sciences was required until 1962 when it was announced by the Town Clerk that in future Guides at Cango Cave would have to write a bilingual examination on the theory, geology and other aspects of the Cave, which would involve "making a thorough study"<sup>67</sup>.

Even though a good knowledge of the earth sciences has been a requirement for appointment to senior positions in major overseas show caves for the past quarter century, this was apparently not considered to be important by the Oudtshoorn Municipality as shewn by a recent advertisement. In 1988 it advertised for a Guide-Superintendent who would be required to "market one of the world's most renowned attractions in the whole of South Africa"; and his desired qualifications were:

*"Matric - bilingualism is essential. A third language will be a strong recommendation as well as qualifications in marketing, personnel management and liaison"*<sup>68</sup>.

No appointment was made. The long-serving Guide Superintendent remained in office until November 1990, after which the post was readvertised at a salary scale R35424 - R37224<sup>69</sup>. The qualification then required was Senior Certificate or National Diploma in the Marketing / Tourist field. Again, no knowledge of caves and their conservation was demanded; and no appointment was made. The present Acting Guide-Superintendent is the former Cave Restaurant Manager, who was appointed in preference to the long-serving Senior Guide.

In November 1992 the Oudtshoorn Municipality advertised for a "Cave Manager" at a salary scale 3 levels higher than that payable to the Guide-Superintendent in 1990. The desired qualifications were bilingualism and:

*"... a B Degree or equivalent qualification in Communication of Geology (sic). Experience in Marketing / Tourism and / or Public Relations is essential to this post. Knowledge of Speleology and a third language will be a recommendation."*<sup>70</sup>

These desired qualifications are a great improvement on those previously demanded, in that a degree in Geology and experience of speleology are required. Nevertheless it is disappointing that experience of marketing, public relations and tourism is considered to be more important than knowledge of speleology.

It is the responsibility of the person in immediate charge of the Cave to set and maintain standards for guiding, education and conservation. If that person has little or no knowledge and experience of speleology, conservation and environmental education, and if he does not receive the support of higher management, the quality of the management of the Cave will inevitably be poor.

### Training of the Guides

Rohde<sup>71</sup> has written at length on the importance of training of cave guides, which should provide the basis for guides to present their own individual tours in their own styles. They must be thoroughly familiar with the cave features, both natural and artefact. They must be well-informed about the history and geology of the cave, and about general geology and speleology. They must have good communication skills, be flexible in their presentations, and be able to respond to questions.

The Cango Cave guides receive little training. They did, in 1926, receive a detailed job description, in which only the twelfth and last paragraph defined their responsibilities to tourists:

"12. The Guides must learn as quickly as possible the several routes through the Caves, so as to avoid delay when conducting parties. They must also learn to describe the various Chambers, stalagmites and stalactites, dates of discovery, improvements &c. in a short concise manner for information of visitors, and this must be done with every party irrespective of numbers."

This indicates the low priority which the Municipality gives to the importance of training. Presumably the newly-appointed guides learned their jobs from their predecessors, a practice which has recently been deprecated because all the errors<sup>72</sup> and bad habits will tend to be perpetuated by the recruits.

Inadequacy of guide training has been the subject of repeated complaints during the past century. In 1894 the Magistrate received a complaint that the Guide was "sullen and unobliging". On investigating he discovered that the guide's command of the English language left much to be desired<sup>73</sup>. Despite this the Guide kept his job until the 1920s. It is therefore apparent that English-speaking visitors at that time would have learned very little about the Cave.

Complaints were regularly received about the standard of the guiding service<sup>74</sup>. One visitor wished that the guide would merely switch on the lights, and say nothing<sup>75</sup>. The South African National Society took exception to commercial

advertising by the guides<sup>76</sup>, one of whom for many years endorsed a proprietary analgesic. The Oudtshoorn Publicity Association asked that the guides make the Cave tour more interesting<sup>77</sup>. Another visitor complained about the speed with which he was taken through the Cave, and that he could see no connection between what he was seeing and what the guide was saying<sup>78</sup>. Further complaints referred to the bad taste and fertile imagination of the guide<sup>79</sup>, to cheapness and gimmickry<sup>80</sup>, to inappropriate levity<sup>81</sup> and to apathy<sup>82</sup>.

These are the complaints of those people who took the trouble to write. It will never be known how many disappointed tourists complained to their friends, and never returned.

On being asked how he came to be selected for a post of temporary Cango Cave guide, one student in December 1991 replied that he was required to study a book - the title and author of which he had forgotten. Thereafter he had to write, and pass, a test on the content of the book. This indicates the unsatisfactory training which this guide received. It appears that few of the temporary guides have any knowledge of geology and speleology. They learn the speeches, repeat them verbatim at the appropriate part of the Cave, and give the impression of being bored. Many of the guides are Afrikaans-speaking, and have an inadequate command of the English language<sup>83</sup>.

#### Content of the Cango Cave tour

Although since 1967 there have been some technological changes in the way Cango Cave is presented to tourists, there is still no attempt to interpret the Cave. After their visit, the tourists do not know what a cave is, why it is there, how it and the speleothems were formed, and how the presence of visitors is deleterious to the Cave environment.

What little factual information is given to the tourists contains mistakes, which are inexcusable because the truth is easily available to the Cave management. Examples include:

- 1) *The Cave is formed in dolomite. The correct version is limestone*<sup>84</sup>.
- 2) *The Cave was discovered on 11 July 1780 by Farmer van Zyl while chasing a wounded buck. Although there is no evidence to support this story, it has been repeated so many times that it has come to be accepted as true. A more plausible story is that the Cave was discovered between 1776 and 1805 by Foreman Roadmaker van Zyl while searching for road metal; but the matter is not proven*<sup>85</sup>.

While these two errors may not be particularly serious in themselves, they well illustrate the lack of care which the Cave management gives to the presentation of the Cave to its visitors, and its failure to receive and take cognisance of relevant literature.

Present-day tourists are herded into van Zyl's Hall where they first see and hear a recorded reconstruction of the first descent into the Hall by van Zyl. They then proceed into Botha's Hall for a bilingual son-et-lumière presentation from whence they are conducted by the Guides through the rest of the Cave for a fanciful description of the shape and likeness of the various speleothems often with biblical connotations e.g. "Madonna and Child; Angel's Wings". The Afrikaans tours have even greater religious content. This emphasis could well be offensive to non-Christian tourists, the numbers of which are increasing with the increasing affluence of the non-white population, and as South Africa becomes internationally acceptable.

Management decrees that at busy times, the senior, permanent guides stay in the ticket office and at the Cave entrance. Their duties are to issue tickets, make announcements over the public address system, supervise from outside the Cave the guides and other employees, and control the son-et-lumière apparatus. The actual guiding is done by the junior or temporary guides. On very busy days even these guides remain at fixed positions within the Cave; and the tourists walk from guide to guide. Each guide is repeating the same information many times during the day, and rapidly becomes bored. This has a deleterious effect on the quality of the information imparted to the tourists.

On 16 December 1991, not the busiest day of the year, there were 19 guides on duty inside the cave; and 17 tours were run. There were 2669 tickets sold, giving an average of 157 visitors per tour. This ratio is clearly unsatisfactory. Those visitors at the back of the tours had difficulty in hearing the guide. Long before the Devil's Workshop was reached the tour group was so spread out that it merged with the group behind. The visitors were then left to find their own, unsupervised, way out of the Cave, clashing with other parties on their way in. It is impossible adequately to inform and supervise such large parties; and the standard of guiding will inevitably be poor<sup>86</sup>.

It is therefore clear that on busy days the guides at the Cave are unable to cope with the demands placed upon them. The visitors in each tour should therefore be considerably reduced to a manageable number, a practice which is enforced elsewhere. At Postojna Cave in Slovenia visitor numbers are effectively limited by the capacity of the light railway through the entrance series. Crystal Cave in Pennsylvania, USA., limits visitors to 30 per tour<sup>87</sup>;

while Kromdraai Cave in the Transvaal limits visitors to 240 per week<sup>88</sup>. It should be feasible to offer different tours for different types of visitors, and to offer only short tours in the busy season.

Despite the huge size of Mammoth Cave, USA., with its 240 km. of large passage and multiple entrances, it is management policy to restrict visitor numbers. Six different tours are offered to suit the interests and fitness of the visitors<sup>89</sup>. A maximum of 40 tours per day is organised, with no more than 200 visitors per tour depending on the carrying capacity of the designated route<sup>90</sup>.

The tourists at Cango Cave should be informed in layman's language about the history, geology, speleogenesis, meteorology, biology and speleothem chemistry of the Cave. Their environmental impact on the Cave and its surroundings, and the fragility of the cave environment, should be emphasised using the appropriate features in the Cave as illustrations.

Holland recognises eight different categories of visitor to a show cave<sup>91</sup> (Table 7.6.3):

Table 7.6.3: CATEGORIES OF VISITORS TO SHOW CAVES	
1)	Package tourists
2)	Social or special interest groups
3)	Educational tours
4)	Peer group
5)	Family unit
6)	Retired people
7)	General traveller
8)	Repeat visitors

The style and content of any tour needs to take into account the nature of the visitors in that tour. For example, the desirable style and content of a tour for pensioners is obviously different from that suitable for schoolchildren. At Cango Cave the same tour is usually given to all parties with no cognisance of the differing interests and needs of those parties.

It is possible to combine education with entertainment. At Crystal Cave, Pennsylvania, USA., tours last 45 minutes and have 30 patrons. The Guides combine jokes with serious information, and manage to impart something about speleogenesis, conservation, geology, ecology, and biology in that time. Most important, they keep the attention of the visitors for the duration of the tour<sup>92</sup>. Attentive visitors are more likely to remember the information which they have been given.

One difficulty in providing adequate numbers of competent guides for Cango Cave is the seasonal nature of the trade. Thus daily numbers can fluctuate from 84 on a mid-week school term winter's day (30 July 1990) to 3182 during the summer holidays (18 December 1990). It is clearly uneconomic to retain all year sufficient guides to manage the holiday crowds. Nevertheless, all guides, both permanent and temporary, should be adequately trained. Ideally students of the earth sciences should be employed as temporary guides, recruited if necessary from outside Oudtshoorn. But such recruitment would be contrary to the Municipality's traditional policy of employing local people in preference to outsiders. Since the closure of the College of Education in December 1989, there has been in Oudtshoorn no institution of higher education which can supply students for temporary work at the Cave. Oudtshoorn schoolchildren, and Oudtshoorn youths studying elsewhere, are currently employed.

It is therefore apparent that although successive managers of Cango Cave have always described the Cave as being "world famous", they have never provided a guide service which meets international standards. The numbers of visitors in each tour should be drastically reduced; and the standard of presentation improved. This would ensure that all tourists can hear the guide at all times, and that they would be more likely to remember that which they had seen and been told. Smaller tours would ensure that the tourists are better supervised by the guide.

South Africa is currently moving towards international political acceptability; and the Rand continues to depreciate in value compared to foreign currencies. Therefore, assuming that no political disaster will occur, increasing numbers of foreign tourists can be expected to come to South Africa. These visitors will expect international standards at all tourist attractions. It is therefore essential that the standard of guiding be improved, and that tours be offered in languages other than English and Afrikaans. On busy days single language tours should be provided; but during the quiet season it may be necessary to offer multi-lingual tours.

#### 7.6.2.2 Guide Books i.e. the written word.

The guide's presentation, being verbal, is transitory. Because it has already been shewn that the standard of guiding at Cango leaves much to be desired, it can be expected that little will be retained by the visitor. Any unsatisfactory and unpleasant features of a tour will be remembered long after the acceptable aspects are forgotten.

The provision of guide books therefore has an important rôle to play in the presentation of a show cave. Such books tend to be kept by the purchaser, to be re-read, and to be

passed to friends; and are therefore useful as an aid to publicity. In time, they become valuable collectors' items. But as with all printed matter, the market has to be large enough to justify the expense of printing and publishing.

Cango Cave has always featured in guide books to the Oudtshoorn district; but it was not until 1912 that the numbers of visitors were sufficient to stimulate private publication of the first guide book specifically about Cango Cave<sup>93</sup>. This was written by F.M. Rex, and entitled "The Cango Caves". The problem of high printing costs and low sales was solved by having the guide published first in a magazine, and then reprinted separately. This guide book has eight pages including photographs and the 1897 survey, and quotes from earlier and inaccessible writers. The author was aware of the environmental degradation of the Cave by vandals and of the inability of successive Governments to control this vandalism, and called for local control.

Control having passed to the Oudtshoorn Municipality, a combined anonymous "Oudtshoorn and the Cango Caves" booklet appeared in 1923<sup>94</sup>. A second edition entitled "Oudtshoorn South Africa and the famous Cango Caves" appeared three years later<sup>95</sup>. Both were published jointly by the Oudtshoorn Municipality and the S.A. Railways & Harbours, and were therefore eulogistically written with no hint of previous mismanagement. Thus the Registry with its many graffiti would "*gladden the eye of the visitor*". One contemporary writer was very critical of the first edition of this booklet, and complained that it would compare very badly with the "*clever, high-grade productions*" produced in other parts of the British Empire<sup>96</sup>. A similar criticism appeared of the 1926 edition<sup>97</sup>.

A re-designed guide book appeared in 1934, entitled "Oudtshoorn and the Cango Caves"<sup>98</sup>. The next guide book appeared five years later, entitled merely "Oudtshoorn South Africa", and made little reference to the Cave<sup>99</sup>. These were again published jointly by the Municipality and by the S.A. Railways & Harbours, and were similarly eulogistically written.

Comparison of these early Cango Cave guide books with those of Jenolan<sup>100</sup>, Han<sup>101</sup> and Postojna<sup>102</sup> confirms the validity of these criticisms.

The first guide booklet author to present a geological account of Cango Cave, under the title "How Nature Fashioned the Cango Caves", was Prof. E.D. Mountain in 1937. A second printing appeared between 1958 and 1967<sup>103</sup>. In addition to the usual description of the Cave and its surroundings, the author wrote about the geology of Cango and other cave areas in South Africa. The separate pamphlets were published by

the Oudtshoorn Publicity Association, a department of the Municipality.

Some time after the completion of the Development Scheme in 1967, there appeared another guide booklet, "Focus on the Cango Caves"<sup>104</sup>. There is no indication of the author and publisher, but the style of writing and superficial content suggest that it was published by the Oudtshoorn Municipality.

The most comprehensive guide book to Cango Cave, entitled simply "Cango", appeared in 1958 having been written by members of the S.A. Spelaeological Association (Cape Section) following their exploration and survey in 1956<sup>105</sup>. It contained well-written accounts of pre-history, history, survey, geology, meteorology and zoology of the Cave, and was very well received, running to 4 English and 2 Afrikaans editions. This book became obsolete after the discoveries of Cango II and III in 1972 and 1975 respectively. It went out of print in about 1980, and was never updated. Nevertheless, it will have brought Cango Cave, and South African speleology, to the attention of thousands of South African and overseas readers. This book was privately published, but was written with the encouragement of the Cave management. High printing costs prevented a fifth, updated edition. The S.A. Spelaeological Association (Cape Section), having in 1980 invited quotations from printers, concluded that the book would have to sell for R10-00 - a price which the Cave Director deemed to be too high for sale at the Cave. Because no advance order was received from the Cave, where most purchases can be expected to be made, the Association was unable to proceed with a new edition.

The next guide book was published privately in 1985<sup>106</sup>. Although published only in English, the title is in Afrikaans: "Kango". It was completely rewritten with chapters on the geology, biology, history and topography of the show cave, Cango II, Cango III and other caves in the Cango Valley. Although there are some minor errors in the historical chapters, these have been brought to the attention of the publishers, and hopefully will be corrected should a new edition appear.

The latest guide book, "In My Torchlight: A Guide's Guide to the Cango Caves", has been written by a former guide at the Cave. It has obviously been produced at very low cost to fill only 16 pages<sup>107</sup>. Nevertheless, the author gives short accounts of speleogenesis and the different speleothems to be found in the Cave, cave biology and meteorology, discovery and history of the Cave, and a topographical description. It has been translated into Afrikaans, "In My Flitslig: Kango Grotte 'n Besoekersgids"<sup>108</sup>, and into German "Im Lichte Meiner Taschenlampe: Eine Leitung für die Kango Höhlen"<sup>109</sup> - the

first time a Cango Cave guide book has appeared in a non-South African language.

7.6.2.3 Museum Displays i.e. the visual medium.

Not all visitors are sufficiently literate to be able to appreciate guide books, especially such comprehensive ones edited by Burman<sup>110</sup> and Walker<sup>111</sup>. For this reason it has been the policy of museums all over the world to present their collections in the form of models, specimens, diagrams and photographs which visitors can inspect in their own time. For many years there has been a major museum in Oudtshoorn, named for its founder, C.P. Nel; but there is no Cave display at all.

In 1950 £50 was voted from the Cave account for the C.P. Nel Museum, and in 1970 a further R1000 was voted for a speleological exhibit at the Museum. In 1980 an annual donation of R2000 was voted for the Museum from the Cave Cultural Development Fund. Despite these subventions, there is no speleological exhibit at the C.P. Nel Museum. This subsidy from the Cave accounts, amounting to more than R20000, would have been more than sufficient to finance an appropriate speleological and geological display in the C.P. Nel Museum. It seems strange that the Oudtshoorn Municipality, which has since 1921 encouraged publicity for the Cave, has not insisted that this money be used to present Cango Cave in particular, and speleology in general, to the Museum visitors.

However, there has been an exhibit at the Cave since 1967. In the chambers immediately inside the entrance there is a display of bushman life. In the entrance passage there are display cabinets containing faded cave photographs torn from a glossy magazine, old overseas show cave brochures, a model of the survey of Cango I, a geological time scale, calcite and aragonite crystals, and model insects. Very little has been done to these displays during the past 25 years. On busy days tourists are hurried past this inadequate display of speleological ephemera as the exhibit is not part of the tour.

There is no immediately ideal place for a speleological museum at Cango Cave, the cave-mouth building not having been designed to incorporate a museum. Ideally the museum should be placed before the ticket office so that access is not dependent on the payment of an admission fee.

It should be possible to adapt the cave-mouth building which was designed to duplicate all facilities in keeping with the requirements of the Separate Amenities Act. Because that Act has been repealed, there is no necessity for two restaurants and two sets of toilets and ablutions. The ticket office could therefore be moved to the former tea room, the nearest point to the entrance. The curio shop,

currently in the former tea room, could be relocated in the main building. Visitors could then be encouraged to enter the building directly from the car park at the lowest level, and to pass the restaurant, curio shop, toilets and ablutions on their way to the ticket office. The provision of a speleological museum inside the cave-mouth building, between the bottom entrance and the ticket office, would ensure that all visitors would be exposed to the educational benefits of such a display.

This discussion has shown that the management structure at Cango Cave has never been, and is not, conducive to management on conservation principles. The Cave has never been, and is not being, managed in keeping with international standards and in keeping with the stated policies of successive political masters of the Cape. To summarise:

- 1) The legal status of Cango Cave has never encouraged the investment of private capital for its development as a tourist attraction.
- 2) Although tourist infrastructure has been provided both inside and outside the Cave, this could have been done at least half a century earlier and with better consideration for the Cave and its surroundings.
- 3) Few of the profits have been reinvested in the Cave.
- 4) Very little pure, and no applied, research has been done at Cango Cave.
- 5) The educational and scientific potential of Cango Cave has not been exploited to international standards.
- 6) The guiding service at Cango Cave is not in keeping with international standards

Suggestions for future management are therefore made in the next chapter.

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CHAPTER 8

RECOMMENDATIONS FOR FUTURE MANAGEMENT

*"A tired Cave with a tired management."*<sup>1</sup>

Having established that Cango Cave has not been to date appropriately managed, it is relevant to make recommendations in principle for future management.

As discussed in Section 7.2, at present policy decisions are made by the (Municipal) Cango Cave Committee, all the members of which are local politicians with no speleological knowledge. As with most politicians, they are concerned about being returned to office at the next election. They consequently manage the Cave with a short-term view to re-election. The Town Councillors and officials in the Provincial Secretary's Department, who are required to approve the decisions of the Cango Cave Committee, are similarly ignorant of karst and caves.

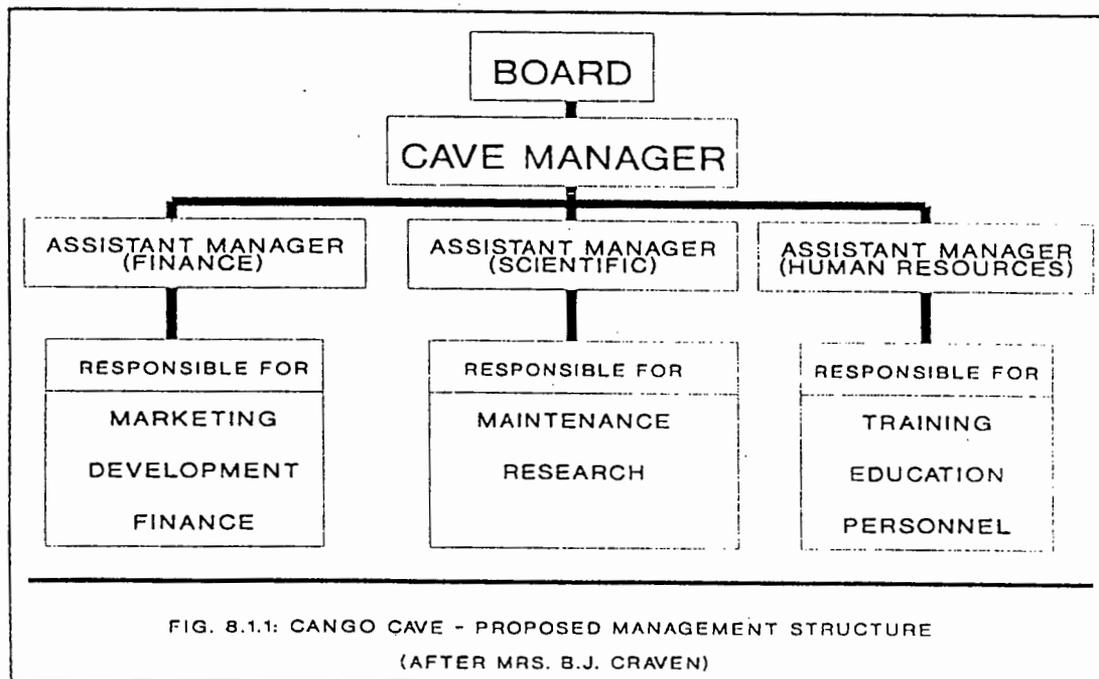
No Cave Director with experience and knowledge of speleology has ever been appointed. Directors have not been provided with adequate money and time to follow speleological and conservation developments overseas, and have therefore been unable to apply such knowledge to the Cave.

Since 1921 the Director of the Cave has combined this responsibility with that of Town Clerk. He therefore is unable to devote his full attention to the Cave.

To ensure that Cango Cave is appropriately managed in the future, as a national asset in need of conservation, it is essential that major changes be made at both executive and middle management levels so that control is removed from the vested interests of the Oudtshoorn Municipal Councillors and officials. This change is essential for the Cave to be managed as a national asset in need of conservation, rather than as a local authority enterprise.

8.1 TIERS OF MANAGEMENT

The proposed management structure is outlined in Fig. 8.1.1:



### 8.1.1 Executive Management

Legislation should be passed to enable the executive management of Cango Cave to be withdrawn from the Oudtshoorn Municipality, and to be transferred to independent Trustees and Board members who have no vested interest in the income from the Cave. The Cave should be vested in Trustees in whose name the title deeds and other assets would be registered. The Board members should be required to operate the Cave on a conservation basis, primarily for the benefit of the Cave as a National Heritage Site. Such Trustees and Board members could operate in association with an already established Government conservation organisation such as Cape Nature Conservation or the National Parks Board. The Board members, having received advice from other experts if necessary and from the Cave Manager, should be required to make the necessary policy decisions for the management of the Cave. They should also be required to interview and recommend applicants for senior staff appointments.

The Board members should be appointed by the Minister of Environment Affairs for a fixed number of years. The duration of their appointments should initially be staggered so that all do not retire simultaneously. This would ensure continuity of management. They should be drawn from differing backgrounds such as Government, Province, the Oudtshoorn Municipality, universities, and speleological societies. Their differing backgrounds would bring together

local knowledge, as well as skills in conservation, speleology, marketing, business management, finance and tourism. This would ensure that no particular interest is likely to dominate, and that decisions would be by consensus following debate. A proposed constitution for this Management Board is presented in Appendix VI.

These arrangements would ensure that the management policies for the Cave would be independent of the vested interests of the Oudtshoorn Municipal Councillors. Opinions and advice would be received from all parties which have an interest in the Cave; and decisions would be made in the best interests of the Cave. This would be in keeping with the Government's tourism policy, which emphasises "the conservation and wise use of the environmental resources that form the basis of the attractions South Africa has to offer"<sup>2</sup>.

#### 8.1.2 Middle Management

The posts of Cave Director (part time) and of Guide Superintendent (full time) should be abolished, and combined into that of Cave Manager (full time). The Cave Manager should have a degree in earth or environmental sciences, and should have practical experience in, and knowledge of, karst and speleology. The job description should contain the requirement that the conflicting demands of presentation and of conservation should be balanced (Appendix VII). The Cave Manager should be required to undertake, or to contract for, the necessary applied speleological research so as to be in a position to advise the Board members with respect to the implications of policy decisions.

This arrangement would ensure that the Cave Manager is able to devote the whole of his time to the Cave. His office should be at the Cave. Decisions could then be made quickly without reference to a remote, higher and part-time authority in Oudtshoorn.

The Cave Manager would be responsible for the day to day management of the Cave, and would delegate the various portfolios according to the abilities and interests of himself and of his Assistant Managers. It is most unlikely that the Cave finances and work load would permit and necessitate eight Assistant Managers. Therefore the division of the various portfolios into Finance, Scientific and Personnel would ensure that related functions are performed by the same Assistant Manager. It may be that the Cave Manager could manage all the portfolios by himself, or with only one Assistant Manager. Perhaps a temporary Assistant Manager would be needed until the recommended changes were effected.

If no suitable applicant for this post is available in South Africa, a Cave Manager should be found overseas. He

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could be appointed on a contract basis with a view to training a local person eventually to assume responsibility.

It is unlikely that someone who is competent to manage the scientific aspects of a show cave will also be well-informed about the catering, retail and accommodation industries. Therefore the restaurants, bars, and curio shop should continue to be leased to private entrepreneurs, and the proceeds therefrom paid into the Cango Cave account. The camp sites should similarly be leased to private enterprise, and the rent paid into the Cave account.

This procedural change would simplify the administration of the Cave, and enable the Cave Manager to devote the whole of his attention to the Cave. It would deprive the Oudtshoorn Municipality of some of its income; but at the same time it would eliminate all the Municipal hidden expenditure on, and responsibility for, the Cave. It would also be in keeping with the Government's privatisation policy<sup>3</sup>.

### 8.2 FINANCIAL PROVISION

The latest available accounts (Table 5.3.3) shew that the Cave is in a healthy financial position. The recent maturation of the 25 year loan raised to finance the 1967 Development Scheme will reduce the annual liabilities and further improve the Cave finances. There should therefore be no need to raise further loans to finance the necessary research, repairs and maintenance.

Attempts should also be made to recover, with interest, from the Oudtshoorn Municipality the moneys previously spent from the Cave accounts on items unconnected with the Cave. If the Municipality were unable to raise the necessary funds to repay the expensive capital items such as the C.J. Langenhoven Memorial Library, the Arnold de Jager Indoor Sports Centre, the synthetic athletic track and stadium, and the Adventure Training Centre, those properties should be transferred to the Cave which would then charge an economic rent for their use. If successful, this would increase the capital fund and / or income of the Cave account, thereby providing more funds for research and development.

It is also proposed that in future all profits from the Cave should be spent only on the Cave viz. on presentation, maintenance, facilities for visitors and Cave research. The Cultural Development Fund should be abolished, and amalgamated with the Cango Cave Trust account. If there were no legal method of diverting funds from the Cave account to unrelated items, the Board members would not be tempted to spend money on other projects.

8.3: MAINTENANCE AND REPAIRS

Although the floor of Cango Cave is regularly swept and some litter removed, the Cave has never been thoroughly cleaned since it was discovered. Non-urgent cleaning, maintenance and repairs should be done during the quiet, winter, months. This would cause minimal disturbance to visitors. It would ensure that the guides and other staff are occupied throughout the year, thereby increasing the number of full-time employees. Fewer part-time employees, who are inevitably less experienced and skilled than their full-time colleagues, would then be needed. If contractors are employed to do this work, the fragility of the Cave environment must be impressed on them, and they must be closely supervised by the Guides. It will probably be better to do the work by Cave employees who can be trained in the techniques of cave preservation, rather than by contractors.

As indicated in Section 6.2, the following need to be done urgently:

- 1) All speleothems must be carefully treated to remove the accumulated dust and lint.
- 2) All lampenflora must be removed, and the lights replaced with low-energy sources of illumination which will discourage the re-growth of lampenflora.
- 3) All litter, both conspicuous and inconspicuous, must be removed from the Cave
- 4) All electrical wires and installations must be concealed. Perhaps after a quarter of a century the time has come to re-wire the Cave using modern inert miniaturised components.
- 5) The modern fibreglass cover should be removed from the 1891 gate, and transferred to the gate at the modern artificial entrance. This would restore the natural ventilation of the Cave to that which existed at the time of its discovery.
- 6) The wooden stage in van Zyl's Hall, and the changing rooms behind the stage, should be removed. This would contribute to the restoration of van Zyl's Hall towards its original state. The reduction of numbers of visitors in van Zyl's Hall, and the absence of stage lights, would ensure that the temperature did not rise unduly and that changes in the relative humidity would be minimised.

8.4: PRESENTATION AND MARKETING  
TO TOURISTS AND FOR EDUCATION

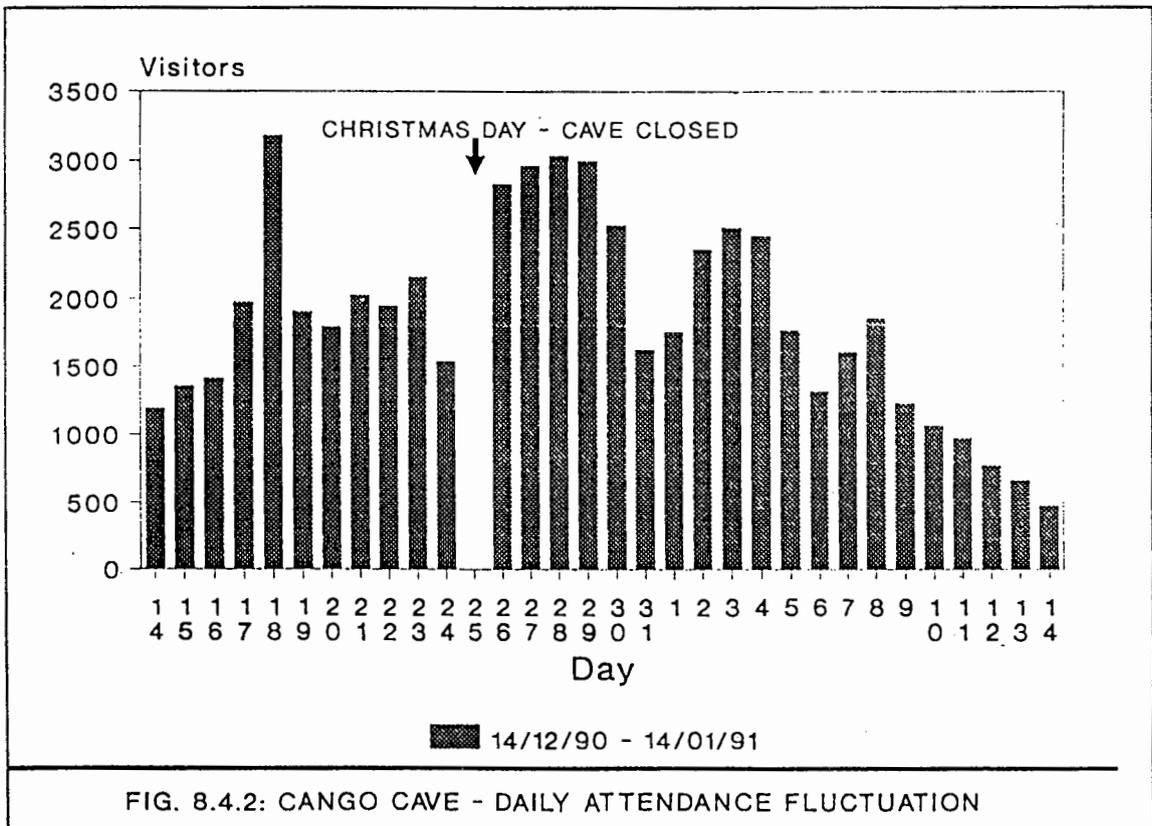
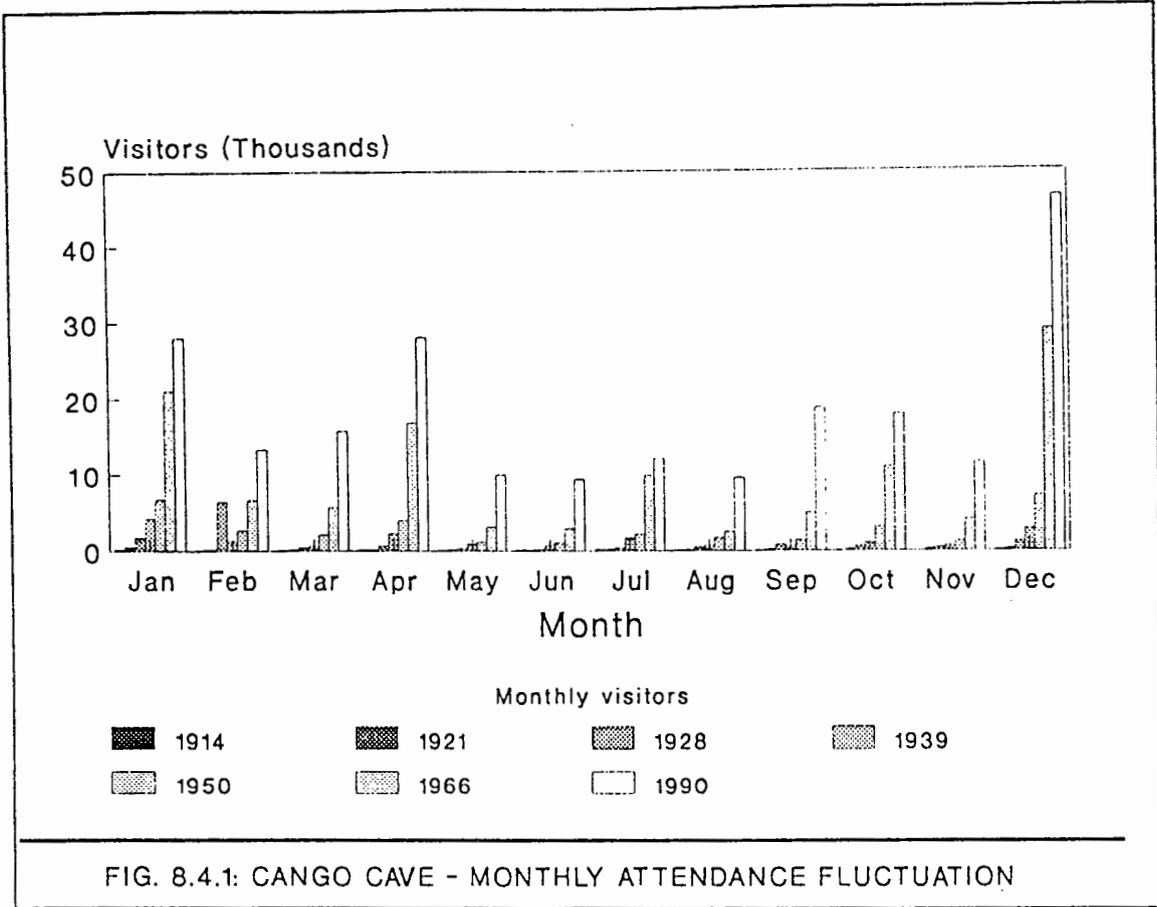
Cango Cave should be presented to its visitors in such a way that after their tour they have learned about cave environments, this specific Cave, and its need for conservation. This can be done by appropriate selection and training of guides, a good museum display, explanatory leaflets included in the price of the admission ticket, and by a more detailed guide book for purchase by those who wish to read further after leaving the Cave. Guide training, and other aspects of the presentation of the Cave, should be done in the quiet season when there can be expected to be minimal or no disturbance to the tourists.

As discussed in Section 7.6.2.3, a museum display should be provided between the car park and ticket office in such a position that visitors are required to pass it. The museum should explain to the visitors by means of photographs, diagrams, models and specimens the history, archaeology, speleogenesis and environmental aspects of the Cave in particular, and speleology in general.

The place of Cango Cave in its environment should be demonstrated to visitors by laying out a nature trail, with explanatory leaflets and notice boards, to the north-west of the entrance and above the Cave. This land has been owned by the Oudtshoorn Municipality since 1985; and it would therefore be a relatively simple matter to provide such a trail. Similar nature trails have been laid out during the past decade by the Divisional Council (since incorporated into the Regional Services Council) for the benefit of patrons of the De Hoek campsite 4½ km. north-west of the Cave<sup>4</sup>.

A nature trail would be an additional attraction for visitors to Oudtshoorn and Cango Cave. Difficulty of restricting access would ensure that no charge could be made for this facility. If the proposed Cango Cave nature trail were to connect with the Regional Services Council's trails, the patrons of the campsite would be encouraged to visit the Cave, and to spend their money on the other facilities at the Cave. Further important functions of the proposed Cave nature trail would be to divert people away from the Cave during busy periods, and to provide something for the visitors to do while waiting for their Cave tour to begin. Usage of the trail would be encouraged by notices and leaflets, and by verbal exhortation by all employees of the Cave and of its trading sub-contractors.

During the high season the facilities at Cango Cave are stretched to capacity, while during the low season business is very quiet (Fig. 8.4.1). There is a similar fluctuation between mid-week and weekend (Fig. 8.4.2).



It is therefore desirable to increase demand during the quiet season, and to reduce it when busy. This might be done by not insubstantial tariff increases during the high season - a standard practice in the hotel industry. On the other hand the cost of entry into Cango Cave is a small proportion of the cost of travelling to, and staying in, Oudtshoorn. It may be, therefore, that tariff increases would not reduce demand.

One potential source of custom during the quiet season is schools. Karst geomorphology is taught in the Geography syllabi for Standards 7 and 9 in South African schools. Cango Cave features prominently in at least three school geography textbooks<sup>5</sup>. Therefore all schools within easy travelling distance of Oudtshoorn could be encouraged to send their pupils to Oudtshoorn and the Cave. The entrance fee could be considerably reduced in the low season to encourage such educational visits. The presentation could be organised by the guides in consultation with the teachers; and could include a visit to Oudtshoorn so that the pupils could see the interaction between the Cave, its immediate environment, and the town. Work sheets prepared by the guides could be issued to the pupils of visiting schools, to be read before arrival at the Cave. All these educational programmes should be composed in the low season, thereby providing work for more full-time guides.

Similar off-season visits by geography and earth science students from universities and technikons could be encouraged. Geography and the earth sciences cannot be adequately taught only in the classroom and lecture hall. Field trips to Cango Cave and its environs would be valuable additions to classroom teaching.

#### 8.5 RESERACH: CAVE ENVIRONMENT AND CAVE INTERIOR

Applied research needs to be done urgently into the effects of visitors on the Cave, and of the Cave on visitors. This information is essential to decide if it is desirable to limit the number of visitors and the time they spend in the Cave. This necessitates the commissioning of an environmental impact assessment along the lines proposed by Cigna & Forti<sup>6</sup>.

Continuous monitoring of the temperature, relative humidity, pCO<sub>2</sub> and alpha-radiation should be done for 12 months in Van Zyl's Hall, the Devil's Workshop, Cango II and outside the Cave; and these figures should be compared with the daily ticket sales. On busy days visitors are already not admitted to the Devil's Workshop; and this must be taken into account when interpreting the results. The following questions need to be answered:

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- 1) Do the visitors have any significant effect on the composition of the Cave atmosphere? If the answer is "Yes",
- 2) Does the Cave atmosphere revert to normal while the Cave is closed at night?
- 3) Do the changes in the Cave atmosphere affect the rate of deposition and solution of the speleothems?
- 4) What is the number of daily visitors which will not significantly affect the Cave atmosphere?
- 5) Is the level of alpha-radiation sufficiently high to necessitate restriction of the time spent in the Cave by tourists and employees (Section 3.3)? If radiation levels are high, they could be reduced by installing extractor fans<sup>7</sup> - which would at the same time change the relative humidity, temperature and pCO<sub>2</sub>.

Such research could be done by the Cave Manager, by the Guides, by members of the speleological societies and by universities. Ideally every Guide should be required to undertake a research project. This would ensure that they develop an interest in at least one aspect of the management of the Cave. It would also relieve the monotony of repeated tours.

### 8.6: CANGO CAVE SCIENTIFIC ADVISORY COMMITTEE

While this thesis was being prepared, the Oudtshoorn Municipality released a "*Cango Caves: Charter: General Management Policy & Strategy*" (Appendix VIII) which proposed the establishment of a Committee which would advise the Cango Cave Committee on future management of the Cave (Note 2; Appendix VIII). Members of this Scientific Advisory Committee are to be drawn from the Oudtshoorn Municipality, the Council for the Environment, the S.A. Spelaeological Association, the National Monuments Council, the C.P. Nel Museum (Oudtshoorn), and the Oudtshoorn Aesthetic Committee. It is, however, very unlikely that any scientific expertise would be forthcoming from the Oudtshoorn Municipality, the C.P. Nel Museum and the Oudtshoorn Aesthetic Committee.

Although the "*Cango Caves: Charter*" is very impressive, the proposed constitution of the Scientific Advisory Committee suffers from several serious defects:

- 1) The members are to be appointed by the Oudtshoorn Municipality. They might therefore be subject to pressure if their contributions should be unacceptable to the Municipality.

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- 2) The Chairman is, ex officio, to be the Chairman of the Cango Cave Committee. He cannot therefore be seen to be impartial.
- 3) The Committee is purely advisory, and has no power to enforce its recommendations.
- 4) There is no stipulation about the frequency of its meetings.

The decision to establish the Committee was taken in 1989, but it was not announced in the Cape until August 1990<sup>8</sup>. The members were informed of their appointments 15 months later. At the time of writing (December 1992) the Committee has still not met.

Although the preamble to the Scientific Advisory Committee constitution states quite clearly that the "*presentation in the Caves of any form of show, recital, presentation or concert ...*" shall be strictly prohibited, two recent incidents have occurred in direct contradiction of this laudable policy:

- 1) 15000 people attended a passion play in the Cave during Easter 1991. Another similar play is to be presented in the Cave during Easter 1993<sup>9</sup>.
- 2) As part of a drug company promotion, 400 psychiatrists and their spouses were wined, dined and entertained in the Cave to readings from Shakespeare on 20 June 1992<sup>10</sup>. Two opera singers performed between the speleothems<sup>11</sup>. On being asked who was paid how much for the use of the Cave, the organiser evasively replied that he "thought that his company (Smith Kline Beecham) made a donation to the Cave conservation fund"<sup>12</sup>.

The organisation of these two functions, which would appear to have been organised for financial reasons in direct contravention of the constitution, does not encourage confidence in the ability of the Oudtshoorn Municipality to manage Cango Cave on a conservation basis. Similarly, the lack of urgency in convening the first meeting of the Scientific Advisory Committee does not encourage confidence in the Municipality. Nevertheless, an independent and adequately funded Scientific Committee would play an invaluable rôle in the future management of Cango Cave. Such a Committee could sit independently of the proposed Management Board. However, it might be more economical of time and money to incorporate the proposed Scientific Committee into the Management Board as proposed in Section 8.1.

This chapter has emphasised the urgent necessity of introducing a management structure which will ensure that

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the cleaning, maintenance, repairs, research and presentation at Cango Cave are improved to international standards. That structure must be independent of the vested interests of the Oudtshoorn Municipality.

Having made recommendations for future management of Cango Cave, it is now possible to summarise the findings of this thesis.

NOTES AND REFERENCES

- 1 Howes C. (Aug. 1992) Personal communication.
- 2 Anon. (1992) "White Paper on Tourism Republic of South Africa" 18 pp. (Pretoria: Government Printer).
- 3 Anon. (1987) "White paper on Privatisation and Deregulation in the Republic of South Africa" 16 pp. (Pretoria: Government Printer).
- 4 Craven S.A. (1975 - 1991) Personal observations.
- 5 Carr D. et al. (1991) "Successful Geography" pp. 36 & 68 (Cape Town: O.U.P.).  
Earle J.L. et al. (1986) "New Window on the World" pp. 76 - 83 (Cape Town & Johannesburg: Juta).  
Swanevelder C.J. et al. (1987) "Senior Geography Standard 9" p. 122 (Goodwood: Nasou; 5th. ed. 2nd. imp.).
- 6 Cigna A.A. & Forti P. (1989) "The environmental impact assessment of a tourist cave" pp. 29 - 38 in Kranjc A. (ed.) "Cave Tourism. Proceedings of International Symposium at 170-anniversary of Postojnska jama, Postojna (Yugoslavia), November 10 - 12, 1988" 204 pp. (Postojna).
- 7 Bown W. (1992) "Cavers risk Cancer from Underground Radon" New Scientist 12 Sep. p. 4.
- 8 Weekend Argus Weekender Supplement (1990) 25 Aug. pp. 4 - 5.
- 9 van Wijk E. (1991) "Thus did Love suffer" S.A. Panorama 36. (6), 4 - 11.
- 10 The Weekly Mail (1992) 26 June - 02 July p. 14.
- 11 Holmes R. (1992) Personal communication.
- 12 du Plessis H. (1992) Personal communication.

# **PART FOUR**

## **SUMMARY OF FINDINGS**

CHAPTER 9

SUMMARY OF FINDINGS

This thesis has clearly shewn that:

- 1) Although Cango Cave has been developed for the benefit of tourists, that development could have been done at least half a century earlier and should have been done with better consideration for the environment inside and outside the Cave.
- 2) Cango Cave has not been, and is not being, managed on a conservation basis in keeping with international standards, and in accordance with the policies of successive political masters of the Cape.
- 3) The revenue from Cango Cave has not been spent in the best interest of the Cave, and has not been spent in accordance with the policies of successive political masters of the Cape.
- 4) The scientific and educational value of Cango Cave has not been exploited to its full potential.

The original hypothesis, that Cango Cave has, since its discovery in about 1780, been appropriately managed in all aspects of environmental and financial practice since its discovery in about 1780, is therefore rejected.

APPENDIX I: CANGO CAVE: SOME BIOLOGICAL  
COLLECTIONS AND METEOROLOGICAL OBSERVATIONS

SPECIMENS COLLECTED FROM CANGO CAVE BY PURCELL IN 1896

**Insecta:**

- (1) A large brown cockroach which was rushing about on the floor of the Cave;
- (2) A Carabid beetle found under stones;
- (3) A small black fly; and
- (4) A minute, white-winged Psocid, which was very common everywhere on the damp surface of the cave.

**Arachnida:**

- (1) 2 species of Pseudoscorpions found under loose stones;
- (2) A minute Acarid or Mite;
- (3) A moderate-sized spider, belonging to the Fam. Agalenidae. The latter was sent to Mons. Simon in Paris and named by him *Phanothea peringueyi* (Simon, 1896).

FAUNA COLLECTED FROM CANGO CAVE BY GRINDLEY IN 1956

**Mammalia:**

Twilight zone: *Hystrix africae-australis* (porcupine)  
*Procapra capensis* (dassie)  
Unidentified small rodents

Dark zone: *Graphiurus ocularis* (Cape dormouse)  
(bones)

Bats: *Rhinolophus capensis*  
(Cape Horseshoe)  
*Miniopterus natalensis*  
(Natal clinging)

**Mollusca:**

*Hypolysia florentiae*

**Arachnida:**

*Phanothea peringueyi*  
*Cangoderces lewisi*

Two unidentified small forms

Two species of pseudoscorpions (Purcell)

A minute Acarid or mite (Purcell)

**Insecta:**

*Periplaneta americana*

(ubiquitous & introduced)

Small dipterous flies including

*Sciara* sp. ign.

A Carabid beetle (Purcell)

Collembola

A minute Psocid (Purcell)

*Nycteribosca africana* (bat ectoparasite)

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1956 METEOROLOGICAL DATA FROM CANGO I								
Date	Time	Max °C	Min °C	Dry °C	Wet °C	Soil °C	Barom cm Hg	Humid %
<u>Site A</u>								
1 Sep	1225					17.8	70.28	
1 Sep	1528		18.3	18.1	17.9	18.0	70.18	98
1 Sep	1640		18.3	Ind	17.6	17.6	17.7	69.92
2 Sep	1020	18.3	18.3	Ind	17.6	17.6	17.7	69.97
2 Sep	1202	18.3	18.3	Ind	17.6	17.6	17.7	69.93
2 Sep	1545	18.3	18.3	Ind	17.8	17.7	17.7	69.84
3 Sep	0943	18.3	18.3	Ind	17.9	17.6	17.8	69.68
<u>Site B</u>								
1 Sep	1503					18.3	70.23	
1 Sep	1545		17.8	Ind	18.6	18.3	18.2	70.20
1 Sep	1702	18.9	17.8	Ind	18.7	18.5	18.2	70.04
2 Sep	1000	18.3	17.8	Ind	18.6	18.2	18.2	70.18
2 Sep	1225	18.3	18.3	Ind	18.7	18.2	18.2	70.06
2 Sep	1604	18.3	18.3	Ind	18.7	18.2	18.2	69.97
3 Sep	1106	18.3	18.3	Ind	18.7	18.2	18.2	69.77
<u>Site C</u>								
1 Sep	1421					16.9	70.36	
1 Sep	1600		16.7	Ind	16.4	14.1	16.8	70.28
1 Sep	1725	16.7	16.7	Ind	16.4	13.9	16.7	70.01
2 Sep	0940	16.7	16.1	Ind	16.1	13.3	16.6	70.25
2 Sep	1245	16.7	16.7	Ind	16.2	13.6	16.6	70.13
2 Sep	1623	16.7	16.7	Ind	16.4	14.0	16.7	70.01
3 Sep	1129	16.7	16.7	Ind	16.7	13.9	16.7	69.77
<u>Site D</u>								
1 Sep	1715		18.9	Ind		18.6	70.01	
2 Sep	0952	18.9	18.3	Ind		18.5	70.18	
2 Sep	1234	18.3	18.3	Ind		18.5	70.09	
2 Sep	1612	18.3	18.3	Ind		18.4	69.97	
3 Sep	1117	18.9	18.3	Ind		18.5	69.77	
<u>Site E</u>								
1 Sep	0915			11.7	9.9		70.39	79
1 Sep	1611			18.8	16.5			76
2 Sep	1253			26.9	23.0		70.23	72
2 Sep	1634			24.3	20.9		70.04	74
3 Sep	1155			28.2	24.8			76
<u>Site G</u>								
3 Sep	1022			16.6	18.2			96
<u>Site H</u>								
1 Sep	1731						69.97	
2 Sep	0928						70.13	
2 Sep	1643						69.92	

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Sites:	A:	Devil's Workshop
	B:	Sand Room
	C:	Small chamber leading off the Fern Room
	D:	Grand Hall
	E:	Outside - 186 m. from Cave entrance
	G:	Bat Cemetery off Devil's Workshop
	H:	Cave entrance
Ind =		Indices of maximum and minimum thermometers adjusted

1980 METEOROLOGICAL DATA FROM CANGO CAVE				
Date	Time	CO <sub>2</sub> Volume percentage	Relative Humidity	Location
4 Apr	1100		100%	Cango II
4 Apr	1400	1.35		Proximal end Cango III
4 Apr	1430		90%	Proximal end Cango III
4 Apr	1530		95%	Proximal end Cango III
4 Apr	1850	1.25		Floor, Faa Chamber
4 Apr	1936		97%	Roof, Faa Chamber
4 Apr	1940	1.35		Roof, Faa Chamber
5 Apr	1030		96%	Proximal end Cango III
5 Apr	1120	1.35		Floor, Krakatoa
5 Apr	1130		97%	Floor, Krakatoa
5 Apr	1830		95%	Roof, Krakatoa
5 Apr	1830	1.52		Roof, Krakatoa
5 Apr	2100		96%	Proximal end Cango III
6 Apr	0810		96%	Proximal end Cango III
6 Apr	1100		100%	Amphitheatre
6 Apr	1100	1.41		Roof, Amphitheatre
6 Apr	1115	1.41		Floor, Amphitheatre
6 Apr	1130	1.57		Roof, The Canyon
6 Apr	1130		100%	Roof, The Canyon
6 Apr	1145	1.63		Floor, The Canyon
6 Apr	1500	1.52		Ice Chamber
6 Apr	1500		100%	Ice Chamber
6 Apr	2200		95%	Proximal end Cango III
6 Apr	2230	1.63		Pools Passage
6 Apr	2240	1.74		Proximal end Cango III
7 Apr	1100	1.19		Cango II, large chamber
7 Apr	1115	1.35		Lumbago Walk, Cango I
7 Apr	1200	0.029		Outside, near entrance



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- 5) Oudtshoorn Divisional Council Correspondence 1858 onwards:  
1/OHN 4/1/1/1/1/1 d. 26 Aug. 1858, 11 Oct. 1866  
1/OHN 4/1/1/1/2/1 d. 07 Jan. 1860  
1/OHN 4/1/1/2/9 Nos. 121, 276  
1/OHN 5/1/1/1/1  
Nos. 10, 42, 49, 56, 62, d. 31 Dec. 1868  
1/OHN 5/1/1/1/2 3/64  
1/OHN 5/1/1/2/1 d. 21 Dec. 1867, 22 Sep. 1871  
1/OHN 5/1/1/2/4  
Nos. 204 d. 05 June 1881, & 4.168 d. 15 Oct. 1883  
1/OHN 5/1/2/2/1 d. 10 Jan. 1868  
1/OHN 5/1/2/2/3 1/90  
1/OHN 5/1/3/2/1 Nos. 824, 988
- 6) Colonial Legislature:  
Printed papers: CCP 3/1/1/3 No. 767  
CCP 3/1/1/6 p. 11
- 7) Master of the Supreme Court: Wills & Death Notices  
MOOC 6/9/127 No. 5263  
MOOC 7/1/302 Nos. 117 & 118
- 8) Dept. of Lands 1890 - 1891 LND 2/10 L.4025  
1895 - 1897 LND 1/435 L.4025  
1897 - 1906 LND 1/619 L.4025  
1899 LND 1/642 L.8680
- 9) Public Works Dept.  
1897 - 1899 PWD 2/5/316 (U.2)  
1897 - 1905 PWD 1/2/54 B.42  
1903 - 1905 PWD 2/5/325 E.14  
1903 - 1905 PWD 1/5/74 12E/32 B.42  
1910 PWD 2/5/325 A.17X
- 10) Attorney-General (Union)  
1911 AG 1784 12009/07 2/1623/13
- 11) Cape Provincial Administration (Provincial Secretary).  
These files, despite the illogical numbers, comprise a complete and logical sequence:
- |             |              |        |             |           |
|-------------|--------------|--------|-------------|-----------|
| 1906 - 1922 | PAS          | 2/1041 | 75/A/79     |           |
| 1921        | PAS          | 2/799  | L73/C/51    |           |
| 1922 - 1925 | PAS          | 2/800  | L73/C/72    | (Batch 1) |
| 1926 - 1927 | PAS          | 4/262  | 75/A.79     |           |
| 1928        | PAS          | 4/262  | 75/A.86     |           |
| 1928 - 1933 | TBK PAS (-A) | 2/225  | 75/A79      | (Batch 3) |
| 1934 - 1936 | PAS          |        | L75/C/57    |           |
| 1936 - 1947 | TBK PAS (-A) | 2/225  | 75/A79      | (Batch 3) |
| 1947 - 1959 | PAS          |        | L75/C/57    |           |
| 1959 - 1960 | TBK PAS      |        | A86/12/19/1 | (Batch 2) |
| 1961 - 1962 | TBK PAS      |        | A86/12/19/1 | (Batch 3) |

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1962 - 1965	TBK PAS	A86/12/19/1	(Batch 4)
1965 - 1969	TBK PAS	A86/12/19/1	(Batch 5)
1970 - 1971	TBK PAS	A86/12/19/1	(Batch 6)
1972 - 1975	TBK PAS	A86/12/19/1	(Batch 7)
1976 - 1977	TBK PAS	A86/12/19/1	(Batch 8)
1978 - 1980	TBK PAS	A86/12/19/1	(Batch 9)
1980 - 1982	TBK PAS	A86/12/19/1	(Batch 10)
1982 - 1983	TBK PAS	A86/12/19/1	(Batch 11)
1984 - 1985	TBK PAS	A86/12/19/1	(Batch 12)

Miscellaneous files:

1941 - 1958	Oudtshoorn Municipality: Separate amenities		
	TBK PAS	A86/7	(Batch 1)
1950 - 1977	Oudtshoorn Municipality: Land purchases		
	TBK PAS	A86/81/1	
1967 - 1975	Oudtshoorn Municipality: Separate amenities		
	TBK PAS	A86/7	(Batch 2)
1968	Cango Cave trading accounts: shortages		
	TBK PAS	A86/3	
1974 - 1977	Oudtshoorn Municipality: Land purchases		
	TBK PAS	AA86/81/42	
1975 - 1984	Oudtshoorn Municipality: Complaints & Enquiries		
	TBK PAS	AA86/55	
1976 - 1983	Oudtshoorn Municipality: Separate amenities		
	TBK PAS	A86/7	(Batch 3)
1978 - 1979	Oudtshoorn Municipality: Loans		
	TBK PAS	AA86/12/13	(Batch 4)
1982	Oudtshoorn Municipality: Loans		
	TBK PAS	AA86/12/13	
1984	Oudtshoorn Municipality: Cango Cave Resort		
	TBK PAS	AA86/50/2/1	

12) Oudtshoorn Municipal audited accounts (incomplete):

1920	PAS	2/799	L73/C/48	
1921	PAS	2/969	L75/C/61	
1922	PAS	2/800	L73/C/74	(Batch 1)
1923	PAS	2/800	L73/C/74	(Batch 2)
1924	PAS	2/800	L73/C/74	(Batch 3)
1925	PAS	2/800	L73/C/74	(Batch 4)
1933	PAS	2/804	L75/C/1	(Batch 1)
1934	PAS	2/804	L75/C/1	(Batch 2)
1935 - 1943	PAS	2/804	L75/C/1	
1950 - 1951	PAS	2/804	L75/C/1	
1961 - 1966	TBK PAS	A86/1		
1967 - 1968	TBK PAS	AA86/1		
1969 - 1970	TBK PAD	D.133		
1971	TBK PAS	A86/1		
1972 - 1978	TBK PAS	AA86/1		
1981	TBK PAS	AA/86/12/19/1		
1982 - 1990	(Courtesy of Oudtshoorn Municipality)			

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13) Oudtshoorn Municipality (incomplete)

1921 - 1924	Financial matters	3/OHN 41 165
1922 - 1946	Financial matters	3/OHN 43 18 5 Items W, U, T, S & Q
1923 - 1935	Auditor's Reports	3/OHN 52 250A F.1
1923 - 1935	Auditor's Reports	3/OHN 52 250B F.1
1925	Visit of Prince of Wales	3/OHN 61 550A F.1
1925 - 1930	Financial matters	3/OHN 41 165B
1925 - 1926	Railway correspondence	3/OHN 3 26/23 F.1
1926 - 1938	Electrification	3/OHN 35 101 101A F.1
1927	Notices of motions	3/OHN 17 81
1927 - 1934	Notices of motions	3/OHN 10 69A
1936 - 1946	Engineer's Reports	3/OHN 28 62
1938 - 1940	Notices of motions	3/OHN 10 69B

14) Oudtshoorn Divisional Council Minute books & correspondence (incomplete) 4/OHN

15) Illustrations:

AG 16138 - 16143	Six copies of Molendorf's pre-1823 water colours of Cango Cave.
AG 16144	Contemporaneous copy of the Rev. George Thom's 1816 elevation of Cango Cave.

16) A872: Letter d. 15 Mar. 1879 from John Laing to the Rev. W.R. Thompson.

Other archival sources have been consulted only if there was reason to believe that relevant documents would be available:

Transvaal Archives, Union Buildings, Pretoria

Executive Council Minutes (Union)	URU 265 515
Governor-General 1921	GG 508 8/60
	GG 508 8/675A
S.A. Railways & Harbours 1924 - 1927	SAS 581 G4/4/33

Africana Museum, Market Square, Johannesburg

J.W. Molendorf's original pre-1823 water colours of Cango Cave.

C.H. Joberns 1876 water colour of Cango Cave (68/2689 p. 11)

S.A. Library, Queen Victoria Street, Cape Town

Diary of William Harrison	1830
Michell MSS., Picture No. 163B	1872

CRAVEN S.A. (1992) MANAGEMENT PROBLEMS AT CANGO CAVE (UCT)

Diary of Charles Frederick Juritz (MSB 672) 1899  
S.A. National Society Minute Books 1913 - 1922  
Annual Report 1918 - 1919

Library of Parliament, Cape Town

Another contemporaneous copy of the Rev. George Thom's  
1816 elevation of Cango Cave.

National Monuments Council, Bree Street, Cape Town

File 20/4 1926 -

Oudtshoorn Municipality, Civic Centre, Oudtshoorn

Council minute books & committee reports 1918 - 1945

It is disappointing that the Oudtshoorn Town Clerk was unable to produce any post-1945 document relevant to Cango Cave, claiming that none could be found. Limited information for this period is available from the Oudtshoorn and other newspapers, and from the Provincial Secretary's files. If the relevant minute books, committee reports and annotated correspondence had been made available, they would have supplied the reasons for the various decisions made by the Municipality during that period.

Cape Deeds Office, Plein Street, Cape Town

George Quitrents 3 (1) 24

Transfers No.	160	d.	02 Mar.	1827
	141		21 June	1839
	142		21 June	1839
	85		25 May	1846
	1		04 Jan.	1847
	60		18 Jan.	1847
	99		14 Dec.	1848
	189		25 Jan.	1853
	235		30 Jan.	1868
	319		25 July	1868
	320		25 July	1868
	425		24 Dec.	1874
	5560		10 June	1926
	1847		18 Feb.	1944
	1848		18 Feb.	1944
	4403		30 Mar.	1955
	4404		30 Mar.	1955
	4405		30 Mar.	1955
	33804		09 Dec.	1975
	919		31 Jan.	1977
	28572		04 Aug.	1982
	37438		14 Oct.	1985

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Surveyor-General, Plein Street, Cape Town

File appertaining to Oudtshoorn Farm No. 28, de  
Kombuys.

C.P. Nel Museum, Oudtshoorn

Letter d. 20 Oct. 1891 from Civil Commissioner,  
Oudtshoorn to Mr. H. van der Veen.

J.W. van der Veen Esq., Grootkraal, Cango Valley  
Business ledger 1916 - 1922 of Herman Wilhelm Johannes  
van der Veen, tobacco farmer of Grootkraal.

University of London School of Oriental and African  
Studies

London Missionary Society Archives: Letter d. 08 Dec.  
1816 from the Rev. George Thom.

Bodleian Library, Oxford, England

Diary of Alfred, Lord Milner 22 Sep. 1897

University of the Witwatersrand Library, Johannesburg

Letters from Sophy Gray to her children, 1855.

University of Cape Town Library, Archives and MSS.  
Dept.

S.A. Spelaeological Association (Cape Section) records.

Royal Society of South Africa (University of Cape Town)

Minute Book of the S.A. Philosophical Society (1897).

Appel A. (1979) Die Distrik Oudtshoorn tot die  
Tagtigerjare van die 19de. Eeu - 'n Sosio-  
historiese studie pp. 485 - 498. (PhD. Thesis:  
University of Port Elizabeth.)

APPENDIX III: DRAFT CANGO CAVES PRESERVATION ACT of 1912

"BILL

"to

"PROVIDE FOR THE PRESERVATION, PROTECTION, MANAGEMENT AND CONTROL OF THE CANGO CAVES, SITUATE ON THE FARM 'COMBUYS', IN THE DIVISION OF OUDTSHOORN IN THE PROVINCE OF THE CAPE OF GOOD HOPE.

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" (TO BE INTRODUCED BY THE MINISTER OF LANDS)

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"WHEREAS certain doubts have arisen as to the proper authority for the control and management of certain Caves, known as the 'CANGO CAVES', in the Division of Oudtshoorn, in the Province of the Cape of Good Hope, which under the title deed of the farm are reserved in favour of the public.

"AND WHEREAS in order to protect and preserve the Caves it is deemed expedient that such doubts be removed.

"BE IT enacted by the King's Most Excellent Majesty the Senate and the House of Assembly of the Union of South Africa, as follows:-

- "1. Notwithstanding anything to the contrary contained in the South Africa Act of 1909 or in any other law in force in the Province of the Cape of Good Hope, the control, management and preservation of the CANGO CAVES situate on the farm 'Combuys' shall vest in the Governor-General.
- "2. It shall be lawful for the Governor-General to appoint a Board of Management to consist of five members under the Chairmanship of the resident Magistrate for the time being of the Division of Oudtshoorn in the Province of the Cape of Good Hope, and it shall be the duty of and such Board is hereby empowered to take such measures as may be necessary to insure the proper protection and preservation of the aforesaid Caves.
- "3. The Board may, subject to the approval of the Governor-General, enter into contracts for providing facilities for the accommodation of visitors in the vicinity of the Caves, and for the general improvement of the interior of such Caves, so as to make them more attractive and easily accessible to visitors.

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- "4. Subject to the provisions of this Act and the approval of the Governor-General, the Board may from time to time frame regulations for the proper protection and preservation of the Caves, fix the charge for admission thereto, and provide for penalties in the event of any breach or non-compliance with such regulations.
- "5. The revenue derived under the preceding Section shall be devoted to the management and improvements of the said Caves.
- "6. This Act shall be cited for all purposes as the CANGO CAVES PRESERVATION ACT, 1912."

APPENDIX IV: CANGO CAVES ORDINANCE No. 18 of 1921

"ORDINANCE No. 18 of 1921 to Provide for the control and management of the Grotto known as the Cango Caves situated within the Division of Oudtshoorn.

"Whereas the control and management of the Grotto known as the Cango Caves situated within the Division of Oudtshoorn is in the opinion of the Governor-General a matter of merely local or private nature in the Province of the Cape of Good Hope:

"And whereas it is desirable that the control and management of the said Caves should be entrusted to the Council of the Municipality of Oudtshoorn:

"BE IT THEREFORE ORDAINED by the Provincial Council of the Province of the Cape of Good Hope, as follows:-

"1. From and after the commencement of this Ordinance the **control and management** of the Grotto known as the Cango Caves situated within the Division of Oudtshoorn shall be **vested in and devolve upon the Council of the Municipality of Oudtshoorn.**

"2. The said Council shall have power to provide or to contract for the provision of all such appliances and facilities including lighting, ladders, stairways and other conveniences necessary or desirable for the convenience, safety or protection of visitors and to make such further provision and to take such further measures as may be required in connection with the control and management of the said Caves **and to expend its funds upon the said purposes or any of them**, subject to the previous approval of the Administrator of the details of all proposed works and undertakings.

"3. The said Council shall have power to levy and collect from all persons visiting the said Caves such tolls or charges as may be approved by the Administrator according to a tariff to be framed from time to time by the Council. **All such tolls or charges shall be paid into the general revenue of the Council.**

"4. Nothing in this Ordinance contained shall be deemed or taken to affect any public rights established by the terms of the servitude registered against the title of the farm known as 'Combuys'.

"5. This Ordinance may be cited as the Cango Caves Ordinance, 1921."

APPENDIX V: CANGO CAVES ORDINANCE No. 5 of 1971

"ORDINANCE

"To provide for the control and management of the Cango Caves by the council of the Municipality of Oudtshoorn and for matters incidental thereto.

"BE IT ORDAINED by the Provincial Council of the Province of the Cape of Good Hope as follows:-

- "1. The control and management of the Cango Caves (hereinafter referred to as "the Caves") situated within the division of Oudtshoorn shall vest in the council of the Municipality of Oudtshoorn (hereinafter referred to as "the council")
- "2. The council may, with the approval of the Administrator, provide and maintain or contract for the provision and maintenance of all such works, undertakings, amenities and services as may in its opinion be necessary or desirable for the convenience, safety or protection of visitors to the Caves and make such further provision and take such further steps as may in its opinion be necessary or desirable for the effective control and management of the Caves.
- "3. The council may charge and recover from all visitors to the Caves such admission charges as may be prescribed in a tariff to be framed from time to time by the council and approved by the Administrator.
- "4.(1) All income derived by the council from the admission charges referred to in section 3 and such other charges as may be recovered from the use and enjoyment of any work, undertaking, amenity or service provided by such council in terms of section 2 shall be deposited with a commercial bank registered or deemed to be registered under the Banks Act, 1965 (Act 23 of 1965), to the credit of an account to be called the Cango Caves Account.
- "(2) The moneys standing to the credit of the Cango Caves Account shall, with the approval of the Administrator, be applied-

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- " (a) to administrative costs incurred in the control and management of the Caves and in the exercise of the powers conferred upon the council in terms of section 2;
  - " (b) to the defrayment of expenditure incurred by such council in the exercise of such powers, and
  - " (c) to such other purposes as the Administrator may, either generally or specifically, from time to time determine.
- " (3) Estimates of probable income and expenditure on the Cango Caves Account for the calendar year next ensuing shall be prepared by the council not later than the twenty-eighth day of February, 1972, and thereafter not later than the last day of February in each succeeding year and shall be signed by the mayor, the town clerk and the treasurer of such council.
- " (4) The council shall, notwithstanding the provisions of the Local Authorities (Audit) Ordinance, 1938 (Ordinance 17 of 1938), -
- " (a) cause to be kept such books of account as may be necessary to maintain a detailed record of all the assets and liabilities pertaining to the Cango Caves Account and of the financial transactions entered into in respect of the Caves and shall cause such books of account to be made up on the twenty-eighth day of February, 1972, and thereafter annually on the last day of February in each succeeding year;
  - " (b) not later than the thirty-first day of March, 1972, or such later date as the Provincial Auditor may determine, cause to be prepared a balance sheet reflecting such assets and liabilities and a statement of the actual income and expenditure on the Cango Caves Account for the period from the first day of January, 1971, to and including the twenty-eighth day of February, 1972, and
  - " (c) not later than the thirty-first day of March in the year 1973 and in each succeeding year, or such later date in any such year as the Provincial Auditor may determine, cause to be prepared a balance sheet and statement as contemplated in paragraph (b) in respect of the period of twelve months immediately preceding the last day in February in any such year.

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- " (5) A copy of the signed estimates referred to in subsection (3) and of the balance sheet and statement referred to in subsection (4) (b) and (c) shall be submitted to the Director of Local Government who may call for such further documents and information as he may require.
- " (6) The books of account, balance sheet and statement referred to in subsection (4) shall be audited by the Provincial Auditor for which purpose the Local Authorities (Audit) Ordinance, 1938 (Ordinance 17 of 1938), shall mutatis mutandis apply to the Cango Caves Account.
- " (7) The provisions of the Local Authorities (Investment of Funds) Ordinance, 1935, shall mutatis mutandis apply in respect of moneys standing to the credit of the Cango Caves Account.
- "5. Nothing in this ordinance contained shall be so construed as to affect any public rights established by the terms of the servitude registered against the title of the farm known as 'Combuys'.
- "6. The Cango Caves Ordinance, 1921, is hereby repealed.
- "7. This ordinance shall be called the Cango Caves Ordinance, 1971."

APPENDIX VI: CANGO CAVE MANAGEMENT BOARD:  
PROPOSED CONSTITUTION

This appendix, composed by the author, presents only points for inclusion in a constitution for the proposed Cango Cave Management Board. The actual document would have to be drafted by a constitutional lawyer.

- 1) Whereas it is deemed to be desirable that Cango Cave in the Oudtshoorn District of the Cape Province of South Africa shall be managed on a conservation basis, the Minister of Environment Affairs shall appoint the following members to the Management Board:
  - 1.1) A representative of the Minister of Environment Affairs;
  - 1.2) A representative of the Cape Provincial Administration;
  - 1.3) A representative of the Municipality of Oudtshoorn;
  - 1.4) A representative of the National Monuments Council;
  - 1.5) A representative of the South African Spelaeological Association (Cape Section), or of other Cape spelaeological society.
  - 1.6) A representative of the Department of Tourism of the Cape Technikon;
  - 1.7) Two other, independent, members.
- 2) Board members shall be appointed for a maximum of five years; and their appointments may be renewed.
- 3) The Chairman shall be appointed by the Minister.
- 4) No Board member shall receive additional remuneration for services rendered. Members shall, however, be reimbursed for expenses and loss of income.
- 5) The Board shall be required to enforce the policies that the Cave shall be self-financing, and be managed on a conservation basis.

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- 6) The Board shall be responsible for determining all management policies at the Cave.
- 7) All profits from the Cave shall be applied only to research and development at the Cave, and elsewhere relevant to the Cave.
- 8) The Board shall appoint the Cave Manager and other senior officials.
- 9) The Board shall meet at Cango Cave every six months, or more frequently if necessary.
- 10) The Board shall be required to submit an annual report to the Minister.

APPENDIX VII: PROPOSED CAVE MANAGER JOB DESCRIPTION

(after Mrs. B.J. Craven)

Job Title:	Cave Manager.
Location:	Cango Cave, Oudtshoorn.
Number of Incumbents:	1
Number of Direct Subordinates:	Maximum of 3
Total Number of Subordinates:	To be decided after appointment.

A. MAIN OBJECTIVE OF THE JOB:

The primary objective for this job is the management of Cango Cave so that the conflicting demands of conservation and presentation are balanced.

B. MAIN TASKS OF THE JOB:

To be responsible and accountable for:

- 1) Advising the Board with policy decisions for the Cave.
- 2) Implementing those policies at the Cave, with the necessary supporting systems.
- 3) Ensuring that the Cave is maintained on a conservation basis.
- 4) Initiating and managing the relevant research projects that need to be undertaken at the Cave.
- 5) Setting up and maintaining a speleological museum at the Cave.
- 6) Managing the budget of the Cave, and presenting annual audited accounts to the Board.
- 7) Marketing and publicising the Cave, within its carrying capacity.
- 8) Recruiting, managing and controlling Cave personnel.
- 9) Preparing material for the presentations made by the Guides, with particular reference to the differing nature of the various visitor groups.
- 10) Ensuring that the surrounding environment and nature trail is an asset to the Cave.

C. RESPONSIBILITY LEVEL.

The Manager will report to, and work with, the Board on all matters relating to the Cave. He or she will be responsible for all the personnel issues at the Cave. He or she will also be responsible for the implementation of all policy decisions made by the Board.

He or she is responsible for ensuring that all dealings with the Public have a positive response for the Cave. He or she will also be responsible for handling all public problems, irrespective of the nature of those problems.

APPENDIX VIII

"CANGO CAVES: CHARTER: GENERAL MANAGEMENT POLICY & STRATEGY

"His Honour the Administrator and Members of the Executive Committee of the Province of the Cape of Good Hope; His Worship the Mayor and Councillors of the Municipality of Oudtshoorn; the Chairman and Members of the Council for the Environment, and the Chairman and Members of the National Monuments Council,

"GREETINGS

"Whereas the Cango Caves are recognised as an outstanding and unique natural heritage comprising a series of limestone caverns situate in the Swartberg Mountain range in the vicinity of Oudtshoorn in the Klein Karoo area of the Republic of South Africa; and

"Whereas the Cango Caves are universally proclaimed as one of the richest sources of a large variety of cave speleothems in their natural colour which deserves and compels sympathetic and meaningful conservation and management; and

"Whereas the Cango Caves are furthermore recognised as an important recreational and educational asset and one of the foremost tourist attractions of the Republic of South Africa; and

"Whereas the control and management of the Cango Caves has been vested in the Council of the Municipality of Oudtshoorn by the Administrator of the Province of the Cape of Good Hope in terms of the provisions of the Cango Caves Ordinance No. 5 of 1971 (formerly Ordinance No. 18/1921); and

"Whereas the Cango Caves has been declared a National Monument and the provisions of the National Monuments Act No. 28 of 1969 is therefore applicable to the development of the Cango Caves; and

"Whereas it is accepted that it is therefore imperative that a general policy and conservation strategy for the Cango Caves and environment be compiled and adopted to ensure the proper conservation (wise management) of this asset in perpetuity; and

"Whereas the general principle of the conservation of the Cango Caves is that they shall not be utilised beyond their natural potential - in other words that no deterioration or damage of the speleothems and their natural

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colour shall be permitted to take place as a direct consequence of the impact of visitor numbers or behaviour and / or control over their relationship with the Caves phenomena; and

"Whereas it is also recognised that the Cango system is undoubtedly far more extensive than is known at the present moment in time having due regard to a series of side passages which for practical purposes have not been fully explored;

"Now therefore by these presents witness that the following conservation and management policy objectives are set out and adopted by the Council of the Municipality of Oudtshoorn following close consultation and collaboration with the Council for the Environment;

"OBJECTIVES:

- "A) That in order to ensure that there is no change in the underground cave systems referred to above as a result of human agency, it is accepted as being essential that the total environment in which these Caves occur shall be protected by means of an effective management policy which shall specifically include the total prohibition of the quarrying of limestone or any other form of karst denudation; the protection of the natural vegetation cover more particularly in relation to the Cave system directly or indirectly and the protection of the natural water systems on which the Cango Caves are reliant for the maintenance and enhancement of their very existence as well as the preservation of their pristine beauty.
- "B) That it is accepted that the existing facilities of the portion of the Cango Caves generally known as Cango I are considered as being completely adequate to cater to the recreational and educational needs of the broader tourist community.
- "C) That it is accepted that access to the more recently discovered extensions of the Cango Caves system generally referred to as the Wonder Caves or / Cango II; III; IV; V; shall be strictly limited to further scientific study and exploration which shall be explicitly directed at improved management and / or conservation of the Cango Caves system.

"The Council of the Municipality of Oudtshoorn furthermore approves of the following general policy statement in the furtherance of the agreed objectives:

"GENERAL POLICY STATEMENT:

"That at all times whilst giving effect to the establishment or improvement of the Cango Caves facilities for the safety and convenience of the broader tourist community and the following principles shall be strictly adhered to;-

- "\* No construction works other than those considered to be essential and desirable for the convenience, safety or protection of visitors to the Caves or for the effective control, management and conservation of the Cango Caves, shall be carried out within the Cango Caves itself;
- "\* Any construction works in the Caves system shall at all times be in complete sympathy and harmony with and be totally compatible with the natural Cave environment and shall be carried out in such a manner that it will cause the absolute minimum disturbance of the Cave environment whilst at the same time complementing the presentation of the Caves as a unique tourist attraction;
- "\* The illumination of the Caves and Caves speleothems shall be effected in such a manner as will ensure that the associated lighting and heat will not have any deleterious effect on the general appearance or continued growth of the speleothems.
- "\* It is a principle of sound conservation that any natural area or system can only accommodate a given number of persons at any one time without causing irreparable deterioration of that system. Consequently the problem of visitor numbers which are likely to increase in the future shall be monitored on an ongoing basis by the Cave management in allowing the utilisation of the Cango Caves. In this regard it is specifically agreed that close attention shall be given to the effect of increasing numbers of visitors as well as natural phenomena on the temperature and relative humidity within the Caves and the associated chemical reaction on Caves speleothems and the general Cave environment.
- "\* Should at any time in the future it be found that artificial ventilation of the Cave system becomes essential or desirable for the safety or convenience of visitors, the greatest care shall be taken to ensure that the Cave atmosphere is maintained as near to natural as is possible.
- "\* Similarly it is recognised that at some time in the future it might be found possible and practical to

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provide a new entrance to the new Cave system as a result of continued scientific exploration and research, and, in this eventuality it is accepted as being essential that it should be approached with the greatest measure of circumspection in order to obviate any deterioration of or damage to the Caves system.

"\* It is specifically determined that at no time in the future shall the consideration of financial gain in relation to the development of the Cango Caves and related facilities be permitted to outweigh the overriding principle of conservation of this natural asset and heritage of future generations.

"\* The Cango Caves and its environs hosts a variety of original pre-historic paintings and artefacts and management is accordingly specifically charged to do all things necessary to ensure the proper preservation thereof.

"\* In the furtherance of the conservation of the Caves system and also in promoting the enjoyment of other visitors of its unique natural features, the following actions by members of the public visiting the Caves shall be strictly prohibited:

"\* Smoking within the Caves;

"\* The touching, damaging or breaking of any Cave formations;

"\* Deviating from clearly demarcated pathways;

"\* Littering or fouling the Caves by any means whatsoever;

"\* Defacement by any means of the Cave formations, environment or structures;

"\* The unseemly disturbance of the quietude in the Caves;

"\* The presentation in the Caves of any form of show, recital, presentation or concert which could be considered to detract from the status of the Caves as a National Monument or not be in harmony with the natural environment.

"\* Arising from the foregoing and by these presents it is agreed by the Council of the Municipality of Oudtshoorn and the Council for the Environment as follows in respect of an acceptable modus operandi aimed at achieving

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the approved objectives within the framework of the general policy statement outlined herein;-

- "\* That the Council of the Municipality of Oudtshoorn has discharged its duties and responsibilities in respect of the proper control, management and development of Cango Caves as a major tourist attraction in the Republic of South Africa in a most commendable manner since this natural asset was first entrusted to it in terms of the provisions of the erstwhile Cango Caves Ordinance No. 18 of 1921.
- "\* That the Council of the Municipality of Oudtshoorn pledges itself to honour and implement the abovementioned conservation principles in their future management, control and development plans of the Cango Caves as a heritage of future generations;
- "\* That in the event of the management plan in respect of the Cango Caves system being reviewed at any time in the future in the light of circumstances prevailing at the time, the basic principles and guidelines enounced in this document shall be upheld;
- "\* That whilst the autonomy of the Council of the Municipality of Oudtshoorn in the control, management and development of the Cango Caves within the framework of the Cango Caves Ordinance No. 5 of 1971 is fully recognised and endorsed, it is hereby agreed that a Scientific Advisory Committee be constituted by the Council from nominees of its own choice to advise Council from time to time on problems relating to the Cango Caves.

"Signed and sealed in the name and on behalf of the Council of the Municipality of Oudtshoorn on this \_\_\_\_\_ day of \_\_\_\_\_ in this year of our Lord 1989.

" \_\_\_\_\_ Mayor

" \_\_\_\_\_ Chairman Cango Caves Committee

" \_\_\_\_\_ Town Clerk

" (NOTE)

- "1. This draft charter has been prepared in English having due regard also to its ultimate submission to the International Union of Speleology who are responsible for the scientific management and development of caves worldwide, for purposes of their records having due

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regard to our close association with this world body since 1964.

"2. With reference to the proposed constitution of a Scientific Advisory Committee for the Caves it is commended for favourable consideration by the Council of the Municipality of Oudtshoorn that the Scientific Advisory Committee be constituted as follows:

- "i) Chairman of the Cango Caves Standing Committee (Convenor).
- "ii) The Town Clerk / Director of the Cango Caves.
- "iii) Dr. Douglas Hey (Council for the Environment) (Fauna & flora and environmental matters).
- "iv) Dr. Steven Craven (S.A. Spelaeological Association).
- "v) A representative of the Historical Monuments Council.
- "vi) A representative of the C.P. Nel Museum.
- "vii) A representative of the Oudtshoorn Aesthetic Committee."