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M A P L I B R A R I A N S H I P

WITH SPECIAL REFERENCE TO THE
BIBLIOGRAPHIC DESCRIPTION OF PRE-1900 PRINTED
MAPS OF THE CAPE OF GOOD HOPE (SOUTH-WESTERN SECTION)

BY

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for the degree of **MASTER OF ARTS**
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at the **UNIVERSITY OF CAPE TOWN**

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Map librarianship, with special reference to the bibliographic description of printed maps of the Cape of Good Hope, south western section, before 1900; by Margaret Findlay Cartwright.

ABSTRACT

Having given a short resumé of the background of maps and map making, the handling of maps in libraries was investigated. The examination of the development of bibliographic description of maps, resulted in, inter alia, the identification of their peculiar characteristics. Special attention was focussed on the difficulties of the detailed description of early maps. As it was considered important to refer to authoritative reference sources for further details, cartographical sources for maps of the Cape of Good Hope were examined and evaluated. As a final step, the maps themselves were examined, with full details being supplied for 15 representative maps. This is followed by a comprehensive checklist of maps of the Cape of Good Hope (south western section), sufficient information being supplied to identify them, together with references to their original published sources, their reference in standard bibliographies, and a record of any known reproductions available. The primary objective of contributing towards improved access to maps of the Cape of Good Hope has thus been achieved.

ACKNOWLEDGEMENTS

Like Conrad, this researcher has always "had a passion for maps" (Conrad: Heart of darkness). From early childhood my family used maps while tramping over the hills of the southern Cape Peninsula. It was, therefore, a natural topic to choose for the student bibliography required for the Higher Certificate in Librarianship at the University of Cape Town in 1954. During this research into maps in books I became acquainted with the accounts of early travellers and Africana bookstock, and of course the maps of the period.

This interest in maps was retained when I joined the staff of the South African Library, Cape Town, where I discovered the joys of handling the early sheet maps and old atlases. During my 25 years in charge of the Africana and Manuscripts Departments of this Library, I took upon myself the responsibility of looking after the pre-1900 sheet maps "in my spare time". Over the years I examined sales catalogues and collected copies of maps wherever they appeared. The advent of the photocopier in the 1960s made this task easier, and I was able to build up an enormous bank of background knowledge of maps, which was invaluable in terms of advice both to researchers and the acquisition of maps by the Library.

The lack of a definitive list of maps of Southern Africa led me to investigate the practicalities of compiling such a list, and has resulted in the present investigation.

This dissertation could not have been completed without the support and encouragement of the staff of the South African Library, and especially my own staff in the Manuscripts Department who have carried on on their own while I was absent on

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Although the planned analysis of place names found on maps was eventually not proceeded with, I would like to express my gratitude to Professor Don Mason of College of Librarianship Wales, for sending me extracts from his own M.A. dissertation in connection with locational indexing of maps. Equally helpful were the staff of the Onomastics Bureau of the Human Sciences Research Centre who sent me printouts of place names in magisterial districts.

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Cape Town
1st April 1987

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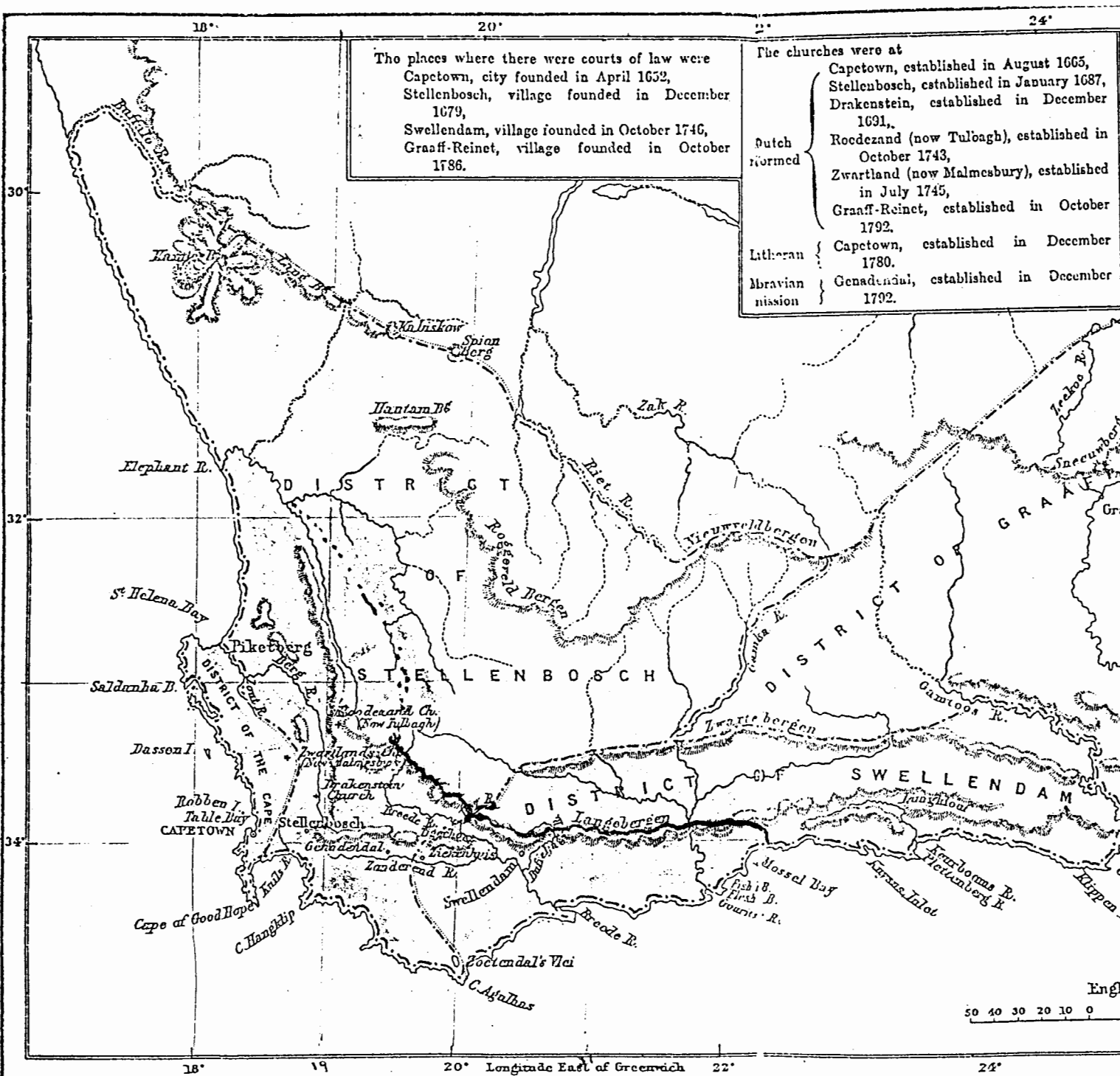
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ABBREVIATIONS

(for fuller details see page 226A)

| | |
|--------------|--|
| BM | British Museum catalogue of maps |
| CartM, CartJ | Cartwright bibliographies |
| Cory | Cory library catalogue |
| DOM | Tooley's <u>Dictionary of mapmakers</u> |
| Hollway | Bibliography |
| JPL | Johannesburg Public Library exhibition catalogue |
| MCS | Map collectors' series |
| MCS.6 | Tooley: <u>Early maps</u> |
| MCS.17 | Schrire: <u>The Cape of Good Hope</u> |
| MCS.29-30 | Tooley: <u>Printed maps of Africa</u> |
| MCS.47-48 | Tooley: <u>Maps of Africa</u> |
| MCS.61 | Tooley: <u>Printed maps of Southern Africa</u> |
| MCS.76 | Verner: <u>Maps by John Arrowsmith</u> |
| MCS.82 | Tooley: <u>A sequence of maps of Africa</u> |
| MCS.88-89 | McGechaen & Verner: <u>Maps in the parliamentary papers by the Arrowsmiths</u> |
| MCS.108 | Hoppen: <u>Small maps of Africa</u> |
| NNM | National Maritime Museum catalogue |
| Nord. | Nordenskiöld catalogue |
| Norwich | <u>Maps of Africa</u> |
| PRO | Public Record Office catalogue by Penfold |
| SAip | <u>South Africa in print</u> exhibition catalogue |
| Stell. | Stellenbosch catalogue by Stubbings |
| Tooley | <u>Collectors' guide</u> |
| Tooley DOM | <u>Dictionary of mapmakers</u> |



The places where there were courts of law were
 Capetown, city founded in April 1652,
 Stellenbosch, village founded in December
 1679,
 Swellendam, village founded in October 1746,
 Graaff-Reinet, village founded in October
 1786.

The churches were at

| | |
|-------------------|---|
| Dutch Reformed | Capetown, established in August 1665, |
| | Stellenbosch, established in January 1687, |
| | Drakenstein, established in December 1691, |
| | Rocdezand (now Tulbagh), established in October 1743, |
| Lutheran | Zwartland (now Malmesbury), established in July 1745, |
| | Graaff-Reinet, established in October 1792. |
| Abrahamic mission | Capetown, established in December 1780. |
| | Genadendal, established in December 1792. |

Plate 1: CAPE OF GOOD HOPE, SOUTH-WESTERN SECTION
 Delimitation of area investigated

CHAPTER 1

I N T R O D U C T I O N

1.1 BACKGROUND

The compilers of the Oxford English dictionary noted the use of the word "map" for the first time in 1527 and defined a map as follows: "visual representation of the earth's surface... delineated on a flat surface of paper or other material".

These flat surfaces are recognised as prime sources of geographical knowledge, and as such have gradually found their way into libraries, the acknowledged storehouses of information. Provided that they were bound as books (e.g. atlases), maps could be handled as books (Phillips, 1904:14) and easily absorbed into the bookstock. The flat sheets of paper, however, because of their large clumsy shape, have had to be handled with care and stored in special cabinets. Maps have consequently been regarded as "problem children" (Ristow, 1946:1101) and as somewhat of an embarrassment to librarians, who during the 19th century tended to ignore them (Badger, 1892:375). Some early attempts were made to organise map collections ('How we keep unbound maps', 1891:72-75), but it was only at the beginning of the 20th century that librarians began to pay special attention to maps in their care.

From a survey of the professional literature it appears that hitherto attention has been focussed on the physical handling of maps as library material, and that an appreciable measure of agreement has been reached with regard to the cataloguing, classifying, storing, and the care of maps in libraries. However, very little attention has been given to the information content of the maps themselves. Nor has sufficient attention been given to the handling of early maps.

It is commonly acknowledged that libraries are significantly more than storehouses (Post, 1981:439), and that librarianship "is a process of communication between knowledge on the one hand and people on the other" (Line, 1969:4). If librarians, therefore, are to act as the link between the cumulative store of knowledge and the user, the reference and research functions of librarianship become vitally important. Reference service is one aspect of map librarianship that has been markedly neglected (Treude, 1975:24), but today map librarians are being advised to "use the information systems of the future for the historical records of the past" in order to give excellent reference service (Cobb, 1984:209). The value of maps as reference tools "will wax and wane primarily because of the librarians who handle them" (Spellman, 1970:18).

1.1.1 Historical map research began in the 19th century with the collections of maps organised by such scholars as Jomard, Lelewel, and Nordenskiöld, the latter being responsible for compiling facsimile atlases of important manuscript and printed maps from mediaeval times to the end of the 18th century. This made it possible for scholars to observe the development of cartography through the ages. Pioneer map bibliographer, Sir Herbert George Fordham, was the first to concentrate on listing and identifying maps of a specific area (notably the county of Hertfordshire, England, in 1900), thereby creating the term "carto-bibliography" for such a detailed bibliographical study of maps. More recently Tooley has become the current expert in this field, contributing invaluable works such as Tooley's Dictionary of mapmakers (1978), as well as editing the extensive Map Collectors' Circle series on map research (1959-1979), and, since 1977, editing The map collector. All this activity has created invaluable background material for map research relating

to the whole world.

Early attempts to collect facsimile editions of maps were pioneered by scholar A.E. Nordenskiöld as early as 1892, and followed by Yusuf Kamal in 1926. Modern projects include the anniversary publication of Portuguese maps in 1960 (Monumenta cartographica Portuguesea, edited by Cortesão and Teixeira da Mota), and the series of facsimile atlases published by *Theatrum Orbis Terrarum* of Amsterdam since 1964. In this way manuscript maps and scarce atlases are being placed within the reach of scholars and libraries. The discovery in 1951 of the then unknown maps of former Cape Governor C.J. van de Graaff by C.Koeman was an exciting event, and their publication in 1952 as Tabulae geographicae coloniae Bonae Spei was an important landmark. Prior to this it had been assumed by the British cartographer Barrow that the Dutch authorities at the Cape in 1795 had not made worthwhile contributions to cartographical research.

1.2 STATEMENT OF THE PROBLEM

1.2.1 The lack of a definitive list of maps of South Africa, and in particular the Cape of Good Hope, inhibits both research and reference service, as it is not possible at present to trace easily a map of a specific area, or at a particular period of time. There have only been general surveys of uneven quality, limited either to area or to cartographer.

Maps of Africa and Southern Africa were listed in bibliographies as early as 1897 (Hollway), in catalogues of map collections (British Museum, 1885; 1967), or in exhibition catalogues (Johannesburg Public Library, 1952), but the first separate list of maps was that compiled by Sidney Mendelssohn in

his South African bibliography (1910, v.2). Although still a useful starting point, the brief entries in Mendelssohn do not identify specific maps accurately, as in many cases the title has been abbreviated. More detailed lists have been compiled since 1910 by researchers such as Tooley (1964 ; 1969), M.F.Cartwright (1955; 1976), J.F.Cartwright (1955; 1976), Schrire (1972), Verner (1978), and now Norwich (1983), but there is at yet no definitive list of maps of Southern Africa, nor of the Cape of Good Hope.

1.2.2 The difficulties of applying bibliographic description to early maps have seldom been discussed in library literature. In particular, the identification of such early maps has not been firmly established. Many of the recent guides refer to the same map in different ways - sometimes by name of cartographer, sometimes by name of publisher or printer, and sometimes (but less often) by area. The area entry is the most satisfactory, but few South African libraries have catalogued their map collections in full.

1.2.3 Few of the bibliographies or lists mentioned above contain reproductions of the maps described. The exceptions are those works by Tooley (1964 ; 1969), Schrire (1972), and Norwich (1983). Therefore, no comprehensive visual guide to maps of Africa and South Africa has yet been published. Maps are pictorial representations of the surface of the earth, and no matter how well they are described in words in catalogues and bibliographies, there can be no doubt that the most satisfactory means of obtaining information from maps is to handle them personally. In the case of old maps, handling them personally is either hazardous or impossible. Map users are seldom in the fortunate position of being able to consult the originals. Thus

they have to be content with handling facsimiles or reproductions of such maps. It is, therefore, important to record where the originals, reproductions or facsimiles can be found. Such information would enable the map user to see at a glance whether the map illustrated does cover the area in which he is interested or whether it contains the type of information he requires.

1.3 DELIMITATION OF SCOPE AND FIELD OF INVESTIGATION

The scope of this investigation will be confined to printed maps of the Cape of Good Hope (South Western districts) within the boundaries of 1745 (cf.1.3.1), and published before 1900 (cf.1.3.2).

1.3.1 Area

The area designated represents the southern tip of the continent of Africa, known to the Western world since the rounding of the Cape of Good Hope by Bartholomew Diaz in 1488, and is consequently shown on most maps drawn after this date. It became the core of white settlement after the arrival of Jan van Riebeeck and his entourage in 1652.

Globes and maps of the world showing the African continent will not be included, as they have been described and listed adequately by experts such as Skelton (1952) and Shirley (1984).

Maps of Africa as a whole will likewise be omitted, since Tooley (1969) and Norwich (1983) have both covered this field reasonably well.

Similarly, maps covering the area of Southern Africa and South Africa comprehensively will not be dealt with. Maps covering these two regions include those extending southwards from 10 degrees north of the Equator, those depicting the area south of the Equator, and those showing the area south of the Zambezi. Those representing the area south of the Limpopo cover

the territory of the present Republic of South Africa. However, in the past the term "South Africa" was often used to describe the area of white settlement at the southern tip of Africa and so could also indicate the area known as the Cape Colony until 1910. It is only with the expansion to the north by the Voortrekkers in 1838 beyond the Cape boundaries of the Orange and Keiskamma Rivers that the term "South Africa" began to take on its present meaning of a political unit "south of the Limpopo".

The southern tip of Africa indicates the area known as the Cape of Good Hope or Cape Colony, and today the present Cape Province of the Republic of South Africa. It extends from 29 degrees south (Orange River) to 34 degrees south, and from 16 to 28 degrees east, covering an area of 717 318 square kilometres. Once again this was considered too large an area to examine in detail, for the purpose of this study. Accordingly attention was concentrated on the south and south western areas of the Cape Province, representing the first areas of white settlement since 1652.

Although the first Portuguese explorers rounded the Cape as early as 1488 (Diaz) and 1497 (Vasco da Gama), it was only in 1651 that the Dutch East India Company sent Jan van Riebeeck to the Cape to establish a refreshment station for the passing ships en route to the East Indies. It had never been their intention to found a colony, but within a few years private farming was permitted and the "free burghers" became the first settlers. The stockfarmers gradually went further inland to find grazing for their cattle, thus forcing the boundaries of the infant colony to expand. By 1700 the colony had extended to Tulbagh and Riebeeck Kasteel, and by 1710 as far as present-day Caledon. In 1745 a new district of Swellendam was proclaimed, thereby extending the

jurisdiction of the Dutch East India Company as far as the Great Brak River beyond Mossel Bay. The easternmost extension was the farm Hagel Kraal. The boundaries of this area, therefore, encompass the area of white settlement at the Cape as at 1745, and include the historic districts of the Cape, Stellenbosch and Swellendam.

Geographically, the area chosen for close examination in this study is bordered on the north by the Olifants River (31 degrees 30' south), inland beyond the Cedarberg and Langeberg mountain ranges (but not as far as the Roggeveld mountains or Swartberg range), and along the southern coast as far as the Great Brak River beyond Mossel Bay (22 degrees east). It includes the area known as the Swartland, the edge of the Cedarberg, the Boland, Groenland, the Sandveld, and the Overberg, but it does not extend beyond the Hex River mountains. It therefore excludes the Bokkeveld and the Little Karroo.

The difficulty with geographical areas is that designations such as "southern" and "western" tend to be used rather loosely and do not circumscribe precisely demarcated areas. In this way the phrases "Western Cape" and "south-western districts" may be referring to the same area, or overlap with it in parts.

1.3.2 Date

Although the area covered is based on the boundaries of the Cape Colony as at 1745, the maps handled are those published prior to 1900. In order to avoid the fresh complexities emanating from the Anglo-Boer War, the actual cut-off date chosen is September 1899, i.e., the month preceding the outbreak of hostilities.

Sidney Mendelssohn listed all maps found in his collection in Volume 2 of his South African bibliography (1910). This list,

entitled "Cartography", contains 1034 entries, but the maps listed under "South Africa" number 206 and the "Cape Colony" maps number 166. By analysing those books published during the period 1900 to 1908 (date of last books listed), it is possible to arrive at some conclusions. During this period 2 111 books were published on South Africa, and of these, 465 books related to geographical topics. Such books were likely to contain maps. Most of the activity during the Anglo-Boer War took place in Natal and the northern Cape Colony, and it was only during the guerilla campaigns of 1901 and 1902 that the battles reached the western and southern Cape Colony. Maps appearing in these books depict the area in which the battles took place. Consequently very few would indicate the area under investigation.

Another factor to be noted is that by the end of the 19th century maps were no longer the product of individual craftsmen, but instead those of the publishing houses of George Philip & Son, J. G. Bartholomew, Justus Perthes, and others. These standard maps formed the basic map for all current events, and revealed little new geographical information. The exception is the work of the British Intelligence Department, which in the closing year of the 19th century conducted original surveys and began producing the detailed series of maps entitled The Imperial map series of South Africa (Wood & Henderson, 1899-1900) and the series Boer and Briton by Wood & Ortlepp. These maps fall outside the scope of this investigation.

1.3.3 Printed maps

Manuscript maps in their original state have not been examined. As these maps are unique, they are generally only to be found in single specific institutions in Europe or North

America or in archival depots and museums in South Africa and elsewhere in the world, and are therefore not easily available for investigation and comparison.

Although manuscript maps and charts were being produced from early times, it was the fall of the Byzantine Empire in 1453 that enabled the geographical knowledge of ancient Greece and Rome to be once more available to the West by fugitive scholars bringing with them to Rome the earliest surviving Greek manuscripts. In this way the ideas of Ptolemy of Alexandria (A.D. 2nd century) were rediscovered, and new editions of his Geographia were published by the new printing process in 1477. The invention of printing in about 1440 facilitated the spread of this classical knowledge throughout the known world. Five "tabulae modernae" were added to the edition of 1482, thus adding new geographical ideas to those of the classical scholars (Skelton, 1960:529).

As far as portulans and sea charts are concerned, these were working-tools used by sailors and not many examples have survived today. Those that exist have survived by chance or by the fact that they were collected and bound between boards by enterprising publishers and sold to collectors. It is assumed that many of these have eventually ended up in map collections in libraries or other institutions (cf. 2.3.2 - 2.3.3).

1.3.4 Government publications

Government publications pose a problem, as their organisation is complicated, making retrieval a difficult task and consequently unpopular with researchers. The maps by the Arrowsmiths in the British Parliamentary papers have been listed in an issue of the "Map collectors' series" (McGechaen & Verner, 1972-3), but no systematic attempt has been made to investigate parliamentary or government publications any further.

Occasional references to these maps have been found in the list by Hollway (1897). Cape Parliamentary papers have also not been systematically searched for maps attached to reports of the Cape Government Railways or other likely sources. This calls for a separate investigation.

1.3.5 Field of investigation

This investigation is based on material found in libraries, in particular that in the South African Library and the Library of Parliament, both in Cape Town. The Cape Archives Depot has, therefore, not been visited.

The list found in vol. 2 of Mendelssohn's South African bibliography, together with the material examined while compiling student bibliographies in partial fulfilment of the University of Cape Town Higher Certificate in Librarianship in 1954, will be utilised as the basic sources on which to base further investigation. Those items listed by Mendelssohn and not yet examined (i.e. those published after 1857, the date limit of J.F. Cartwright) will be followed up and investigated. Throughout, attention will be focussed on "contemporary works", published before 1900 (cf. 1.3.2).

In addition, Hollway's geographical bibliography (published in the Transactions of the Philosophical Society of South Africa in 1897), will be examined in detail. Accession lists, book catalogues of the British Museum and the Library of Congress, and map catalogues of various libraries and institutions, will be scanned. Map periodicals, such as The map collector, will be investigated, as well as the early geographical journals of the 19th century.

Other sources investigated are the catalogues of map

publishers (e.g. Edward Stanford Ltd), antiquarian booksellers such as Sawyer, Broekema and Francis Edwards, map dealers (Hoppen), and auctioneers (Sothebys). The sales catalogues of Fred. Muller, Amsterdam, in the 1860s were also found to be invaluable sources of information.

1.4 PROPOSED METHOD OF INVESTIGATION

The investigation into the listing of maps of the western and southern Cape will be undertaken against an Anglo-American background. All libraries, archives and information centres in South Africa have long-standing links with developments in the field in North America and Britain. South Africa shares many of the attributes and problems of the profession in Britain, the United States, Canada and Australasia. It is for this reason that the literature survey will be confined largely to studies emanating from these countries. Although continental sources will not be examined in detail, reference will be made to the important part played by Dutch, German and French map librarians and geographers.

1.4.1 Literature survey

As a preliminary step in the investigation a literature survey of the topic will be undertaken. The intention behind this is twofold:

- (a) to gain a broad overview of the scope and ramifications of cartography and map librarianship; and
- (b) to examine what is necessary for the detailed bibliographical description of maps.

A brief study of the historical background of cartography will be conducted in order to gain a deeper understanding of maps and their unusual characteristics.

The professional literature will be examined systematically in order to reveal the way in which maps have been and are being handled in libraries.

The cataloguing of maps, as well as other problems peculiar to maps, will come under scrutiny. A closer look at the way in which historical or old maps should be handled, especially in carto-bibliographies, will follow.

1.4.2 Investigation of maps

The empirical aspect of the study will be developed in the final chapters (cf. 6, 7 and 8), where the sources of maps will be examined with a view to gathering all references to maps of the Western and Southern Cape. As this field is so vast, and in order to keep this investigation within bounds, no attempt will be made to compile an exhaustive list of maps. The aim has been instead, to present a representative checklist of maps of this area. Particular attention will be paid to listings in authoritative reference sources and the existence of reproductions.

Maps that have been handled and described, but whose existence has not been noted in reference sources, will be given the name of the library in which they may be found, e.g. by means of the PISAL code:

CS South African Library
 CLP Library of Parliament
 JPL Johannesburg Public Library / Africana Museum

1.5 PROBLEM OF DEFINITION

Maps in general, and old maps in particular, are both "geographic" tools and "bibliographic monstrosities" (Brown, 1941:83), involving the application of the techniques of both

printing and publishing, and of the graphic arts. Consequently, the map librarian has to be aware of the technical terms used in these fields. A glossary of such terms will be provided in Appendix 2.

1.6 REFERENCE SOURCES

An exhaustive survey will be made both of professional and cartographic literature, details of which will be found in the "List of readings" (Appendix 4). Important sources of the maps themselves are indicated by means of the symbol #.

In the final checklist (cf.8), reference is made to the main carto-bibliographical sources, published catalogues and bibliographies in which the map has been traced or "listed". The abbreviations listed below have been used to identify these sources, full details of which are to be found on page 226A as well as the "List of readings" (Appendix 3).

| | |
|--------------|--|
| BM | British Museum catalogue of maps |
| CartM, CartJ | Cartwright bibliographies |
| Cory | Cory library catalogue |
| Hollway | Bibliography |
| JPL | Johannesburg Public Library exhibition catalogue |
| MCS | Map collectors' series |
| MCS.6 | Tooley: <u>Early maps</u> |
| MCS.17 | Schrire: <u>The Cape of Good Hope</u> |
| MCS.29-30 | Tooley: <u>Printed maps of Africa</u> |
| MCS.47-48 | Tooley: <u>Maps of Africa</u> |
| MCS.61 | Tooley: <u>Printed maps of Southern Africa</u> |
| MCS.76 | Verner: <u>Maps by John Arrowsmith</u> |
| MCS.82 | Tooley: <u>A sequence of maps of Africa</u> |
| MCS.88-89 | McGechaen & Verner: <u>Maps in the parliamentary papers by the Arrowsmiths</u> |
| MCS.108 | Hoppen: <u>Small maps of Africa</u> |
| NMM | National Maritime Museum catalogue |
| Nord. | Nordenskiöld catalogue |
| Norwich | <u>Maps of Africa</u> |
| PRO | Public Record Office catalogue by Penfold |
| SAip | <u>South Africa in print</u> exhibition catalogue |
| Stell. | Stellenbosch catalogue by Stubbings |
| Tooley | <u>Collectors' guide</u> |
| Tooley DOM | <u>Dictionary of mapmakers</u> |

CHAPTER 2**M A P S**

Maps have been compiled over the centuries for the serious purpose of imparting geographical information in graphic form with accuracy and clarity. These "bird's eye views of the land below" (Ling Chu Poh, 1967:79) are invaluable sources of information to both geographers and historians, as they reflect what a particular area looked like at a particular period. Maps, therefore, are a means of visual communication, reflecting pictorially history written in the language of geography. "Maps are peculiarly geographical documents", states (Wilson, 1948:13).

No matter what the subject matter, a map is always linked with "geographic area" (Jong, 1948:273), and without it "there is no map" (White, 1959:155).

A map can be considered from several angles: as a scientific report on the state of exploration, a factual work on the current state of knowledge, a historical document reflecting a state of affairs at a given time, a functional tool for travellers or navigators, a research source for checking geographical data, a work of art for art lovers, or even as an investment for collectors. This study, however, is concerned with maps as potential sources of information.

2.1 MAPS AND LIBRARIES

The collecting and preserving of maps by libraries and other institutions has been of great importance to those interested in the history of maps and their makers. The growth of geographical libraries (and map and atlas collections) can be traced to the end of the 14th century, when maps came to be regarded as documents to be given special treatment similar to books (Wolter, 1973:238). Although various references point to

the establishment of the first map collection in 1459 (ibid.:241; Tooley, 1984:42), this assumption could not be verified. We do know, however, that the earliest catalogue of a map collection was that of Viglius of Aytta in 1575 (De Smet, 1979:237; Waterbolk, 1977:47). This collection of maps had formed part of the University of Louvain which was destroyed in World War I (ibid.). Library inventories are often our only evidence of the existence of many early maps (Bagrow, 1948:18).

Although all librarians act as links between their bookstock and their readers, the map librarian has the extra responsibility of serving as the interpreter of the map to the map user, thus acting as the "interface" between map production and map utilisation (Treude, 1975:26). Although it is not always possible for map librarians to be qualified geographers (Bergen, 1972:310; Friis, 1950:149), it is important for them to have some knowledge of the history of cartography (Brown, 1941:15). This is particularly vital when dealing with a collection of old maps, as the curator or librarian should be able to appraise and analyse these maps intelligently and be ready to answer the questions of the map collector (ibid.:43).

An understanding of maps, as well as a knowledge of the history of geography and cartography, is therefore an essential part of providing a satisfactory map service. It is also of critical importance in map identification, "for it is from familiarity with such things as fashion-changes and development of scientific knowledge that maps, charts, plans and globes may often roughly be assigned to their correct periods" (Lister, 1965:15). Reference will be made to these details in 2.4, as well as the Glossary in Appendix 2.

2.2 MAP RESEARCH

The history of cartography and the history of geography are closely interlinked, i.e., on the one hand maps were the products of geographical knowledge, while, on the other, exploration and further geographical knowledge would not have been possible without maps.

The term "cartography", introduced to describe the science of making maps (from surveying the ground to the drawing of the map or chart) (Greenhood, 1964:xi), was used for the first time in 1859 (according to the New English dictionary, 2:140), and it is now the generally accepted term used for this new field of study. An interest in maps and historical geography began during the first half of the 16th century, and was a direct cause of the collecting of maps by public libraries and private collectors (Wolter, 1973:239).

An intense preoccupation with the history of maps and their makers had begun early in the 19th century with scholars like Wälckenaer in 1823, and collectors such as Jomard in 1842, Kohl in 1843, Santarem in 1848, and Lelewel in 1850, who began to assemble important maps in both original and facsimile editions (Mullins, 1966:439). Scholars were thus able to study such maps and publish their findings, in many cases together with facsimiles of the maps themselves. However, the modern study of the history of cartography may be said with some confidence to have begun with the scholarly work of Adolf Nordenskiöld, who "brought to the study of early maps a mind trained in the sciences and a zeal to organise this field" (Post, 1981:440). This Swedish explorer, scientist and bibliophile made a systematic collection of the most important maps of the 15th to 16th centuries, and published facsimile atlases of early printed maps (1889) and unpublished sea-charts (1897). These works have

since become classics of their kind (Hakli, 1979:ix).

The 20th century brought with it an increased interest in map research, and a concomitant increase in the volume of published findings. In particular, the past 30 years have seen a phenomenal increase in the number of books published on cartography - both scholarly works and popular "coffee-table" books. Many of these latter types contain facsimile reproductions of the maps themselves (cf. 2.2.1). Guides to historical cartography have been written by scholars such as Bagrow (1951), Bricker (1969), Crone (1962), Skelton (1958), and Tooley (1970). In addition, numerous books have been produced on maps of specific areas, such as North America, Australia, and Africa, and more recently world maps (Shirley, 1984). (African maps will be discussed in greater detail in Chapter 6). Most of these volumes have detailed introductions giving some background history of maps and map makers, thus providing important source material on which to base this chapter.

Map research was given further impetus in 1935 with the founding by Bagrow of the annual Imago mundi as a means of publishing research results. The articles cover a wide range of topics, ranging from cartographers and the cartographic output of specific countries, analyses of atlases, discussions on map publishing and economics, map incunabula, and the technical aspects of map making. Another invaluable source of information concerning early maps is the journal Acta cartographica, begun in 1963, and featuring reprints of important historical articles on cartography which have appeared in journals since 1800 (and hence often not readily obtainable to researchers today).

Valuable contributions to map research have been made by scholars like Skelton and Tooley. Of particular importance are

the works by R V Tooley, who contributed many articles and books, notably Tooley's dictionary of mapmakers, the Map Collectors' Circle series (as editor), and more recently as editor of the Map collector (1969) ('My head is a map', 1973: passim).

Another 20th-century phenomenon has been the growth in the number of institutions specialising in maps. The latest statistics are given in the IFLA World directory of map collections (1986). Some of these are devoted entirely to cartographic research: for example, the Herman Dunlap Smith Collection at the Newberry Library in Chicago, and the Collection for the History of Cartography at California State University at Fullerton (Boswell, 1976).

2.2.1 Facsimiles

These historical maps constitute exacting research material demanding careful study and interpretation on the part of the scholar (Collins, 1977:10), as well as considerable time and searching on the part of the librarian, whose duty it is to examine, identify and describe the maps in his/her care. As it is commonly agreed among librarians that "no verbal expression can serve as a satisfactory substitute for the original map" (Wilson, 1958:14), it follows that an intensive study of old maps requires the handling of preferably the original, or, failing that, a facsimile copy of the original. This was realised by collector Kohl who painstakingly copied by hand early maps of North America, which today are in the Library of Congress (Mullins, 1966; 1975:439; Wolter, 1973:260). The map librarian today realises too that although the original map is important for research, the information found on it is even more valuable. Facsimiles or reproductions and rebound atlases are, therefore, just as useful and serviceable to librarians as the rare and

valuable originals. In this way, map librarians strive to serve scholarship rather than act merely as collectors or curators (Fairclough, 1972:291).

Although the business of publishing facsimiles of rare and decorative maps is a profitable one, and maps are much in demand today (Smith, 1973:117), not only to collectors, but also to cataloguers and bibliographers, it is not unique to the 20th century. Facsimile publishing had its origins in the 16th century, soon after the invention of printing, *had* made facsimile reproduction of rare and important maps possible. It thus continued the Renaissance tradition of imitating the original products of classical civilisation (Koeman, 1964:87). In many instances our knowledge of early map making is derived entirely from facsimiles, as the original maps have not survived (Noe, 1980:111). For example, the outstanding Roman "Peutinger table" map of the time of Augustus is known to us only through a mediaeval copy (attributed to Castorius, and found in Augsburg) of another copy made in c.A.D.300 (Stunkel, 1965; 1975:43; Modelski, 1977:119).

The reproduction of early maps as a means of illustrating studies in the field of early cartography took on a more or less systematic character after 1842 when Santarem published his Atlas composé de mappemondes.

The new printing techniques of the 19th century increased the production of map facsimiles, but until the application of photography in the 1880s, their reliability remained doubtful (Koeman, 1961:87). Nordenskiöld's Facsimile-atlas (1889) and Periplus (1897) attained a high technical standard, but advances in colour technology have made it possible in the 20th century to produce elegant and near-perfect facsimiles of many rare and

decorative maps. The recent publication of Cresques' Catalan atlas of 1375 (in 1978) and the Rotz atlas of 1542 (in 1983) are notable examples.

Yussuf Kamal started building up his collection of facsimiles of old maps in the 1920s, focussing his attention on Africa from ancient Egyptian times to the end of the 16th century. The first 14 volumes of this Monumenta cartographica Africae et Aegypti (the biggest facsimile atlas ever made at the time) were edited by Wieder and published from 1928 to 1946 (but only completed in 1951). Portuguese maps, covering the years from the late 15th to the early 17th century, were similarly collected by Cortesão and Teixeira da Mota in 1960. Facsimile reprints of early atlases have been published in the Theatrum orbis terrarum series from 1964 onwards, and by individual publishers. This post-war "explosion" in facsimile publishing throughout the world is clearly shown by comparing the short lists compiled by Crone (1953:appendix II) and Ristow (1969), with that of Noe's 4th edition (1980). As a large number of reproductions of rare or unique items in map collections had been published by libraries and historical societies in limited editions and so went quickly out of print, it had become necessary to keep in touch with these institutions, as well as the increased output of commercial firms (Noe, 1980:iii). Some five hundred facsimiles of early maps and atlases issued by 145 publishers throughout the world are thus available today. In addition, the Map collector publishes regular lists of maps offered for sale by dealers, together with the prices obtained at auction sales throughout the world.

2.2.2 Map makers

The first list of map makers was that compiled by Ortelius in 1570 when he recorded the names of nearly 90 cartographers who had contributed maps for his atlas. Within 30 years this list had nearly doubled. During the 18th century scholars continued investigating the historic past, resulting in lists of geographers and map makers being composed by Coronelli in 1707 and Gregorii in 1713. The growing interest in the history of geography shown in the 20th century added a variety of catalogues, bio-bibliographies and carto-bibliographies as source materials for a general directory of cartographers. Names of cartographers can be located in the author catalogues of major map collections, such as those of the British Museum and the Library of Congress, but actual lists of cartographers are found in the cartographic histories of Bagrow (1951), as revised by Skelton (1964), and Lister (1965). The 1960s saw the culmination of two major projects, namely Bonacker's directory (1966) of 6 350 of the most important map makers from earliest times to the present day (in particular, German cartographers), and Tooley's dictionary of map makers appearing in the "Map collectors' series" from 1965. Tooley revised and enlarged these lists to produce his Dictionary of mapmakers in 1979, "the first comprehensive work of this kind in English" (Tooley, 1979: introduction by Helen Wallis, xii). It contains nearly 21 450 entries, recording every person associated with the production of maps from the earliest times to the year 1900, and is the result of Tooley's specialised knowledge of maps gathered over a period of 50 years. Criticism levelled at it by Harley (1980:98-99) is that it is by no means comprehensive, as some important sources have been omitted, notably Eden's list (1979) which records some 10 000 cartographers from 1500 to date in Great Britain alone

(ibid.).

2.2.3 Time charts

Charts describing chronologically the development of geographical knowledge through the ages are useful for placing historical events in perspective. Pictorial charts of this nature were compiled by Erwin Raisz of the Institute of Geographic Exploration, Harvard University, for his textbook General cartography (1938, 2nd ed 1948), after their first appearance in print in Imago mundi, 1937. An attempt at compiling a South African version will appear as an Appendix to this study.

2.3 OUTLINE HISTORY OF MAPS AND CHARTS

The time charts previously mentioned (Raisz, 1938) are a good pictorial guide showing the sweep of cartographic development, but a useful short introductory history is that written by Crone (1962; 5th ed 1978). More detailed histories are those by Skelton (1964), and Tooley (1970), the latter giving an accurate and readable account with detailed lists of individual cartographers and important maps. In all these narratives it can be seen that maps are the products of a number of processes and influences (Crone, 1970:ix) - some of which are described in the following sections.

As the main thrust of this study is the period of the printed map (i.e., after 1440), only a brief survey will be given of the early beginnings of map making up to the end of the Middle Ages.

2.3.1 Early beginnings to the Middle Ages

Maps have been said to be the oldest of the graphic arts (Greenhood, 1944:1), and certainly predate the invention of writing. The earliest crude maps scratched with a stick on the sand, painted or incised on to a hard surface, either ephemeral or immovable, have seldom survived. In fact, only a handful of early maps produced before the Christian era have been preserved. The earliest surviving examples from classical antiquity are some clay tablets, dating from late Babylonian times (about 2 300 B.C.), found in Mesopotamia (Baldock, 1966:10; Stenkel, 1968:37), and some papyrus rolls, found in Egypt (Thiele, 1938:4; Modelski, 1977:118). But it was the Greek scholars and geographers of the classical and Hellenistic ages who made the greatest contribution to geographical knowledge and the early development of maps. The concept of a spherical earth was worked out by Pythagoras as early as 500 B.C., and the scientific measurements and mathematical principles developed by Eratosthenes about 200 B.C. contributed greatly to early cartography. The great geographer and astronomer Claudius Ptolemy (A.D.90-168) is known as the founder of scientific astronomy and geography. His well-known work, Geographia, was illustrated by 26 regional maps and world maps (or "mappae mundi"), reflecting the contemporary limits of the known world. The Romans, however, ignored the achievements of the Greeks, concentrating instead on practical road maps of their empire (Modelski, 1977:119). The most outstanding product of their map making skills is the afore-mentioned "Peutinger tafel" road map of about 40 B.C. (cf.2.2.1), of which only a mediaeval copy survives. Ptolemy's ideas on geography thus continued to be of value and dominated the whole of the Christian and Muslim world for 1 500 years (Tooley, 1970:5).

With the collapse of the Roman Empire in the West, and the subsequent cutting of the lines of communication between Europe and Greek scholars in the East, a period of stagnation set in, an era still often described as the "Dark Ages". During this time mediaeval scholars and geographers in the West reverted to the belief in a flat earth and produced maps that were either merely perpetuating the geographical knowledge of the Romans (Raisz, 1938:26), or were symbolic and moral rather than utilitarian (Tooley, 1970:12). In some instances they constituted decorative illustrations of theological texts (Raitz, 1938:26). Maps of the known world at this time showed Jerusalem at the centre, around which the three known continents of Asia, Europe and Airica were grouped as a T within an O, hence the term "I-O maps".

In contrast to the West, the Muslim world during the Middle Ages had access to the Greek heritage, and Arab geographers continued the tradition of classical antiquity and improved on it. The Arab religion, which incorporates the principle that every mosque must face towards Mecca, as a matter of course developed an awareness and knowledge of the location of "place" (Raisz, 1939:26). Consequently, the Arabs, who had developed an expertise in astronomy, mathematics and geography, soon became expert geographers and map makers. Mapping became an integral part of their educational system and maps were used regularly for geographical instruction in the schools. The manuscript map of the known world by Idrisi (or Edrisi) in 1154 is based on Ptolemy, and represents the combination of these classical traditions and Muslim geographical knowledge.

In the 13th century as a result of the travels of Marco Polo and other Venetian traders overland to Asia, a new interest in and an awareness of geography developed. Mediaeval cartographers turned away from theological statements and paid more attention

to the appearance of the world as it actually was (Tooley, 1970:15-16).

With the development of the mariners' compass, seamen were able to venture further away from the coastline, so the art of navigation made great progress. At the same time a new type of sea chart, based on direct observations made with the aid of the compass, was created for seamen by Genoese mariners in order to supplement the written sailing directions. These "portulans" (or "port-finding" charts) were far more accurate than the contemporary terrestrial maps (Winter, 1956:39-44). The oldest surviving chart, the "Carta Pisana", may have been made as early as 1275 (Modelski, 1977:123). The Laurentian portulan on eight sheets (in the Medici atlas of 1351) depicts the general shape of Africa (Kimble, 1935:29; Thiele, 1938:26). The portulan tradition reached its peak in the production of the "Catalan" atlas of 1375, the work of a family of Catalonian Jews who worked in Majorca at the end of the 14th century.

2.3.2 The renaissance of cartography in the 15th century

Map production received its first real impetus in the 15th century, as a result of a number of processes and influences of the time (Brown, 1941:10; Crone, 1953:ix). These were the invention of the printing press, the rediscovery of the ideas of Ptolemy and other classical writers, and the discovery of the New World, which all contributed to scientific map making and encouraged maps to be published in rapidly increasing quantities to reflect the changes in geographical knowledge.

The collapse of the Byzantine Roman Empire after the fall of Constantinople in 1453 had a major effect on the development of geographical knowledge, as Greek scholars fled to the West,

bringing with them the classical knowledge of the Greeks as preserved in Arab manuscripts. The translations of Ptolemy's works into Latin and the vernacular by Greek scholars were tremendously popular, and even more so after the first printed edition in 1470. In the next 80 years over 100 editions were published (Tooley, 1970:6-8), and the Ptolemaic tradition continued to influence geographers well into the next century. The first printed maps appeared in the Bologna edition of 1477, but it was the Ulm edition of 1482 that contained five new maps based on contemporary knowledge. These "tabulae modernae" gradually increased in number in successive 16th-century editions of Ptolemy, as the editors grafted the new geography of the great discoveries onto the old Ptolemaic stock (Skelton, 1960:529).

2.3.3 The invention of printing and engraving

The invention of the printing press in the West in about 1440 facilitated the spread of the new geographical ideas and accounts of exploration throughout the known world. No longer were maps merely functional navigational tools soon to be worn out by constant use: multiple copies could be printed and preserved between covers by enterprising map publishers, notably the Italian "atlases" attributed to Antonio Lafreri (Skelton, 1960:230). These compilations were sold to meet the demand for geographical knowledge, and maps were thus brought within the range of a far greater number of people. Many of these maps fortunately found their way into map collections and into libraries, and were preserved. Other maps are only found listed in old inventories or catalogues and are no longer extant (Bagrow, 1948:18). The oldest known printed map is the woodcut "T-O" map by Isidore of Seville in 1472, but the first modern printed maps were those appearing in the Ulm edition of Ptolemy

in 1482 (cf. supra). The printing of maps by copper engraving or woodcut soon developed into an important graphic art (Modelski, 1977:130).

2.3.3.1 The map trade

Although manuscript maps and charts had been produced from early times, printed maps did not appear until the end of the 15th century. Originally the master craftsman had done everything himself, from drawing to selling, but as the demand for maps grew, he had to expand by engaging the services of apprentices. Greater wealth meant further expansion, involving even the purchase of the output of rival firms, and slowly a wholesale trade in maps developed. By the middle of the 16th century the demand for maps had grown to such an extent that flourishing centres of map production were maintained, particularly in Venice and Rome. Map publishing thus became established as a trade in its own right. Later developments led to the formation of trade houses which brought the various craftsmen together under one roof, and businesses became rationalised and streamlined (Tooley, 1969:vi). More detailed histories of the map trade in various European countries have been written by amongst others, Tyacke (1978), Herbert (1983), Pedley (1981) and Kiss (1947).

2.3.4 The great geographical discoveries

Man's conception of the world changed dramatically at the end of the 15th century. By comparing the view of the world as seen by Behaim in 1475 with that of the world map drawn by Juan de la Cosa in 1500, it is possible to see clearly how the known world had doubled in size within twenty-five years (Raisz, 1938:34). The reason for this striking change can be attributed

to a number of important inventions. In addition to the invention of the compass (cf.2.3.1), the building of larger and better sailing vessels, such as the caravel, enabled ships to sail for many months. The consequent discoveries of new lands and the opening up of the oceans provided the chart makers with data for maps of the coastline, which in turn stimulated further explorations (Tooley, 1970:97-101). The Portuguese began moving southwards along the western coast of Africa and across to Brazil, and Da Gama found the way to India round the Cape. The traditional Ptolemaic view of the world could no longer be accepted as infallible or reliable (Thiele, 1938:27), and map makers were moved to produce more realistic charts. By 1507 cartographer Waldseemüller used a new method of "projection" to produce an accurate map of the known world (Keuning, 1955, 12:1).

The popularity of "cosmographiae" (i.e., textbooks of geography, astronomy, history and natural sciences) at this time is indicative of the intense interest in geography and the growing demand by travellers for topographic maps. These books contained descriptions of countries arranged in regional order and were illustrated with maps and figures. The work produced by Apian in 1524 ran into 15 editions, but that produced by Münster in 1550 was even more popular, remaining the main sourcebook of geographical information for over 50 years.

2.3.5 Migration of leadership in cartography from one nation to another

Through the centuries map making and the dissemination of geographical knowledge have been restricted by political and religious forces: maps were "made furtively, studied secretly, and destroyed promptly", says Brown (1941:9).

As potential sources of information, maps have always been considered secret and subject to government control. Phoenician mariners were instructed to wreck their vessels rather than disclose to their enemies the route to their destination (Tooley, 1985:106), and later sea charts were jealously guarded. Even the possession of maps was forbidden in Roman times, as Suetonius records that it was a grave offence for a private person to have a map of the world in his possession (cited by Thiele, 1938:8), and Emperor Augustus locked up maps of survey of the realm (related by Brown, 1941:10). In times of war (and commercial rivalry) secrecy concerning maps and mapping was official government policy, and access to maps was strictly controlled (ibid.:9-10). Even in modern times, during World War II, this practice continued. The British Control of Maps Act of 1940 specifically forbade librarians to allow certain maps to be consulted or lent without the production of a licence, nor could aliens consult such maps (South African libraries, 1940:118).

Although the early explorers and cartographers tried to keep the knowledge of their travel routes to themselves, secrecy could not be maintained under the pressures of commercial spying, bribery and conquest (Tooley, 1984:106). Many map makers were enticed away to other nations, thus spreading cartographic knowledge from nation to nation. This movement is reflected clearly in the 1971 catalogue of the National Maritime Museum, Greenwich, where the atlases have been listed according to their cartographic "schools". In the 16th and 18th centuries plagiarism was also common, with many cartographers copying maps, with or without the phrase "drawn from" or "based on".

2.3.5.1 Portugal and Spain

Although the Italian maritime states had initiated trade

with the East by going overland, the Portuguese broke their monopoly in 1488 when they pioneered the "seaway to the Indies" (Skelton, 1970:24-50). Excellent charts were being prepared both by the Catalan or Majorcan school of map makers in Spain; later after persecution the Jews fled to Portugal and joined the school of navigators established by Prince Henry the Navigator at Sagres in Portugal. In an attempt to solve the intense rivalry between Spain and Portugal, the Treaty of Tordicellas in 1494 divided the world into two spheres of influence, Spain being granted the area to the west of the Azores and Portugal the area to the east. This meant that Portuguese explorers gradually worked their way down the west coast of Africa. The story of Portuguese cartography has been well documented by Cortesão and Teixeira da Mota (1935, 1960). The first map to incorporate the successful rounding of the Cape by Vasco da Gama and Bartholomew Diaz was that drawn by Juan de la Cosa in 1500. With the advent of printing, maps could no longer be kept secret, and maps were smuggled to Italy.

2.3.5.2 Germany

Although Germany never dominated map making in the early years, its contribution was extensive and valuable. Nuremberg was an important early geographical centre, renowned for the Nuremberg chronicle of 1493 and the Behaim globe of 1492. Important mapping landmarks were the modern maps in the Ptolemy edition by Waldseemüller in 1513 (including the first separate map of Southern Africa), and the first separate map of Africa ("Den Rechtenweg", 1505). Germany also took the lead in the 16th century with the production of geographical picture books, in particular, the town views in Civitates by Braun and Hogenberg (Keuning, 1963:41-44). In the late 19th century German

cartographers regained their importance. New conceptions of geography introduced by Humboldt and Ritter, together with the invention of lithography, made German maps and atlases the most significant until World War I. Justus Perthes, Petermann, and Baedeker were the most important publishers (Tooley, 1970:24-28).

2.3.5.3 Italy

Italy took the lead in map making at an early date, owing to her favourable geographical position in the centre of the civilised world, the skills and daring of her navigators and explorers, and the skilled craftsmanship of her artisans. Venice had been the centre for copying manuscript maps, by taking the lead in printing the works of Ptolemy (in 1477), and thus reviving the interest in classic geography. By the middle of the 16th century flourishing map printing centres were established at Rome and Venice. Famous names were Gastaldi (who compiled a large map of Africa), Lafreri (who preserved many early maps by collecting and binding them), Forlani and others (Tooley, 1970:19-21).

However, as the major world trade routes shifted from the Mediterranean to the Atlantic coasts, Italy began to lose its dominant position as the centre of the map trade in the late 16th century. Later Italian work was mainly imitative (Tooley, 1970:21), except for the highlights of the 17th century (Sir Robert Dudley and Coronelli), and the works of Zatti and Santini in the 18th century.

2.3.5.4 The Netherlands

Maritime successes, trading and wealth are inextricably linked with map making, and the upsurge of commercial activity in the Low Countries (or the Netherlands), especially after the

establishment of the Dutch East India Company in 1602, had a noticeable effect. In the 16th century Antwerp became the centre of geographical production, dominating the map market. A notable landmark in the history of cartography was the production of the first "modern" atlas by Ortelius in 1570, who published the first uniformly-sized systematic collection of the best available maps, based only on contemporary knowledge. This atlas became so popular that it ran into 25 editions within the next 30 years and supplanted the classical works of Ptolemy.

The period from the end of the 16th century to the end of the 17th century has been called the "golden age" of Dutch cartography, when Amsterdam succeeded Antwerp as the main centre of map production and distribution, as described in detail by both Koeman (1961) and Tooley (1970: 29-37). The Dutch have been called the greatest map makers in the world of this time (ibid.:29), and their maps are renowned for their accuracy, magnificent presentation and richness of decoration. Sea charts were known as "waggoners" for many years, after the first collection of engraved sea charts published by Waghenauer in 1583. Mercator was the first to use the term "atlas" in 1585 to describe his collection of maps, instead of the commonly used phrase "Theatrum orbis terrarum". He is regarded by Raisz as the greatest name in geographical science after Ptolemy (Raisz, 1938:31), and his work was continued by his successors Hondius and Jansson for over a century. Other famous names were those of the Hondius, Keulen, Wit, and, most important of all, the Blaeu family of cartographers. Many of these map publishers were in the hands of the same family for over a hundred years, spanning many generations. The Keulen family, for instance, were publishing marine charts from 1654 to 1823, over five

generations. The convoluted family relationships of Dutch map publishers have been investigated in depth and dramatically illustrated in chart form by Koeman (1961:144-5).

Although Dutch cartography continued to be prolific after the 17th century, it had lost its flair and the maps produced by Ottens, Covens and Mortier, Valk, Tirion and Schenck are considered to be more decorative than scientific (Raisz, 1938:32). Because of the expense of altering the copper engraving plates, errors were often perpetuated through many editions (Modelski, 1977:130).

2.3.5.5 France

The initiative in map making passed to the French in the 18th century during the period of consolidation of power and expansion of France under Louis XIV. However, in the early years of the 16th century the school of Dieppe had played its part in printing editions of Ptolemy (Lyons 1535), and some of its finest decorative maps (particularly those of Oroncè Fine) had much influence on Dutch map making. With the decline of Dutch cartography in the late 17th century, the highly decorative maps by Sanson, Du Val, Bellin, Jaillot and De Fer dominated the mapping scene. Once again family firms continued the mapping tradition, with the Sanson family spanning five generations from 1600 to 1720. French engravers at this time were unequalled, and produced excellent work.

The ferment of scientific activity, which culminated in the founding of the Academie Royale des Sciences in 1666, caused French geographical conceptions to be the leading influence in the "reformation" of cartography that took place in the late 17th century. The invention of the telescope and the chronometer were but two of the scientific discoveries that helped solve some of

the pressing cartographic problems of the time (Thiele, 1938:34), especially scientific methods of measuring the earth. Further details can be found in Crone's useful handbook (1962:128-40), as well as in Tooley (1970:38-46).

An accurate method of determining longitude was worked out by Frenchman Picard (Szczesniak, 1960:89-93) which enabled members of the Cassini family, not only to undertake successfully the first national triangulation survey of France in 1733, but also to produce the first topographic map in 1720 (Thiele, 1938:36). Such large-scale national surveys are essential tools for military campaigns, and within a short time all countries in Europe had established official mapping agencies (Modelski, 1977:137). Today about 75 % of all maps published are produced by national and local government mapping departments (*ibid.*). Of interest to South Africa is the fact that it was the Frenchman, Abbé de la Caille, who undertook the first triangulation survey of the Cape of Good Hope in 1752. The skills of the French marine chart-makers are illustrated in the Neptune français, first published by Mortier in 1693.

The new scientific approach to map making, with the emphasis on accuracy, is shown in the work of De Lisle, who is regarded today as the first "modern" cartographer. His world map of 1700 set new standards of scientific correctness (Thiele, 1938:43), and his map of Africa in 1699 was copied or used as a basis by contemporary and later geographers for most of the 18th century. De Lisle was followed by D'Anville whose scientific accuracy and excellent workmanship produced an almost perfect outline of Africa in 1749 (Thiele, 1938:42). D'Anville removed from his maps all data not critically authenticated (Skelton, 1970:282), so that the blank spaces on maps were no longer filled with the

"monsters and mythical cities" (described so poetically by Swift).

2.3.5.6 Britain and the United States

From the end of the 18th and during the 19th centuries Britain became the premier maritime and commercial power in the world, and made the greatest contribution to cartography. The Elizabethan "golden age" of exploration, literature and drama produced also the famous map maker Saxton in the 1570s. His map of the British Isles was said to be the "finest map of the 16th century" and used as a source by European map makers for 200 years (Stunkel, 1965:53). However, these early decorative maps by Saxton and Speed are considered to be unimaginative in design (Raisz, 1938:52). Pioneering work was contributed by Heylin who produced the first folding map of Africa in 1652, and Halley who originated the first meteorological and magnetic chart in 1688. The first roadbook and standard statute mile were used by Ogilby in 1570, while yet another pioneering effort was the first geological atlas of William Smith in 1815. It was also an Englishman, Wright, who revolutionised nautical science in 1599 - his work being subsequently used by Hondius and copied extensively by other map makers (*ibid.*). More advanced maps were published in the later 17th century by Dudley, Seller, and Ogilby, to be followed in the 18th century by Moll, Senex, Bowen and Kitchin.

But it was only with the high-quality workmanship of Jeffreys, Cary and the Arrowsmiths at the end of the 18th century and into the 19th, that British maps took over the leadership from the French. The founding of the African Society in 1788, and later the Royal Geographical Society, also had a great influence on the spread of geographical knowledge and the part played by

Britain (Tooley, 1970:47-62). The establishment of the Ordnance Survey in 1787, together with the surveys done by the British soldiers and engineers during the military campaigns throughout the world during the 18th and 19th centuries, initiated official surveys of those areas (Skelton, 1970:77; Marshall, 1980:21-44).

The reputation of British hydrographers has always been high, as from the time of the early Elizabethan navigators English charts of their discoveries had been copied and used by cartographers of other nations. Sailing directions had been translated from the French and Dutch as early as 1588 in the Mariner's mirrour (Waters, 1970:95), but directions for all the seas in the world were first published in Hakluyt's voyages in 1600, together with Linschoten's travels in 1598 (Skelton, 1970:95). Marine charts were being compiled as early as the 1670s by Seller and Collins, and continued by Thornton, and Mount and Page. English pilotbooks and charts were published by the firms of Sayer & Bennett in the 1780s, continued by Laurie & Whittle, Heather, Norie, and later the Imrays. The Hydrographic Service was only established officially in 1795, but marine surveys and the increased accuracy of the hydrographic charts soon gave Britain the leadership in map production and publishing for over 150 years (Ritchie, 1967; Day, 1967). The spread of the British Empire and the activity of British cartographers meant that the mapping of India, Africa, Australasia, the Arctic and elsewhere owed much to British endeavour (Skelton, 1970:77).

Rapid technological development in communications, the railway system, steamships and electric telegraph, all combined to create an urgent need by the middle of the 19th century for a universal system of longitude and a unified system of global time-keeping, as well as a standard world prime meridian. An

international conference held in Washington D.C. in October 1884 resulted in the important decision that Greenwich should be the Prime Meridian, a decision influenced by the fact that the dominance of British commerce throughout the world resulted in 72% of the world tonnage (or shipping) using charts based on the Greenwich meridian (Terrell, 1984:47).

By the middle of the 19th century the works of individual cartographers were being replaced by those of the large cartographic publishing firms, such as Edward Stanford and George Philip, and the Scottish firms of Black, A.K. Johnston, and George Bartholomew. American cartographers at this time were the firms of Joseph Colton and Henry Tanner.

2.3.6 CONCLUSIONS

To sum up, it is clear that by the end of the 19th century, maps had gained in accuracy; the establishment of official surveys in most countries had encouraged uniformity; and originality of design and decorative embellishments had almost entirely disappeared (Thiele, 1938:58; Fordham, 1914:10).

2.4 MAP PRODUCTION TECHNIQUES

The map librarian or curator involved in handling the early historical maps will find that a knowledge of the various methods used in producing such maps will deepen his understanding of them. Maps have been called "bibliographic monstrosities" (Brown, 1941:83), because they have been produced by so many various techniques, involving those of printing and publishing as well as those of the graphic arts (ibid.). It is therefore necessary for maps to be considered from all angles if they are to be thoroughly understood and fairly appraised (ibid.:84).

Explanatory notes and a glossary of useful terms used when dealing with maps, will appear in Appendix 2. Useful sources of information in this respect are the works of Brown (1941), Boggs & Lewis (1946), Skelton (1952), Lister (1965) and Tooley (1984).

2.4.1 Illustrations

Map printing has involved a variety of techniques. Some maps were engraved on copper, and then transferred to stone or metal plates, before being printed. Other maps were printed from woodblocks, while others were made by the wax engraving process. Sometimes it is desirable to indicate, for the benefit of the map user, the process by which the map was reproduced.

2.4.2 Paper

The art of making paper was known to the Chinese as early as A.D.105, but was slow to reach the West. These skills only reached Italy in A.D.1270 via Islamic scholarship (Baldock, 1966; 1975:9). Watermarks were formed by placing a distinctive brass design on the wire screen used in the paper-making process, which consequently made the paper thinner and translucent at that point. It is now possible to date maps by means of these various symbols, as detailed research has been conducted by Briquet (1907), Heawood (1924) and Churchill (1935). When machine-made papers were produced in 1801, bleached papers were introduced.

2.4.3 Printing

Printing was originally done by hand on a handpress, with the result that pressure could only be applied unevenly. This made for uneven results, with faint and dark sections. With the introduction of steam presses in the mid-19th century, such

unevenness was no longer visible.

When compiling a detailed carto-bibliography, maps have to be examined exhaustively in order to detect subtle variations in their physical appearance (cf. 5.4). These include the following factors:

Proof: trial impression by engraver to check progress. As he was working "in reverse", some of these proofs were also in reverse.

State: condition of finished plate at any given time.

Remarque proof: small sketch in lower margin, together with signature.

2.4.4 Decorations and conventional signs

Towards the end of the 16th century decorations and conventional signs began replacing descriptive notes and immature pictures, which had been used to fill in the blank spaces on the map. Often these embellishments can be used to identify particular maps, as they reflect the ages and fashions of the time. The cartouche (or framework in which the title was placed) was in the 16th century generally copper-engraved, and showed architectural schemes of vast pomposity. During the 17th century, on the other hand, the cartouches were less elaborate and more naturalistic, with explorers' figures, and the title on a tent or sail. There was a strong baroque influence. In the 18th century the rococo influence resulted in romantic ruins and imaginary scenes. By the 19th century, although the title was written plainly without decoration, steel engravings of vignettes and views were added.

The borders in the 15th century were plain frame lines, but by the 16th century they were elaborate, with pictures and corner ornaments (e.g. maps of Ortelius and Blaeu). Later these

borders indicated the degrees of latitude, and later even longitude. Occasionally they contained the bar-scale as well.

Scales and compass rose were practical and decorative in the early years, but as the sea charts were replaced by maps, the compass rose ceased to serve a practical purpose and was dropped.

Maps can often be dated by a knowledge of the history or design of the sailing ship displayed off the coasts. The monsters and allegorical figures were very much in evidence "to fill up gaps" in the 16th and 17th centuries, but after the scientific approach of the French in the 18th century these decorations were no longer added.

Heraldry was a colourful part of the decoration of maps, especially in the late 18th century.

A legend is the explanatory table found on a map, in which all signs and symbols used are clearly explained. Maps portray facts by devices of representation which, in many instances, require explanation. Colours, shading, geometrical figures, circles, lines of various kinds, and many other devices have been used to represent various facts. Although there is no rule or special practice relating to the legend, the map cataloguer may well observe inadequacies or inaccuracies in map legends and make appropriate notes or comments.

The lettering used on a map also reflected the fashions of the period. The early manuscript and early printed maps were produced by woodcuts and were done in the gothic style. From 1470 with copper engraving it was possible to be freer and less stiff, so the humanistic lettering came into favour.

2.5 CARTOGRAPHIC CONCEPTS

An understanding of the concepts inherent in maps will also add to a deeper appreciation of the maps. Many of these characteristics will also have make an impact on the bibliographic description of maps, but this will be discussed later in greater depth (cf.4.4).

2.5.1 Scale

This concept is unique to maps. As mentioned earlier in the Introduction (cf.1.1), a map represents an attempt to depict on the flat surface a three-dimensional representation on a much smaller scale. It is therefore necessary to define the relationship of map distance (MD) to ground distance (GD), which in modern maps is expressed by means of a Representative Fraction or RF. (Dahlberg, 1967; 1975:65-77).

The Representative Fraction is the most commonly used method of expressing scale on topographic maps. Independent of any linear system of measurement, it can be converted readily into any system. The disadvantage is that it does not give a visual idea of the length of units on maps. Many nations use representative fractions that are typical of their maps - e.g. 1:63 360 is typically British; and 1:62 500 is typically American. With metrication many scales are changing to the more easily understood ratio 1:250 000. Scales can also be expressed verbally, e.g. one inch represents 2 000 feet or four miles to the inch. These would have to be converted into feet or inches into the representative fraction if maps produced by different agencies and nationalities had to be compared with one another.

2.5.2 Latitude and longitude

These lines connect all places at the same distance from the Equator (lines of latitude), and show the relationship and distance of places to the east and the west of one another (lines of longitude) (Thiele, 1938:35 note)

Greek scholars of the 5th century B.C. had found a way to determine the latitude of a place, but it was only by the 1670s A.D. that Picard worked out a way to measure the longitude (Greenhood, 1964:13-14). This accuracy became possible when the chronometer was invented by Harrison in about 1735 (ibid.).

2.5.3 Prime meridian

This is another concept unique to maps, and is explained clearly by Boggs & Lewis (1946:91-92), Terrell (1984) and Howse (1980).

Ever since the geographers of ancient Greece developed a method of fixing geographical position, the cartographer has been faced with the problem of choosing a prime meridian on which to base his degrees of longitude (Terrell, 1984:47). The voyages of discovery in the 15th and 16th centuries intensified the navigational problems of longitude, with map makers using a variety of island locations in the Atlantic. No unanimity of agreement was reached until 1634 when Louis XIII ordered the Island of Ferro (Isle de Fer, Hierro) in the Canary Islands to be the only prime meridian. Other cartographers tended to rely on their own devices, choosing either a conspicuous national monument (such as the dome St Paul's in London), a local observatory, or another specific point of departure.

By the 17th century it was thought that astronomy would be able to provide the solution to accurate measurement of longitude at sea. Consequently, the observatories of Paris and Greenwich

were founded for this purpose in 1667 and 1675 respectively. By studying the movements of the moon and the stars over a long period, sufficient data was collected to make it possible to issue the first Nautical almanac in 1766. These astronomical tables, based on the Greenwich meridian, enabled a navigator to calculate by astronomical means alone his exact position anywhere on the globe (Terrell, 1984).

The marked increase in official British hydrographic activity from the 1760s onwards, together with the work of the land surveyors in North America, meant that more and more charts and maps were being based on the Greenwich meridian. By the second half of 19th century rapid technological developments in communication combined to demonstrate with increasing urgency the need for a universal system of longitude. The growth of continental railway systems, especially those of the United States, the increased speed and reliability of steamships, the spread of the electric telegraph, all demanded a unified system of global time-keeping, and, by extension, a world prime meridian.

An early attempt was an "international" chart for seamen was that of Bellin in 1751: he shows on the "Carte réduite des Mers du Nord" no less than five commonly used meridians with their associated scales of longitude.

2.5.4 Orientation

Roman maps were "oriented", which meant, as the word indicates, that east was to the top. Mediaeval maps were similarly oriented, perhaps because the Garden of Eden was believed to be located in the east. On some of the early African maps, for example, those by Jean Rotz and Ruscelli, south

was shown at the top, but in recent centuries true north direction has been the conventionally preferred top position. The map user should learn for himself how to orient such maps.

2.5.5 Conclusions

It has been said by Boggs that "an ability to locate oneself by means of parallels and meridians, regardless of the projection and of the orientation, is a 'must' in map reading" (Boggs & Lewis, 1945:93-94).

CHAPTER 3 M A P L I B R A R I A N S H I P

3 INTRODUCTION

The term "map librarianship" (or the art of handling maps in libraries) is a comparatively new one, being used for the first time in 1950 by the University of Illinois (cf.3.3.2). Although the concept is new, the association of maps with libraries dates back to many centuries.

Although the origin of libraries is unknown in precise terms (Johnson, 1970:7), librarianship has always been concerned with the custody and retrieval of information in recorded form (Rauclé, 1975:94). It is therefore conceivable that the preservation of the written word marks the early beginnings of libraries, which followed closely the rise of literacy and learning (Irwin, 1968:399).

Libraries are known to have existed as early as the 3rd millennium B.C. in Sumeria (Wolter, 1973:237). The earliest evidence of the organisation of literary and archival records has recently been discovered at Ebla (2 700 B.C.) in Northern Syria, where clay tablets were found arranged in some form of order (Wellisch, 1981:488-500). Therefore, it can be said that by 2 000 B.C. organised collections of recorded knowledge existed in both Mesopotamia and Egypt (Johnson, 1970: 23-25). The most famous library of the classical world was that of Alexandria which was estimated to have had 500 000 rolls by the middle of the 1st century B.C. and whose librarians were notable scholars - amongst whom were the geographers Eratosthenes and Ptolemy (cf.2.3.1).

The problem of filing baked clay tablets with rolls of papyrus must have made those early librarians realise even then that maps were "a law unto themselves" (Mason, 1958:1). Libraries

continued to flourish in the Roman Empire, and even during the Middle Ages a generic "librarian" was in charge of the collections of manuscripts and codices preserved in monasteries and colleges (Larsgaard, 1978:288).

3.1 MAPS IN LIBRARIES

The role of books and libraries in the revival of learning begins in the mid-14th to the late 16th century (Thiele, 1938:489). During this period a growing interest in geography (cf.2.3.4) led to maps being prized as the prime source of geographical information. Maps were also fine examples of graphic art, and as such attracted the attention of rulers, wealthy princes and merchants, who were becoming interested in collecting books and works of art (Koeman, 1961:13). In the course of time many of these private collections were absorbed into and became the core of emerging national libraries. In this way the British Library today holds the royal collections of George II and III, the National Library of Austria in Vienna holds the collection of Prince Eugene, and the Bibliothèque Nationale some of the former royal collections of France (Stephenson, 1979:118).

Despite these promising beginnings, however, the presence of maps in libraries up to and during the 19th century (and even into the early years of the 20th century) appear to be the result of historical coincidence rather than of a deliberate policy decision to collect maps.

Comprehensive historical and contemporary surveys of the development of map libraries have been contributed by Ristow (1946; 1955; 1967), Mullins (1966; 1975:432-43), Schorr (1974), and Stephenson (1979). Both the articles by Ristow (1946) and

Schorr are augmented by extensive bibliographies. These surveys depict the growth of interest in maps shown by librarians.

3.2 HISTORICAL OUTLINE

During the 19th century maps were largely ignored by librarians. Librarians had little difficulty in collecting maps while they were bound as books, but flat sheets of "unbound" maps caused them to regard this type of graphic material as problematical. The physical shape and awkward size of maps, combined with their lack of bibliographic data, demanded special treatment and storage, which librarians were generally unwilling to give them. The potential role of maps as sources of geographical information tended on the whole to be underestimated and hence to be neglected by libraries in general. Maps were likely to be relegated to inconspicuous corners "to be cared for in some spare moments by a member of staff who had neither enthusiasm nor preparation for handling geographical materials" (Lewis, 1944:75).

Moreover, there was a general lack of co-ordination in map organisation: what happened to maps in libraries was largely a matter for the individual library concerned. In this way catalogues of their map holdings were produced in isolation by the British Museum in 1843 (and again in 1885), and by Harvard College Library in 1831 (Badger, 1892:375; Mullins, 1966; 1975:436). Despite such independent attempts at effecting optimal organisation of maps in libraries - which should be viewed as encouraging signs in themselves - there was a growing need for a systematic approach to the problem.

3.2.1 19th Century

In the United States maps found in university collections at the time were limited to rare historical items, or served merely as compilation material for government mapping departments (Ristow, 1946:1101). The need for organising these scattered resources had been recognised as early as 1853 by Hunt, who urged the establishment of a central government geographical library (Ristow, 1955:1102). This idea was supported two years later by the map enthusiast, J.G. Kohl, and in 1872 by D.C. Gilman (Mullins, 1966; 1975:438-9). Although nothing was done until 1897, when a separate map section was established in the new library building of the Library of Congress, librarian Phillips had already begun to organise and catalogue the maps "in his spare time" (Wolter, 1979:53). When made head of the new section, Phillips was faced with the problem of organising over 40 000 maps which had been for years "a confused mass in various corners, corridors and cellar rooms" and were then "dumped into the Hall of Maps and Charts in absolute confusion" (LeGear, 1956:vii).

Some of the smaller American libraries had started organising their map collections in the 1870s and 1880s (Winsor, 1887:442; McDonald, 1950:453), while Badger at Harvard was also trying to sort maps "in his spare time" (Badger, 1892:375-7). By the closing years of the century, therefore, it could be seen that collections of maps were being controlled in established map libraries with varying degrees of success.

The librarian of the Brooklyn Public Library had reported in 1891 that he was rolling up the very large sheets, tying them with tapes, and then finally placing them "on the tops of the shelves or in window-ledges, where there is no risk of their

being crushed" ('How we keep unbound maps', 1891:73). The idea that maps constituted a form of library material to be disposed of or be given a "resting-place" typified the attitude of many librarians from the 19th century to relatively recent times (Ristow, 1946:1102).

Although at this time some of the larger libraries had solved one of the problems of map organisation by establishing separate map rooms for their locational accommodation, yet there was little agreement as regards methods of physical arrangement or classification. Reference to some of the ways by which librarians controlled their maps include the arrangement of maps by geographical area ('How we keep unbound maps', 1891:72,74-75; Andrews, 1903:22-25), topical indexes to place or region (Winsor, 1887:442), and the provision of key charts to show holdings (Parsons, 1895:201). Although cataloguing rules had been drawn up by Panizzi for the British Museum as early as 1841, and by Cutter for the Library of Congress in 1876, there was still an evident need for a system of cataloguing and classification (Selmer, 1976:7; ALA, 1949:v).

3.2.2 20th Century

The 20th century is significant not only for the growth in the number of map collections and libraries, and their increase in size (Stephenson, 1979:118), but particularly for the development of the concept of map librarianship.

For the first few years of the new century not much attention appears to have been paid to maps and their organisation in the library literature. In fact, in some quarters maps were still being considered as non-book material (and hence 'unimportant') (Smithers, 1912/3:195-9), minor library material (ALA, 1917:23-29); not considered "proper" in libraries (Hagen, 1969:3); or had

been ignored or downgraded (Patterson, 1978:68), neglected like "problem children" (Lewis, 1944:75), relegated to oblivion (Friis, 1950:138) or treated as the "poor relation of the book" (Koeman, 1959:5).

The outbreak of World War I stimulated a geographical awareness and a renewed interest in maps within the United States in particular. Military and governmental requirements demanded maps, which in turn encouraged advanced geographical studies at universities. Thus map collections took on a new importance.

The appearance of geographers and military users on the mapping scene focussed attention on a simplistically misleading statement made in 1904 by Phillips that "maps could be handled as books" (1904:14), which had provoked strong reaction from geographers and practising map librarians at the time. Consequently geographers took an increasing interest in the way in which maps were being arranged in libraries, and played a major role in making improvements. They had become increasingly dissatisfied with the inadequacies of library classification of the subject field of geography (Lock, 1969:479). Hence it was not surprising to find that geographers such as Williams and Boggs were developing their own schemes for arranging maps (Williams, 1930; Boggs & Lewis, 1945). All of them in some way or another expressed a strong conviction that maps and books were fundamentally different (ibid., 1945:iii; Williams, 1930:6).

With the outbreak of World War II in 1939, attention was once more focussed on maps and mapping, and librarians became aware of the incompletely catalogued state of most of their map collections. In Europe map collections had been underexploited through lack of trained staff and proper catalogues (Wallis, 1979:107). This proved not only a great handicap to wartime

research (Wilson, 1948:6), but an additional burden with the great demand for modern maps for military purposes. After the War these surplus map stocks were no longer needed. There were in addition over 900 tons of captured German and Japanese maps in the possession of the Allies. In grateful acknowledgement of the help given during the War the United States Army Map Service in 1945 presented packages of some 5 000 map sheets to some 45 institutions in the United States (Mullins, 1966:119), and between 1946 and 1950 presented 20 000 maps each to another 150 institutions (Nicoletti, 1986:2-3; Hagen, 1979:3-7). The surplus wartime mapping collected by the British defence authorities was distributed similarly (Knight, 1977:95).

This created a crisis in American map libraries, where map librarians were abruptly faced with the task of handling some 20 000 uncatalogued maps. The Library of Congress attempted to solve their own dilemma by sponsoring an annual summer map project in 1951, whereby co-operating libraries sent staff to help sort surplus stock and in exchange select items for their own institutions.

The plight of the map librarian faced with large stocks of unprocessed maps made the American library profession once again aware of the urgent need for advice on the management of maps in libraries. A special issue of the Library journal (March 15, 1950) was consequently devoted to the position of maps in libraries, which led in turn to a dramatic increase in articles submitted by map librarians to library science and related journals.

The introduction of a special course on maps by the University of Illinois in 1950 (cf.3.3.2) stimulated further interest in maps and their handling, leading eventually to the coining of the term "map librarianship" to describe this new

awareness (Woods, 1952:87). The decade of the 1960s heralded the period of greatest activity to date as regards the publication of books and articles on the subject of handling maps in libraries. It would thus appear that by this time the library profession had formally accepted "map librarianship" as a legitimate subfield of special librarianship, generating its own literature, professional journals, and breed of librarian.

The first book devoted entirely to map librarianship was a selection of articles published over the years in specialised journals, yet not easily available to the prospective map librarian (Drazniowsky, 1975). It represents an extensive listing of articles written by experts, and relating to the processing and care of maps and the running of map libraries. The first textbook to be written on map librarianship was by Nichols (1976), to be followed the next year by the manual by Larsgaard (1977).

3.2.3 Map libraries today

Surveys of the map library scene were made in the late 1960s by Ristow (1967b; 1975:479-80) and Lock (1969:467), and in the late 1970s by Ristow (1978) and Wallis (1979:107-116). They reveal a healthy state of affairs in which the major map collections provided evidence of growth and organisation. Many of the collections were under the care of scholars (Lock, 1969:467). There has also been an increase in the number of map collections and separate map rooms. An encouraging improvement was the increased employment of full-time map librarians (Cobb, 1985:15). Considerable thought, effort, time and discussion had been directed towards map cataloguing and classification (Ristow, 1967b; 1975:461), and although in 1976 only 50% of the 743

collections in the North America had been catalogued (Stephenson, 1979:120) in 1985 this figure had improved to over 55% of the total of 919 map collections (Cobb, 1985:16).

Computerisation in the 1970s and 1980s has had an impact on the map library world, by facilitating the growth of library networks. These have provided computerised bibliographic data, thus reducing the cost of cataloguing (cf. 4.3).

Liaison between map librarians, geographers and cartographers, and official bodies and commercial agencies are thriving, and mutually beneficial today (Wallis, 1979:114-5). Map librarians now move in more diverse spheres than did their predecessors before World War II, and together with other professionals concerned in one way or another with maps, form a well-knit international community (*ibid.*:116). Such widening of horizons adds greatly to the interest and efficiency of professional work.

3.3 MAP LIBRARIANSHIP

It was realised in the mid-20th century that satisfactory service in dealing with maps can be provided only by properly trained map librarians. The self-trained librarians of the 19th century had entered the library profession largely by chance rather than by design; they came from a variety of non-cartographic backgrounds, and none had prior training in librarianship or geography (Ristow, 1967c:3610). However, these early librarians were fully aware of their inadequacies: as early as 1903 criticism was levelled at library assistants in charge of map collections, insisting that map librarians should be more than caretakers (Andrews, 1903:22-25). It was soon realised that maps could not be handled as readily as books, and consequently "their care and manipulation should be entrusted to

one person" in a library (Letts, 1900:6).

By and large, map collections formed part of the general library, and librarians were expected to look after maps "in their spare time" (Wolter, 1979:53; Cobb, 1985:15). Even where map libraries were established as separate administrative units, they have often been "the preserve of librarians with a 'bookish' approach to cataloguing and management" (Mumford, 1966:447).

As map collections expanded in size and number, an increasing number of professionally trained geographers found employment as map librarians. This tendency was stimulated further during World War II by the rapid development of map libraries within the federal government of the United States (Stephenson, 1979:120). Although geographers brought with them an unprecedented knowledge of the making, interpretation and use of maps, they lacked skills of librarianship, such as the acquisitions procedures, cataloguing, classification, and the maintenance of collections. Librarians on the other hand were considered to need training in geography (ibid.): in fact, geographers and archivists were strongly of the opinion that map librarians should be geographers (Friis, 1950:149; Bergen, 1972:310).

3.3.1 Training and education

Librarians themselves were fully aware of their inadequacies as custodians of maps (Hyde, 1972a:287), but until the 1950s and 1960s the only kind of formal training offered to map librarians was that of in-service or self-training. At library schools maps were generally included in the curricula only as a sub-topic of the cataloguing of non-book material. But these self-

educated map librarians (Wallis, 1979:107) realised that their collections could be improved dramatically in both service and care, if professionally trained personnel were available (Drazniowsky, 1975:iv)

In 1950 the need for a course to improve the skills of geography students was recognised at the University of Illinois in the United States, and with the co-operation of map librarian, Bill Woods, a special course on "Maps and carto-bibliographical aids" was introduced. Great interest was shown in the then revolutionary idea of training persons for map librarianship before, not after, they ^{had} become map librarians (Larsgaard, 1981:500), and within a few years other universities were offering similar courses. In 1969 the Columbia University School of Library Service (which had been one of the pioneers of training library personnel as early as 1887 (Hanson, 1970:279)) initiated a course in map librarianship (Drazniowsky, 1975:iv). By 1979 five accredited library schools in North America were offering such courses (Stephenson, 1979:120).

In Britain reaction was a bit slower: in 1966 Mumford could say that there was no formal training or academic discipline in map librarianship at British universities and polytechnics (Mumford, 1966:447), a situation confirmed yet again in 1969 by Lock (1969:467). Although as yet no map librarianship courses are offered at library schools, ASLIB - with the co-operation of the British Cartographic Society - began to organise short annual courses for those who worked with maps in 1969. The National Library of Scotland also started summer study courses in 1976, and more recently in 1984 the College of Librarianship Wales included map librarianship in its International Graduate Summer School programme.

3.3.2 Professionalism

As the size and number of collections increased, professional librarians and map curators realised the need for interaction among themselves. In 1941 nine members of the Special Libraries Association in Washington D.C. asked permission to form a Geography and Map Group as a forum for an exchange of information and ideas. By 1944 the membership of the group had grown to 50, who then formed the first national organisation of map librarians, and published their own Bulletin in 1947. By 1978 their membership had increased to over 350 (Stephenson, 1979:121). Other regions in the world followed suit by developing their own organisations, beginning in 1966 with the Western Association of Map Libraries in California, the Association of Canadian Map Libraries in 1967, the Australian Map Curators' Circle in 1973, the British Cartographic Society - Map Curators' Group in 1966, the New Zealand Mapkeepers' Circle in 1976, and the Southern African Map Collectors' Association in 1979 (ceasing operations as from 1986), and many others. All these groups have produced their own bulletins, thus creating a widening pool of professional expertise.

3.3.2.1 International co-operation

In 1969 the International Federation of Library Associations (IFLA) established a Geography and Map subsection within its Special Libraries Section as an international organisation created for the discussion of problems and issues of concern to map and geography librarians around the world. In 1977 this became a full section within the Special Libraries Division. Their first task was the publication of the World directory of map collections (IFLA, 1976; 2nd ed. 1986). They are now, in co-operation with the International Cartographical Association)

working on an International glossary of cartographical terms (Wallis, 1979:110-1).

In 1974 a joint working group was appointed to develop acceptable international standards for describing maps and related items. This resulted in the 1977 publication of the International Standard Bibliographic Description for Cartographic Materials (ISBD(CM)). Map librarians also co-operated with the preparation of the Anglo-American cataloguing rules, 2nd ed. (AACR 2) in 1978/9.

3.3.3 Academic research

Academic research into the subject of maps in libraries started slowly. An examination of the ASLIB index to theses from 1950 to 1978, reveals that until the mid-sixties research into librarianship was listed under the term 'Bibliography' - an approach reflected implicitly in the subjects handled. These were mainly coloured by the historical or scholarly approach of the bibliographer, for example, Marine cartography in Britain 16th century to 19th century (Robinson, 1960). But in 1969 research into librarianship was listed for the first time as 'Library and information science', and investigative research became the new trend. Although there are still historical theses dealing with, for example, the maps of Scotland (Stone, 1972), and the Ordnance Survey of Ireland (Andrews, 1971), there were also more analytical surveys of maps or maps in libraries. The more recent ones listed include topics such as: the cartographic content of guide book literature of Wales (Walters, 1967); storage of maps in libraries (Nokes, 1970); analytical indexing of locational information on maps (Mason, 1972), and, more recently, the cataloguing and classification of maps (Merrett,

1976). The latter thesis is an invaluable source of information and guide to the various approaches to the subject, although its' publication date limits it to discussing AACR 1967 and Dewey 18th.

3.3.3.1 South African academic research

In South Africa research into librarianship and library science began slowly with articles being submitted to the professional journal, South African libraries. However, during the first 40 years of its existence (1933 to 1973), maps were only mentioned in news items (e.g. a report on the "Control of Maps Order, 1940" (cf.2.3.5) or mentioned only as one of the many examples of non-book material. The first independent article to be submitted was that written by Merrett, describing his successful map recataloguing project at the Natal Society Library (Merrett, 1978:147-50).

Lists of completed research and research in progress in library and information science appeared in two issues of South African libraries, namely 1968 and 1980 (Kruger, 1968:95-98; 1980:69-75), although comprehensive lists of theses on all topics at South African universities from 1918 onwards have been compiled by Robinson (1942) and Malan (1959+). From an examination of these lists, it can be seen that academic research into librarianship and information science had begun relatively late. No entries dealing with libraries were recorded until 1955, when Friis submitted a survey on rural library services. After a slow start there has been increasing evidence of interest in higher academic research in library and information science. Topics covered range from the historical accounts of specific libraries (Aschenborn, 1966; Jooste, 1975; and Tyrrell-Glynn, 1972 and 1984), to enumerative bibliographies (Eales, 1974 and Aucamp,

1976), or more specific aspects (education for librarianship, censorship, reference work, etc). Map librarianship, however, has not been handled, except for a historical account of the official government mapping of South Africa (Liebenberg, 1979), and cartographical studies of various towns (Nel, 1951; van der Merwe, 1967). Articles have been submitted to journals by surveyors (De Smidt, 1897), geographers (Forbes, 1965), archivists (Beyers, 1965), and Africana librarians (Smith, 1973).

3.4 MAP ORGANISATION

"The most important function of a map library is the use of its collections".

"Without use the library is merely a storehouse of maps and atlases"

(Modelski, 1977:157).

Both these statements emphasise that the material within a library must be processed and organised in such a manner that reference and research will be facilitated optimally.

Although cataloguing may be viewed generally as the mere art of describing books accurately, it has been defined in its technical sense as the "process of preparing...entries for a catalog" (A.L.A. 1941:24). In the broader sense this process includes all the activities associated with the preparation and maintenance of a catalogue, including classification and the assignment of subject headings (ibid.; Landau, 1958:66). So, although the main emphasis of this dissertation is bibliographical description, it is necessary, first, to survey the whole field of map care briefly, before concentrating on the technical aspect of cataloguing, namely: "the determining of the forms of entry and preparing the bibliographical descriptions for a catalog" (ibid.).

3.4.1 Map storage

Advice on the handling of maps appears in most of the literature consulted, ranging from general agreement that maps should be kept flat (Drury, 1908; Brown, 1941:17), to admonitions to "treat them with respect" (Joubert & Roodt, 1976:34), and "never [to] be in a hurry" (Akers, 1978:2). Technical advice on map storage is given by many authorities, including that provided in a thesis by Nokes (1970) and in articles by LeGear (1956), Hill (1965) and Galneder (1970; 1975:389-94).

In the late 19th century, however, there was a dearth of professional or other helpful advice offered to struggling map librarians (cf.3.2.1). At a symposium held by the American Library Association in 1891 ('How we keep unbound maps', 1891:72-75), librarians revealed some of their methods of placing maps in portfolios, hanging rolled maps round the walls of staircases, and, in some of the smaller libraries, folding the maps into slip cases for filing on regular book shelves (Ristow, 1946:1102). A more disturbing note relating to the lack of system in map organisation in libraries at the time was the fact that many librarians were also dissecting sheet maps, mounting them and folding or binding them as books so that they could be placed on the shelves (Larned, 1892:76; Lenox, 1900:6; Letts, 1902:76; Hubbard, 1903:611; Smithers, 1912/3:195-9). The questionable practice of cutting maps and arranging them on bookshelves was still being followed as late as the 1930s (Ristow, 1946:1104).

Previous mention was made (cf.3.2.2) of the professional resistance to the acceptance of maps as bona fide material in libraries (Merrett, 1976:1). Such resistance applied mainly to separate sheet maps, as single maps in books or collections of maps in atlases could be handled in the same way as books. Sheet maps, however, pose a problem to libraries (Layng,

1961:61), because of the special care needed to handle them. Their size, unwieldy shape, pliability and low tear strength in relation to surface area make them unique as non-book material. Such uniqueness, in turn, renders standard library practice inappropriate (Stevens, 1973:11), as maps require special treatment with regard to storage and shelving on the one hand and to reference service on the other (Friis, 1950:149, note).

Because of their physical characteristics (i.e. their great variation in size and flimsy state), sheet maps are "more easily damaged" than books (Modelski, 1977:153). It is, therefore, obviously desirable that maps should only be filed in one place or at the very least to be moved as little as possible. Foncin states quite simply that "continual movement is wrong" (1953:33). The need for their immobility has emphasised the importance of their arrangement and methods of retrieval to map librarians. In the attempt to limit handling to a minimum, many map librarians do not allow "browsing" by map users, advocating closed access instead. Hence, the handling of maps should be strictly proscribed (Larsgaard, 1978:153), and map/user contact should be kept to a minimum (Nichols, 1976:273).

The most effective means of reducing the handling of maps is achieved by effective classification, detailed cataloguing, and information indexing - i.e. by identifying the individual sheet or sheets more precisely in catalogue entries (Nichols, 1976:274). This is considered to be of especial importance when dealing with collections of old maps (Brown, 1941:17-25).

3.4.2 Effective classification

Classification has been defined as the application of a "systematic scheme for the arrangement of books and other

materials according to subject or form" (A.L.A., 1943:30), requiring the arrangement to be based on "common characteristics or affinities", and "bringing related subjects together" in a logical order (O.E.D.). Effective classification should not only bring together related items, but also create a definite filing position for each item (Boggs, 1937:3). Such a filing system should control both the appropriate shelving of the item and its quick retrieval (Carney, 1908:181; Alonso, 1977:47). Classification, therefore, serves as a means of facilitating the physical location of the map, thus enabling staff not only to find, but also to process maps with a minimum of time and effort (Wilson, 1948:7; Winearls, 1967; 1975:353; Nichols, 1976:173).

The shelfmark or call number assigned to the map as a means of keeping the map collection in order (Hagen, 1966:31), may be a simple domestically devised one, or ^{may} be based on the notation symbols used in a chosen published classification scheme. In this connection, Merrett warns of conflict when the notation is expected not only to reflect subject interrelationships, but also to satisfy the simpler needs of filing (Merrett, 1982:3).

The most satisfactory way of arranging maps has been a matter of argument since the early years of the 20th century, ranging from a strong belief that no satisfactory system could be found (Fletcher, 1899), to the conclusion that the specialists could not agree on the "best" method (Anderson, 1950:450-2). The issue on which there was common agreement, however, was that any scheme involving maps should be primarily area-orientated (Brown, 1941:29; Bergen, 1972; 1975:310). This conclusion is supported by the finding of the Special Libraries Association, Geography & Map Division (SLAG&MD)'s investigation in 1953 that 74 % of map queries were area-orientated (Buffum & Woods, 1956:4). It is

also in conformity with the ideas of Brown, who maintained more than forty years ago that reference queries usually related to geographical area (1941:29).

However, Buffum (1972:35) points out that while a simple area arrangement of maps allows for the retrieval of a map depicting a particular geographical area, this does not necessarily mean that the specific map required by the user will have been retrieved. In a similar vein, Thiele had earlier expressed the opinion that tracing a single map would require a detailed listing (i.e. cataloguing) of all maps in the collection (Thiele, 1938:286).

Advocates of properly arranged map collections have expressed their feelings strongly: Winser in 1916 supported "a well-arranged map collection without a catalog" (Ristow, 1946:1103), in preference to a well-catalogued collection with a cumbersome arrangement that made it difficult to find the desired map (*ibid.*). Gerlach expresses his opinion even more forcefully by stating that "cataloging is a waste of time" (1970:297).

3.4.2.1 Classified arrangement

The various acknowledged systems of filing maps range from simple alphabetic arrangements to complicated numerico-geographic ones, or even forms of geo-coding (geographic-coding). The book classification schemes (generally of the alpha-numeric type) arrange books of the same subject together on the shelves, and when applied to maps attempt to place maps of the same geographical area together. The schemes most frequently applied or adapted in the Anglo-American sphere of influence are those of the Library of Congress (LC), the Dewey Decimal Classification (DDC) and the numerico-geographic Universal Decimal

Classification (UDC). On the other hand, the map classification schemes in fairly common use (and designed specifically for maps) are those of the American Geographical Society (AGS), Boggs and Lewis, the Royal Geographical Society, and the United States Army Map Service (AMS).

The advantages and inadequacies of each of the schemes have been dealt with comprehensively by Merrett (1976:chapter 7; 1982), Selmer (1976:8-9) and Larsgaard (1973:37-47; 1978:56-88). The ideal scheme should be capable of encompassing as wide a variety of maps as possible, be maintained efficiently, and be able to place the map in a logical arrangement (*ibid.*:56).

The logical arrangement of geographical concepts and, therefore, indirectly also of maps, is a matter that has occupied the minds of geographers for some time (cf.3.2.2). For many years professional librarians refused to recognise the map classification problem as a unique one requiring special treatment. Geographers were, however, equally concerned with the problem, and they played a leading role in doing something positive by creating and planning new methods and new schemes, such as those proposed by Boggs, Williams and others. In an effort to overcome this dilemma the International Geographical Union appointed a Classification Commission in 1955 to report on the classification of maps and geographical publications (Libault, 1955:93-95; Gerlach, 1961:250).

Opponents of the classification approach, however, query whether classification as a primary or secondary aid to location is indeed the best approach to maps. Such questions as: "Why translate the word of your desire into a symbol and back again, multiplying your movement and straining memory, when you can go straight to the word on card or map?" (Prévost, 1946:104) have been put. Similar reservations have been expressed by other

writers who argue that there is little point in developing an elaborate classification system in conjunction with full cataloguing for maps as the two systems largely overlap (Merrett, 1976:23). It was considered by the New York Public Library to be sufficient to use merely the main entry and the date for filing sheet maps (Hudson, 1976:97).

3.4.2.2 Alphabetical arrangement

The simplest and most easily understood arrangement is the alphabetic one, using natural language. One of the main virtues of an alphabetic scheme (frequently called "titling") is that it is more readily understood by the general public, and is quick and easy to apply. The Library of Congress used this form of abbreviated cataloguing successfully for many years, and it provided reasonably good controls when the collection was small. After tours of the United States in the 1890s, both Badger and Parsons described the chaotic methods used: maps listed and filed geographically, but without physical description or call number (Badger, 1892:375), or maps not yet organised (Parsons, 1895:199). As maps multiplied, however, the lack of a comprehensive catalogue placed increasingly greater burdens upon the reference staff. With no complete card catalogue reference librarians were obliged to withdraw from the files an unmanageable number of maps, thus "subjecting the maps to abnormal wear and tear and multiplying refiling workloads" (Ristow & Carrington, 1971:475)

3.4.2.3 Non-geographical arrangement

Other filing methods unrelated to area (such as size, date, accession number, subjects, and even provenance), have been discussed by archivist Ehrenberg (1967:12) who found that in many libraries without adequately trained staff, maps have had to be

filed as quickly as possible by following such simple methods. Maps in the Bibliothèque Nationale have been arranged in order of arrival, and their inherent characteristics of size and date, since 1884. Foncin pleads that more effort should be put into detailed cataloguing, thus providing a comprehensive catalogue, with the maps in fixed-location order of arrival (1953:34). Geographer Lock notes that filing by accession or by size in closed collections is more practical, as it makes better use of stack space (1969:479-80). This argument is criticised by Larsgaard, however, who suggests that the financial advantage of using this economical filing system is wiped out by the time taken in doing detailed cataloguing and in retrieving the maps (1978:85).

Hall endorses Foncin's opposition to classification, supporting her advice that user browsing is not advisable, particularly as the very nature of the material inhibits browsing (Hall, 1973:27). Merrett offers a compromise in the arrangement debate by conceding that a fixed location scheme is by no means out of place per se, especially in a closed-access collection (1976:24).

3.4.2.4 Code numbers

Because of their rapid growth rate and their relative uniformity in size, topographic series maps are generally filed by their code or series numbers. Such a code number usually consists of a meaningful mnemonic code, often based on co-ordinates, which facilitates instant filing and retrieval. It is, however, necessary to provide an index sheet for each series, so that the relationship between each sheet in the series can be clearly seen, and the holdings of the institution can be marked

(Neddermeyer, 1973b, 32-3; Wilcocks, 1979). It would seem that such a graphic index to maps provides the best means of access to what are essentially graphic tools, says Merrett (1976:15). This method was being used as early as 1895 (Parsons, 1895:201), and was revived by Armbruster in the 1920s (Selmer, 1976:7).

3.4.2.5 Subject arrangement

Another method adopted in certain map collections is to classify and file according to subject rather than by area. This would result, for instance, in all road maps, all railway maps, all topographic surveys, etc., being found grouped together. It presupposes considerable geographical and cartographic knowledge on the part of the librarian, who would have to be able to distinguish a general map from a topographic map, or a sea chart from an oceanographic survey (Brown, 1941:28-29). The biggest drawback to this system, however, arises from the fact that most of the queries emanating from the public are related to the geographical area first, and only secondarily to the topic or subject (Wallis, 1965:14-15). This aspect can be brought out more expeditiously by means of consulting the catalogue than by trying to twist the filing arrangements into subject order. One must not forget the basic dictum of filing - i.e. that an item can be filed only in one place, but the catalogue can facilitate the multiple approach necessary to record and locate each item in the file (Thiele, 1938:288). There is no limit to the number of these entries.

The earliest printed maps were topographic, reflecting the physical features and political boundaries of designated areas, with perhaps inset city plans, elevations of buildings, vignette views, and decorative embellishments. Even the nautical charts included in their descriptions the natural features of the

coastal landmass. These old maps, therefore, usually incorporated several subjects, but the basic core remained geographical. Although the first subject map by a cartographer may be claimed to have been the meteorological chart by Halley in 1688 (Robinson, 1982:46), it was only during the 19th century that thematic maps came to be issued more regularly. Old maps, therefore, cannot be arranged satisfactorily by subject (Brown, 1941:28).

3.4.3 Detailed cataloguing

The most effective means of handling maps is achieved by detailed cataloguing (cf. 3.4.1).

A topic much debated in the professional literature is the question as to whether or not maps were to be treated in the same way as books. While it is acknowledged by some writers that maps were notably different from books, it is stated that their objectives were the same (Brenan, 1975:111). Maps, unlike books, state facts and not opinions, and reflect conditions without interpreting the facts (ibid.).

The period between the two world wars is notable for the climax of the "maps vs. books" controversy. Previously many librarians had recommended that the same general cataloguing rules that applied to books could apply equally to maps (Parsons, 1895:199-201). However, Phillips of the Library of Congress stated in 1900 that the name of the author was of "small consequence" (Phillips, 1900:5), advocating instead the "titling" method adopted by the Library of Congress, by way of emphasising the importance of the subject content (i.e., area shown) over and above the date (Selmer, 1976:8). Yet the appearance of the new 1904 edition of the cataloguing rules of the Library of Congress

(i.e., Cutter's Rules for a dictionary catalog) drastically affected the thinking of all those concerned with map organisation. Phillips had contributed a section on the cataloguing of maps and atlases to Cutter's Rules, in which he observed that "the cataloging of maps and atlases differs very little from the cataloging of ordinary books" (Phillips, 1904:140), thus implying his support for Cutter's rule that the "cartographer is the author of maps". In the light of Phillips' 1900 statement, this represents a dramatic change in opinion.

The immediate effect of the 1904 statement (which was subsequently amplified and published separately as a pamphlet by the Library of Congress (Ristow, 1946:1103)) was to encourage all cataloguers to think of maps as peculiarly shaped books (and so cataloguing them under author). The authority of the Library of Congress was accepted more easily as LC printed cards were being produced and distributed as early as 1897. But the most important consequence of Phillips' simplistic statement was the strong influence it was destined to exert on the American Library Association rules of 1909 (and its subsequent reprints), and even the Anglo-American cataloguing rules of 1967, thereby imposing its stamp on the training of new generations of librarians.

Various attempts were made over the years to explain more clearly what Phillips actually meant by his statement. British librarian Crone of the Royal Geographical Society pointed out that it was "probably true that the actual preparation of the catalogue slip for a map does not differ essentially from that required for a book" (Crone, 1936:98). He sees the real divergence to occur when the cataloguer proceeds to the assignment of headings to the cards before filing them in the catalogue (ibid.). This view was shared by Thiele who stated that "book cataloguing technique is, on the whole, applicable to

maps" (1938:282), a thought endorsed later by Boggs and Lewis (1945:111).

The main controversy in the early post-war years has been centred on the question of cataloguing, caused by the dissatisfaction of map librarians with the cataloguing rules published by ALA and LA in 1949. The 1961 Paris Conference on Cataloguing Principles focussed attention on cataloguing principles, which resulted in the codification of a new cataloguing philosophy and practice to high levels of sophistication for the next few years (Wolter, 1979:74). It was realised that solid bibliographic control through cataloguing and classification was essential (Collins, 1977:16), but this ideal could not be achieved until the appearance of the computer (Ristow, 1967b; 1975:466-7).

An investigation into computer-assisted procedures for the bibliographic control of separate sheet maps was undertaken by the Library of Congress in 1968, and resulted in the successful development of the map cataloguing system, known as MARC Map (MAchine Readable Cataloging) in 1969 (Wolter, 1979:75). The ability of the computer to manipulate bibliographic data has facilitated the production of book catalogues, shelflist cards and bibliographic lists (Selmer, 1976:10).

The rapid in-flow of non-book material into the information system in general makes it imperative that libraries develop uniform methods of cataloguing (Cox, 1971:472-5). In recent years there has been a growing awareness that information can be found in sources other than the printed word, and both the new cataloguing codes of 1967 and 1979 paid attention to the such material. Hence, the use of the term "non-book librarianship" (Kujoth, 1968), or "non-print media" (Grove, 1975).

3.5 CONCLUSION

While direct open access to maps without the aid of a catalogue can meet the needs of a small collection, once the collection has grown beyond a few thousand sheets "only a catalogue can achieve maximum use with minimum withdrawal of sheets " (Merrett, 1976:20).

CHAPTER 4

CATALOGUING OF MAPS

One of the statements made by Merrett in his thesis on Map cataloguing and classification (1976:21) is that there is a great deal of overlap between cataloguing and classification in the case of maps. Map librarians have consistently emphasised the importance of precise cataloguing which they feel "unavoidably complements the classification scheme chosen" (Collins, 1977:18; Thiele, 1938:282).

Despite Gerlach's somewhat abrupt statement that if maps are filed alphabetically by area, "cataloging is a waste of time" (1970:297), librarians are generally agreed that cataloguing provides the most reliable access to maps, as well as serving as an accurate record of the collection (Modelski, 1977:154). Because of their physical characteristics maps do not lend themselves to being displayed on open shelves. For that reason they need to be represented in a written record even more than books do (Lewis, 1944:78). Cataloguing, therefore, is the key to the efficient use of a map collection (Crone, 1936:92). It saves not only time and wear and tear on the collection, but also provides multiple approaches, with area, subject, authority, publisher, title, series and even scale entries added (Modelski, 1977:154).

4.1 The compilers of the Anglo-American cataloguing rules (1967) exhorted cataloguers in the following terms:

To avoid excessive handling of maps, the catalogue entry should give as much aid as possible to the reader in the selection or rejection of a particular map
(AACR, 1967:210).

Despite this strong injunction, however, many libraries in the sphere of Anglo-American influence have not yet catalogued their map collections, although the maps themselves have been arranged in some way or another. This can be attributed to the relatively undeveloped nature of map librarianship (cf. 3.2.2). For example, the Library of Congress only began to undertake full cataloguing of maps during World War II, and in 1970 was reported to have had catalogue cards for less than five per cent of their total stock of three to four million sheet maps (Spellman, 1970; 1975:201; Ristow & Carrington, 1971:375).

A brief and essentially informal survey of the South African situation was made by this researcher in 1981, relating to the state of the map collections of eleven institutions in the country (viz. three legal deposit libraries, including the two national libraries, two archives depots, two large public libraries, and four university libraries). Of these, six institutions reported that they had completed their cataloguing, while the remaining five stated that they relied on very simple index cards, their stock being classified briefly according to their book classification scheme and their series maps filed by sheet number. The archives depots and one library filed their maps according to accession number, i.e. in order of arrival.*

Because map cataloguing is difficult (Jong, 1948:267) and "not easy" (Larsgaard, 1978:154), it has been suggested that temporary form cards or "brieflisting", would be advisable as a means of quick cartographic control over new acquisitions (Voorhees, 1976:4-5). Full cataloguing for maps is, therefore, said to be unnecessary because of the high degree of patron / librarian contact (ibid.). Such a method of less than full

* Personal notes. M.F. Cartwright

cataloguing is quick and simple to compile, especially with the aid of non-professional help, but has been criticised by Larsgaard as a false economy, being too brief, incompatible and non-standard: "Doing something right the first time is least expensive" (Larsgaard, 1976:154).

The map cataloguer will have to do more background searching than his book counterpart - and this is by no means confined to early maps (Merrett, 1976:16). This is particularly important for a historical collection of maps (Collins, 1977:16). This issue will be discussed in Chapter 5.

4.2 HISTORICAL DEVELOPMENT OF MAP CATALOGUING

The cataloguing of books has enjoyed what seems to the map librarian an "enviable history of uniformity and consistency" (Karrow, 1983a:10). Since the publication of Cutter's 1904 Rules there have been only minor changes in descriptive style, although cataloguers have disagreed on questions of entry and the detail required in a description. It is only with the appearance in 1978 of the 2nd edition of the Anglo-American cataloguing rules (AACR 2), that library cataloguers, he claims, have had to adjust to a drastic change in approach (ibid.:10).

The cataloguing of maps has not been so fortunate, and a short summary of its early beginnings is therefore necessary.

4.2.1 Early beginnings

The earliest map catalogues reflected individual library practice. Thus, the Harvard College catalogue of 1835 and 1887, the catalogues of the John Crerar Library, and those of the Library of Congress made independent appearances. In Britain the British Museum, and later Cambridge University Library and the Bodleian Library, Oxford, produced their own cataloguing

codes. An interesting feature of all these early attempts at cataloguing maps was the entry under area.

The British Museum's Rules of 1841, being the earliest list to appear in print, had a considerable influence on cataloguers (not only for positive reasons, but also for the lessons to be derived from procedures that were unsuccessful (Horner, 1970:215)). The brief reference to maps instructed cataloguers to create a main entry under the specific English name of the geographical or topographical area which the work represents (Nichols, 1976:175). The code was revised in 1936, and reprinted in 1967. The Catalogue of printed maps, based on these rules, is, in effect, a geographical index to maps held in the British Museum. The entries in the latest photolithographic edition of 1967 reflect a variety of cataloguing styles, as there has not been time to recatalogue the earlier entries according to modern methods. Nevertheless, the principle of geographical entry has remained in force. For example, entries for South African maps are entered under the inverted form:

AFRICA, SOUTH. **General maps.**
 ----- Stanford's Map of British South Africa. Scale,
 1:5,977,382. 94 English miles to 1 inch. 678x508mm.
 Edward Stanford: London, 1894.

4.2.2 Cutter 1876, 1904, and Phillips

Despite the publication of these map catalogues in which the entries were arranged by area, Cutter's solution to the problem of maps was to treat them as books: his Rules of 1876 refer only to books, with the rules applying to all situations (Woods, 1959:258). In contrast to this, Phillips of the Library of Congress some years later made the surprisingly "modern" statement that the name of the map maker was of small consequence in cataloguing, compared to the role played by area, subject and

date in retrieval (Merrett, 1976:12; Phillips, 1900:15). However, Phillips' subsequent volte-face in the 4th edition of Cutter in 1904, in which appeared his pronouncement that maps and books were similar, had the effect of entrenching Cutter's "author" concept for maps. The struggle to return to the "geographical" approach was to occupy the minds of map librarians for the next 70 years. The remarkable variation in cataloguing formats has been described in detail by Fink (1962:6-11), Selmer (1976:7-11), Larsgaard (1978:91-120), and Merrett (1976:3-5).

4.2.3 Anglo-American Cataloguing rules, 1908

The compressed list of Anglo-American Cataloguing rules: author and title entries, issued in 1908, refers only briefly to maps (viz. "the cartographer is the author of the map"), and makes no provision for analytical cataloguing of maps in monographs (Merrett, 1976:12). As this code was for over 60 years the standard followed by generations of librarians, a map entry was handled by way of illustration in the following way:

STANFORD, E. Stanford's Map of British South Africa.
1899. Scale 25 miles to the inch.

4.2.4 Boggs and Lewis, 1945

The challenging ideas of geographer Boggs and map librarian Lewis, although drafted in 1932, only became known to the wider library profession in 1945, when the manual was published. This had a great impact on the practical library cataloguing of maps, as for the first time attention was being given to the problem of proper identification and description of maps. Boggs and Lewis discarded the concept of main entry by author ("leaving that to the map user"), emphasising instead that geographical area was the most significant item of identification (Merrett, 1976:14).

Although Boggs and Lewis were primarily concerned with practices needed for separate map collections, they also made provision for a consolidated book and map catalogue, "should this be preferable in some libraries" (Boggs & Lewis, 1945:preface). Their novel approach to the handling of maps, together with their practical advice on map cataloguing, was welcomed by map librarians, and adopted by special libraries in the United States and Britain. Unfortunately, their suggestions had little impact on official catalogue code makers. Until the improved cataloguing codes of the 1970s were developed, Boggs and Lewis remained a popular guide to handling maps, and still has its adherents today (Brenan, 1975:111), with entries such as this one:

Stanford's Map of British South Africa. London,
Edward Stanford Ltd., 1899.
54 x 69cm. 1:5 977 382.
Mercator projection.

4.2.5 Revisions of 1908 Cataloguing rules

The revisions of the 1908 Cataloguing rules (published in 1941 and 1949) continued the approach of the author being responsible for the map, although the 1941 edition did contain an appendix on maps and atlases (ALA, 1941:347-53). A footnote acknowledged that small libraries might find an entry under subject (i.e. geographical area) all that was necessary, but that special collections might prefer a main entry under area (ibid.:347). Although the appendix was dropped in the 1949 edition, the advice concerning area entry was included (ALA, 1949:26).

4.2.6 L.C. Rules for descriptive cataloging, 1949:

The Library of Congress (LC) began its major map cataloguing project in 1941, publishing its rules for the first time in 1949.

It was also at this time that LC began providing printed cards for the United States Army Map Service depository maps which, in their turn, were being sent to hundreds of American libraries (Hagen, 1979:3). By using these cards compiled according to the official cataloguing code, many libraries were thus following the Library of Congress cataloguing practice of main entry under author. This was criticised by practising map librarians, who favoured the geographical entry as being more practical, and felt that no attention was being paid to the needs of specialised map collections (Ristow, 1967b; 1975:461-2).

Map librarians were confirmed in their organised opposition to entry of maps by author (Woods, 1959:257), by the findings of the user surveys conducted by committees of the Special Libraries Association Geography and Map Division (SLAG&MD) both in 1948 and 1953. These findings revealed that 74 % of reference requests were by area, 24 % by subject, and only 2 % by title, publisher, scale or date, i.e. none by author (Merrett, 1978:147; Gerlach, 1970:298). The favoured form of heading appeared to be: Area - Date - Subject (Ristow, 1967b; 1975:461), although in 1959 SLAG&MD had recommended that map cataloguing headings should be based on the hierarchy of Area -Subject - Date, rather than on the principle of authorship (Woods, 1959:257).

4.2.7 Anglo-American cataloguing rules, 1967

Unfortunately, the new cataloguing code of 1967, the Anglo-American cataloguing rules (AACR 1967), did not accept or incorporate any of these new ideas. Instead, the rules for non-book material, as found in Part III, appeared to be a reprint of the Library of Congress's own rules for handling such material, thus continuing the concept of "intellectual responsibility"

(Horner, 1970:215). Although aware that "the distinctive characteristics of maps require special treatment" (AACR, 1967:210), the code still ruled that choice of entry "shall be compatible with author entries for books in an author and title catalogue" (*ibid.*). Although generally pleased with the eight pages of rules for entry and description, containing advice on collation and the minimum requirements for the notes, map librarians were still highly critical of the code, considering it still too sketchy for specialised map collections and out of line with current practice in most specialised libraries (Merrett, 1976:13; Karrow, 1983b:10). An improved map entry looked like this:

1967: Stanford's Map of British South Africa. Edward
Stanford, 1899.
1 map. col. 54 x 69cm.
1:5 977 382.
Mercator projection.

Map cataloguers on the whole continued to voice their disapproval of the official rules of entry contained in AACR 1967. Accordingly, many disregarded these rules on map entry, following instead the rules of Boggs and Lewis, the American Geographical Society (1969), the simpler rules of the Canadian Library Association (1973), or those of the Association for Educational Communications and Technology (1976) (Anglo-American rules for cartographic materials, 1979:123). As there was no body of detailed information to which to turn for guidance, the influential Library of Congress developed its own internal code for cataloguing maps. Pirated editions of the LC cataloguing manual were used by other libraries, until, in response to a popular appeal, it was eventually published in 1979.

4.2.8 Canadian Library Association: Rules for non-book materials, 1973

The information explosion of the post-war years has made librarians increasingly aware of the information potential to be found in material other than books. Although the 1967 AACR contained a section relating to non-book material, these rules were by no means satisfactory. In an attempt to redress these inadequacies, the Canadian Library Association compiled its own rules for such material (Weihs, 1973). Under the Maps section it is stated that for main entry "maps are entered under title" (*ibid.*:49). Although entry under geographical area was considered preferable, such a form of heading was admitted to be more difficult for interfiling. It was suggested that the main entry heading should be under the area covered, the predominant subject matter, and the date (*ibid.*:97-98).

Generally speaking, the bound atlases found in many libraries have been treated as books and appear under the name of the cartographer or editor. On the other hand, the loose sheet maps, maps in books, or folded maps by the same cartographer have been listed under the geographical heading, thus resulting in the loss of valuable connections between the two sections. The general rule was, therefore, qualified by the following guideline: "some maps may be entered under cartographer if a media centre deems it important to link bibliographically the cartographer's books, maps and other works" (Weihs, 1973:49). The Canadian experiment would result in the following sample map entry:

Stanford's Map of British South Africa. London,
Edward Stanford Ltd, 1899.
1 map. col. 54 x 69cm.
1:5 977 382.
Mercator projection.

4.2.9 International Standard Bibliographic Description, 1977

Map librarians were given ample opportunity to discuss and comment on the proposed International Standard Bibliographic Description for Cartographic Materials, known as ISBD (CM), before it was eventually published in 1977 by IFLA's Subcommittee of the Geography and Map Division. While not setting out to be a new code of cataloguing rules, it did guide cataloguers through the problems of description and provide them with a means of sharing descriptions internationally by labelling bibliographic elements through punctuation symbols (Foncin, 1981:333). Many of the ideas appearing for the first time, namely the ISBD punctuation, the General Material Designation (GMD) designed as an early warning device when interfiling records, provision for International Standard Book Numbers (ISBNs), alternatives for handling accompanying material, rationalisation of the notes, and the opportunity of expressing coverage in terms of geographic coordinates, were later to be incorporated into the new edition of the Anglo-American cataloguing rules (AACR 2) published in 1978. Also of importance to map cataloguers was the opportunity to describe individual maps or groups of maps within a series or in an atlas by means of "multi-level description" (AACR 2: rule 13F). It should be noted in passing that to date this guideline has not been followed by many map agencies, although the Public Archives of Canada appear to be taking the lead (Stibbe, 1979). The "new look" sample for map entries was as follows:

Stanford's Map of British South Africa [cartographic material]. - London: Edward Stanford, 1899.

4.2.10 Anglo-American cataloguing rules, 1978

The response given by map librarians to the 2nd edition of the Anglo-American cataloguing rules (AACR 2) in 1978 was very

favourable, mainly because the rules had been worked out under the auspices of an international agency by experienced working cataloguers, and had been thoroughly reviewed (Karrow, 1983a:10). There was, nevertheless, criticism on the grounds that the rules were still insufficiently precise and explicit (Murphy, 1981:2-9).

Many of the sound ideas expressed in the ISBDs have been incorporated, and the arrangement and concept of the volume is more logical than that of AACR 1967. Description and entry have been separated, and, consequently, the earlier controversy arising from the primacy of author or area as main entry has now been defused on an international basis. The basic cataloguing description is laid out in Chapter 1, but all subsequent chapters dealing with other formats (Maps are dealt with in Chapter 3) are mnemonically related to it. Interesting additions are the provisions made for three different levels of cataloguing, guidelines for the cataloguing of mixed-media works and other non-book material, and the provision for the "mathematical data area" (scale and projection) immediately before the publication statement. The fact that the rules cater for all kinds of cartographic material, including aerial photographs and space remote-sensing images is of particular interest. The provision made for recording the co-ordinates (AACR 2:rule 3.3D) allows for on-line subject access independent of language (Karrow, 1983b:10).

The most serious defect concerns measurement (Rule 3c20), where the instruction "measure between the neat lines" (i.e., the innermost edge of the border) is a departure from many years of map cataloguing practice of measuring from the outermost edge of the border (Karrow, 1983b:10). As regards early maps, the option is given (Rule 3.5D1) to measure to the nearest millimetre.

The two examples listed below will give some idea of the new styles of entry:

1. Stanford's Map of British South Africa [cartographic material]. - Scale 1:5 977 382. Mercator projection. - London: Edward Stanford, 1899. - 1 map: col.; 54 x 69cm.
2. York [map]. - Scale 1:50 000, approx. 2" to 1 mile. - Southampton: Ordnance Survey, ca.1977. - 1 map: col; 80 x 80cm. - (Ordnance Survey 1:50 000, second series, sheet 105)
Parts of legend in English, French & German.

Despite the acceptance of this latest international standard cataloguing code by the major libraries and agencies in the English-speaking world (AACR 2:v), there is still an evident need for interpretation of the rules and minor changes (Salinger & Zagon, 1985:57-90). The advent of the computer has rendered the "main entry" concept of little significance, but has made the standardisation of procedures increasingly important (Ristow & Carrington, 1971:346).

4.3 AUTOMATION AND COMPUTERISATION

In the past, automated methods of map cataloguing were not an option available to most map libraries, the large government libraries being the first to experiment with and later implement these methods (Larsgaard, 1977:121). During World War II the United States Army Map Service Library was faced with the problem of dealing with hundreds of maps with a minimum number of untrained staff, a situation handled successfully by means of form cards and punched cards (Murphy, 1945:157-9). Form cards were also discussed by de Jong both in 1943 and 1948 (1943:121; 1948:274). Although these methods were highly successful in speeding up the handling of maps, little more was done by others in this field until the mid-1960s when the University of California at Los Angeles (UCLA) began investigating an

electronic information retrieval system for maps (Hagen, 1966:30-35; Easton, 1967; 1975:301). Other librarians were also considering automation with special application to map libraries (Palmerlee, 1967; 1975:338-52), but progress made over the preceding twenty years has been overtaken by the rapid development of the computer and its application to solving problems in the library. Automation has been invaluable in encouraging costing and a thorough analysis of procedures (Merrett, 1976:17-18; Murphy, 1970; 1975:188).

In 1970 the Library of Congress reported that its map holdings consisted of about 9 million sheet maps and 35 000 atlases, with an annual increment of 20 000 sheets - an accession rate that was impossible to control by manual methods and insufficient staff (Hill, 1977:149). To cope with this situation, LC launched an investigation in 1968 as to the best means of adapting the Anglo-American cataloguing rules to computerised procedures for the cataloguing of maps - and within a short time Machine Readable Cataloging (MARC) was developed (Ristow & Carrington, 1971:50). The MARC system is one that applies alpha-numeric codes to bibliographic elements in a catalogue record in order to make the data "machine-readable" (Fleming, 1981:332). The improved version, MARC II, has been adopted by three national libraries, and the major library associations have approved it as the standard for the communication of machine-readable bibliographic description for all forms of material (Ristow & Carrington, 1971:347).

Although computerised methods have been successfully applied to bibliographic description (Horner, 1970:143-4) and document retrieval (e.g. Tenopir & Cepparelli, 1979), a system to retrieve specific information from pertinent maps requires a higher level of sophistication and greater financial support than that which

an individual library can afford.

Map information networks have already been started in the United States, namely the CARTESS system discussed by Phillips (1973:71-78), and a union catalogue for cartographic documents (the Centrale Catalogus Kartografie - CCK) exists in the Netherlands (Waal, 1978:17-24; 1979:107-26; 1979:250-67).

4.3.1 Computerisation in South Africa

In 1974 the Government Archives Service embarked on a programme to computerise all the records in its archival depots throughout the country (and South West Africa/Namibia). At the same time the South African library profession was also investigating the production of a union catalogue of manuscripts. After negotiations with the Government Archives a co-operative project was launched early in 1978 (to be known as the National Register of Manuscripts, or NAREM) to process and retrieve manuscripts or private accessions. Manuscripts and private papers held by the main libraries in the country are now included in the central archival database in Pretoria, which is accessible through terminals found in the archives depots in Cape Town, Bloemfontein, Pietermaritzburg and Pretoria, as well as in the South African Library in Cape Town and in other institutions on application. Database creation is by Storage And Information Retrieval System (STAIRS/VS) while on-line retrieval is by AQUARIUS (A QUery And Retrieval Interactive Utility System), which interacts with the computer (Olivier, 1982). The system is orientated towards document - rather than information - retrieval approach, although the latter is planned for a later stage.

Encouraged by the success of this enterprise, the Archives

Service has continued to add the records of all photographs and maps to the same database. The pioneering cartographic project is being processed by the Cape Archives Depot, and the situation to date [February 1987] is that this numerical "stocklist" may be consulted at the Depot and is accessible via the terminal. In checking the first drafts of the printout sheets of the project, it appears at first glance that the results are not always satisfactory. The information fed into the database has been copied from the catalogue cards, but unfortunately this information would not satisfy the high standards demanded by map librarians in accordance with the dictates of AACR 2. For example, none of the entries for the older maps includes scale statements, nor are there references to the original source of the map described. Map entries would appear as follows:

1. Depot, source: SA Library
 Type: Maps
 Volume number, reference: 2/122
 Description: Stanford's Map of British South Africa;
 54 x 69cm
 Dates: 1899

2. York ordnance survey
 1977
 1:50 000 col. 80 x 80cm (Ordnance survey 1L50 000, second
 series, sheet 105)
 Directorate of Overseas Survey, 1977

4.3.2 South African Bibliographic and Information Network

The South African Bibliographic and Information Network (SABINET) was established in 1983. It is based on the Washington Library Network (WLN), but modified to incorporate the SAMARC record. Although the network went live in October 1983, online cataloguing began only in September 1985 (SABINET bulletin, 1985, 2:2). All records supplied to SABINET must be in AACR 2 format, so it is important for map librarians to consider the implications of using AACR 2 and investigate the use of SAMARC.

Lengthy discussions on this matter were held with Mrs I van Niekerk (co-ordinator of SAMARC and secretary of SABINET since 1984) at the SAILIS Conference held at Bloemfontein in September 1983. At that time no library was contributing any cartographic records to the network.

The SAMARC format, which was developed and accepted in 1981 as the national exchange format of bibliographic records (SABINET bulletin, 1985, 1(2)), is still being refined. In the meantime book records are being entered through the temporary expedient of SABIMARC. Only when SAMARC becomes fully operational towards the end of 1988 will map cataloguing records be able to be accepted. A sample of the proposed form of entry is shown below:

Reference: 6/598
 Date: 19801026 d 1977
 Eng.
 Great Britain
 1977
 1:50 000
 York Ordnance Survey
 Map
 Scale 1:50 000. approx. 2" to 1 mile
 Southampton Ordnance Survey, ca.1977
 1 map. col. 80 x 80cm.
 Ordnance Survey 1:50 000 second series sheet 105
 Part of legend in English, French & German

4.3.3 Conclusions

A critical examination of these entries reveals how the standards required by automation for document retrieval have affected the traditional standards of bibliographic description. This state of affairs had been foreseen by Merrett in his concluding remarks on map cataloguing, namely, that "some cataloguing traditions may have to be abandoned" (1976:18).

The implications for handling early maps are examined in the Chapter 5.

4.4 CHARACTERISTICS OF MAPS

Maps, as we have learnt from references in a previous chapter (cf.2: introduction), are "both graphic and geographic" (Boggs, 1936:108), combining the features of books and pictures (Fordham, 1927:4), and written in a universal symbolic language (Dahlberg, 1969; 1975:74). Unlike books, the surface of the map sheet serves as both title-page and text, with the information arranged to suit the space available and the taste of the map designer (Boggs & Lewis, 1945:1; Library of Congress, 1949:67).

These distinctive characteristics, therefore, not only require special treatment in the catalogue entry, but also make the task of recording all the relevant data in a succinct manner particularly demanding, exacerbated by the fact that vital data are often missing (Merrett, 1976:12). By common agreement, therefore, map cataloguing is more exacting than ordinary bibliographic cataloguing, arising from the need to give the map user a good mental image of the map, i.e., not only with regard to its physical format but also its contents.

This is also made more difficult by the lack of reference material for checking facts, as single-sheet maps are normally not recorded in the national bibliographies. Very often too the material being handled is unique, incomplete, detached from its main work, anonymous or falsely described (Lee, 1955:21; Merrett, 1976:16).

It was illuminating to learn from personal discussions at the International Map Seminar held in Pretoria in 1979 to what extent cartographers have been unaware of the difficulties they were creating for librarians, who were responsible for describing and storing their cartographic products. One such instance was the tendency on the part of some cartographers to extend

arbitrarily the size of the sheet of paper in order to incorporate a slightly larger area of territory than planned, thus creating problems of storage in standard-sized cabinets.

4.4.1 Main Entry Headings

The concept of "main entry" originates from the former library practice of providing only one entry (or "main entry" card in a card catalogue) containing all the information necessary to identify the item completely (Landau, 1966:287). The additional entries supplied abbreviated cataloguing information only. Once the Library of Congress began printing cards in 1897 and supplying them to other libraries, this "main" card became the basic "unit" which, with the addition of the necessary headings, could then be used for all entries, if required. With the increase in centralised cataloguing agencies, the use of the unit card has become the norm (Buffum, 1977:46). It is, therefore, the heading, as chosen by the cataloguer, which determines the place of the catalogue entry in the cataloguing sequence (Landau, 1966:287). As the approach to the printed book catalogue has generally been that of author, the main card for books has inevitably been entered under author. When this practice was applied to maps, however, which are generally searched for by subject, an immediate problem reared its head, with confusion over the use of the main author card as "main entry" (Buffum, 1977:47). Boggs and Lewis made it clear in their manual that they were describing the standard "unit" entry, and were ignoring the "main entry" with its "heading" (Boggs & Lewis, 1945:27, note).

As described in the previous section on cataloguing codes (cf.4.2), controversy over the years has surrounded the issue

as to the primacy of the author vs. area as main entry for maps (Merrett, 1976:7-11). The Library of Congress and AACR advocate author main entry, in conflict with the rest of the map library world who are in favour of entry under area (Larsgaard, 1978:92; Karrow, 1977:2.0). Both ISBD (CM) and the new AACR 2 have avoided the issue by stating the requirements for the description of the map, leaving the question of the heading for the individual library. The possible never-ending controversy in the choice of main heading has become somewhat muted in the 1970s, as "main entry" concept has little significance in a computerised system (Ristow & Carrington, 1971:346).

Linked with the choice of heading is the question of the map catalogue itself: whether the cards are to be interfiled with the general catalogue, or to be filed in a separate map catalogue. As readers have been said to be "book orientated and cartographically illiterate" (Merrett, 1976:19-20), the tendency is for them to favour the author approach. Headings incorporating area would thus not be happily interfiled in a main, name-orientated card catalogue. The unsatisfactory state of map classification and geographical terms (cf.3.4.2.1) makes a dictionary catalogue in particular inadequate for the purposes of geographical research (American Geographical Society, 1966:iii). It is therefore more common to find map catalogue cards filed separately, with added entries under author interfiled in the main name catalogue (*ibid.*). Further details and the merits and demerits of the arrangements within such a separate map catalogue are described by de Jong (1943:124; 1948:275-8) and Merrett (1976:8).

4.4.1.1 Establishment of Area Headings

As area is the salient feature where maps are concerned (cf. 2), it is not surprising to find in the SLAG&MD survey of 1953 that 74 % of map queries were based on area (Prescott, 1979:12; Winearls, 1967; 1975:353). It would appear, therefore, that the heading selected for a map entry should emphasise the subject content (i.e. geographical area) rather than the creative or author aspect (Merrett, 1976:8).

The first problem encountered with area headings is that of choosing an appropriate name to describe the area covered by the map. It is generally agreed that this should be the modern geographic name of the area described (Crone, 1936:98), rather than the name mentioned in the title (Jong, 1943:121-2). This can be a complex matter when the map area covers two or more regions, such as, for example, a map depicting the Cape Province but extending also into the Orange Free State and Natal.

Similar difficulties are encountered in the case of hydrographic charts, where the coastal features predominate and very little is shown of the interior. Charts such as those covering the coastline from the Orange River to south of Saldanha Bay (i.e., a mere part of the west coast of the Cape Province), or, even extending from, say, West Africa or just north of the Equator to Cape Agulhas, are very difficult to categorise satisfactorily.

Other problematic instances are those of maps showing the boundaries between two areas, involving the map cataloguer in a major decision to choose the main area, and make added references to the others not chosen (Drazniowsky, 1970:237; Merrett, 1976:9).

Difficulties likewise arise when the geographical name of a

area does not fit into standard regions or coincide with political units. An example of this is "Southern Africa" - a vague term which incorporates many political units. Smaller areas or districts, such as the "Western Cape", "Skeleton coast", the "Sandveld", "Groenland", or the "Berg River Valley" are further examples. Maps of politically defunct or fragmented areas such as the High Commission Territories, South African "homelands" (or "self-governing" vs. "independent" states) pose special problems of their own. Frequent changes in the names of African countries during the 1960s were a cataloguer's nightmare, especially so in the case of Zaire and other regions adjoining the Congo River (Jong, 1948:272; Foncin, 1953:34; Merrett, 1976:10).

It has been suggested that when dealing with early maps an historical atlas showing geographical areas at specified periods should be kept at the map catalogue to guide researchers (Jong, 1948:278).

4.4.1.2 Form of Entry: Direct

The main problem with the choice of the form of heading is to determine whether the heading is to be direct or indirect. Both these approaches have been ably described by Merrett (1976:8-9) and commented on by Winearls (1967; 1975:354). The direct method is the simplest, as this approach requires the cataloguer or researcher merely to choose the specific name of the country, region or town described by the map. This is the approach followed by, amongst others, the British Museum (1885) and the Royal Geographical Society (Crone, 1936:99), and recommended by the Special Libraries Association. In the British Museum scheme compound names, in which the prefix denotes a geographical and not a political division, have been inverted,

so that maps of South Africa are to be found listed under "Africa, South" (British Museum, 1967, vol.1).

In an alphabetical catalogue this direct form of approach offers immediate satisfaction to the researcher who goes directly to the area name he has in mind (Winearls, 1967; 1975:357). However, alphabetical order is not always satisfactory, as maps of a particular area and its neighbouring districts are not together but dispersed alphabetically throughout the catalogue. The researcher, therefore, cannot be certain that all possible names have been checked or all resources of the catalogue have been exhausted (Jong, 1948:276; American Geographical Society, 1966:iii).

4.4.1.3 Form of Entry: Indirect

Adopting the approach of Indirect entry on the other hand enables the map cataloguer to reflect the systematic arrangement or hierarchical position of the area concerned. The regional heading of the entry will thus be referred to the widest possible geographical unit in which it occurs (Crone, 1936:100): i.e. names of towns will be entered under the name of the larger administrative division, the province or state. In the South African situation this would mean that Cape Town could be given the heading: "South Africa. Cape of Good Hope. Cape Town"; while Durban would appear as: "South Africa. Natal. Durban". Smaller units, such as suburban areas, would, therefore, appear under the name of their specific town: e.g. "Newlands" and "Bluff" under "...Cape Town" and "...Durban" respectively. This system has been chosen, for example, by the Library of Congress (ibid.), the American Geographical Society (Parsons, 1946), and the Natal Society Library, Pietermaritzburg (Merrett, 1978:147).

Critics of this method point out that such long headings can become too cumbersome, and are "certainly harder to establish" (Winearls, 1967; 1975:354). The main problem is deciding whether all the parts of the heading are necessary and whether any of the intervening steps can be left out (*ibid.*). A map of Simon's Bay, for example, could be entered by this method in a variety of ways: either as "South Africa. Cape of Good Hope. Western Cape. False Bay. Simon's Bay", or "...Cape of Good Hope. False Bay. Simon's Bay", or "... Cape of Good Hope. Simon's Bay".

This method produces hybrid alphabetico-classed headings which are incompatible and not readily interfilable with the standard alphabetical subject headings used in library catalogues (Merrett, 1976:8). It is, therefore, sensible to maintain a separate catalogue for maps, a method advocated by Eames as early as 1897 (Ristow, 1946:1122).

4.4.1.4 Form of Name

The appropriate form of the name of a region issues another challenge to the cataloguer, particularly when he/she is dealing with bi- or multi-lingual countries. Standardisation of geographical names is particularly important, in the interests of international exchange of information and the increasing demands of the computer. Within the past 20 years various authors have compiled geographic dictionaries (e.g. Lana, 1967; Webster, 1972), or lists of place names (Spaul, 1970; Room, 1974, and Wilcocks, 1981). A list of official names of countries has been included in the world gazetteer by Room (1978). On the international front attempts to standardise the names of foreign countries have been made as recently as 1973 by both the International Geographical Union and the International Cartographical Association.

4.4.1.5 Spelling of Name

Related to the difficulty of determining the choice of name, is that of its spelling, particularly in multi-lingual and/or multi-national countries. Official lists of place names have been published in most countries, so that standardisation can be controlled. In South Africa, for example, the original Dutch spelling of the name "Blaauwberg" (battlesite of 1806) has been changed to the modern Afrikaans spelling of "Blouberg". Such decisions are recorded in Official place names = Amptelike plekname, published by the Place Names Committee of the Department of National Education (South Africa. Place Names Committee, 1952; rev.1979).

Because historic events have played such an important part in the creation of geographical names, historical gazetteers are necessary reference sources for cataloguers. Much valuable work has been done on South African place names, namely research by Pettman (1931), Graham Botha (1917, 1926); and more recently, by members of the Onomastics Bureau of the Human Sciences Research Council (e.g. Raper, 1972; G.S. Nienaber, 1977, 1983), and P.J. Nienaber (1963). Invaluable work has been done by Skead in connection with zoological names (Skead, 1973), but a complete historical gazetteer for the whole country has not yet been compiled (Tooley, 1969:v).

4.4.1.6 Area - Subject - Date

Although there appears to be no universally best approach to the subject of the structure of headings for maps (Merrett, 1976:11), the combination of "area - subject - date" (ASD) has been recommended by the authoritative Library of Congress, and is of most concern to map users (Nichols, 1976:197). As

mentioned earlier, results of an investigation by the SLAG&MD in 1953 revealed that 24 % of queries analysed dealt with subject, hence the suggested format of Area - Subject - Date (ASD). This system was chosen by Merrett for his A selected bibliography of Natal maps (Merrett, 1979b), as well as for the map recataloguing project in the Natal Society Library (Merrett, 1978:147).

In practice, this "indirect" form of heading could prove to be frustrating to researchers interested in historical maps. For example, in the Natal bibliography maps of Durban have been listed under 36 subject headings (items 528 to 742). The early maps have not been entered under "History" (which is not a geographical subject) but under "Topography", so the earliest map of Durban (by Lieut. King in 1823) is eventually traced to item 697, under the heading: "Natal. Durban. Topography. 1823". Unfortunately, the bibliography does not contain a chronological index.

Other filing elements in the heading are scale, which has been used as the third position by the University of Kansas, with the University of Toronto adding yet another variation, viz. that of the date as well (Winearls, 1967; 1975:353-4). Winearls considers that in a topographical series (where the scale plays an important part) the date is relatively meaningless, and can, therefore, be safely relegated to the last position in the heading. She considers that the Area - Subject structured entry appears to be essential (ibid.).

4.4.1.7 Area - Date - Subject

An alternative sequence of "area-date-subject" (ADS) (i.e. involving the relegation of subjects to the third position as filing element) has been recommended by Canadian and some American map librarians (Nichols, 1976:197; Weihs, 1973:48;

Woods, 1959:268). This has been implemented , for example, at Newberry Library, Chicago (Karrow, 1977) and Turnbull Library, Wellington (Woodhouse, 1945:26-28).

4.4.2 Description

The descriptive paragraph is at the heart of the cataloguing process (Karrow, 1977:3.01) and the most important part of the map cataloguer's job, as her responsibility is to make truthful statements, enabling the reader to identify or "visualise" a map. In addition, to avoid excessive handling of the map, "the catalogue entry should give as much aid as possible to the reader" (AACR, 1967:rule 210). The scattered items of information found on the map surface must, therefore, be collected and their location recorded, so that the "written description" of the map can be examined and understood just as easily as if the original were being handled. (This aspect is to be explored in greater detail in Chapter 5: Carto-bibliography).

4.4.2.1 Author

Determining the authorship of a map constitutes a different problem from that of a printed book, as maps are pictorial reproductions more closely associated with the "fine arts" than to book production as such. An awareness, therefore, of the different techniques involved in map production is considered to be necessary in order to interpret the various statements found on the face of the map (Brown, 1941:41).

Finished maps are usually the product of many minds, even though the authorship may be attributed rightly to one or two persons. It has been said that a map is produced by specialists

in six stages, viz. successively by the surveyor in the field, the draughtsman, the engraver, the printer, the publisher, and the mapseller (Brown, 1941:41-43).

The use of the phrase "Statement of responsibility" in AACR 2 (Rule 1F) holds the promise of clarifying confusions which may have arisen in the minds of cataloguers trained in the 1908 tradition of "the-cartographer-is-the-author-of-the-map". In cases where no name for the creator of a map is immediately obvious, either by typeface, location or inclusion in the title proper, guidelines have been given in order of preference as to who is primarily responsible for the existence of the map (*ibid.*).

For the handling of antiquarian maps additional advice has been given by Karrow (1977:2.11): names to be considered, for example, are those of the surveyor, cartographer/draughtsman, compiler/editor, the engraver/woodcutter, printer/publisher, claimant of copyright, and even the name of the author of the books in which the map has been first published. Such an array of alternative options leads as a matter of course to the same map being recorded in various sources under different names, and merely adds to the confusion or uncertainty of the cataloguer, whose primary responsibility is the identification of the "author" (White, 1962:78). Some examples of such double entries for the same map are those maps published in John Barrow's Travels in Southern Africa (1805). They have been variously listed under "Barrow", "Cadell and Davies" (the publisher) and "Bohn" (the engraver). Barrow's map is recorded under "Cadell and Davies" by Norwich (1983:no.182).

The problem of identifying the name of the cartographer from among the many personal names found on the face of the map has been made easier by the accompanying statements, such as "after the surveys of". The Latin phrases are more confusing, but

explanatory lists have been provided by various authorities, e.g. Brown, 1941:44; Lister, 1965:117-8; Karrow, 1977:2.12; Tooley, 1982:passim. Despite these aids, the cataloguer must be on the alert for misleading statements. Although the cartographer is usually indicated by the word "auctore", and the draughtsman by the word "delineavit" or "fecit", some of the other terms used on maps (e.g. "scripsit", "sculpsit", "pinxt") have been used interchangeably, without regard to their literal meaning (Brown, 1941:44). It is, therefore, necessary to examine the map more closely before attempting to decide on the name of the cartographer. If in doubt, it is advisable to enter the map under the title or area, pending further investigation (ibid.).

Yet another complication in this respect arises from the difficulties caused by maps being re-engraved and reissued by other cartographers and publishers, with or without any references to the original map (cf. 2.3.5). For example, the map attributed to "Bew 1781" by Norwich (1983:no.283), has been established as a later version of a map of 1753 by Après de Manneville. This raises the question: at what stage does a map cease to be assigned to the original cartographer and appear under the name of his successor? This is particularly so in the case of maps issued by successive officials over a long period of time, for example, the series of hydrographic charts originally issued by Seller in 1675, updated by Thornton in 1702, and continued by Mount and Page in 1750, and then into the period of the Arrowsmiths.

It would appear advisable, therefore, for map cataloguers to enter the map concerned under the name of the "current" cartographer, giving as a note the possible original map maker. The updated version of De La Rochette's "The Dutch Colony of the

Cape of Good Hope" (1782, 1795) should, therefore, be recorded under: Wyld: "The Cape district" (1832). In this way, cataloguers will not be imposing their own decisions.

The form of name to be used is complicated by the fact that many books published during the 20th century list cartographers under different versions of their names. This is particularly so in the case of French and Dutch cartographers. Although "Guillaume de l'Isle" is referred to in the text as "De l'Isle" or "Delisle", he is filed under "L'Isle, de" by Tooley (1969:68-72; 1978:395). The English style of "Delisle", "De L'Isle" and "Del Isle" has been selected in the heading chosen by Norwich (1983:no.59), Lister (1965:153) and Nordenskiöld (1979:item 64) respectively. Yet another variant has been chosen by Shirley (1984:no.603-4): namely, "Isle, G. de l'".

The French encyclopaedia, Larousse (which could be expected to reflect authoritative French preference) has, however, recorded him under "Delisle". The principle of national authority will, therefore, be accorded primacy in dictating the practice to be followed in this thesis.

4.4.2.2 Titles

The overwhelming majority of maps have titles, even though some of them might not mention the name of the cartographer, or the date in the title statement. Hence the title may be regarded as the most reliable and accurate reference element to the identification of a particular map. Despite the general reliability of title statements on maps serious difficulties do arise none the less (Brown, 1941:44-46). For example, some maps have bilingual titles, resulting in the convention of only one version of the title being quoted in authoritative sources. Early Dutch cartographers were particularly fond of this style,

using Latin and Dutch in the 17th century, and French and Dutch in the 18th century. One such example is the map of Southern Africa found in the various editions of the travels of Linschoten in 1599, which is recorded as "Typus orarum maritimarum" in the Latin version, and "Afbeeldinghe der custen" in the Dutch version.

Often such titles are recorded in odd positions, such as inside or outside the borders of the map, in an inconspicuous area of the map, or even on the verso. To circumvent the possibility of inconsistencies and idiosyncrasies, the map cataloguer needs to record all known or likely versions of the titles, and to identify their positions. The new cataloguing rules (AACR 2:rule 1.1D) have introduced the sign " = " to indicate alternative titles, a procedure designed to facilitate the task of map identification.

Another difficulty with the identification of titles is the preference of some authorities to use shortened versions of the title, thereby tending to confuse the cataloguer and acquisitions librarian, who might not recognise the map under the listed title. This is particularly noticeable in Tooley (1969, plates 1-100) where the titles do not always reflect the full title as found on the map, e.g. pl.79: "Africae tabula", instead of "Accuratissima totius Africae tabula" (Sandrart, 1700). This was also the position in Mendelssohn's cartography list (Mendelssohn, 1910:1097) in which Barrow's "General chart of the Colony of the Cape of Good Hope 1801" is listed as "Colony of the Cape", and "Africae accurata tabula 1668" by Meursius (*ibid.*, 1096) is recorded as "Meursium's map". It is therefore necessary to incorporate every acceptable variant of title found in the index, so that lists and catalogues can be checked with

confidence.

Maps containing only titles (i.e., without indication of cartographer or engraver), constitute yet another category to be handled by the cataloguer. Although such maps may be temporarily unidentifiable, as reference sources increase in number and accuracy, they might at some future date be identified as the works of particular cartographers. Nichols recommends that for the moment such anonymous maps should be listed under title (Nichols, 1976:238), a practice supported by both Merrett (1976:10) and Brown (1941:45, 78). Such practice could, however, create further problems if the maps concerned were the only ones with an entry under title - unless of course title entries were given for all maps in the collection. A more practical approach might be to record anonymous maps at the beginning of the sequence - either directly under title or under the heading "Anonymous". The cataloguer or acquisitions librarian would then automatically check these entries first, and by constant handling would become aware of the problematic maps and on the alert for possible solutions. One of the well-known maps of the Western Cape has still not been identified: this is the "Nieuwe naauwkeurige land- en zee-kaart" [1695/1700], published in the atlas of Ottens of 1745.

Maps without titles is another category to be examined. In cases such as this the cataloguer must supply a title, which should ideally be short and concise, and yet include the geographical name of the area shown (Brown, 1941:50; Jong, 1948:272). This reliance on the map cataloguer's choice of words could lead to a variety of "titles" being given to a particular map, with a consequent lack of uniformity and difficulties with identification.

Meaningless titles or titles without any reference to geographical area shown have also been encountered. Titles that are too similar could also be frustrating (Jong, 1948:272).

Although Merrett came to the conclusion, in his master's thesis, that the title "is usually a reliable indication of the map's contents" (Merrett, 1976:10), he qualified the statement two years later, stating that "title alone is a notoriously unreliable indication of the content of a map" (Merrett, 1978:147).

This is especially true of old maps. For example, the designations given to the maps covering the area of the present Republic of South Africa vary from "Basse Aethiopie" (Sanson, 1662), "Monomotapa et la Cafrerie" (Mallet, 1683), "Africae pars Australis" (Scherer, 1702), "A map of the southern extremity of Africa" (Paterson, 1789), and "Cape of Good Hope, Natal &c" (Weller, 1858). Maps describing the area of the Cape Province include such various versions as "La Basse Ethiopie" (van der Aa, 1735), "Le pays des Hottentots" (Bellin, 1746), "Caerte van der zuyderhoeck van Africa" (Commelin, 1598), "Southern coast of Africa" (Arrowsmith, 1812), and "A map of the European territory" (Lichtenstein, 1811).

4.4.2.3 Scale

Scale is unique to maps, and one of their most significant characteristics (Dahlberg, 1969; 1975:72). It refers to the adjustments made to reduce the physical area of the ground to the physical size of the sheet of paper on which the map has been printed. Most maps indicate this either in words, "1 inch to the mile", or on a linear graphic scale (or bar scale), marked off in inches or metres, or even by means of a symbol known as the "representative fraction", for example, 1:63 360 (or 1 inch = 63

340 inches). This "representative fraction" (or natural scale) is an expression of the ratio between the real distance on the earth's surface and the representation of distance on the map, expressed in universal terms. Being independent of any linear system of measurement, the representative fraction makes it possible to compare maps easily. The disadvantage is that it does not give a visual idea of the length of units on maps (ibid.). Various methods of calculating this fraction have been suggested to cataloguers. A particular example is the "Natural scale indicator" (designed by geographer Boggs), which was distributed with their cataloguing manual (Boggs & Lewis, 1945), and reproduced in Karrow (1977:Appendix B).

No map can be considered accurate without being drawn to scale (Brown, 1941:62), but this is only possible with modern maps. The older maps of the 15th, 16th and 17th centuries were drawn before what is now termed the "scientific era" (which is generally assumed to have begun in the 18th century). Their scales are only as accurate as the state of geographical knowledge at the time permitted. Many of them were compilations based on the maps or surveys made by others (ibid.:63). Measurements of these older maps must, therefore, be interpreted with caution. Sometimes reference is made to the length of the degree, for example, "Dutch miles 15 to the degree", and by means of the degrees shown on the borders of the maps an approximate calculation can be made.

Unfamiliar linear scales remain obscure to the cataloguer, as they cannot be converted readily into their equivalent or modern representative fraction (a method employed only after 1800). However, provision is made in AACR 2 (Rule 3B) for the insertion of a verbal statement of scale when an obsolete unit of

measurement is being used in an old map. Such statements should use the phraseology found on the map, and would assume a form such as: "Scale in French toises [20 = 15mm]".

4.4.2.4 Projection

Another characteristic unique to maps is projection. This is the system by means of which the map maker has tried to delineate on a flat surface (generally paper), without too much distortion, the spherical shape of that part of the earth he is depicting (Ray, 1976:6).

Mercator was the first cartographer to calculate a way in which to produce the nearest two-dimensional approximation to a three-dimensional phenomenon: the resultant "Mercator projection" soon became well known and used by subsequent map makers. Full details of other projections developed and used by later cartographers have been supplied by Boggs and Lewis (1945: 84-90). Although it could be claimed to be the map cataloguer's responsibility to supply information as to the type of projection employed, so as to enable the map user to interpret the map more accurately, Brown, among other writers, has argued that such a task is too technically demanding for the cataloguer. He recommends accordingly that projection statements be omitted from the annotation unless formulated on the map (Brown, 1941:65).

4.4.2.5 Imprints

It is unusual to find information concerning publisher, printer or date grouped together neatly on a map, and the onus is once again on the map cataloguer to gather and normalise the often scattered bits of relevant information (Brown, 1941:51-52). As discussed previously (cf. 2.2.3), the story of map makers and their products is a long and sometimes convoluted one, relating

the manner in which cartographers often took over or bought up the plates of rival houses. Before the 19th century the functions of engraver, printer, publisher, and seller were not clearcut: often one individual performed two or three of these functions, and sometimes all of them. Several individuals were responsible for different aspects of the publication and distribution, while others had to do with the physical manufacture of the map (Karrow, 1977:3.404; Brown, 1941:42-43). Because of this tangled state of affairs it is again not always easy to identify a particular map as being the product of a specific cartographer. The printer likewise played an important part in the production of the map of one firm, and for that reason should be recorded - at least for all maps published before 1800 (Jong, 1943:122). It is therefore gratifying to note that AACR 2 has made provision for recording the names of both printer and publisher (AACR 2: rule 3.4G).

4.4.2.6 Date

The map cataloguer's task is often complicated by the appearance of a confusing variety of dates on a map. The dilemma then is choosing from among the given dates the one most likely to reflect the time-frame accurately. For the cataloguer wishing to serve all the specialist users of the library, this, too, has its tensions, as the historian for example will tend to be more concerned with the map image (and thus the year of the topographical survey), whereas the bibliographer would be more interested generally in the year of printing and publication (Jong, 1948:275). Multiple dates are common when different features of the map are being revised regularly, as in the case of nautical charts, especially those issued by the Admiralty.

Phrases, such as "based on" or "redrawn by", make it difficult to assign an approximate date to maps. In this respect Brown gives an illuminating account of the jealousies and plagiarisms common among the early map publishers (Brown, 1941:38-40). It was estimated in 1747 that, of 16 000 maps in existence at that time, only one in nine was original (Tooley, 1985:94).

In some cases, despite the appearance of a precise date on a map, such information may not necessarily be accurate. Often maps were reissued with new and corrected data without the imprint being adjusted accordingly. It thus becomes imperative for the map cataloguer to examine the map more closely for minor clues, such as extensions to railway lines, additional towns, notes on discoveries and other comments which might or might not be dated. There are also many instances of map plates being used again and again, without major changes, over a long period of time. For example, Delisle's map of Africa was in use for more than a century without being revised. In this situation, however, the original woodblocks and plates would have become more and more worn through use, with the result that the impressions would have become fainter and fainter. These subtle differences in the later "editions" would be visible to the keen eyes of the expert, but only if the original maps could be handled and examined. Other clues to a more precise date might be found by examining the decorative additions to older maps, such as the dedications to wealthy patrons, the references to "privilege", or vignettes.

Because a map represents a particular geographical area at a particular time, the date of publication is of unusual significance. Consequently, an undated map is not only a nuisance, but "a proper subject of something more than annoyance" (Fordham, 1914:96), limiting its value and usefulness. Every

effort, therefore, must be made by the cataloguer to establish a precise or approximate date for an inadequately dated map.

Although it has been pointed out that one should not try to date a map solely by the book or atlas in which it is bound (Brown, 1941:51), such a procedure can be very useful for purposes of approximation. Problems arise, however, when maps are detached from their original binding and are sold separately. The map cataloguer then faces the difficulty of having to identify both the map and the book to which it belongs.

Other technical means of dating maps approximately is by internal evidence, such as examining the paper on which they are printed. Watermarks have been exhaustively investigated by experts such as Briquet (1907, revised 1968), Churchill (1935), and Heawood (1924), and as appendix in Lister (1965), although Brown cautions that watermarks are not always reliable (Brown, 1941:53-55).

Such detailed technical investigation of maps involves major bibliographic research, which has already been begun by experts such as Tooley and Verner. The results of this type of research, when published, form the basis for reliable reference works, and are of great importance to the map cataloguer.

Intensive research of this nature, however, falls outside the scope of this investigation. Dates appearing in this thesis have been found in the various published works issued during the past seventy years, and instances of uncertainty or discrepancy will be pointed out.

4.4.2.7 Size

The physical description of a map, and in particular that relating to its size and extent, can be of great importance,

both to the librarian (who has to store it), and to the map user (who needs to know something about its approximate size: whether it is a large wall map or a small miniature map, for example). This is also of interest when reproduction is required, or when maps are to be exhibited. Fine measurement of old maps to the nearest millimetre (AACR 2:rule 3.5D1) or centimetre (Karrow, 1977:3.53) could, however, be pointless and misleading because the paper might have become distorted or shrunk over the years, thereby preventing accurate measurements being made or reliable comparison with other copies of the same map being rendered possible (Brown, 1941:57). On the other hand, such details might be vital to the identification of particular maps, and thus become the true test of a sound bibliography (Jong, 1948:275, 279).

By common consent, it is the size of the actual map surface that is important (Cutter, 1904; Crone, 1936; Jong, 1943, ISBD (CM), 1978), but from the early years of this century there have been disagreements over just what has to be measured. "Within the borders" was the axiom recommended by Cutter (1904:141), and supported by both Letts (1902:74) and Cole (1901). Forty years later this standard was confirmed both by the American Library Association (1941), and by Boggs and Lewis (1945). The recent AACR 2 instruction to "measure between the neat lines", i.e. the innermost lines of the borders of the map (AACR 2:rule 3.5D1) has been criticised by Karrow as constituting a departure from many years of established cataloguing practice (1983:28).

Measuring from "the outer edge", i.e. including the borders, has been the practice of the Library of Congress (LC, 1949:67), a method also endorsed by ALA, 1949 and by AACR 1967. Antiquarian maps were treated in this way by Brown (1941:58) and Karrow (1977:3.53). De Jong's instruction to measure the outside line,

excluding the "bladrand of omlijsting" (Jong, 1948:274) is ambiguous, as it is uncertain that he meant by this the neat line or perhaps the plate mark. Brown recommends this method if there is no neat or border line (1941:58).

In the early years of this century, Letts reported that there was no precedent in the measuring of maps, and offered his solution of measuring from left to right, then top to bottom. However, the generally accepted method is to measure from top to bottom, then left to right. It is disturbing to find, therefore, that the entries in Tooley's Collectors' guide (1969) give these measurements in reverse. Similarly, the British Standards Institution recommends measuring the width first, then the height (BSI 5195-75).

Other problems relating to measurements occur when the maps contain insets, or when a portion of the map extends beyond the border. It then becomes necessary to measure the overall surface of the map.

4.4.3 Notes

The previous points (4.4.2.1 - 4.4.2.7) are considered essential for the description of any map, but in most instances supplementary information is required to give the correct and comprehensive impression of the map (Boggs & Lewis, 1945:35; Brown, 1941:70; Jong, 1943:123). Such notes have been called the "cataloguers' cadenza" (Horner, 1973:212), as it is here that the cataloguer can relax and give as much detail or explanation as he considers necessary. This will depend on the importance of the map itself, as well as the type of library for which the map is being catalogued. Historical map collections will naturally require the most detailed cataloguing.

Some additional guidelines have been suggested by Boggs and

Lewis (1946:35-39), namely the insertion of notes relating the map to other works (e.g. series notes, analytical notes, "accompanying" notes, or "copy of" notes), notes concerning the content (e.g. characteristics, area, data, kind of reproduction, handwritten additions), notes giving "carto-bibliographical" information, and notes concerning material on the map sheet, but not part of the map proper (e.g. insets, diagrams, tables, indexes, illustrations, etc).

4.4.4 Insets

Although map insets should be mentioned in the catalogue description of the main map, the inset could be as important as the main map itself in many instances (Merrett, 1978:148). Karrow recommends that in such cases it should be catalogued in full (1977:5.1), so that the description appears conveniently at the beginning of the entry, rather than in a note at the end.

4.4.5 Atlases

Atlases are the most unorthodox type of publication known to the book world, being compilations of maps, sometimes by different cartographers and different publishers (Brown, 1941:49). They have, on the other hand, always been in the fortunate position of looking like books, and should fit in to a certain extent with book cataloguing procedures (Merrett, 1976:1). They have consequently generally been catalogued as books (Jong, 1943:123). Nevertheless, because they share the characteristics of both maps and books (Boggs & Lewis, 1945:47-48), they continue to pose bibliographical problems (Brown, 1941:49).

The early atlases began life as map sheets bound into book

form, and reflect what the map publisher had in stock at the time. There is, therefore, no such thing as a "perfect" copy. The publisher often planned and announced his selection of maps to be incorporated into an atlas, but at the last minute sometimes had to change the content when a particular map was not available. The "Binder's contents" is, therefore, not always a true reflection of the actual maps bound together. It is therefore necessary to collate and catalogue the copy in one's hand (Brown, 1941:49). These old atlases, like old maps, are generally catalogued by author, with analytical entries for the individual map (Merrett, 1976:15; Jong, 1948:280).

4.5 CONCLUSION

In most map collections browsing through historical maps is not allowed. Hence solid bibliographic control through cataloguing and classification is essential. A historical map is, however, an exacting type of research material, demanding careful study and interpretation by scholars. It is important, therefore, for the map cataloguer to aid this research by providing as accurate and exact a description as possible. This topic will be examined in greater depth in the next chapter.

CHAPTER 5

PROBLEMS OF DESCRIPTIVE CATALOGUING OF OLD MAPS

In the previous chapter attention was given to the special problems of cataloguing maps, and the way in which the latest cataloguing rules have attempted to deal with these. Canadian librarian, Layng, claims that "descriptive cataloguing of maps is the most interesting and provocative exercise offered in the whole range of library science" (Layng, 1968: quoted by Collins, 1977:17). But the question has been posed whether or not the principles of descriptive bibliography as laid down in these rules can be applied successfully to early printed maps. These maps present special problems, a state of affairs discussed by Verner, who has reminded cataloguers that maps as illustrative objects cannot be converted easily to verbal descriptions. He came to the conclusion that although the conventional library cataloguing procedures might perhaps be suitable for modern maps, they are "in no way adequate for the proper identification of old maps" (Verner, 1976:32).

5.1 DEFINITION

The earliest printed map appeared soon after the invention of printing, and the first "modern" contemporary printed map appeared in the German edition of Ptolemy's Cosmographia (Ulm, 1482). Unfortunately no standard term is used by researchers for these early printed maps, as the designation used usually reflects the interests of the inquirer. To collectors they are objects of value, owing to their rarity and their artistic qualities; hence they are often referred to as "antique" or "antiquarian" maps. They have also been called "decorative" or "picturesque" maps, because of the amount of decoration or pictorial ornamentation appearing in them. To the geographer

interested in these early attempts at cartography, they are "early" maps. The ordinary man in the street tends to refer to them as "old" or "historical" maps, while the librarian commonly describes them as "special" maps, as they need specialised care and attention.

There is also no common agreement as to the cut-off date distinguishing an "old" map from a "modern" map. By common consensus, however, the end of the era of the private cartographer and the period when land-surveying became the work of government agencies on a large scale can be considered as the cut-off point between the "old" map and the "modern" cartographic era (Nichols, 1976:184). The Bodleian Library has defined its special maps as being those published before 1850 (ibid.:215). In their turn, writers such as Brown (1941:15) have confined their study of "old" maps to those published before 1800, as has Tooley with his maps for collectors (1969:v). The British Standards Institution (BSI) has demarcated the period for old maps as that preceding 1825 (BSI, 1975:BS 5195-75), whereas Bukovska (1963:13) considers maps before 1870 to demand special treatment. More recently, Karrow has considered all maps published before 1900 as constituting antiquarian cartographic material (1977:introduction).

Irrespective of any confusion that may exist about terminology and parameters, there can be no doubt about the value of these "old" maps, as they are invariably rare, sometimes unique, often beautiful examples of the artistic skills of their creators, and always of interest. Because of these attributes it is even more important for these maps to be handled with care and protected from wear and tear. The librarian or cataloguer therefore has a vital part to play in preserving old maps, by

providing good, accurate and detailed cataloguing (Nichols, 1976:232-3).

5.2 FACSIMILE REPRODUCTIONS

The importance of facsimile reproductions of rare and early maps has been touched upon in 2.2.1; namely, that these copies fill the gaps in map collections caused by the scarcity of the originals. Rare maps, therefore, are no longer confined to special collections, nor to scholars only, but are more easily available to the general public. Consequently, the complication of cataloguing old maps has come into the range of the ordinary cataloguer. It is, therefore, necessary for all cataloguers to be aware of the complexities and problems of handling such maps (Merrett, 1976:15; Nichols, 1976:229).

5.3 BIBLIOGRAPHIC DESCRIPTION

The amount of detail given in a map cataloguing description depends on the purpose for which the description is prepared. An entry for a library catalogue will require less detail than will be needed for the detailed study of a single map (Verner, 1976:36). At the same time old and rare maps need to be described in more detail than current maps (Boggs & Lewis, 1945:50; Nichols, 1976:233). The difficulty to be raised at this stage is the various demands made on the skills of the cataloguer and the carto-bibliographer when dealing with these early maps.

5.3.1 Detailed description

The detailed analysis of individual maps forms the core of the 20th-century phenomenon known as "carto-bibliography": i.e., the systematic study of early printed maps as objects for the diffusion of geographical knowledge (Verner, 1965:100). For origin of term cf. 5.4). Geographers refer to this scrutiny as "the study of cartography on a scientific basis" (Sprenst, 1924:xvi), while librarians look upon it as "map description and

of a decorative map exhibited during the Van Riebeeck Festival at the Johannesburg Public Library in 1952 (for illustration see Appendix 1:10):

CAPE OF GOOD HOPE. 1795. DE LA ROCHETTE.

"The Dutch colony of the Cape of Good Hope, by L.S. de Rochette, 1795, engraved by W. Faden".

At the foot: "London: Published by W. Faden, successor to the late T. Jefferys geogr. to the King, Charing Cross; 2d, edition corrected Decr. 1st 1795."

50 x 53 cm. Coloured.

The cartouche is made up of a cliff, bearing the inscription, as background...[5 lines of description]. On the right is a note [about Abbé de la Caille]. On the left is a note: "Longitude east of London", and immediately above this is the scale.

This is on the whole a detailed, accurate map...
This map is from William Faden's General atlas, 1795.
[4 lines of notes].

[Item 152]

Yet another library description is that used for the historical maps in the Gubbins Africana Collection at the University of the Witwatersrand which have been catalogued fairly recently [1980] as follows:

1795

LA ROCHETTE, Louis Stanislaus d'Arcy de (1731-1802)

The Dutch Colony of the Cape of Good Hope by L.S. de la Rochette. M.DCC.XCV. Engraved by W. Faden. 2d. Edition corrected Decr. 1st.1795. London, Published by W.Faden, Successor to the late T.Jefferys, Geogr. to the King, Charing Cross, 1795.

map. 49x33 cm.

Title from cartouche, imprint at foot of map.

Engraved by W. Faden.

Scales vary.

Prime meridian: in lower left-hand corner below scale:
Longitude East of London. Along right-hand side of map:
Degree of the Meridian Measured in the Year 1752 by l'Abbé de la Caille, and found to be Equal to 57.037 Parisian Toises.
Navigation symbols are marked in the coastal waters of the bays.

This map is the 2nd edition of the author's 1782 map and is from Faden's General atlas, 1795. [5 lines of description]. Cartouche, upper right-hand corner is in the form of a large rock with small trees on the top and sides...[4 lines]. On the left-hand side of the map are two lettered tables.

A red line depicts the route of the British army from its landing at Simon's Bay to Cape Town.

Yet another example is given below (for illustration see Appendix 1:4):

[1732] NIEUHOF, Johan (1630-ca.1672)

A Mapp of the Cape of Good Hope with its true situation. (London, Printed by assignment from Messrs. Churchill, 1732). col. map. 28 x 36cm.

Title from cartouche.

Scale, lower right-hand corner, is given in Dutch miles, English and French leagues. It is drawn on what appears to be a low stone wall, behind which are sitting a richly dressed European man, and an African child in western clothes holding a mallet and bundle of rope.

Border round map shows degrees of latitude and longitude. The degrees of longitude appear to relate roughly to the Ferro meridian.

Rhumb lines extend over the sea area, and a compass rose indicates north to the right and east to the top of the map. Navigation symbols are marked in the coastal waters north of Table Bay.

The Dutch copy of this map, the best-known early map of the Cape first appeared in: Gedenkweerdige Brasiliaense zee- en lantreize. Amsterdam, Weduwe van Meurs, 1682, by Johan Nieuhof. John Churchill in his: Collections of voyages (see imprint in heading of this map) included the above map in v.2. The captions are in English...

Cartouche, taken together with scale decoration appears to be highly symbolic... [12 lines of description]. J.N., appears on the cartouche of the original map is faintly visible, having been partially deleted.

The hinterland is decorated with a wide variety of animals...the route of one of the early exploring expeditions is shown, as well as the canal...

p.141 with v.2 faintly visible before it appears in the top left-hand corner.

There are seven sailing-ships in the sea and False Bay has been named Table Bay.

q.v. JPL cat.

Such a lengthy description would be too cumbersome for a card catalogue, but would be suitable for a sheet catalogue, which can be expanded indefinitely. This method is recommended by Brown, as a means by which bits of additional information can be noted down immediately and filed with the map (1941:72-73).

5.4 CARTO-BIBLIOGRAPHY

The term "carto-bibliography" was coined by Sir Herbert George Fordham in 1900 to identify the procedures he employed in compiling a bibliography of maps of Hertfordshire. Without any

precedents to guide him, he had had to devise his own forms and methods and arrangements. After putting these ideas into practice by compiling more bibliographies of English county maps, he was sufficiently confident in 1914 to describe his objectives as follows: carto-bibliographies, he stated,

should be capable of enabling the enquirer from the inspection of its text, to identify with absolute certainty an individual map, naming its author, its designer, and its engraver, fixing its date, making reference to the atlas, collection of maps, or topographical work in which it originally belonged, and generally establishing its historical position and cartographical value

(Fordham 1914; quoted in Hyde 1972b:288).

5.4.1 Transcription of Title

The carto-bibliographer would thus make an accurate and thorough bibliographical description of the map with the title a "quasi-facsimile transcription" of the original (Verner, 1976:35), as shown in the example below:

Plate 33

22. CARLINGFORD LOUGH

To /Mr Reeve Williams / Teacher of ye Mathematicks /
in London. / This Chart is Dedicated, / and Presented, /
by Capt.Greenvile Collins. / Hydrographer to ye KING./

(Verner: Map collectors' series, no.58, 1976)

A different style is that used by Wheat and Brun in their Bibliography of maps of America (1969), as exemplified in the description of item number 852:

[1797]

Description: In oval at left of center: A /
CORRECT CHART / OF THE SOUTHERN COASTS OF /
AFRICA, / FROM THE EQUATOR / TO THE CAPE OF
GOOD HOPE. In oval under title: ENGRAVED FOR
MALHAMS NAVAL GAZETR. Beneath oval: ROLLINSON
SCULPT. NEW YORK. Below bottom neat line at
center: PUBLISHED BY SPOTSWOOD AND NANCREDE
BOSTON. The ocean south of Madagascar is
named SOUTHERN PACIFIC OCEAN. Just below the
Equator near the west coast appears ANZICO
TO THE MICOKO. No soundings are given.

From the above examples it will be seen that the use of capitals and the symbol "/" have been used to convey accurately the look and "feel" of the title-page. Such amount of detail, however, is clearly unnecessary for the needs of a cataloguing department in a general library, neither should it be demanded in the average library containing maps. The use of the symbol "/" will render these entries unacceptable for the modern international exchange of information through national or international networks. In the new AACR 2 code the symbol "/" has been used to signify the Statement of responsibility, following immediately on the Title proper, so that it cannot be accepted as ^{signifying} a line-ending.

5.4.2 Printing changes

Another function of a carto-bibliography is that of detecting and elucidating the changes which have been made in the plates from which maps were printed (Nichols, 1976:253; Verner, 1976:32). This involves examining the paper used, the variations in printing, and the provenance of the map (*ibid.*, 1976:31,35). Clear explanations of the problems involved in such detailed analysis are given by Brown (1941:83-89) and Verner (1965:100-105).

Fordham's pioneer bibliography of Hertfordshire maps not only gave detailed bibliographical descriptions of each map, but in addition supplied information on the map makers, on their plates and on place names, thereby setting a standard for future carto-bibliographies of the other counties of England (Hyde, 1972b:288).

These stringent standards were followed by subsequent bibliographers, such as Cole (1898 and 1901), Chubb (1911, 1917, et seq.), Whitaker (1933), Price (1948/9), Cowling (1959), Wheat and Brun (1969), and more recently, by Verner (1976) and Hyde

(1972b). However, Fordham's prescriptions were not followed slavishly by these bibliographers: even Fordham himself modified his subsequent bibliography on Cambridgeshire maps (1908) by not describing every state of each map listed.

Both Chubb and Whitaker subsequently recommended a further improvement: that of noting down only the preceding and subsequent state of each map (Whitaker 1933). Such a code of bibliographic description (known as the Fordham-Chubb-Whitaker method) was followed by many bibliographers, although Hyde points out that this method was incapable of demonstrating at a glance the relationships between the various editions of a given map (Hyde, 1972b:288). However, in 1948/9 Price returned to Fordham's Cambridgeshire plan by listing only all subsequent states. Yet another style was used by Harvey and Thorpe in 1959, in which they recorded maps in chronological order of first appearance, followed by a sequence of all impressions and lithographic transfers, thus recording the entire and complex history of a single engraved plate or lithographic stone. A further development was shown in the "Map collectors' series" monograph by Hodson in 1969, in which he not only pin-pointed from which atlas each map had been extracted, but also included some atlases not previously recorded. In addition, he gave the locations of these atlases. He did not, however, describe the maps in full, and deviated from the usual method of measurement by quoting first the horizontal and then the vertical dimensions (Hodson, 1969:7).

Verner's map of Carlingford Lough (Map collectors' series, no.58: item 22) lists the physical details immediately after the descriptive paragraph:

e.g. Engraver J.Harris delin: et Sculp.
 Plate NS 43.5cm. EW 32.8cm
 Map NS 42.5cm EW 32.4cm
 English mils 3 = 7.5cm.

Note The dedication is on a monument in the bottom left corner. The scale is above the dedication. One panel 3.2cm. across the top and one 4.5cm across the bottom contain profiles of the coast. State 1 [1693] No dedication or engraver's name. State 2 1693 Dedication and engraver's name added.

In his Collectors' guide (1969) Tooley concentrates particularly on this aspect of description, because of its value and importance to collectors. He lists other editions, issues, variants and states, whenever there is a change, in the following manner:

[1701]

MOLL, Herman

Congo, Angola, Cafres, Monoemugi, Monomotapa, Zanguebar & Madagascar. H.Moll fecit. 19 x 17cm.

Page number 102, headed Africa. No text beneath.

[1709]

[Page number] 164, [headed] Africa. Text beneath.

[1709]

Without page number, signature or surrounding text.

[1713]

Without page number, signature or surrounding text.

[1722] [1723] [1723] [1727].

5.5 CONCLUSIONS

From the above examples it would appear that carto-bibliography may be viewed as the ultimate refinement of descriptive cataloguing, and the question now arises as to whether these high standards, as set out by Verner (1976), are practicable or desirable in conventional library cataloguing. Recently Ralph Hyde considered the whole question of carto-bibliographies, and posed the question as to whether or not this amount of detailed investigation was really necessary (Hyde

1972b:290). He challenged the basic objectives as formulated by Fordham in 1914:

enabling ^{the} inquirer to identify with absolute certainty an individual map, ...making reference to the atlas.. or topographical work in which it originally belonged, and generally establishing its historical position and cartographical value,

querying whether they could best be achieved by the severely analytical approach that the Harvey-Hodson method (1959 and 1960) seemed to be leading carto-bibliographers. He proposed that a sense of proportion should be kept, as "carto-bibliography is a means to an end, and not the end itself", pointing out that the inquirer wants information, and that a carto-bibliography should thus lead the librarian quickly to information that would satisfy him (ibid.).

It is suggested, therefore, that a surfeit of analytical detail is inappropriate for the daily housekeeping routines of map cataloguing in a conventional library. The role of the cataloguer and bibliographer should be to record these maps accurately so that the appropriate scholar, student or interested person is guided to them (Nichols, 1976:230). It should be sufficient, therefore, to refer in the notes to the various carto-bibliographical sources available, which in turn enable the inquirer to find more precise details. In the next section following (Chapter 6), reference will be made to these carto-bibliographical sources, with some comments on their strengths and weaknesses.

CHAPTER 6

SOURCES FOR COMPILING A REGIONAL BIBLIOGRAPHY OF MAPS

6.1 INTRODUCTION

In the previous chapter the method of describing maps and compiling carto-bibliographies was investigated in detail. As we have seen in 3:3.2, maps have in the past been generally neglected by librarians and bibliographers. Atlases, being sheet maps bound into books, have fared somewhat better, and are normally recorded in library catalogues and reference sources. Separate (i.e. sheet) maps, however, are seldom reviewed in the newspapers and popular magazines (Wright & Platt, 1947:85), neither are they recorded satisfactorily for research purposes in most of the general bibliographical works, national bibliographies, or in standard library catalogues. To compile a list of maps of a specific region, therefore, involves much background research over a wide range of library material. Not only does one have to investigate what maps have been published, but also where the published maps are to be found - thus necessitating the investigation of collections of maps in both libraries and archives.

Maps originally published in atlases are often discovered to have been torn out and sold separately by map dealers and antiquarian booksellers, subsequently being interfiled with the sheet maps - and so are not readily recognisable today (Smith, 1973:12). Although some scholars query the assumption that atlases without text can actually be considered "books", this fine distinction has been ignored in the present investigation. Hence maps, whether originally published as separate sheets or bound into books, have been treated as a single category for the purposes of this study.

6.2 HISTORICAL BACKGROUND TO THE REGION

Before investigating a specific region it is imperative to have some knowledge of the geographical and historical background of the area.

Although references to the early exploration of Africa have been mentioned in 1.3.1 and 2.3.5, useful surveys of the mapping of Africa have been supplied by amongst others, Lane-Poole (1950), Smith (1960), Tooley (1969), Holehouse (1973) and Ergenzinger (1966). Although the Greek historian Herodotus (ca.484-424 B.C.) wrote of a Phoenician circumnavigation of Africa in about 600 B.C., this assumption was discounted by Ptolemy in the 2nd century A.D. (Holehouse, 1973:194), and it was only after the rounding of the Cape by Diaz and Da Gama in 1488 and 1497 that the southern tip of Africa was depicted on maps for the first time. From the 15th century, therefore, the African continent is seen on maps of the world, but more details are shown on the coastal charts of the early seamen (De Kock, 1957). Regional maps were products of settlers, merchants and missionaries during the 17th and early 18th centuries, followed by accurate maps of the interior by travellers and exploring scientists.

As accurate mapping is "inextricably linked with surveying" (Liebenberg, 1979:2), historic accounts of surveying are useful sources of information about mapping in South Africa. The major work on Cape official surveys was written by De Smidt (1895), while a brief survey was presented by Liebenberg to the International Map Seminar in Pretoria (Liebenberg, 1979). Further historical articles have appeared in the proceedings of the various conferences of South African surveyors, i.e. the 6th and 7th conference held in Cape Town (CONSAS '78) and Stellenbosch (Symposium on History of Surveying and Land Tenure in South

Africa, 1983). The foundation of modern mapping was laid by Abbe de la Caille in 1751-1753, when he accurately measured the arc of the meridian from a base line at Malmesbury. Official mapping began with the appointment of the first Surveyor-General of the Cape Colony in 1828. For many years the crude farm diagrams remained the sole maps available. Topographic mapping of the region only became possible once the geodetic surveys of Sir Thomas Maclear (1848), Captain Bailey (1859 to 1862), and Colonel Morris (1883 to 1892) had produced an accurate framework on which to base all surveys (Liebenberg, 1979:35-36; Watson, 1970:44).

6.3 GENERAL GUIDES

A most notable bibliography (or list of books compiled according to some principle of usefulness) is the multi-volumed work on bibliographies by Besterman, entitled A world bibliography of bibliographies (4th ed, 1965-7). This has now been expanded into separate regional or subject volumes, with the African volume, entitled A world bibliography of African bibliographies, being revised by J.D. Pearson (Besterman, 1975).

A specific bibliographic survey of sources for maps of Africa for the years 1500 to 1800 is that submitted by Ogunsheye to the Nigerian geographical journal (1964:39). A similar guide to sources of information on the mapping of Africa was drawn up by Ferro in 1982, but his planned articles on the mapping of particular regions or countries have yet to appear in print (1987). Both these bibliographic surveys, as well as the standard guides to reference books - British (Walford, 1982), American (Sheehy, 1976), and South African (Musiker, 1979) - reveal the scattered state of map references. Common to all are

the classic South African bibliography of Mendelssohn (1910), Tooley's Collectors' guide (1969) and the Research catalogue of the American Geographical Society (1975). This strange mixture of a bibliography, a guide to maps, and the card catalogue of a library reveal the paucity of useful sources for early regional cartography. It also underlines the wide range of library material containing geographical information.

A practical starting point for any geographical research is the out-of-date but nevertheless still valuable work by Wright & Platt (2nd ed, 1947). The authors give a general survey of carto-bibliographical aids, or, in their terms, "aids to the finding of maps and atlases" (ibid.: 83). These aids include general information on map collections, carto-bibliographies, map catalogues, index maps to specific map series, and generalised maps. Most of these geographical aids to research devote attention to maps (ibid.:85-86).

6.3.1 Bibliographies

In an effort to discover what maps have been published, it is necessary to turn to bibliographies of Africana, defined as "the study of books on Africa, south of the Sahara". Because of the strong Dutch connections with the settlement of South Africa, Dutch bibliographies can be useful sources of maps.

1876 Veth and Kan: Bibliographie van Nederlandsche boeken, brochures, kaarten, enz. voor Afrika. Utrecht: Beijers, 1876.

Although this is a list of books, there is a section on maps which lays special emphasis on the marine charts and maps to be found in the Rijksarchief, Amsterdam. Reference is also made to maps of journeys into the interior of South Africa. An interesting feature of each descriptive entry is the inclusion of

information on geographic co-ordinates, as indicated below:

Paskaart van 't Zydelykste gedeelte van Africa, vertoonende de Saldanha Bay, de Goede Hoop en de Bay Falso enz. Amst. J. van Keulen, z.j. Met vignet. 32 50' - 35 Z.Br.

Another bibliography of books on Africa - that of Paulitschke: Die Afrika-Literatur in der Zeit 1550 bis 1750 (1882) - contains a useful list of "South African" maps (items 930 to 1007).

1897 Hollway: "Bibliography of books...relating to South Africa, with special reference to geography". Transactions of the South African Philosophical Society, 1897.

This invaluable source of information includes entries for manuscript maps and magazine articles from the time of Vasco da Gama up to 1888, the year of the founding of the British South Africa Company. More than 2 000 entries are listed chronologically, but only in brief form, lacking full bibliographical details for each entry.

6.3.2 Library Catalogues

Most countries today have published national bibliographies, issued either by national bibliographic centres or the national library. The current output of South African maps is recorded in the South African national bibliography (SANB) from 1959, the year of first publication. Although neither Great Britain nor the United States has published a national bibliography covering the period exclusively "pre-1900", the catalogues of their national libraries (the British Museum and the Library of Congress) reflect all the books published and deposited by the publishers. Together their large catalogues, therefore, constitute a comprehensive bibliography of books published in the English-speaking world.

The British Museum Catalogue of books (1885, 1954) lists the books and atlases alphabetically, but records the single sheet maps in a separate catalogue (cf.6.4.2). In the same way the Library of Congress Catalog of books (1958) / National union catalog (1964) lists atlases alphabetically, and for a short period (i.e. 1954 to 1965) sheet maps were also included (under name of the cartographer).

6.4 SOURCES OF MAPS

Maps are produced in a variety of forms - as series, single sheets, atlases, and "as adjuncts to monographs and journals" (Ferro, 1982:13). Because of this variety, the task of compiling a list of maps involves searching a wide range of printed material: books, periodicals, catalogues, lists and cartobibliographies. Maps bound between covers and published as atlases are the easiest to trace.

6.4.1 Atlases

Catalogues of atlases are invaluable sources of information about maps, although the description of each atlas might vary in style. The pioneering effort of Philip Lee Phillips of the Library of Congress (LC) stemmed from his attempts to identify loose maps found in the LC Hall of Maps and Charts in 1897 (cf.3.2.1).

1909-1920 Phillips: A list of geographical atlases in the Library of Congress. Washington D.C. 4v.

1954-1968 --- continued by LeGear: v. 5 - 8.

Each atlas in the collection is fully described bibliographically, but the contents note tends to reflect only the maps dealing with North and South America. It is not

possible, therefore, to use the early volumes edited by Phillips to compile a list of all African or South African maps. This deficiency has been redressed in the later volumes edited by Clara LeGear, in which detailed contents lists are given for each volume. It is in Volume 6 that she lists the contents of Kamal's Monumenta - an important aspect as only 100 sets were published and distributed worldwide. A copy of this work has been deposited in the Cape Archives Depot in Cape Town.

Under broad subject headings, the atlases are listed chronologically, but supplementary indexes provide access to the names of the authors/cartographers (with abbreviated titles), to subjects, places, and even publishers.

1961 Koeman: Collections of maps and atlases in the Netherlands.
Leiden: Brill, 1961 (Imago mundi; supplement III).

In this work Koeman describes the atlas holdings and map resources of the Netherlands in the 16th and 17th centuries, giving not only the history but also the contemporary state of the various map collections in the Netherlands. He presents, in addition, a schematic outline of the bibliography of atlases published in the Netherlands before 1800. It is, therefore, a valuable source of information about early Dutch atlases, which in turn contain maps of Africa and Southern Africa.

1971 National Maritime Museum, Greenwich: Catalogue of the library. H.M.S.O., 1971. v.3: Atlases and cartography.

The Museum was only established in 1934, and its map collection is based on the private collections of A.G.H. Macpherson and Sir James Caird. An unusual feature of this catalogue is the alphabetical listing of the atlases arranged by national groups or cartographic "schools", beginning with the Ptolemy atlases through to the German and American atlases of the late 19th century - thereby giving an informative survey of the

growth of cartographic knowledge from the Renaissance to modern times. The bibliographic description of each atlas is followed by short notes on the atlas or cartographer with detailed listing of the contents, recording each map by plate number, with the short title in modern form. Variant states of some maps have been noted, but bibliographical differences have not been listed. The typographical layout is particularly pleasing and of an exceptionally high standard.

Additional helpful information supplied is a list of the contents of all issues of Imago mundi issued up to v.21, 1967. Part Two of v.3 contains a geographical index to the all maps listed in the atlases.

The National Maritime Museum catalogue lays itself open to criticism insofar as the atlases have not been listed chronologically, thus losing the advantages of Phillips' List. Despite this shortcoming, the catalogue is an invaluable source for collecting references to maps of Africa and Southern Africa, as well as checking the dates of publication.

1967-72 Koeman: Atlantes Neerlandici. 1967-1972. 5v.
Amsterdam: Theatrum Orbis Terrarum.

This is yet another valuable source of information about Dutch maps, being a bibliography of all terrestrial, maritime and celestial atlases and pilot books, published in the Netherlands up to 1800. The terrestrial atlases are listed by cartographer or publisher, and v. 4 contains the maritime atlases. The indexes to title, to year of first publication, to cartographers and engravers, and to geographical names are found in the fifth volume. In addition the most important index is that to the map content of each of the atlases listed - something which is missing from the atlases listed by Phillips

(1912-1920). Unfortunately, despite the use of the computer to generate this index, it is not complete, and items found listed in the contents of a specific atlas have not been traced through the index.

1979 + The A.E. Nordenskiöld collection in the Helsinki University Library: annotated catalogue of maps made up to 1800; comp. by Ann-Mari Mickwitz and Leina Miekkaavaara. Helsinki: University Press; Stockholm: Almqvist & Wiksell International; Atlantic Highlands, N.J.: Humanities Press, 1979-

Although the private collection of Adolf Nordenskiöld was originally catalogued at the turn of the century, a recataloguing project was begun in 1968. Three volumes have been published up to 1982, and the planned fourth volume is to contain the index to places. The catalogue consists of detailed bibliographical descriptions of each of the 500 atlases, arranged in alphabetical order, followed by descriptions of maps contained in 310 books, and finally descriptions of nearly 200 loose maps - together making a grand total of nearly 24 000 pre-19th-century maps. Each map is recorded under the cartographer and the date, followed by an exact transcription of the title, the position of the title either inside the cartouche or outside, and further details as to type, colour, text, size (in millimetres) and other details - in strict accordance with the new cataloguing style laid down in AACR 2. This exact scientific description is at first glance somewhat alarming to the amateur, and one criticism is that although [c:] for "title inside cartouche" is self-evident, the use of [t:] for "title outside cartouche" is not. This means that it is necessary to confirm frequently the meaning of the various components of the description, thus making any checking task a long one.

Despite these difficulties this catalogue is an invaluable source for dating various editions of the atlases, together with

the details of the maps listed. 223 entries contain maps of Africa or Southern African areas, with only 78 maps dealing with the Cape. The example given below refers to a map appearing in item 524. Peter Kolb's Description du Cap de Bonne-Esperance, 1741:

Vol. II

- [1] [C:] CARTE DE LA COTE ORIENTALE D'AFRIQUE, depuis MOSAMBIQUE jusques près du CAP DE BONNE-ESPERANCE. CAARTE VAN DE OOST-KUST VAN AFRICA, van MOSAMBIQUE tot digt aan KAAP DE GOEDE HOOP. - (Map). Tom. II. p.1. Before A 298 x 381 mm.

6.4.2 Library Catalogues of Maps

Catalogues of large libraries and catalogues of map collections are a major source of information about printed maps. Fortunately for researchers, two of the main national libraries of the world (namely the British Museum and the Library of Congress) have catalogued and published their map holdings.

The British Museum began cataloguing its manuscript maps deposited in the Department of Manuscripts (together with those attached to the library of King George III) as early as 1844, and published three volumes by 1861. Although manuscript maps are excluded from this study, it is stimulating to find that the maps are listed primarily by place or area (e.g. Africa, Cape of Good Hope). Volume 3 on Africa was reprinted in 1962.

The first stage of cataloguing the printed maps was begun under W. Hughes in 1843. New accessions were described in varying degrees of fullness and of form, hence it soon became necessary to start a major revision project in 1885 under R.K. Douglas. Amongst other things, Douglas modernised and standardised the forms of geographical names used in the headings, which were composed from the words used in the title. This may be considered a misleading practice, as map titles do

not always demarcate precisely the area being described. Maps of Africa, therefore, are found listed under "Africa", with subdivisions such as "eastern coast/ western / southern", etc. The maps are entered briefly under title, place of publication only, and date. Added entries are given for the surveyors, compilers, editors and publishers of maps.

Apart from the catalogues of the major national libraries of the world, the published catalogues of other libraries should also be investigated. Libraries with map collections, as well as map libraries, can be identified in the IFLA World directory of map libraries (1976), and in its 2nd edition, published in 1986.

The older of the two national libraries in South Africa (the South African Library, Cape Town) has produced various catalogues of its special book collections, examined below:

1821 Catalogue of the Dessinian Collection in the Public Library of Cape Town; compiled by von Manger and Kaufmann.

This catalogue records the books collected by Joachim von Dessin up to 1761 (the year of his death), which in 1820 formed the basic stock of the then newly established South African Public Library in Cape Town. The arrangement is by size under broad subject headings, with books in Latin, Dutch, and German predominating. Unfortunately the atlases belonging to the collection (as shown in the handwritten catalogues of 1782 and 1793, preserved at the N.G.Kerkargief, Cape Town), were not included in the printed catalogue. Subsequently, some of the atlases were found to have been absorbed into the bookstock of the South African Library.

- 1888 Hahn: Index to the Grey Collection, Cape Town
in seven sequences - part VII South Africa

Only six references to cartographic items have been found, e.g. single maps by Hall and Arrowsmith and a folder of manuscript maps of the 17th century.

As mentioned previously (cf.4.1), few South African libraries have catalogued their map holdings to date, while only two of them have published their catalogues.

- 1958 Rhodes University, Cory Library: Catalogue of the map collection. Grahamstown: Rhodes University

Arranged by area according to Dewey, both printed and manuscript maps are listed. A re-cataloguing project took place at the Cory Library during 1981.* As a result the shelfmark used in the catalogue is no longer valid.

- 1984 Stubbings, E. Catalogue of maps published before 1860...
Stellenbosch: University Library

These maps are part of the Hugh Solomon collection of maps which now form part of the Africana collection.

6.4.3 Lists and Bibliographies

- 1910 Mendelssohn: South African bibliography. London: Kegan Paul.

The essential reference work to be consulted in this period is the South African bibliography by Sidney Mendelssohn (1910), which contains an annotated list of about 7 000 books to be found in the British Museum, Bibliothèque Nationale, Library of Congress, K. Biblioteek in the Hague; also the South African Public Library, and Fairbridge Collection in Cape Town, and the Port Elizabeth Public Library (SABIB, 1979:xiii). The most important section of the work, as far as maps are concerned, is the "Cartography" list in v.2, which lists all the atlases, maps

* Personal communication from S.Folds, 1981.

edited by the South African Library, Cape Town and published in 1979. Because of the spate of South African publishing after 1925, the editors were forced to confine the revision both geographically and in content (SABIB, 1979:xv). The final total of 50 000 items is confined to books only, arranged alphabetically, and without a subject index.

1983 Norwich: Maps of Africa: an illustrated and annotated carto-bibliography. Johannesburg: Donker.

This large volume describes the maps personally owned by O. Norwich, and in this way is limited to the contents of his collection. Within this framework, however, appears for the first time detailed AACR2 cataloguing descriptions (by a trained librarian) of each map, accompanied by a photographic reproduction of the map handled, together with voluminous notes compiled by Norwich, an enthusiastic collector of maps over the past 30 years. In chronological order he describes maps of Africa, parts of Africa, sea charts (which are always difficult to allocate to a specific geographic area), followed by detailed maps of smaller areas of Southern Africa such as the Cape, Natal and Transvaal. A particularly valuable contribution are his notes concerning the probable original published source of the map. This helps give a more accurate approximation of date. Of the 345 maps (covering the years 1486 to 1892) described and reproduced, only 74 appear in Tooley's Collectors' guide (1969), 42 are recorded in the Cartwright bibliographies (1955; 1976), and 82 are listed in the Johannesburg Public Library's exhibition catalogue (1952). Many unusual maps not previously encountered are recorded and illustrated for the first time, thus making a valuable contribution to African and South African cartography. Unfortunately, the half-tone reproductions of the maps lack the

clarity of reproduction found in Shirley's work on world maps (1983).

Criticism which may be levelled at Norwich's work relate to the "wordy" description of the cartouche and pictorial decorations which, owing to the accompanying reproduction of each map, would appear to be unnecessary. The provision of an English translation of the title in the middle of the title paragraph is bibliographically unconventional, as this information is generally recorded as a note. The cardinal rule, viz. that all information supplied by the cataloguer should be enclosed in square brackets, has not been followed. Instead, round brackets appear to have been used (without a clear explanation as to their meaning), and one may justifiably query the apparent inability of the publisher to provide such square brackets.

No systematic attempt has been made to differentiate between editions. The descriptive comment on the maps themselves is of uneven quality, and many of the comments on the South African maps have been "copied" from the Cartwright bibliographies (1955; 1976).

The useful index of personal names relating to the map and its making also contains much unnecessary information. For example, one would question the importance of indexing the names of the first and second wives of cartographer Jaillot. Many of the references in the index relate to the speculative remarks made by the compiler, rather than to the actual maps under discussion, thus creating an uneven quality of factual and conjectural entries gathered together in one index. The index also reverses the normal method of using boldface to indicate the main entry (i.e. the maps themselves), with ordinary type for the notes (i.e. notes or additional information) by reversing the procedure. Inconsistency in the handling of surnames with

prefixes is a disturbing factor, with entries given as a rule under the substantive part of the surname (e.g. La Caille), to be followed later by entries under the prefix (e.g. De la Rochette). There are also insufficient cross-references, with no link between the more often used "Leo Africanus" and the chosen entry "Africanus".

6.4.3 Library Accession Lists

Although library accession lists could be useful sources of information, sheet maps are seldom recorded. The exception is those antique maps which are added to the special collections department of the library concerned. One such Africana collection is listed below:

1985 Durban Public Library. Don Library.

This is an illustrated accession list of the latest acquisitions, containing many maps and atlases. The descriptive entries are both informative and authoritative, being compiled by V. Cartmell, one of the sub-editors of the A.L.A. Cartographic materials: manual (1983).

1987 South African Government Archives Service: Map database.

This project is still in progress, with the Cape Archives Depot doing the pioneer task of putting their map holdings onto the computerised database in Pretoria (cf.4.3.1). A printout of the stocklist (arranged by size in accession order) is available for consultation at the Archives depots.

6.4.4 Exhibition Catalogues

Catalogues of exhibitions of maps can be a fruitful source of information concerning maps, not only because they record the

existence of a specific map, but also because they form a lasting record of the exhibition (Stark, 1986:288). Even the simplest of lists contributes some information of technical or bibliographical value.

The Dutch scene has been examined in depth by C. Koeman (1961:179, 182-5). An important landmark was the Eerste Nederlandsche Tentoonstelling op Scheepvaartgebeid (E.N.T.O.S.) held in Amsterdam in 1913, which in turn led to the establishment of the Nederlandsch Historisch Scheepvaartmuseum in Amsterdam. Catalogues of various exhibitions held by the Museum in subsequent years (1922, 1929, 1938) have been published, as well as illustrated booklets based on the holdings of the Museum (i.e. Platenalbum by Cannenburg 1922, 1935, 1941).

International conferences on cartography or geography tend to serve as occasions for commemorative exhibitions, such as those held in 1967 (3rd International Conference on Cartography), and 1972 (International Exhibition and Conference on Historical Maps) in Budapest. The British Museum has also held important exhibitions in 1972 and in 1978. The latter exhibition produced a catalogue, entitled: Cartographical curiosities, containing descriptions of the important maps on display. The Bayerische Staatsmuseum also published a catalogue of their international exhibition of maps, held in Munich in 1979, under the title: Die Kaart als Kunstwerk.

In South Africa catalogues of the important historical photographic exhibitions by photographer Arthur Elliott were published in 1910, 1913 and 1926. References were made to maps, but only the 1913 catalogue devoted an entire section to early maps and charts.

Two later exhibition catalogues of importance were those

connected with the Tercentenary celebrations of the arrival of Jan van Riebeeck, held in 1952.

1952 Johannesburg Public Library & Africana Museum:
Exhibition of decorative maps of Africa up to 1800...
descriptive catalogue.

This exhibition was the first of its kind to be held in connection with the maps of Africa, and the catalogue represents the first South African attempt at detailed descriptive cataloguing of antiquarian maps. It was compiled to accompany the exhibition of 158 maps on display. The descriptive entries are given in great detail, providing sufficient information to identify the maps precisely, as well as supplying valuable background information concerning the cartographer and his times. Ease of consultation is hampered by the lack of a list of contents. There are no illustrations.

1952 Boekspieël van Suid-Afrika = South Africa in print.
 Cape Town: Book Exhibition Committee of the Van Riebeeck Festival. Section One.

This is the catalogue of a exhibition of books, atlases and maps held in the South African Library, Cape Town, to commemorate the arrival of Jan van Riebeeck at the Cape in April 1652. Although only sixty four "picturesque" maps were exhibited, it is the scholarly introduction to the subject "Maps and cartography" that makes this exhibition catalogue such a valuable reference tool, even today (more than thirty years later). The maps, which include manuscript maps from the Cape Archives, are listed in chronological order, providing a brief title, a statement relating to its source, and a short comment on content.

6.4.5 Auction and Sales Catalogues

These are yet another source of valuable information, providing clues as to the movement of specific items and their

former provenance. This is especially true of catalogues published by the antiquarian booksellers. Koeman in his Collections of maps and atlases (1961) gives an exhaustive description of the history of map-collecting from the 16th to the 19th century. This includes an outline of the auction system and antiquarian bookselling during the 19th century. As an appendix he lists the important book auction sales of interest to the Netherlands from 1599 to 1952 (Koeman, 1961:294-6). He refers, in particular, to the importance of the firm of Frederick Muller for the study of the history of cartography. Many of the maps offered for sale are described in great detail, together with historical and bibliographical notes. Catalogues relating to "geographie, cartographie, voyages" were issued by Frederick Muller as early as 1855, and continued to be issued by the firm Fred. Muller and Co. until 1912 (Koeman, 1961: chapter V). A report on the early years of English map collecting has been reported by Harley and Walters (1978).

Another early sales catalogue was that compiled and published by Walckenaer in 1853. Although the sale was primarily of 2 500 books, the catalogue also lists old maps, or as Walckenaer expresses it, "cartes géographiques".

Firms such as Broekema, Israël, Francis Edwards, Charles Sawyer, Sothebys, Maggs, and others, have been publishing special map or geographical issues of their sales catalogues since the last century. The most recent catalogues are now illustrated by reproductions, sometimes in colour, of the maps being offered for sale. More recent antiquarian map dealers are Hoppen and Peter Potter in London, while Clarke, Thorold, Bakker and others have listed maps for sale in South Africa.

Advice to map collectors is now being offered by journals, such as The map collector, established by R.V.Tooley in 1977. It

gives news of auctions and maps offered for sale throughout the world, together with prices realised at recent sales.

These catalogues are useful for checking individual sheet maps or atlases, but their disadvantages derive from the tendency of some dealers to list the items by title or offer a mixed lot of maps for sale - both of which procedures make the checking of these lists a slow and laborious task. To avoid duplication it is advisable to compile one's own title index for all antiquarian maps.

To help standardise bibliographical references the British Standards Institution in 1975 issued Recommendations for bibliographical references to maps and charts... (BSI 5195-1975 and 1977).

6.4.6 Series: Government Agencies and Institutions

Series maps are usually published by official map-making agencies. Before the foundation of these agencies, however, charts and maps were issued by private cartographers.

Although inventories have been published of the official output of these agencies, e.g. early Belgian official maps (Gachard, 1848), Admiralty charts and plans (Dunsterville, 1866), and military maps compiled by the Intelligence Division (Power, 1891), few of them are available in South African libraries.

1982 Penfold: Maps and plans in the Public Record Office. H.M.S.O. v.3: Africa:262-348.

These maps were acquired by the Public Records Office in the middle and later 19th century, and include maps received from non-British sources. The majority of the South African maps recorded here appear to be manuscript plans compiled by the Royal Engineers while in South Africa from the beginning of the 19th century to the early 20th century:

2481. Cape Province. 1815.

'A Map of the European Territory of the Cape of Good Hope, compiled & sketched from Personal observations... by H. Lichtenstein.'

About 31 miles to an inch. 51cm x 34cm. Engraved by M. Thomson, 14 Bury Street, Bloomsbury. Published 31 Mar. 1815 by H. Golburn, Conduit Street.

CO 700 Cape of Good Hope 8

6.5 SECONDARY SOURCES

6.5.1 Maps in Books

Many geographical and travel sources (e.g. Engelmann, 1858; Bibliotheca geographica, 1895-1917; Hautzch & Schmidt, 1903; Hartig, 1905) are referred to by Sheehy (1976), Koeman (1961) and others; but these books are not available in any South African library at present. Because travel books are a major source of maps, sources for South African travellers have been investigated by various bibliographers, namely, Engels (1952), Schmidt (1954), and Mackenzie (1948).

6.5.1.1 Bibliographies

The first bibliographies of South African maps were those compiled by two library school students of the University of Cape Town. These bibliographies were submitted in February 1955, but only published in 1976.

1955 Cartwright, M.F.: Bibliography of maps of Africa and Southern Africa in printed books, 1550-1750
Cape Town: School of Librarianship, 1976.

Cartwright, J.F.: Bibliography of maps of Southern Africa in printed books, 1750-1857.
Cape Town: School of Librarianship, 1976.

As stated in the titles these bibliographies refer only to maps in printed books and so do not list separate sheet maps. Both bibliographies relied heavily on Mendelssohn's cartography list, the catalogue of the Royal Empire Society, and Cox's Reference guide; the cards in the catalogues and the books on

the shelves of the major research libraries in Cape Town (i.e. the South African Library, the University of Cape Town Libraries, and the Library of Parliament). The compilers found that the Library of Parliament (Mendelssohn Collection) was particularly strong in analyticals of periodical articles, but no further attempt was made at the time of compilation to investigate periodical sources beyond incorporating entries recorded in that Library's card catalogue.

Following the recommendations of Boggs and Lewis (1945:27) each individual map is entered under title, within the framework of area and chronological date of publication. The annotation gives some idea of the area covered and the type of information to be found on the map, in particular referring to names of places or farms. The scale is computed according to the "Natural Scale Indicator", supplied by Boggs and Lewis, but no indication was given of the original scale. The published source of each map (although not necessarily the atlas in which the map appeared originally) is supplied. The location of each volume within the Cape Town area is also given.

The indexes refer to the names of the cartographers, engravers, etc., as well as to the authors of the books in which the map were found - although this procedure was not carried out in such detail by J.F. Cartwright. The long descriptions and bibliographical layout do not facilitate ease of consultation in these lists. The major deficiency of these bibliographies is the omission of the maps of such major cartographers as Blaeu, Goos and De Wit. This can be attributed to the fact that their atlases of maps were at the time still "uncatalogued", thus not recorded in the card catalogues, and so not handled by the student bibliographers.

6.5.2 Maps in Periodicals

Mendelssohn's South African bibliography (1910), v.2, not only includes information about maps, but also information about articles in periodicals. It lists the contents of not only South African periodicals of the last century, but also ^{of} the most important and influential geographical journals of the period. In addition, magazine articles culled from a variety of sources and periodical indexes are listed under similar general subject headings, as those used in the cartography section. Although such lists did not yield additional information about maps, they did serve as a reminder of possible sources for further investigation. It must be remembered that Mendelssohn had already included in the main section many articles appearing in periodicals, mainly those of the Royal Geographical Society, the United services journal, and the Gentleman's magazine. The bibliography by Hollway (1897) also included many periodical references.

With these leads in mind it was possible to examine the various geographical and other journals of the last century. The Journal and Proceedings of the Royal Geographical Society (1831-78), the Geographical magazine, the Scottish geographical magazine, the Geographical journal (1893+), the National geographic (1898+), and particularly Petermann's Geographischen Mitteilungen (1855+) were examined. Articles from other geographical magazines were also found reprinted in the Acta cartographica. Copies of the Dutch geographical journal, the Nederlandsch Aardrijkskundige Genootschap tijdschrift (1876+) were unfortunately not available locally.

The mapping activities of engineers and soldiers, on the Eastern frontier during the last century can be found in the United services journal, whereas naval charts can be found in the

Naval chronicle (1799-1813), the Nautical magazine (1832+), and the Nautical magazine and naval chronicle (1871-84). An unexpectedly useful source of maps was the Gentleman's magazine, devoted normally to the social activities of gentlemen. By examining the early years from 1738 onwards, it was possible to find some maps in the 1750s (by Gibson), but after this date interest in Southern Africa waned, and by 1800 it was not considered worthwhile continuing the investigation. A recent article in Imago mundi examined the maps published in the first 50 years of the magazine's existence (Reitan, 1985).

6.6 SECONDARY SOURCES: COMPILATIONS

The proliferation of books concentrating on maps is a 20th-century phenomenon, pioneered by the work of Skelton, and dominated in the 1960s and 1970s by R.V. Tooley. Early works were those by Eckert (1921-5), followed by the early work of Tooley in 1952, and that of Skelton (1960). Tooley's work, it should be noted, contains a useful chronological list of maps of Africa.

1969 Tooley: Collectors' guide to maps of the continent of Africa. London: Carta Press.

Tooley's Collectors' guide is aimed at the collector of early printed maps of the whole continent of Africa, of Southern Africa and the Cape of Good Hope, and does not include maps of great rarity or maps in printed books. The informative introduction includes a background to the trade practices of the early map makers, as well as to the methods of production, the colour and style of maps, and finally discusses the value of maps for the collector. Biographies of 60 cartographers from Van der Aa to Wyld, covering the years 1500 to 1899, are followed by descriptions of many of their important African maps, including

lists of the various editions. Although over 400 maps are listed overall, only 105 of them are reproduced as plates. Much of the information was originally published in the Map collectors' series (see below).

The Guide is a vital starting-point for anyone interested in maps of Africa, but especially for collectors who wish to verify details of the map held in their hands. The arrangement is such that the main text finishes on p.128, and is followed by three pages of an index referring only to the cartographers discussed previously, followed by 100 plates of reproductions of some of the maps discussed. The alphabetical approach, followed in the main text, is repeated in the plates section, where the maps are given abbreviated titles. There is no chronological list of maps, nor is there any attempt to provide an index to geographical area. As most inquiries in libraries are based on area - for example, a map of South Africa in 1820 - this book does not readily lend itself to serving as a library reference tool.

Some of the entries are annotated, with references to the information found on the map (for example, the De la Rochette maps of the Cape of Good Hope 1782 and 1795), but these notes represent the exception rather than the norm. An in-depth investigation has been conducted in order to date more accurately the period of the map. Lack of local knowledge has prompted Tooley to make the following statement in the Introduction (Tooley, 1969:v): "it took a long time before the information gained and made public by explorers appeared on printed maps". He quotes as an example the fact that Cape Town is named much later on an English map than on the maps by Dutch and French cartographers. This claim is a generalisation, not borne out by

the explanation given by archivist, M. George, to a SAILIS Western Cape branch meeting in 1982: namely, that Cape Town during the Dutch period was known only as "De Vlek", "De Kaapse Vlek", or "De Kaap", and it was only in 1804 with the official recognition of a town government and the presentation of an official coat-of-arms, that the term "Kaapstad" or "Cape Town" was used officially for the first time. This argument is confirmed by Liebenberg (1979) and Beyers (1965).

1966-1975 "Map Collectors' Series": publications of the
Map Collectors' Circle. London: 1966-1979.

This series of 110 monographs is an essential tool in the study of carto-bibliography by scholars and collectors, as fourteen issues record maps connected in some way with Africa and Southern Africa. Maps of Antarctica (No.2) have not been included in this study, as the glimpses of the southern tip of the African continent shown in these maps do not add to the researcher's knowledge or contribute anything new in any other manner concerning the spatial and temporal parameters of this subject.

The monographs of especial importance to this study are the carto-bibliographies compiled by R.V. Tooley (nos. 1,2,6, 29,30,61 and 82), Schrire (no.17), Campbell (no.46), Verner (nos.58 and 76), McGechaen (nos.88-89), and Hoppen (no.108). All these carto-bibliographies describe the maps briefly, and add notes concerning the various editions or "states" of the map. Whenever possible, the sources or origins of the maps are given.

As a practical exercise, indexes were compiled for all African (and South African) maps illustrated in this series, and this information has been incorporated into the final checklist (cf. 8). In the course of this experiment it was discovered that of the 278 maps originally illustrated in the "Map

collectors' series", less than half (only 117) were selected to illustrate the Collectors' guide (Tooley, 1969).

6.6.1 Facsimiles (cf.2.2.1)

Nordenskiöld's collection of facsimiles of early maps of the 15th and 16th centuries would have to be examined for African maps, but the emphasis is on manuscript maps, which are not of direct concern to this study.

1894 Remarkable maps of the XVth, XVIth, and XVIIth century, reproduced in their original size; sponsored by Fred. Muller & Co. Amsterdam.

These reproductions of maps were assembled by A.W. Mensing, a member of the firm of Muller (Koeman, 1961:95). Mensing's interest in maps continued after he left the firm and resulted in his amassing his own large private collection of maps. The sale of his collection aroused large public interest when sold by Sothebys in London in 1924. Fortunately the collection was bought and returned to Holland, and now forms the core of the Scheepvaartmuseum collection in Amsterdam (ibid.; Scheepvaartmuseum catalogus, 1923: introduction).

F.C. Wieder joined the staff of Frederick Muller & Co. in the 1890s and after 1902 developed the Cartographical Department at the peak of the Dutch commerce and shipping boom and the consequent interest in Dutch cartography (ibid. 107). When Wieder became connected with the K. Nederlandsche Aardrykskundig Genootschap and the Amsterdam University Library, he also became interested in collecting cartographic source material. His experience in compiling the Muller catalogues of 1908 to 1912 led him to become interested in the bibliographic description of the separate sheet map, and improving the description of atlases. Wieder is important internationally for his co-operation with Prince Yussuf Kamal as editor of fourteen volumes of the

physically biggest facsimile atlas ever made. Only 100 copies were published and presented to selected institutions worldwide. A set is available at the Cape Archives, Cape Town.

1928-38 Monumenta cartographica Africae et Aegyptii
reproductions of unique and rare maps; edited by
F.C. Wieder. The Hague: Nijhoff.

This work covers the period from classical times until the discoveries of the 17th century. A detailed list of their contents appears in v.6 of the List of geographical atlases in the Library of Congress, edited by LeGear.

1960 Cortesão & Teixeira da Mota: Portugaliae monumenta cartographica. Lisboa:

The publication of this magnificent facsimile atlas in 1960 to commemorate the 500th anniversary of the death of Prince Henry the Navigator was another important landmark. Nearly 1 300 maps and charts of Portuguese origin from the late 15th century to the early 17th century have been critically examined - and reproduced, thus presenting a critical history of early Portuguese atlases. Although the majority of maps examined were manuscript, some printed maps have been recorded. Some 1 500 presentation copies were given to university libraries and learned institutions.

1968 Klemp: Africa on maps. Leipzig: Edition Leipzig.

Of the 78 maps described and reproduced, only four or five concern Southern Africa.

6.7 CONCLUSIONS

An examination of these cartographical sources has made it possible to collect references to all maps of the Cape of Good Hope, and in this way to compile a comprehensive checklist of

such maps. This would in itself serve as a basic reference source for map cataloguers, and will be discussed in the following chapters 7 and 8.

CHAPTER 7 L I S T O F M A P S

7.1 I N T R O D U C T I O N

In the previous chapters the problems of bibliographic description of early maps, as well as the cartographical sources for maps of the western and southern Cape of Good Hope, have been examined. The end result has been the compilation of two lists: (a) a sample list of fifteen maps with full bibliographic description (cf.7.3), and (b) a checklist of over 300 maps of the south western Cape of Good Hope with brief descriptions (cf.8.3)

7.2 C H O I C E O F S A M P L E S

In order to test the theories discussed in the previous chapters, fifteen maps, ranging from the early neo-Ptolemaic maps of the 16th century to the detailed official maps of the late 19th century, have been selected for detailed bibliographic description.

In selecting samples to be examined in detail an attempt was made to choose maps representative of cartographic "schools", thus presenting a picture of map making through the centuries. No attempt was made to confine these samples to maps of the Western Cape, as detailed maps of this area only appeared after the mid-17th century.

The final selection of prototypical examples, therefore, is limited to three maps of the 16th century (Munster, Gastaldi, and Houtman), two of the 17th century (Goos and Nieuhof), five of the 18th century (van der Aa, de Fer, Tirion, Philippe and de la Rochette), and five maps of the 19th century (Barrow, Arrowsmith, Tallis, Petermann and the Cape Surveyor-General). Reproductions of these maps appear in Appendix 1.

7.2.1 Arrangement of list

The overall arrangement of the list of samples is chronological, so as to show the sweep of cartographic development. Each map, however, has been catalogued under the heading structure: Area - Date. At the same time, because early maps are known by the name of their cartographers, an additional sub-heading of cartographer has been provided in the second line of the description. In this way the attention is directed both at the place/date heading and at the name of the cartographer. In this way cataloguers may choose either style of heading, depending on the policy of the library.

7.2.2 Area headings

The immediate difficulty was that of choosing a heading for each map, following the rule of applying "geographic name" of the area depicted, rather than that of the administrative or political unit (cf.4.4.1.1). Most of the maps chosen for detailed description cover the area of South Africa, the Cape of Good Hope, the Western Cape or the Cape Peninsula: all names that could be used directly. The weakness of adopting an alphabetical approach is the resultant dispersal of the entries throughout the catalogue, an order based on the mere whim of the word chosen. It is the responsibility of the cataloguer to choose the correct and most useful heading for each map, based on the policy of the library concerned.

7.2.2.1 Arrangement of headings

An overall hierarchical arrangement with alphabetical headings is suggested as being practical. The catalogue cards of the sample 15 maps could be filed as follows:

| | | | |
|----------------------------|--------|--------------------|----|
| AFRICA | 1572 | Munster | 1 |
| SOUTHERN AFRICA | 1595 | Gastaldi | 2 |
| SOUTH AFRICA | 1595 | Houtman | 3 |
| CAPE OF GOOD HOPE | 1795 | Barrow | 11 |
| CAPE OF GOOD HOPE | 1817 | Arrowsmith | 12 |
| CAPE OF GOOD HOPE | 1850/1 | Tallis | 13 |
| CAPE OF GOOD HOPE | 1895 | Cape Colony | 15 |
| CAPE OF GOOD HOPE, WESTERN | 1660 | Goos | 3 |
| CAPE OF GOOD HOPE, WESTERN | 1705 | Fer | 7 |
| CAPE OF GOOD HOPE, WESTERN | 1715 | Aa | 6 |
| CAPE OF GOOD HOPE, WESTERN | 1747 | Bellin | 6 |
| CAPE OF GOOD HOPE, WESTERN | 1763 | Tirion | 8 |
| CAPE OF GOOD HOPE, WESTERN | 1787 | Philippe de Pretot | 9 |
| CAPE OF GOOD HOPE, WESTERN | 1795 | La Rochette | 10 |
| CAPE PENINSULA | 1782 | Nieuhof | 5 |
| CAPE PENINSULA | 1868 | Petermann | 14 |

7.2.3 Classification number

It was felt necessary to provide a classification number with a view to avoiding the confusion caused by the alphabetical headings, dependent as they are on the arbitrary choice of headings by the cataloguer.

Because of the importance of "being at ease with the classification system" (Alonso & Prescott, 1977:47), the Dewey Decimal Classification (DDC) has been chosen to clarify the geographical situation revealed on each map. This is particularly useful when two or more geographic areas overlap, or the area shown cannot be elucidated with ease. Maps of "Southern Africa" which may or may not include the area north of the Equator, are notably difficult to explain in words, but combinations of 66 (West Africa), 67 (Central Africa) and 68 (South Africa) can express the situation clearly, i.e. "66/68" is used to describe "Africa south of the Sahara".

This "code number" has, however, been placed at the far right, so avoiding interference with the main heading on the left. Hence, libraries using the Library of Congress (LC) scheme can, for example, readily ignore the DDC number if they so wish.

7.2.3.1 DDC expansion for South Africa

The detailed expansion provided by DDC for 968 (the classification for South Africa) appears in the 12th edition of DDC (the earliest one available to the researcher for consultation), and remained unchanged in the 13th edition of 1932 and ^{the} 14th edition of 1942. This practice was, however, discontinued in the subsequent 15th, 16th, 17th, 18th and 19th editions.

The beginnings of the system of organised and more co-ordinated basis for librarianship in South Africa dates from the visit of Carnegie Corporation visitors Ferguson and Pitt in 1928, which culminated in the holding of a library conference in Bloemfontein, to be followed in 1930 with the founding of the South African Library Association. One of the proposals made at the conference had been that "university library arrangement [and by implication, scholarship] should be based on a sound footing" (SESA, 6:618).

South African librarians, therefore, when organising their collections, were bound to base their classification on the 968 expansion found in these early editions of DDC. This framework was, however, not sufficiently detailed in some instances for local purposes. The Johannesburg Public Library took the lead in the early 1940s by working out further expansions, based on magisterial districts, for the classified catalogue of their Africana collection. Further extensions were also designed for historical periods.

In the postwar years many other large libraries followed suit by adopting their own domestic schemes for expansion. An example of this was the University of the Orange Free State, whose own scheme did not follow the original framework provided by DDC (i.e., it assigned the number: 968.3, instead of 968.7, for the Cape of Good Hope.

Postwar development, industrialisation, and political developments have gradually revealed the awkwardness of the original DDC scheme. This is particularly evident in the arrangement of the Cape of Good Hope section (968.7), where there is no distinct number for the "Eastern Province" - parts of the area falling under 968.75 and the rest under 968.77 (Ciskei).

The South African Institute for Librarianship and Information Science (SAILIS) (which superseded the South African Library Association in 1980) has now redrafted the area table for South Africa, scrapping the detail based on magisterial districts and accommodating the political changes, such as those relating to the "independent" states. The Lake Placid Forest Press (for the Dewey Decimal Classification) has formally endorsed these changes, and will issue them as the new Area table expansion for South Africa (-68) in the forthcoming 20th edition of DDC (DC&, 1985:4:5-68).

7.2.3.2 Cape of Good Hope divisions (-9687)

Although the sample maps cover only the areas "Southern Africa", "South Africa", "Cape of Good Hope", the "Western Cape", and the "Cape Peninsula", the further subdivisions of the Western Cape, will be commented on at this stage, as the principle involved affects both the sample list (cf.7.3), and the checklist to follow (cf.8.3).

The majority of maps examined were found to cover an area of the Western Cape ranging from St Helena Bay in the north to beyond Cape Agulhas in the south, or the area of the Cape Peninsula: including Blouberg to the north and Cape Hangklip to the south. By allocating a Dewey number to each entry, the various shades of difference in the term "Cape of Good Hope" (or "Cape Colony") can be indicated quite unambiguously.

The original DDC divisions for the Cape of Good Hope (as found in Editions 12 to 14) have a major defect, owing to the then prevalent decision to begin with the south west of the area (i.e. Cape Town), then to move to the north west (i.e. Namaqualand), and to return finally to the south before proceeding in an anti-clockwise direction up the east coast.

The revised Dewey expansion for the Area table (-68) (DC&, 1985) has re-arranged the Cape districts into a more logical order, starting in the central northern section and moving systematically anti-clockwise round the coast. This has meant that the "North Western Cape" is now represented as "6872", and includes the area from the Orange River and Namaqualand to the Olifants River and the Cedarberg. The magisterial districts of Clanwilliam and Tulbagh are included in this new area. The "Western Cape", represented by 6873, now extends northerly to Piketberg, Saldanha Bay, and easterly to Worcester, Riversdale and the Gourits River. Within this broad area are subdivisions for the Cape Peninsula (68735) and Cape Town (687355). The southern Cape, from Gourits River and Mossel Bay, inland to the Little Karroo, and along the eastern coast of the Tsitsikamma and the Garden Route in the easterly extremity are represented by 6874.

This would mean that the majority of maps under discussion would be classed under 6873 and its expansions. The individual bays found in this area range from St Helena Bay, Saldanha Bay, Table Bay and False Bay in the west, to Struis Bay and St Sebastian Bay in the south - all under the same classification number. Because of this top-heavy accumulation of areas it was felt desirable to return to the more familiar (although not satisfactory) arrangement of the 13th/14th DDCs and their expansions. Details of this will be discussed in 8.2.3.

their expansions. Details of this will be discussed in 8.2.3.

In order to facilitate the handling of the list, the classification number has been placed to the right of the entry, leaving the date and the name of the cartographer in a distinctive position. Those libraries which might like to use this list as a cataloguing guide will, however, still be able to find the classification information in a useful position.

7.2.4 Description

The bibliographic description of the map follows the rules of the latest cataloguing code, viz. AACR 2. This will enable map cataloguers to provide acceptable uniform entries for SABINET, when map entries are accepted into the databank.

In compiling these descriptions, the practical advice supplied by Karrow (1977) has been allied with the interpretations supplied by the Anglo-American Cataloguing Committee for Cartographic Materials (1982). In practice even this advice has been adjusted to suit the maps being handled, and slight deviations will be encountered.

The main emphasis in the annotation has been on the "shows" note, where the cataloguer describes as briefly but as clearly as possible the bounds of the area depicted by the map. The ideal situation would have been to provide with each description a small diagram (as in Roberts' Birds of Southern Africa) indicating exactly the area covered by the map. This, however, would have entailed calling upon the skills of a geographer.

7.2.5 References

The final section of the description refers to cartobibliographical sources, published catalogues and bibliographies, and are introduced by the term: "Listing". Two standard works

have not been recorded, viz. the Library of Congress list of atlases by Phillips and Koeman (1965), essentially for the following reasons: Phillips does not refer in the contents notes to African maps, while Koeman's work was temporarily "misplaced" at a crucial stage of the investigation. The abbreviations used to identify these sources have been listed in 1.6 and page 226A.

Great emphasis has been placed on recording the location of reproductions or illustrations of maps. This information will be prefaced by the term "Reproduced", followed by the abbreviation for the reference source. If no reproduction has been recorded, this note will be omitted.

7.3 SAMPLE LIST OF MAPS

Reproductions of these maps are provided in Appendix 1.

7.3.1 16th century

The maps of the 16th century were still influenced by the neo-Ptolemaic tradition, as will be evident from the following:

Sample 1

German mathematician, cartographer and scholar, Sebastian MUNSTER, produced the most well known and popular maps of the mid-16th century. His charming woodcuts illustrated the Basle edition of Ptolemy of 1544. He was the first to give a separate map of each of the four continents, as well as supplying modern maps of the countries of the world:

AFRICA. 1540

6

MUNSTER, Sebastian, 1489-1552

Africa mit seinen besondern Ländern, Thieren, und
wunderbarlichen Dingen. Cap. j. / Münster. - Basel
1 map; 13 x 16cm

Shows Africa without the southern tip

In his: Cosmographia universalis. 1628

Similar to 1552 edition, with small alterations

Listing: Tooley p.85 MCS.30:S13 Nord.159

Reproduced: MCS.30, pl.XV

Sample 2

Giacomo GASTALDI was the leading Italian cartographer of his day and was appointed Cartographer to the Republic of Venice. He was responsible for the copperplate modern maps in the Venice edition of Ptolemy of 1548, and later produced both a one-sheet map of Africa (1560) and a large 8-sheet map of Africa in 1564. Described below is the larger re-engraved version of the 1561 edition, published by Valgrisi: in which the previously "shot-silk" method of indicating the sea has been changed to the "stipple" engraving. This version also has two sea monsters added:

SOUTHERN AFRICA. 1561-1599

67/68

GASTALDI, Jacomo

Africa nvova tavola / [Gastaldi]. - [Venice: Valgrisi, 1599]
1 map; 19 x 25cm

Shows area from 10 degrees north of Equator

Re-engraved, with additions, from the original 1548 edition

Listing: MSC.29:181 MCS.30:S12 MCS.61:146

Reproduced: Tooley, pl.36

Sample 3

Cornelis HOUTMAN was captain of the first Dutch fleet to sail along the coast in 1595 (Watson: 1978:5). The journal of the voyage was kept by Willem Lodewijcksz. The travel accounts of these early voyages were collected and published by Cornelis Commelin in 1646, and illustrated with early woodcuts, including one of Spilbergen's travels ("Africae pars"):

SOUTH AFRICA. 1595

68

HOUTMAN, Cornelis

Caerte van der zuyderhoeck van Africa, genoemt Cabo de bona Esperanca.

Shows area of southern tip of Africa

Insets: Elevation of the Cape; BL Mossel Bay

In his: Prima pars descriptionis itineris navalis. 1598. p.4In: Commelin: Begin en voortgangh. 1646. vol.1, part 2, p.4

Listing: Mend. JPL.135 CartM.46 MCS.61:119

Reproduced: MCS.61, pl.VI

-- French ed. 1598. L'apparence de la terre du Cap de bonne Esperance

Listing: CartM.22

7.3.2 17th century

The maps of the 17th century represent the part played by the Dutch, ranging from the highly decorative work of Pieter Goos to the more pedestrian work of the early travellers.

Sample 4

Pieter GOOS was a Dutch cartographer, engraver, publisher and printer, known for his magnificently decorative Zee-atlas of 1666:

CAPE OF GOOD HOPE: WESTERN. 1660

6871

GOOS, Pieter, ca. 1616-1675

[Chart of the] Cabo de Bona Esperanca

1 map: 14 x 17cm

Scale in Dutch miles [15=70mm]

Shows area from St Helena Bay to beyond 'Cabo Falço' and 'Rio Dolçe'

Oriented with north to the left

Inset on: Pas-kaarte van de Zuyd-west-kust van Africa

In his: Zee-atlas. 1668

In his: L'Atlas de la mer. 1673

Listing: MCS.6:212 Nord.80

Reproduced: MCS.6:pl.1 Norwich 243

-- Other eds. Dutch 1668, 1672; English 1668, 1670; Spanish 1669; French 1670

Sample 5

Johan NIEUHOF was a Dutch traveller, whose later appointment as Governor of Ceylon enabled him to make frequent visits to the Cape in the middle of the 17th century. This is one of the best known maps of the Cape, showing the canal across the Cape Flats proposed by Governor van Goens. His travels were only published after his death:

CAPE OF GOOD HOPE: WESTERN. 1682

6871

NIEUHOF, Johan, 1618-1672

Caerte vande Cabo de Bona Esperança En haer gelegentheyd
daer omtrent / J.N[ieuhof]

map: col., 28 x 36 cm

Title from cartouche at lower centre

Scale in Dutch miles, English & French leagues

Oriented with north to the right

Prime meridian: Ferro

Relief shown pictorially with 7 ships off coast, and
animals inland. Proposed canal shown through Cape Flats.

Shows area from Dassen Island to far side of False Bay.

Inset view (lower left): Table Mountain

In his: Gedenkwaerdige zee- en lantreise. 1682.

Listing: Mend. JPL.137 CartM.53 Nord.604

-- English version: A Mapp of the Cape of Good Hope with its true
Situation / [John Bew] - [London: Churchill, 1732]

1 map: col., 28 x 36cm.

Title from cartouche at lower centre

Scale in Dutch miles, English and French leagues

Top left: Vol.2 p.141.

In: Churchill - Collection of voyages and travels. 3rd ed.
1744. v.2, p.141

Listing: CartM.53

Reproduced: Norwich 209

7.3.3 18th century

The maps of the 18th century show the imitative work of the Dutch cartographers towards the end of their period of influence. This century was dominated by the French work of Sanson, and the scientific work of D'Anville and Delisle.

Sample 6

Pierre VAN DER AA was a publisher and bookseller in Leiden. He had a prodigious output of atlases and maps, which he printed in small and large sizes, using the same maps in different publications. His work reflects quantity rather than quality (Tooley, 1969:1), being known more for the decorative aspect than for geographical accuracy:

CAPE OF GOOD HOPE: WESTERN. 1713

6871

AA, Pieter van der, 1659-1733

Le Cap de Bonne Esperance suivant les Nouvelles Observations...Augmentées de nouveau. Leiden: Pierre van der Aa

Shows area from Saldanha Bay to False Bay
Ornate frame border, with 2 vignettes of Table Bay & Vergelegen, and captions in Dutch and French
Bottom half of copperplate with Grande Tartarie above

In his: Naaukeurige verzameling der gedenkwaardigste zee- en land-reysen. 1706-8. v.21, p.131

In his: Nouvel atlas. 1714. v.2

In his: De Aanmerkenswaardigste en alomberoemde zee- en landreizen. 1727. v.6

-- Another ed. 1729. Le Cap de Bonne Esperance, suivant...
Complete in itself

In: Du Bois: La geographie moderne. 1729. vol.3

-- Another ed. 1735. Without border. Amsterdam: Covens & Mortier

Listing: MCS.6:10 MCS.61:1-3 NMM.52 Nord.69

Reproduced: Tooley, pl.3 MCS.6, pl.10 (1729)

Norwich 216 (1729)

Sample 7

Nicolas DE FER was a French geographer, engraver and publisher of considerable creative ability. He produced a prolific number of maps, which are decorative rather than geographically accurate:

SOUTHERN AFRICA. 1715

67/68

FER, Jacques Nicolas de, 1646-1720
Partie meridionale d'Afrique ou se trouvent La Basse Guinée, La Cafrerie, Le Monomotapa, Le Monoemugi, Le Zanguebar et L'Isle de Madagascar / par N. de Fer; C. Inselin sculpst. - Paris: De Fer, 1715
1 map: col.; 22 x 32 cm
Shows area south of the Equator
Prime meridian: Paris

In his: Atlas curieux. 1700-05. 1717

Listing: BM MCS.61:138-9 Nord.72 (1717)
Reproduced: Tooley, pl.35 Norwich 167

Sample 8

TIRION's work shows the scientific work done by Abbé de la Caille in 1751/2 at the Cape when establishing the arc of the meridian. This information had appeared first in 1755 in the Mémoires of the Academie des Sciences (La Caille) and also in the Gentleman's magazine (Gibson):

CAPE OF GOOD HOPE: WESTERN 1763

6871

TIRION, Isaac
Nieuwe kaart van de Kaap de Goede Hoop en der na by gelegen landen / volgens de afmetingen van den Abt de la Caille in 1752 door Is. Tirion... - Amsterdam: Tirion, 1763
1 map: col., 30 x 20cm
Scale in French toises
Prime meridian: Teneriffe, Paris
Relief shown pictorially
Shows area from 32 S (north of St Helena Bay) to Cape Hangklip, and inland to Franchhoek

In Tirion, Isaac. - Nieuwe en beknopte handatlas. 1744-69.

In his Hedendaagsche historie. 1763.

Listing: JPL.148 CartJ.45 SAip Stell.91
Reproduced: Tooley, pl.20 MCS.61:pl.XX Norwich 221

Sample 9

PHILIPPE DE PRETOT was a French cartographer and Royal Censor, attached to the Academie Royale des Sciences. His map is similar to that of La Caille (1755):

CAPE OF GOOD HOPE: WESTERN 1787 6871

PHILIPPE DE PRETOT, Etienne André, 1708-1787

Carte du Cap de Bonne Esperance et de ses Environs / [par Philippe de Pretot]

1 map: 19 x 16cm

Scale in toises [30 = 55mm]

Relief shown pictorially with mountain chain inland.

Shows area from St. Helena Bay to Cape Hangklip; includes De la Caille's baseline.

Title at lower left. Upper right: No.91 [or No.III]

Prime meridian: Paris

Similar to map in La Caille's Journal. 1758, and Janvier 1767

Inset (centre left): View of Table Mountain

Listing: MCS.30:30 MCS.61:229

Reproduced: MCS.6:pl.30 (No.III)

Sample 11

Sir John BARROW arrived at the Cape as private secretary to Earl Macartney during the First British Occupation. He drew up an up-to-date map of the Cape Colony, based on scientific measurement. For many years this was thought to be the first accurate map of the Colony, until the discovery of the Van de Graaff collection of maps from the Dutch period in 1950.

CAPE OF GOOD HOPE 1797/8 687

BARROW, Sir John, 1764-1848
 ...This general chart of the Colony of the Cape of Good Hope, constructed from bearings, estimations of distances & frequent observations for latitudes in travelling thro' the country in the years 1797 & 1798 / by John Barrow; engraved by S.J. Neele. - London: Published Septr.1st 1800 by Cadell & Davies
 1 map: 69 x 46cm
 Scale in English miles
 Dedicated to the Earl of Macartney
 Relief shown by hachures
 Shows area from Koussie River to Great Fish River
 Title at top centre

In Barrow, John. An account of travels. - London, 1801.
 - v. I, p.vii.

- French edition. Carte générale de la Colonie du Cap...
- Dutch version. 1803. By von Bouchenroeder: Algemeene kaart...

Listing: Mend. SAip CartJ.7 MCS.61:46
 Reproduced: MCS.61:pl.II

7.3.4 19th century

The work of British cartographers predominated the 19th century, although the work of the German cartographers made a great impact in the latter half of the century.

Sample 12

The ARROWSMITH family, in particular, were the leading map publishers of the 19th century, producing most reliable and accurate maps. Founder Aaron I, and sons Aaron II and Samuel,

were in turn appointed Hydrographers to His Majesty, while nephew John was one of the founder members of the Royal Geographical Society.

CAPE OF GOOD HOPE 1817 687

ARROWSMITH, Aaron I, 1750-1833
 Cape of Good Hope / [drawn by A. Arrowsmith]; engraved by Sidy. Hall. - Edinburgh: Constable, 1817
 1 map: col. outline, 20.5 x 25cm
 Scale in British miles
 Shows area from Koussie river to Great Fish river. Shows districts of Cape, Stellenbosch, Tulbagh, Zwellendam, Graaff Reynett and Uitenhage
 Redrawn to show development, otherwise same as 1802
 Title at upper centre. Right margin: XLVII

In his A new general atlas. - 1817. - pl. XLVII

Listing: MCS.31:30-31 MCS.61:23-24

-- Reissued 1717-1833. Listing: MCS.61:24 MCS.31

Sample 13

The Illustrated atlas issued by the firm of TALLIS & Company (London and New York) in 1850-51, was one of the last decorative atlases of the 19th century. It was illustrated with steel engravings and adorned with small vignette views.

CAPE OF GOOD HOPE 1850 687

TALLIS, John & Co
 Cape Colony / the map drawn & engraved by J. Rapkin; the illustrations by H. Warren & engraved by H. Bond. - London: John Tallis & Co., [1850]
 1 map: col. outline, 28 x 37 cm
 Scale in miles
 Shows area from Orange River to Keiskamma River
 Relief shown by hachures
 Vignettes in each corner: Entrance to Knysna, Grahams Town, lion, and Cape Town

In Tallis, John. Illustrated atlas. - London; New York, 1850/51
 In Martin, R. Montgomery. Illustrated atlas; Part 37. - London, [1850]
 In Martin, R. Montgomery. The British colonies; Division VII. - London, [1851]

Listing: CartJ.38 MCS 61:270-3 Stell.89
 Reproduced: Tooley, pl.85 Norwich 237

Sample 14

August Heinrich PETERMANN was appointed geographer to the Queen while working in London with Fullarton in the mid-19th century. On his return to Germany he worked for Perthes in Gotha, before branching out on his own to found the journal Petermanns Geographische Mitteilungen in 1855:

SOUTH AFRICA 1868

68

PETERMANN, August Heinrich, 1822-1898

Das Capland, nebst den Sud-Afrikanischen Freistaaten und dem Gebiet der Hottentotten & Kaffern / von A. Petermann; H. Habenicht... - Gotha: Perthes, 1868

1 map: 24 x 39cm

Scale 1:5 000 000 (German miles & nautical miles)

Relief shown by hachures

Shows area of Southern Africa, south of the Zambesi

Title at lower right

Prime meridians: Paris, Ferro, Greenwich

Illustrating 1st census in the Cape Colony 1865

Inset: Table Bay und False Bay. - Die Capstadt

In Petermann's Geogr. Mitt. - 1868, pl.2, p.14

Listing: Hollway 939

-- Another edition. 1875

In Stieler's Hand-Atlas. - No.72

Sample 15

The first detailed official map of the CAPE COLONY based on accurate surveys was that produced by the Surveyor-General, J Templar Horne, in 1895. Previous mapping attempts (e.g. De Smidt in 1876) were based on inaccurate measurements and old farm diagrams:

CAPE OF GOOD HOPE 1895

687

CAPE COLONY. Surveyor-General
 Map of the Colony of the Cape of Good Hope and neighbouring territories / compiled from the best available information by the Surveyor General... - London: Stanford's Geographical Establishment, 1895
 1 map: col., 140 x 200 cm
 Scale 1: 126 200 000 (English statute miles & Cape roods)
 Signed: J. Templer Horne
 Relief shown by hachures

Also folded edition in four sheets: Sheet 3. SW sheet

Listing: not traced; located in CS

7.4 CONCLUSION

The final checklist of maps of the Cape of Good Hope will be listed in the next chapter.

| Date or Period | Appellation of Map | Size in inches | Compiler's or Author's Name; or Reference: Author—Catalogue |
|----------------|-------------------------------|----------------|---|
| 1795 | Dutch Colony of the Cape | 16½ × 23½ | DE LA ROCLETTE, L. S. (London.) |
| 1795 | S. A. in 1795. Pub. 1899 | 16½ × 13½ | VOIGT, J. C.: 50 Years' Republic in S. A. |
| 1796 | L'Afrique | 36 × 25½ | LE VAILLANT, F.: Second Voyage. |
| 1801 | Algoa Bay | 10½ × 17½ | BARROW, Sir John: Travels in South Africa. |
| 1801 | Cape Peninsula | 10½ × 22½ | BARROW, Sir John: Travels in South Africa. |
| 1801 | Coast of Africa | 28 × 10½ | BARROW, Sir John: Travels in South Africa. |
| 1801 | Colony of the Cape | 28 × 19½ | BARROW, Sir John: Travels in South Africa. |
| 1801 | Mossel Bay | 8½ × 11 | BARROW, Sir John: Travels in South Africa. |
| 1801 | Table Bay | 10½ × 15½ | BARROW, Sir John: Travels in South Africa. |
| 1801 | Cap de Bonne Espérance | 11½ × 20 | DEGRANDPRÉ, L.: Cote . . . d'Afrique. |
| 1803 | Coast of Africa | 11½ × 18 | ARROWSMITH, A.: Coasts of Africa. |
| 1803 | Southern Coast | 18½ × 11½ | ARROWSMITH, A.: Coasts of Africa. |
| 1805 | Cape of Good Hope. 4 Sheets | 29 × 25 | ARROWSMITH, A.: Chart, C. G. H. |
| 1806 | Colony of the Cape | 28½ × 19½ | BARROW, Sir John: Interior of South Africa. |
| 1806 | Southern Extremity (S. A.) | 16½ × 10½ | BARROW, Sir John: Voyage to Cochinchina. |
| 1809 | Africa. 4 Sheets | 29 × 24 | PURDY, John. (London.) |
| 1810 | Algoa-Baai | 13½ × 11½ | ALBERTI, L.: Kaffers aan de Zuidkust. |
| 1812 | Cape of Good Hope | 5½ × 8½ | C.G.H.: Naval Chronicle. |
| 1812 | Saldanha Bay | 5½ × 8½ | C.G.H.: Naval Chronicle. |
| 1812-15 | Cape of Good Hope | 20½ × 16½ | LICHTENSTEIN, H.: Travels in South Africa. |
| 1815 | South Africa | 17½ × 10½ | CAMPBELL, Rev. J.: Travels in South Africa. |
| 1816 | Table and Saldanha Bays | 10½ × 8½ | FISHER, R. B.: Importance of the Cape. |
| 1818 | Cape of Good Hope | 21½ × 10½ | LATROBE, Rev. C. I.: Visit to South Africa. |
| 1819 | Colony of the Cape | 8½ × 6½ | CURTIS, Rev. C. G.: Account of the Cape. |
| 1819 | Algoa Bay. (Rep. 1907) | 8 × 5½ | GRIFFIN, James: New Settlement. |
| 1819 | Gaika's Territory. Pub. 1908 | 8 × 8½ | THEAL, G. M.: History of South Africa. |
| 1820 | Witte Revier | 9½ × 8 | HALLBECK, Rev. H. P.: Enon. |
| 1820-2 | South Africa | 10½ × 8 | SHERWOOD, Neely & Jones. (London.) |
| 1820-2 | Albany. Pub. 1897 | 24½ × 20 | CAMPBELL, C. T.: British South Africa. |
| 1821 | Cape of Good Hope | 21½ × 8½ | LATROBE, Rev. C. I.: Visit to South Africa. |
| 1822 | Southern Africa | 28 × 34 | BURCHELL, W. J.: Travels in South Africa. |
| 1822 | South Africa | 18½ × 13½ | CAMPBELL, Rev. J.: Second Journey. |
| 1822 | Survey of Cape. Pub. 1833 | 18 × 25 | OWEN, Capt. W. F. W.: Narrative . . . |
| 1823 | Cape Town and Harbour | 8½ × 10 | BIRD, W. W.: The Cape in 1822. |
| 1827 | Southern Africa | 21 × 15½ | THOMPSON, George: Travels in South Africa. |
| 1828 | Southern Africa | 16½ × 10½ | PHILIP, Rev. J.: Researches in South Africa. |
| 1832 | South Africa | 12½ × 9½ | KAY, Rev. S.: Caffraria. |
| 1834-5 | District of Albany | 8½ × 4½ | GODLONTON, R.: Kaffir Hordes. |
| 1834-5 | Eastern Province. Pub. 1908 | 8½ × 8½ | THEAL, G. M.: History of South Africa. |
| 1835 | South Africa | 9 × 8 | CAMPBELL, Rev. J.: Journey to Lattakoo. |
| 1835 | District of Albany, &c. | 4½ × 7½ | PRINGLE, Th.: Residence in South Africa. |
| 1837 | North-East of Cape Colony | 7½ × 8½ | HARRIS, Sir W. C.: Wild Sports of S. A. |
| 1838 | Cape Colony, &c. | 17½ × 20½ | HARRIS, Sir W. C.: Expedition to S. A. |
| 1843 | Cape of Good Hope | 19½ × 16½ | CHASE, J. C.: The Cape of Good Hope. |
| 1844 | South Africa | 34 × 22 | BACKHOUSE, J.: Visit . . . to South Africa. |
| 1847 | Eastern Frontier | 33½ × 22½ | CAPE COLONY: Eastern Frontier—Map. |
| 1847 | Michell's Map | 15½ × 10½ | CATHCART, Sir G.: "Collection of Items." |
| 1848 | Colony of the Cape | 15½ × 10½ | BYRNE, J. C.: Emigrant's Guide—C. G. H. |
| 1848 | British Kaffraria | 15 × 19½ | CATHCART, Sir G.: "Collection of Items." |
| 1848 | Eastern Frontier | 8½ × 6½ | GODLONTON, R.: E. P. Directory. |
| 1848 | Eastern Frontier. Rep. 1902 | 28½ × 22 | LEIBBRANDT, H. C. V.: Rebellion of 1815. |
| 1850 | Diocese of Cape Town | 17½ × 9 | FLEMING, Rev. F.: Kaffraria. |
| 1851 | Cape Colony | 14½ × 11 | MARTIN, R. M.: British Colonies. |
| 1851 | Natal and Kaffraria | 11 × 14½ | MARTIN, R. M.: British Colonies. |
| 1852 | Kaffraria. Pub. 1857 | 8½ × 10½ | CATHCART, Sir G.: Correspondence. |
| 1852 | Tambookie Location. Pub. 1857 | 10½ × 8½ | CATHCART, Sir G.: Correspondence. |
| 1852 | Colony of the Cape | 12½ × 9 | GRAY, Rt. Rev. R.: Bishop's Visitation. |
| 1854 | British Kaffraria. Pub. 1908 | 11½ × 8½ | THEAL, G. McCall: History of South Africa. |
| 1855 | Diocese of Cape Town, &c. | 7½ × 8½ | COLENZO, Rt. Rev. J. W.: 10 Weeks in Natal. |
| 1855 | Little Namaqualand | 8 × 13½ | NOLLOTH, M. S.: Namaqualand. |
| 1856 | Colony of the Cape | 20½ × 15½ | BAYLEY, T. B.: Horse Sickness. |
| 1856 | British Kaffraria | 13 × 8½ | BELL, Charles D. (London?) |

CHAPTER 8 C H E C K L I S T O F M A P S

8.1 INTRODUCTION

Over the years, the original "cartography" checklist compiled by Mendelssohn (1910) has been an invaluable reference source for map information on South African maps. Its serious limitations (i.e. lack of detail and abbreviated entries) have been pointed out in 6.4.3.

The following checklist (cf.8.3) is the culmination of an exhaustive attempt to amalgamate all references to maps of the south western Cape of Good Hope that are at present widely scattered through the cartographic source books, bibliographies, and library catalogues examined in Chapter 6.

8.2 ARRANGEMENT

The pattern adopted by Mendelssohn (supra) of arranging the maps, firstly by place, and then by date, has proved successful over the years, and is supported by the findings of map librarians (cf. 1953 survey by SLAGM&D). This arrangement has been continued, as explained below:

8.2.1 **Headings**

Although the individual entries are not "headed" with the name of the area, they have nevertheless been arranged within five broad areas, based on the DDC pattern (as described in 7.2.3.2).

The decision to follow this practice was reached because, although the majority of maps examined cover the area from St Helena Bay to just beyond Cape Agulhas (or the smaller area from Blouberg to Cape Hangklip), the area can be described in a

variety of ways: e.g. "Western Cape", "West coast", "Cape Peninsula", "Cape Town", "Table Bay", "southern coast", etc. Even the simple decision to use "Cape Town" causes confusion at once to the researcher when faced with maps of "Table Bay harbour works", the question arising: should these not have been entered directly under "Table Bay"?

Therefore, to avoid the confusion caused by alphabetical arrangement of terms arbitrarily chosen by the cataloguer, the maps have been arranged under broad headings, based on the pattern set by DDC.

6871 WESTERN CAPE

This term has been used to encompass the general maps of the whole area, from the west coast (i.e. St Helena Bay) to Cape Agulhas. At the same time it will incorporate all maps showing the area of the Cape Peninsula and the "Boland", thus extending northwards as far as Malmesbury, inland to Paarl and Franschhoek, and southwards to Hermanus. This will include charts of bays to the west of Agulhas, i.e. Walker Bay and Sandown Bay. It will not, however, include False Bay, which is a separate entity fitting more closely into the "Cape Peninsula" region. The interior regions of Stellenbosch and Drakenstein are included in this area.

68711 CAPE PENINSULA

This is the most difficult area to define as it includes the physical area of the Cape Peninsula and the Cape Flats, as well as the far side of False Bay (or the Hottentots Holland). It includes what is known as "Greater Cape Town": i.e. the municipal area of Cape Town - which extends from Cape Town to Clovelly - as well as the Divisional Council areas of Hout Bay and Cape

Point, together with the municipal areas of Simon's Town and Fish Hoek and Bellville, Parow, Goodwood, Milnerton, etc.

The bays of the Cape Peninsula will also be included in this area: i.e. Hout Bay, False Bay and Simon's Bay. Charts of Table Bay will be excluded, as they are closely connected with Cape Town itself.

68712 CAPE TOWN AND TABLE BAY

This has been used specifically for the Cape Town municipal area, and would be used for maps of Wynberg, Rondebosch and Muizenberg. Table Bay and Robben Island would also be placed here. It might be argued that the suburbs along the False Bay coast (i.e. Muizenberg, St. James, Kalk Bay) would be more reasonably placed with 6871 (False Bay). For the moment, however, this definition of "Cape Town" will be adhered to, although this decision might well be revised once the checklist has been tested in a practical reference situation.

6872 NORTHWESTERN COAST

This includes the area to the north of Cape Town, from the Olifants River southwards to Malmesbury. It will include all specific charts of Saldanha Bay, St Helena Bay, etc., as well as Dassen Island. General charts extending further southwards to Cape Point and beyond have been placed at 6871 (supra). Although DDC has further subdivisions for this area, these have not been used.

6873 SOUTHERN CAPE

This extends from Cape Agulhas along the coast to the east as far as Mossel Bay, including Struis Bay, St Sebastian Bay and

Flesh Bay. Inland it will include the "Overberg" with Caledon, Bredasdorp, Swellendam, Riversdale, and Heidelberg. The subdivisions as supplied by DDC have not been used.

8.2.2 Description

Unlike the sample maps (cf.7.3), the description of each map is kept as brief as possible, as this is a checklist and not a carto-bibliography.

Each map is headed with the date, followed by the name of the cartographer. Unusual DDC combinations (such as 6871 and 6873 to indicate a map stretching from the western Cape to the southern Cape) are placed far to the right of the entry.

The title and imprint are given in sufficient detail to identify the map, followed by brief notes of distinctive items, such as "orientation" and "insets".

Every effort has been made to write down sufficient information in the "shows" note to give the researcher some idea of the extent of the map. It would have been ideal to supply at this stage a brief diagram showing area covered, similar to those diagrams used so successfully by Roberts' Birds. This aspect could be expanded into a major research project.

8.2.3 References

The final notes of the entry contain references to original published sources, followed by the recording of the map in carto-bibliographies or library catalogues (cf.7.2.5 and 1.6). The existence of a reproduction or facsimile is a feature of this description, as it is felt that only when such a facsimile has been examined, can further research be done into maps of the Cape of Good Hope.

8.3 CHECKLIST OF MAPS

6871 WESTERN CAPE

General maps of west coast and south coast
Area from Saint Helena Bay to Cape Agulhas

- 1598 BRY, Théodore de, 1528-1598
Aguada de sardeijne Tafelberg C. de Bonesperance.
Headed: III Delineatio sinus illius, quem Hollandi mensalem,
sua lingua Taffel Baje, nominarunt

In: Bry: Collectiones Indiae orientalis. 1606. v.7

Listing: Nord.361
- 1598 BRY, Théodore de, 1528-1598
[Africa pars]. Delineatio Promontorio, quod Cabo de bona
Esperanca vulgo vocatur
Headed: II Abbildung der Cabo de bona Esperanca
Top right: III
Bottom right: GK
Oriented with north to the left
Shows area from Aguada de Sadeyne to Tafelberg and C. de
Bonesperance

In his: Petits voyages. 1598
In: Bry: Indiae orientalis. 1612. v.9

Listing: not traced
Reproduced: Norwich 205
- 1601 SPILBERGEN, Joris van, fl.1648
[Africae pars]
Two coats of arms and dedications
Bottom: dit syn gr. No.2
Oriented with north to the right
Distorted view of Peninsula, Tafelb and C de Bonersper,
similar (but in reverse?) to De Bry

In his: 't Historiael journal van de voyagie ghedaen. 1648
In: Commelin: Begin ende voortgangh. 1646

Listing: SAip MCS.61:120
- 1652 HONDIUS, Jodocus, 1563-1612
[Chart between St Helena and False Bay]
Inset on: Paskaarte van de Zuyd-west-kust van Africa

Listing: JPL.136 CartM.43

- 1659 **DONCKER, Hendrick. 1626-1699**
 Cabo de bona Esperanca
 Inset on: Pascaart van de zee-custen van Angola...
 Shows area from St Martins Bay to False Bay

 In his: De zee-atlas. 1666

 Listing: MCS.61:133 Nord.67
- 1660 **GOOS, Pieter, ca.1616-1675**
 [Chart of the Capel] [Cabo de Bona Esperanca]
 Shows from Bay de S Helena to beyond 'Cabo Falço' and 'Rio Dolçe'
 Chart oriented with north to the left
 Inset on: Pas-kaarte van de Zuyd-West-kust van Africa
 Together with inset of: Vlees bay

 In his: De Zee-atlas. 1668
 In his: L'Atlas de la mer. 1673

 Listing: MCS.6:1 Nord.80
 Reproduced: MCS.6, pl.1 Norwich 243
- Other eds.: Dutch 1668, 1672; English 1668, 1670;
 Spanish 1669; French 1670.
- 1682 **NIEUHOF, Johan, 1618-1672**
 Caerte vande Cabo de Bona Esperanca en haer gelegentheyd
 daer omtrent. J.N.
 Shows area from Dassen Island to far side of False Bay
 Oriented with north to the right
 Inset: view of Table Mountain

 In: Nieuhof: Gedenkwaardige Brasiliaense zee- en lant-reize.
 1682. v.2, part 2, p.6.

 Listing: Mend. JPL.137 CartM.53 Nord.604
- English ed. 1703: A Mapp of the Cape of Good Hope, by Bew
- 1675 **SELLER, John, fl.1669-1699**
 A Draught of Cape Bona Esperanca by John Seller. [1675]
 Shows coast from [Saldanha Bay] to 'Sardinia bay' and far side
 of [False Bay]
 Top: views of Table Bay and Fort. Decorative scale
 Oriented with north to the left

 In his: Third book of the English pilot. 1675
 In his: Atlas maritimus. 1675

 Listing: BM JPL.138 MCS.61:248-9 NMM.449
 Reproduced: Tooley, p1.77
- Another ed. 1680 : A Draught of Cape Bona Esperanca
 Reproduced: MCS.6, p1.2
- Another version. By John Thornton. 1703
 -- Another version. By Saml. Thornton. 1711

-- Another version. Mount & Page. 1734, 1743, 1761

1676 SCHOUTEN, Wouter

...die Gelegenheit der Cap de Bon Esperance. D.Decker fe.

In Schouten: Ost-Indische reyse. 1676

Listing: Nord.671

1683 KEULEN, Joannes^{van,} 1654-1715

[Chart of the coast from Saldanha Bay to False Bay]

Oriented with north to the left

Lettered: No.43

In his: Zee-fakkel. 1683

Listing: Hollway 211

1691/92 ZANI, Valerio

Carta del Paese et de Populi del Capo di Bona Speranza.

In his: Il genio vagante. 1691/2

Listing: Nord.726

1688-1702

Nieuwe naauwkeurige land- en zee-kaart... = Nova et accurata
tabula Promontorio Bonae Spei

Shows area from Saldanha Bay to False Bay

Attributed to Ottens, but not proven

Listing: Norwich 207

Reproduced: Norwich 207 (Ottens)

1702/1710 VISSCHER, Veuve de Nicolas, fl.1702-26

[Cape district]

Inset on: Carte de l'Afrique meridionale

Shows area from Robben Island to Bay Falso and the
hinterland

In: Wit:Atlas major. [1706]

In: Wit:Atlas minor. ca.1717

In: Ottens:Atlas minor. ca.1740

Listing: Mend. JPL.120 MCS.6:5 MCS.61:286

Reproduced: Tooley, pl.89 MCS.6, pl.5a Klemp 67

-- Reissued. 170- Henry de Leth

-- Reissued. 1721

-- Reissued. 1792 J B Elwe (without change)

1703 THORNTON, John, fl.1652-1707

A draught of Cape Bona Esperanca. By John Thornton
Shows area from entrance to Saldanha Bay to [False Bay]
Top: view of Table Bay and Fort
Redrawn version of Seller 1675; less ornate scale, new
cartouche, no ship, addition of key A-P

In: English pilot, Third book. 1703

Listing: Tooley, p.104

1703-1711 THORNTON, Samuel, fl.1703-39

A draught of Cape Bona Esperanca by Saml.Thornton
Shows area from south of Saldanha Bay to Table Bay and [False
Bay]
Top: view of Table Bay and Fort
Another edition

In: English pilot, Third book. 1711

Reissued. Mount & Page. 1734, 1743, 1761

Listing: MCS.61:276 Tooley, p.104

Reproduced: Tooley, pl.78

1713 AA, Pieter van der, 1659-1733

Le Cap de Bonne Esperance suivant les nouvelles observations
... augmentées de nouveau. Leiden: Pierre van der Aa

Shows area from south of Saldanha Bay to False Bay
Ornate frame border, with 2 vignettes of Table Bay &
Vergelegen, and captions in Dutch and French
Together with: Grande Tartarie

In his: Naaukeurige verzameling der gedenkwaardigste zee-
en land-reysen. 1706-8. v.21

In his: Nouvel atlas. 1714. v.2

In his: De aanmerkenwaardigste en alomberoemde zee- en
landreizen. 1727. v.6 [not found]

-- Another ed. 1729. Le Cap de Bonne Esperance, suivant...
Complete in itself

In: Du Bois: La geographie moderne. v.3

-- Another ed. 1735. Without border. Amsterdam: Covens & Mortier

Listing: MCS.6:10 MCS.61:1-3 NMM.52 Nord.69

Reproduced: Tooley, pl.3 MCS.6:pl.10 (1729)
Norwich 216 (1729)

- 1727 ~~KOLB, Peter, 1675-1726~~ ~~6871/3~~
~~Caarte van de Kaap de Goede Hoop leggende in 't zuyder gedeelte van Africa = Carte du Cap de Bonne-Esperance Shows area from Dassenberg (near Orange River) to Mossel Bay~~
~~In: Kolb: Naukeurige beschryving. 1727~~
~~In: Kolb: Description du Cap de Bonne Esperance. 1741~~
~~Listing: JPL.141 CartM.49 MCS.61:283~~
- 1726 VALENTIJN, Francois, 1666-1727
Kaart van de Caap der Goede Hoop... [1726]
Shows area from Blouberg to Hottentots Holland and Cape Hangklip
Inset on: Nieuwe kaart van Caap der Goede Hoop
In his: Oud en nieuw Oost Indien. 1726. dl.5, 2.stuk, 10 boek
Listing: MCS.61:282 CartM.54 Nord.701
Reproduced: MCS.61, pl.24 Norwich 214
- 1726 VALENTIJN, Francois, 1666-1727 6871/3
Nieuwe kaart van Caap der Goede Hoop in hare rechte tegenwoordige staat vertoond... J van Braam & G onder de Linden ex.
Shows area from Groen River (30 S) to Algoa Bay
Top right: No.43
With inset: Kaart van de Caap der Goede Hoop
In his: Oud en nieuw Oost-Indien. 1726
Listing: BM JPL.142 CartM.47 MCS.61:282 Nord.701
Reproduced: MCS.61, pl.XXIV Norwich 214
- 1726 VALENTIJN, Francois, 1666-1727
[Chart of the coast of the Cape of Good Hope, from Saldanha Bay to False Bay]
Shows area from Saldanha Bay to Bay Falso
In his: Oud en nieuw Oost-Indien. 1726. dl.5, 2.stuk, 10.boek, p.4-5
Listing: CartM.52 MCS.61:285 Nord.701

- 1727 **KOLB, Peter, 1675-1727 [LAKEMAN, Balthasar] 6871/3**
 Caarte van de Kaap de Goede Hoop leggende in 't zuyder gedeelte van Africa = Carte du Cap de Bonne-Esperance...
 Shows area from Dassenberg (near Orange River) to Mossel Bay
- In his: Naaukeurige beskrywing. 1727
 In his: Description du Cap de Bonne-Esperance. 1741
- Listing: JPL.141 CartM.49 MCS.61
-
- 1727 **KOLB, Peter, 1675-1726 [LAKEMAN, Balthasar]**
 Caarte van de beyde afgelegenste colonien Drakensteen en Waveren = Carte des colonies...
 Shows coast from Flesh Bay to St Catherine's Bay
- In: Kolb: Naaukeurige beschryving. 1727
 In: Kolb: Description du Cap de Bonne Esperance. 1741
- Listing: CartM.58 Nord.524
-
- 1727 **KOLB, Peter, 1675-1727 [LAKEMAN, Balthasar]**
 Caarte van de colonie van Stellenbosch = Carte de la colonie de Stellenbosch
 Shows coast from 'Zee Koe Valey' to Cape Agulhas
- In: Kolb: Naaukeurige beschrywing... 1727
 In: Kolb: Description du Cap de Bonne Esperance. 1741
- listed: JPL.153 CartM.64 Nord.524
-
- 1731 **KOLB, Peter, 1675-1727 [INNYS] 6871/3**
 A new map of the Cape of Good Hope
 Shows area from St Helena Bay to Mossel Bay
 Based on 1719 (Monath) edition, similar to Valentijn
- In: Kolb: The present state of the Cape of Good Hope. 1731
 2nd ed. 1738
- Listing: CartM.48
-
- 1734 **KEULEN, Joannes van, 1654-1715**
 Paskaart van 't Zuydelykste gedeelte van Africa, vertoonende De Saldanha Bay de Bay de Goede Hoop en De Bay Falso
- In his: De nieuwe groote lichtende zee-fakkel. 1734. v.5
 In his: Collection of charts. 1753
- Listing: Nord.124, 128

1734 MOUNT and PAGE

A draught of Cape Boña Esperanca
Shows coast from entrance to Saldanha Bay to 'the Bay of Falzo'
Another edition of Thornton 1703, 1711, but with name erased
Oriented with north to the left

In: English pilot, Part V. 1734, 1743, 1761

Listing: Tooley, p.104; located in CLP

1740/50 DE LISLE, Guillaume, 1675-1726

Carta geografica del Capo di Buona Speranza
Shows area from Saldanha Bay to Hottentots Holland
Based on Sanson

In his: Atlante novissimo. 1740-50. v.2

In: Istoria naturale...dell'Africa. [1750]

Listing: CartM.56 MCS.61:187 Nord.64

Reproduced: MCS.6, pl.12 Norwich 218

-- Reissued and copied by many: 1754

1745 OTTENS, Renier and Josua, fl. 1725-50

De Ommelanden van de Caap de Goede Hoop, met de Saldanha,
Tafel en Falso Baien in groot bestek
Shows area from Saldanha to far side of Caap Falso
Oriented with north to the left

Inset on: "Pascaerte van Cimbebas en Caffares = Cimbebas et Caffariae littora". Not found on previous editions of this map, i.e. that of De Wit 1680 and Renard 1715.

In: Ottens: Atlas van zeevaart. 1745

Listing: BM (Ottens) Hollway 222 MCS.6:13

NNM.264 Nord.242 (Renard)

Reproduced: Tooley, pl.96 MCS.6, pl.13 Norwich 255

1747 BELLIN, Jacques Nicolas, 1703-1772 6871/3

Le pays des Hottentots aux environs du Cap de Bonne
Espérance... dressée sur celles de Kolbe et sur quelques
manuscrits du Depost des Plans de la Marine. Par N.Bellin
Shows area from St Helena Bay to Mossel Bay
Captions in French and Dutch: 'T Land des Hottentotten
Lettered: Tome V in 4, no.5. Tome 3 in 8, p.391

-- Another ed. 1748. J.v.Schley direx

In: Prevost: Histoire générales. 1748. t.6, p.433

-- Swedish ed.? 1770 Hottentotternes Land ved det Gode Haabs
Forbiereg. No.1. VIIID

-- German ed. 1764 Das Land der Hottentotten ? JPL

-- Another ed. 1780

In: La Harpe: Abrège de l'histoire générale. 1780

Listed: JPL CartM.50 Tooley p.22 MCS.61:59

1750 MOUNT, William and PAGE, Thomas

A draught of Cape Bona Esperanca / Monomatapa
Shows coast from Saldanha to False Bay
Redrawn version of Seller 1675 and Thornton 1703
With view of Table Bay and inset of Castle

in: English pilot. 1734

Listing: JPL.145 MCS.61:249

Reproduced: Norwich 219

1755 GIBSON, John, fl.1750-92

A map of the Cape of Good Hope & the country adjacent. 1752.
J. Gibson sculp.
Shows area from St Helena Bay to Hanglip or False Cape.
English version of La Caille, 1755

In: Gentleman's magazine, Nov. 1755

Listing: MCS.61:147 Circulo 37

Reproduced: MCS.61, pl.X

1755 LA CAILLE, Nicolas Louis de, 1713-1762

Carte du Cap de Bonne Esperance et de ses environs. 1752.
J Ingram sculp.

Shows area from St Helena Bay to Hanglip or False Cape
Similar to Gibson, but title on right

In his: Observations faites au cap de Bonne Esperance
(Memoires de l'Academie Royale des Sciences, 1751, p.456)

-- Another version. [M. Dupin sculp.] Title on left, and
addition of vignette view of Table Mountain

In his: Journal historique. Paris: 1758. p.356

Listing: JPL.147 CartJ.44 (1758)

Reproduced: Norwich 220

-- German ed. 1778. Charte von dem Vorgebürge der guten Hofnung
und den anhegenden Gegenden

-- Another version. 1787. Philippe de Pretot

- 1763 TIRION, Isaac, d.1769**
 Nieuwe Kaart van de Kaap der Goede Hoop en der na by
 gelegen Landen. Volgens de Afmetingen van den Abt De La
 Caille in 1752. Amsterdam: Tirion, 1763
 Shows area from north of St Helena Bay to Hanglip or Kaap Fals
 Similar to Gibson and La Caille, but without triangulation
- In his: Nieuwe en beknopte handatlas. 1744-69
 In his: Hedendaagsche historie. 1763. p.683
- Listing: Mend. JPL.148 SAip CartJ.45 Tooley, p.118
 MCS.61:280
 Reproduced: MCS.6, pl.20 Norwich 221

- 1763/4 BELLIN, Jacques Nicolas, 1703-1772** 6871/3
 Carte du Pais des Hottentots aux Environs du Cap de Bonne
 Esperance
 Shows from St Helena Bay to Vleesch Bay (Baye de la Chair)
 Captions in French and Dutch.
- In his: Petit atlas francais. 1763. Tome III, p.391
 In his: Petit atlas maritime. 1764. Tome III, pl.III
- Listing: MCS.6:21 MCS.61:66.(1763) NMM.211
 Reproduced: Tooley, pl.12 (1763) MCS.6, pl.21 (1764)
- Italian ed. 1781. Il Paese degli Ottentotti ne' Contorni del
 Capo di Buona Speranza di Mr. Bellin 1781.
- In his: Teatro della guerra maritime. 1781.
- Listing: MCS.6:24 MCS.61:61
 Reproduced: Tooley, pl.14 MCS.6:pl.24 Norwich 222

- 1769 JANVIER, Jean, fl.1750-72**
 Carte particuliere du Cap de Bone Esperance et de ses
 Environs. Dressée par M.l'Abbè de la Caille
 Shows area from Piketberg to 'Cape Hanglip' or Cap Falso
 Similar to Gibson and La Caille, but without vignette
 Inset on: L'Afrique divisée en ses principaux etats
- Reissued by Santini 1776, 1784, 1788. Venice
 -- Reissued by Delamarche 1818. Paris
- Listing: MCS.6:25
 Reproduced: MCS.6, pl.25 Tooley, pl.43

- 1775 APRES DE MANNEVILLETTE, Jean Bapt. Nic.D. d', 1707-1780**
 Plan du Cap de Bonne-Esperance et de ses Environs; levé géométriquement en 1752, par Mr. de **** ; [engr.] G de-la-Haye
 Top right: 8
 Shows coast from 'Saldagne Baay' to False Baay
- In his: Neptune oriental. 1775
- Listing: MCS.61:16 NMM.204
 Reproduced: Tooley, pl.7 MCS.6, pl.19(detail)
- Another edition, with additional names and soundings
- Listing: MCS.61:16
 Reproduced: Norwich 276
- English edition, on smaller scale. 1781. By J. Bew, q.v.
-
- 1780 BONNE, Rigobert, 1727-1795**
 [Cap de Bonne Esperance; André sculp.]
 Shows area from St Helena Bay to Hanglip or Cap Falso.
 Similar to Tirion, but without double mountain range inland
 Inset on: Carte du Canal de Mosambique
- Listing: MCS.6:29 MCS.61:96-97
 Reproduced: MCS.6, pl.29 MCS.61, pl.4 Norwich 173
- Another ed. Without engraver's name
-
- 1781 BEW, John, d.1793**
 A Map and Chart of the Cape of Good Hope, with the soundings in Table Bay, False Bay & Saldanha Bay, engraved Jno.Lodge jnr. London: Published as the Act directs April 30th 1781 by J Bew
 English reissue of Après de Mannevillette 1775
- Listing: JPL.149 MCS.61:81
 Reproduced: Norwich 283
-
- 1781 BELLIN, Jacques Nicolas, 1703-1772** 6871/3
 Il Paese degli Ottentotti ne' Contorni del Capo di Buona Speranza di M Bellin 1781
 Shows area from St Helena Bay to Mossel Bay
- In his: Teatro della guerra maritime. 1781
- Listing: MCS.61...
 Reproduced: Tooley, pl.14 MCS.6, pl.24 Norwich 222

- 1782 LA ROCLETTE, Louis Stanislas d'Arcy de, 1731-1802**
 The Dutch colony of the Cape of Good Hope. Published by W Faden... March 20th 1782
 Shows from Zout Pan, north of St Helena Bay to beyond Cape Falso (Walker Bay?)

Listing: BM MCS.16 MCS.17:4
 Reproduced: Tooley, pl.30. MCS.16, pl.3 MCS.17, pl.11
 Norwich 225

- 1784/90 MALO DE LUQUE pseud. [P.J.de Gongora y Luzan, Duke of Almodovar]**
 [From] Bahia Falsa [to] B. Sta. Helena
 Inset on: Mapa del Canal de Mozambique

In his: Historia politica. 1784/90. v.1, p.282

Listing: Nord.576

- 1787 PHILIPPE DE PRETOT, Etienne Andre, 1708-1787**
 Carte du Cap de Bonne Esperance et de ses Environs.
 Shows area from St Helena Bay to Hanglip or Cap False, with inset view of Table Mountain
 Similar to La Caille, with triangular baseline
 Top right: No.91 [Another version: no.III]

In his: Atlas universel. 1787

Listing: MCS.61:229 Nord.179
 Reproduced: MCS.6, pl.30 (No.III)

- 1789 SCHRAENBL, Franz Anton, 1751-1803**
 Das Vorgebirg der guten Hofnung.
 Shows area from Lamberts Bay to beyond False Bay
 Based on De La Rochette 1782, Sparrman and Paterson

In his: Allgemeiner grosser Atlas. 1800

Listing: MCS.17 MCS.61:130
 Reproduced: Klemp 69

- 1791/93 GOWER, Richard Hall, 1787-1833**
 Chart of the Worcester's track over the Cape Bank, by R H Gower 1791; W. Harrison sculpt. Published by A Dalrymple Feb. 15th 1793

In: Dalrymple: Explanations to plans. 1784. No.20
 Listing: not traced; located in CLP

- 1793 GRANDPRE, Louis Marie Joseph O'Hier, comte de, 1761-1846**
Plan du Cap de Bonne Espérance, et de ses environs; levé en
1793 par L. De Grand Pré, Officier de la Marine française
Shows coastal area from Saldanha Bay to Cap Falso

In his: Voyage à la côte occidentale de l'Afrique. 1801.

Listing: JPL.150 CartJ.47
Reproduced: Norwich 226

- 1793 STAVORINUS, Johan Splinter, 1739-1788**
Schets der ligging van de Saldanha, Tafel, Hout en Fals Baai
aan Caap de Goede Hoop; engr. C van Baarsel

In his: Reize van Zeeland. 1793. 2de dl., p.117

Listing: Hollway 346 CartJ.3, 46
Reproduced: Norwich 224

- English ed. 1798. Sketch of the situation of Saldanha, Table,
Wood, and False Bays, near the Cape of Good Hope; Neele
sculp. Published Octr.1798 by G.G. and J. Robinson

Listed: MCS.61:236

- French ed. 1798. Carte du Cap de Bonne-Esperance et des baies
adjacentes.

- 1795 LA ROCLETTE, Louis Stanislas d'Arcy de, 1731-1802**
The Dutch colony of the Cape of Good Hope; 2nd edition,
corrected. Published by W Faden 1795
Some names changed

Listing: BM JPL.152 SAip
Reproduced: MCS.61, pl.7 Norwich 225

- 1797 FORSTER, D. I. R** 6871/3
Vergrößerte Charte der Gegend um die Capstadt. [Nürnberg:
Schneider]
Shows area from Berg R in St Helena Bay to the Fet R, beyond
Mossel Bay
Based on Le Vaillant and Sparrman
With inset view
Inset on: Carte von der Südlichen Spitze von Africa

Listing: MCS.6:32
Reproduced: MCS.6, pl.32

1800 LUFFMAN, John, fl.1776-1820

Cape of Good Hope. Engrav'd for Luffman's Select plans of the principal cities...in the world, London, Engrav'd & Published May 1, 1800 by Luffman...

Shows area from Blouberg to beyond Cape Hangklip
In his: Geographical.. & topographic.. atlas. 1815/16 ??

Listing: BM
Reproduced: MCS.61, pl.16

1804 BOHN, François, fl.1800

Kust van Afrika van de Tafel Baay aan Kaap de Goede Hoop tot de Saldanha Baay, Dl.Veelwaard sculp., F.Bohn excud.
Oriented with north to the left

-- French edition. 1801. Côte d'Afrique depuis la Baie de la Table au Cap de Bonne Esperance jusqu'au la Baie de Saldanna

-- English edition. 1804. Coast of Africa from Table Bay at the Cape of Good Hope, to Saldanha Bay; S.J. Neele sculp.
Published Feby. 16 1804 by Cadell & Davies

In:Barrow:An account of travels. 1804

182- DOLIN, A. L.

Map of the Cape of Good Hope to illustrate progress of white settlers into interiorl. Lith. C. Ingrey. Published by T & G Underwood.

In:Bannister:Humane policy. 1830

Listing: none traced; located in CS

1822 HEYWOOD, Peter

This chart, constructed chiefly from the valuable information by James Horsburgh... J.Walker, re-engraved with additions to 1832

Listing: none traced; located in JP

1824 THEUNISSEN, J. B. N.

6871/3

Reis-kaart voor de binnelanden van Zuid-Afrika, van Port Elisabeth naar de Kaapstad. Delt. J.B.N.Theunissen, and lith. by T Goubaud
Shows stopping places along route to Port Elizabeth

In his:Aanteekeningen eener reis. 1824

Listing: CartJ.68

- 1825 WYLD, James, 1812-1887**
 Cape district, Cape of Good Hope. London: Published by
 Jas. Wyld (successor to Mr Faden... Jan. 1st, 1825
 Shows area from St Helena Bay to beyond Hermanus & Walker
 Bay
 Based on De La Rochette. 1795

 Listing: MCS.17:6 MCS.61:127-30 Tooley p.41-42
 Reproduced: Klemp 69 Norwich 236 (1838)
- Other editions. 1832. 1838
- 1831 MICHELL Charles Cornwallis**
 Sketch of a small part of the Colony of the Cape of Good
 Hope engraved by C.C.M.
 Shows area of Paarl, Worcester and Caledon

 In: Cape almanac, 1831.
- 1834 S. D. U. K.**
 Environs of the Cape. [J & C Walker sculp. Published by
 Baldwin & Cradock]
 Shows area from Saldanha Bay to Worcester
 Inset on: South Africa

 In: Steedman: Wanderings & adventures. 1835

 Listing: CartJ.52 MCS.61:256-61
 Reproduced: Tooley pl.82
- Published by Charles & Knight. 1844-52
 -- Published by Cox. 1852-3
 -- Published by Stanford. 1854-70
- 1847 HERSCHEL, Sir John Frederick William**
 Cape observations

 Listing: Tooley DOM
- 1851 GREAT BRITAIN. Hydrographic Office**
 Africa, west coast, St Helena Bay to the Cape of
 Good Hope
- 1853 GREAT BRITAIN. Hydrographic Office**
 Chart of the south coast of Africa from Cape Hanglip to
 Dyer's Island, surveyed by Lieuts. Dayman and Simpson

 Listing: Hollway 628

1854 **IMRAY, James, d.1870**
The Coast of Cape Colony [3 sheets]
Shows area from west coast to beyond Mossel Bay
With insets: False Bay, Simons Bay, Table Bay, St Helena
Bay, Mossel Bay, etc.

Listing: none traced; located in CS

68711 CAPE PENINSULA
 Area of the Cape Peninsula and Cape Flats
 Including charts of the bays

- 1682 NIEUHOF, Johan, 1618-1672**
 Caerte vande Cabo de Bona Esperanca en haer gelegentheyd
 daer omtrent. J.N.
 Shows area from Dassen Island to far side of False Bay
 Oriented with north to the right
 Inset: view of Table Mountain
- In: Nieuhof: Gedenkwaerdige Brasiliaense zee- en lant-reize.
 1682. v.2, part 2, p.6.
- Listing: Mend. JPL.137 CartM.53 Nord.604
- English ed. 1703: A Mapp of the Cape of Good Hope, by Bew
- 1726 VALENTIYN, Francois, 1666-1727**
 Kaart van de Caap der Goede Hoop... [1726]
- Shows area from Blouberg to Hottentots Holland and Cape
 Hangklip
 Inset on: Nieuwe kaart van Caap der Goede Hoop
- In his: Oud en nieuw Oost Indien. 1726. dl.5, 2.stuk,
 10 boek
- Listing: MCS.61:282 CartM.54 Nord.701
 Reproduced: MCS.61, pl.24 Norwich 214
- 1703 BEW, John, d.1793**
 A mapp of the Cape of Good Hope with its true situation.
 in Table Bay, False Bay and Saldanha Bay. Engraved by John
 Lodge jnr. London: J. Bew, 1781
 Shows area of Cape Peninsula and Cape Flats
 English version of Nieuhof 1682
 Oriented with north to the right
 Top left: Vol.2, p.141
 Inset view of Table Mountain
- In: Churchill: Collection of voyages. 1732; 1744
- Listing: JPL:137 CartM.53
 Reproduced: Norwich 209
- 1747 ROBSON, Capt.**
 A plan of Back Bay
 Shows Cape Peninsula
 Inset on: A chart of the south-east coast of Africa
- Listing: NMM.351; located in CS

- 1752 **BUCQUOY, Jakob de, b.1693**
 Baay False gelegen Beoosten Kaap de Goede Hoop; J Bosch excud.
 Oriented with north to the left

 In his: De waterwereld. 1752

 Listing: JPL.65 CartJ.65
- 1753 **BUACHE, Philippe, 1700-1773**
 Baye de Bonne Esperance
 Together with: Côtes de la partie meridionale d'Eso

 In his: Considerations geographiques et physiques. 1753

 Listing: Nord.364
- 1753 **KEULEN, Joannes van, 1654-1664**
 In de Baay Falso. In 't ligt gebragt door Joannes van Keulen
 Shows ara from Sandvlei to Miller's Point
 Together with: Robben Eyland

 In: Marre & Keulen: Nieuwe groote lichtende zee-fakkel. 1753

 Listing: MCS.61:173
 Reproduced: Tooley, pl.46 MCS.61, pl.XIII
- 1764 **NICHELSON, William**
 A chart of False Bay with the appearances of the land; also of Simon's Bay...by Wm. Nicholson, Master of...Spilsbury sculpt. W. Herbert

 Listing: none traced, in CLP
- 1775 **APRES DE MANNEVILLETTE**
 Plan de la Baye Simon, situè au Cap de Bonne Esperance, suivant les observations faites en Aoù et Septembre 1775, par Mr Dalrymple
 Shows
 Top right: 8d.

 In his: Neptune oriental. 2nd ed. 1775

 Listing: MCS.61:17
 Reproduced: Norwich 282
- 1775-1799 **DALRYMPLE, Alexander, 1737-1808**
 Plan of False Bay, by A.Dalrymple 1775, Harmar sc.
 Publish'd A Dalrymple April 17, 1799
 Shows area from Hout Bay to beyond Hanglip
 Notes by Daniel Whittle, Lieut. of HM Brig Euphrosyne

 In his: Explanations to plans of ports &c. 1784. No.21
 In his: Collections of plans of ports. 1774

Listing: none traced; located in CLP

1775-1780 DALRYMPLE, Alexander

Plan of Simons Bay near the Cape-Good-Hope from observations in Augt. & Sept. 1775 A Dalrymple. Published...Novr.25th, 1780

Pictorial elevations

In his: Plans of ports. 1784. No.18

Listing: none traced, located in CLP

1778 LOTTER, Tobias Conrad

Ager Promontorii Bonae Spei

Shows area Blouberg to False Bay

Inset on: Africae pars meridionalis cum Promontorii Bonae Spei

Listing: JPL.129 MCS.6:28

Reproduced: MCS.6, pl.18 Norwich 177

1778 HUDDART, Joseph

A Plan of Cape Bona Esperance with False Bay by Capt. Josh Huddart 1778. London Printed for R Sayer and J Bennett...April 24 1780

Shows from Table Bay to False Cape; and tracks of Colebrooke, Asia, and Royal Albert

Insets: silhouettes of coastline

Listing: MCS.61:156-7

Reproduced: MCS.61, pl.XII

-- Another ed. London: R Sayer...April 20th 1787

1779 GREGORY, Henry

A chart of False Bay... Spilsbury sculp.

-- Reissued in: Herbert's sea charts. 1777-80

-- Reissued in: New directory of East Indies. 1787

Listing: none traced, located in JPL

1780 HUDDART, Joseph

Seamon's Bay in the Bay of False, survey'd by Capn. Josh. Huddart. London Printed for R Sayer and J Bennett...1780

Shows from Muizenberg to Smits Winkll Bay

Listing: MCS.61:158

1780? HUDDART, Joseph

A Plan of Cape Bona Esperance with False Bay. London:
Laurie & Whittle, 1794
Inset: views

In: Sayer & Bennett: Oriental pilot. 1780
In: Laurie & Whittle: Oriental pilot. 1798

Reproduced: Norwich 284

1783 SPARRMAN, Anders

[Chart of False Bay]; engr. by T Conder
Shows area of... in travels of 1772-6
Inset on: A geographical chart... 1785
In his: Resa till Goda Hopps-Udden. 1783. v.1
In his: Reisen
In his: Voyage. 1787
In Paterson: A narrative of four journeys. 1789.

Listing: JPL.132 CartJ.66
Reproduced: MCS.61, pl.XXII Norwich 223

1789 PATERSON, William

[Chart of False Bay] [Cape Peninsula]
Shows from Table Bay to Cape Falso
inset on: Sparrman: A map of the southern extremity of
Africa
In his: A narrative of four journeys. 1789

Listing: JPL.132? CartJ.55 MCS.61:227 MCS.6
Reproduced

-- German ed. 1790
-- French ed.

1790 KRUGER, S

A new chart of False Bay
Shows area from Table Bay to False Cape
inset on: Heather: A new and improved chart of the Cape of
Good Hope. 1796

-- Another edition. 1808.
Inset on: Heather: A new & improved chart of the Cape of
Good Hope

in: Heather: Marine atlas. 1808

Listing: none traced; located in CS
Reproduced: Norwich 230 (Cruger)

1795 RIOU, Edward

An eye-sketch taken from the heights A & B of Hout Bay and
Chapman's Bay near the Cape-Good-Hope by Edward Riou...
A Dalrymple, 11th Map 1795
Shows from
Oriented with north to the left

In: Dalrymple: Charts and plans. 1703-1807. No.16

Listing: none traced; located in CLP

1798 HUDDART, Joseph

An Hydrographical Survey of False Bay or Bay False, including a sketch of the Cape of Good Hope... with several additions and improvements Presented by Mr. Fowmes. London Published by Rt.Laurie and Js.Whittle...1st June 1798

Listing: MCS.61:159

1797 RICE, William McPherson

False Bay at the Cape of Good Hope with the soundings as taken in the year 1797, by order of Rear Adml. Pringle; engraved by C & D Neele Shows...

In: Barrow: An account of travels. 1804. 2nd ed.1806

Listing: JPL.157 CartJ.67

-- French ed. Baie False au Cap de Bonne-Espérance avec les sondes...

1803 BRIDGES

Military plan of the Cape Peninsula drawn by order of the Dutch Govt. and revised and corrected by Lieut.Col.Bridges; engraved by S J Neele. Published Feb.1st 1803 by Cadell & Davies

Shows area from Table Bay (not Robben Island) to Cape Point
Variation of Barrow

In: Barrow: An account of travels. 1804. 2nd ed.1806

Listing: Mend.(1801) CartJ.48 MCS.61:110

-- German ed. 1806. In Uebersicht des Vorgebirges Militaerischer Plan von der Capschen Halbinsel

-- French ed. Militair plan van de Kaapsche landengte

1804 BARROW, Sir John, 1764-1848

Charte von der Halbinsel des Vorgebergs der Guten Hoffnung. Weimar 1804

Shows Table Bay to Cape Point

in: Barrow: Reizen. 1805

Listing: none traced; located in CS

1808 KRUGER, Capt. S.

A new chart of False Bay.

Inset on: Heather

In Heather: Marine atlas. 1808

Listing: Norwich; located in CS
Reproduced: Norwich 230 (Cruger)

1812 GAWTHORPE, P W

A Chart of False Bay, surveyed by order of Rear Admiral Stopford...to which is added Table Bay, with Cape Town and its environs.

With inset: Simons Bay and profiles
Shows from Blouberg to beyond False Cape
Inset on: Norie 1832/60

-- Another ed. ? 1819

Listing: none traced; located in CS
Reproduced: MCS.61, pl.XIX (1819)

1812 ARROWSMITH, Aaron I

Chart of the Cape of Good Hope... London Published...20th Jan.1812

Shows area from Robben Island to False Bay, showing Cape Peninsula in detail

Listing: Tooley, p.11 MCS.17:24

1819 GREAT BRITAIN. Hydrographic Office

Hout Bay... by Goodridge

1819-1827 NORIE, John William

A Chart of False Bay, Surveyed by Order of Rear Admiral Stopford...by P.W. Gawthorpe...to which is added Table Bay Cape Town and its environs Drawn... J W Norie Hydrographer 1819 Stephenson Engraver Corrected to 1827

Inset of Simons Bay, vignette of lighthouse, and silhouettes of coastline

Corrections and new insets

Listing: MCS.16: MCS.61:223-4

-- New edition. 1832, corrected to 1845

-- New edition. 1832. Additions 1860

1824 FRANCE. Dépôt de la Marine

Carte de False Bay et de la Baie de la Table; écrit par Besançon, Vicq.

In: Neptune Francois. IX

Listing: none traced; located in CS, JP

1827 NORIE, John William

A Plan of Simon's Bay

Inset on: A chart of False Bay by Gawthorpe...1819

Listing: MCS.61

Reproduced: MCS.61, pl.XIX

-- Another edition. 1832

-- Another edition. 1850. Wilson

- 1822-28 VIDAL, A. T. E.**
Survey of the Cape of Good Hope. By Lieut. A.T.E. Vidal of H.M.S. Leven... J & C Walker sculpt. London: Hydrographical Office 4th March 1828
Inset views: Cape of Good Hope, Cape Hanglip
Listing: MCS.61:10
- 1829 GREAT BRITAIN. Hydrographic Office**
Hout Bay... Moore
- 1846-1848 GREAT BRITAIN. Hydrographic Office**
South Africa: Simon's Bay. Sir Edward Belcher, 1846, with additions by Owen Stanley. Hydrographic Office, 1848
Admiralty chart: 1849
- 1847 SWART, Jacob**
De Simonsbaai; lith T. Ettlign
Inset on: Kaart van Zuid Afrika

Listing: none traced; located in CS
- 1847 SWART, Jacob**
De Houtbaai
Inset on: Kaart van Zuid Afrika

Listing: none traced; located in CS
- 1847 SWART, Jacob**
De Valschbaai
Inset on: Kaart van Zuid Afrika

Listing: none traced; located in CS
- 1846 RADEFELD, Carl Christian Franz**
Cape Peninsula
Inset on: Neueste Karte von Süd Africa
Top: Meyer's Handatlas. No.93

In: Meyer's Neueste universal Handatlas.

Listing: Norwich
Reproduced: Norwich 194
- 1850 WILSON, Charles [late J W Morie & Wilson]**
Simon's Bay.
Inset on: [South Africal. March 1st 1850
Admiralty chart: 1920

Listing: MCS.61:295
- 1867 GREAT BRITAIN. Hydrographic Office**
Table Bay to Cape Agulhas
Admiralty chart: 2082

- 1867 **PETERMANN, August** Heinrich
Table Bay und False Bay
Inset on: Sud-Afrika & Madagaskar
- Revised 1876
Listing: none traced; located in CS
- 1869 **GREAT BRITAIN. Hydrographic Office**
Cape of Good Hope and False Bay. 1869. London: Hydrographic
Office, 1870
Admiralty chart: 636
- Listing: Hollway 972
- 1869 **IMRAY, James**
False Bay
Shows area from Hout Bay to Cape Hanglip
Inset on: The Coast of Cape Colony
- Listing: none traced; located in CS
- 1869 **IMRAY, James**
Simons Bay
Inset on: The Coast of Cape Colony
- Listing: none traced; located in CS
- 1870 **STANFORD**
[Peninsula of the Cape on enlarged scale]
Inset on: South Africa from...
- Listing: none traced; located in CS
- 1876 **PETERMANN, August** Heinrich
Table Bay und False Bay...[gezeichnet v.H.Habenicht, gest.
v C Stier]. Gotha: Justus Perthes, 1876
Inset on: Sud-Afrika & Madagascar. 1876
- In: Stieler's Hand-Atlas. No.45c
- Listing: MCS.61:267
- 1884 **GREAT BRITAIN. Army. School of Military Engineering**
Plan table sketch of ground from Chapman Bay to Fish Hoek
Bay on the north of the Kromme River and Zwart Kop on the
south and Extension of plane table sketch in a southerly
direction to Cape Point. Chatham, 1884
2 sheets joined; zincographed
- Listing: PRO.2580

- 1885 **BOYLE, G.E.**
The southern suburbs of Cape Town 1885, dedicated to His Excellency Sir Hercules Robinson...by Major G E Boyle.. W A Richards & Sons, Cape Town, lithographers.
Shows area from Cape Town to Plumstead, especially Wynberg

Listing: PRO.2661
- 1887 **PHILIP, George & Son**
Map of the Peninsula of the Cape of Good Hope. London: Philip, 1887
Shows area

Listing: Hollway 1970
- 1888 **BOCK, A**
Plan streets within limits of Wynberg Municipality
6 sheets

Listing: Tooley DOM
- 1891 **GREAT BRITAIN. Hydrographic Office**
Simon's Bay
Admiralty chart: 1849
- 1891 **CAPE OF GOOD HOPE. Surveyor-General**
Plan of proposed schemes of sewerage and sewage disposal for the Municipalities of Wynberg, Claremont with Newlands, Rondebosch, Mowbray and Woodstock. South Africa. Cape Town: Surveyor-General's Office, printed W A Richards, 1891
To accompany Mr Clement Dunscombe's report, 9th Sept.1891

Listing: none traced; located in CS
- 1891 **PHILIP, W B**
A map of the Peninsula of the Cape of Good Hope and its neighbourhood showing the principal hard roads and homesteads... Cape Town: W B Philip; London: George Philip & Son
Issued for 1891 census?

Listing: none traced; located in CS, JP
- 1892 **BACON, G. W.**
Environs of Cape Town
Inset on his: South Africa

Listing: none traced; located in CS

- 1892 **LUDDECKE, R. ,1859-1898**
Cape Town und weitere Umgebung
Inset on: Afrika

Listing: none traced; located in CLP
- 1894 **RICHARDS, W.A.**
Enlarged portion of Cape Division
Inset on: New postal route map. Cape Colony

Listing: none traced; located in CS
- 1895 **PHILIP, George**
The Cape Peninsula

In: Castle-Line: Atlas of South Africa. 1895. No.11

Listing: none traced; located in CS
- 1897 **CAPE OF GOOD HOPE**
Cape Flats. 13 sheets
Shows area from Cape Town to beyond Simon's Town

Listing: none traced; located in CS
- 1899 **PHILIP, W B**
The Cape Peninsula. Cape Town: W B Philip; London: George
Philip & Son
Inset on: New plan of Cape Town

Listing: none traced; located in CS

68712 CAPE TOWN

- 1643 **VRIES, Martin**
 Bay of Good Hope
 Listing: Tooley's DOM
- 1684 **BOUGARD, René**
 Table Baye ou Braye de Table ua Cap de Bonne-Esperance
 Havre de Grace: Hubault, 1684
 In his: Petit flambeau de la mer. 1694. p.392
 In his: Description des principaux ports et bayes. 1684
- English ed. Little sea torch. 1801
 Listing: none traced; located in CLP
- 1686 **TACHARD, Guy de, d.1714**
 Le Baye du Cap de Bonne Esperance; C Vermeulen fecit
 In his: Voyage de Siam. 1686
 Reproduced: Norwich 208
- 1687 **CORONELLI, Vincenzo Maria, 1650-1718**
 Plan of Table Bay
 Inset on his: Route maritime
 In his: Atlante Veneto. 1690-96
 Reproduced: Norwich 51
- 1691 **VOLAN**
 The Dutch factory at the Cape of Good Hope
 In: La Loubere: Royaume de Siam. 1691
 In: La Loubère: A new historical relation of the King of Siam. 1693
 Listing: Mend.
- 1700 **OTTENS, Renier and Josua**
 Tafel-Bay
 Inset on: Nieuwe caarte van Kaap de Goede Hoop
 In: Kolb: Naaukeurige beschryving. Lakeman, 1727
 In: Visscher: Variae tab. geogr.
 Listing: JPL.119
 Reproduced: Norwich 163

1700 MORTIER, Pierre, 1661-1711

Cap de Bonne Esperance

Shows sweep of Table Bay to near Blouberg

Inset on: Carte particuliere des costes du Cap de Bone
Esperance &c.In his: Suite du Neptune françois. 1700.

Listing: Mend. (1693) MCS.61:213 MSC.6:3 Tooley, p.84

Reproduced: Tooley, pl.64 MCS.6, pl.3 Norwich 266

1702/10 VISSCHER, Veuve de Nicolas

Plan du Port et Mont Table au Cap de Bonne Esperance

Inset on: Carte de l'Afrique meridionale

In: Wit: Atlas major. ca.1705In: Wit: Atlas minor. ca.1717In: Ottens: Atlas minor. ca.1740

Listing: JPL.120 MCS.6:5a MCS.61:286

Reproduced: Tooley, pl.89 MCS.6, pl.5. Klemp 67

-- Reissued. 170- Henry de Leth

-- Reissued. 1721

-- Reissued. 1792. J.B.Elwe (without change)

1705 FER, Jacques Nicolas de, 1646-1720

Baye de la Table

Three engravings on one sheet: Cap de Bonne Esperance (view),
and Le Fort du Cap de Bonne Esperance aux Hollandois.In his: Atlas curieux. 1700-1705In his: Petit et nouveau atlas. 1705

Listing: MCS.6

Reproduced: Norwich 210. MCS.6, pl.6

1719 KOLB, Peter [MONATH, Peter Conrad]

Tafel-Baij auf dem Vorgeburg der Guten Hoffnng[sic].

Not in Dutch editions

Inset on: Accurate Vorstellung von Capo Bonae Spei in Africa

In: Kolb: Caput Bonae Spei hodiernum. 1719. p.50In: Kolb: Beschreibung. 1745. Tab.XXVII, p.299

Listing: JPL.143 CartM.31

Reproduced: MCS.61, pl.14 Norwich 213

1727 KOLB, Peter [LAKEMAN, Balthasar]

Tafel-Baay aan het Voorgebergte de Goede Hoop
 Inset on: Nieuwe caarte van Kaap de Goede Hoop
 Together with plan: De Hollandsche Vesting
 Similar to Ottens 1700

In: Kolb: Naaukeurige en uitvoerige beschryving. 1727
 In: Kolb: Nieuwe algemeene beschrijving (abridged). 1777

Listing: Hollway 252 JPL.118
 Reproduced: Norwich 168

-- English ed. 1731. The Table Bay [and The Fort]
 Based on 1719 (Monath) edition

In: Kolb: The present state. 1731.
 In: Kolb: The present state; 2nd ed. 1738

Reproduced: MCS.61, pl.XIV

1747 BOWEN, Emanuel, d.1767

A draught of Table Bay
 Together with: A plan of the Dutch fort at the Cape of Good Hope
 Based on Mortier and Kolb (Lakeman)
 Insets on: Particular draughts of some of the chief African islands

In his: A complete system of geography. 1747. p.508

Listing: JPL.154 MCS.6:14
 Reproduced: MCS.6, pl.14

1748 BELLIN, Jacques Nicolas, 1703-1772

Plan du Fort et de la Ville du Cap de Bonne Esperance =
 Grondtekening van de Vesting en stad der Kaap de Goede Hoop,
 engr. by J.v.Schley
 Top: Tome V No.7

In: Prevost: Histoire générale des voyages. 1748. v.6

Listing: CartM.57 MCS.61:63 MCS.6:

- 1748 BELLIN, Jacques Nicolas
 Carte de la Baye de la Table et Rade du Cap de Bonne
 Esperance. Dressee ... par M. Bellin]. = Kaart der Tafelbaai
 en Ree van Kaap de Goede Hoop, door M.B.
 Shows area from Table Mountain to Blue Mountain
- In: Prevost: Histoire generale des voyages. 1748. T.V.p.
- Dutch ed. 1748. Kaart der Tafelbaai en Ree van Kaap de Goede
 Hoop... J.V. Schley direx.
- German ed. Karte von der Tafelbay und der Rheede des
 Vorgebirges der Guten Hoffnung.
- Swedish ed. Kort over Taffel-bayen. 1770 JP
- Listing: MCS.6:16
 Reproduced: MCS.6, pl.16 (Dutch)
- 1751 MOUNT and PAGE
 [Chart of Table Bay]; F Lamb sculp.
 Oriented with north to the left
- Inset on: A chart of ye coasts of Cimbebas and Caffraria.
 by John Seller & Chas Price, London
- In: English pilot, 4th ed. 1751
- Listing : MCS.6:18 MCS.61:218
 Reproduced: MCS.6, pl.17
- 1753 KEULEN, Joannes van, 1654-1715
 Kaart van de Tafel Baay vertoonende De Reede van C de Goede
 Hoop
 Shows area from Blouberg
- In: Marre & Keulen: Nieuwe groote lichtende zee-fakkel. 1753.
- Listing: Hollway 206 MCS.61:172
 Reproduced: Tooley, pl.47
- Other editions: 1778 Sayer & Bennett; 1780 Dalrymple
- 1753 KEULEN, Joannes van, 1654-1715
 Robben Eyland
 Together with: In de Baay Falso
 in: Marre & Keulen: Nieuwe groote lichtende zee-fakkel. 1753.
- Listing: MCS.61:173
 Reproduced: Tooley, pl.46 MCS.61, pl.XIII

- 1753 BUACHE, Philippe, 1700-1773
Baye de Bonne Esperance
 Together with: Côtés de la partie meridionale d'Es
 In his: Considerations geographiques et physiques. 1753
 Listing: Nord.364
- 1764 BELLIN, Jacques Nicolas, 1703-1772
Carte de la Baye de la Table, et Rade du Cap de Bonne Esperance
 Re-engraved from 1748 version
 In his: Le petit atlas maritime. 1764. Tome III, no.113
 Listing: Mend. CartJ.65 MCS.6:16 MCS.61:68 Nord.10
 Reproduced: MCS.6, pl.22
 -- Swedish ed. 1770. Kort over Taffel-bayen. No.4.VIID. JP
- 1764 BELLIN, Jacques Nicolas, 1703-1772
Ville et Fort du Cap de Bonne Esperance
 Re-engraved from 1748 version
 In his: Le petit atlas maritime. 1764. Tom III, no.114 2?
 Listing: Mend. MCS.6:23 MCS.61:69 NMM.211 Nord.10
 Reproduced: Tooley, pl.13 MCS.6, pl.23
- 1766 UNIVERSAL HISTORY
 Dutch fort, Table Bay, and the Prospect of the Cape of Good Hope. London, 1766
 Listing: MSC.61:281
- 1770 BOURSET, M , fl.1770
Plan de la Ville du Cap-de-Bonne-Esperance et Environs Par M.B.C.T. en Décembre 1770, Croisey sc.
 Oriented with north to bottom
 In: Faden: The general atlas. 1778
 Listing: MCS.61:269
 Reproduced: MCS.61, pl.XXIII
 -- English version. 1795. Map of Cape Town and environs. Faden
- 1770 KEULEN, Joannes van, 1654-1715
 [Part of a map of the Cape of Good Hope]
 Listing: MCS.6
 Reproduced: Tooley, pl.47 MCS.6, pl.26 Norwich 274

1775 DALRYMPLE, Alexander, 1737-1808

Plan of Table Bay

In his: Explanations to plans of ports &c. 1784. No.15

Listing: none traced; located in CLP

1778 SAYER, Robert and BENNETT, John

A Plan of Table Bay, with the Road of the Cape of Good Hope, from the Dutch survey. Published by Joannes van Keulen. London Printed for Robt.Sayer and Jno.Bennett...20 Jany. 1778.

Copy of the Keulen map of 1753

Inset: A south view of the Cape by Abbè de la Caille

In: Oriental pilot. 1784In: East India pilot. 1775/81

Listing: Hollway 206 MCS.61:245 NNM.417

Reproduced: Tooley, pl.47 Norwich 269

-- Another ed. 1794. Laurie & Whittle

1780 DALRYMPLE, Alexander, 1737-1808

Table Bay at the Cape of Good Hope, from Van Keulen, etched by P Begbie, the writing by W Harrison. A Dalrymple 10th Feby. 1780

Oriented with north to bottom

Inset: View. 1732 by J G Loten

Listing: none traced; located in CLP

1784 SELS, J

Kaart der Tafel Baaij van Kaap de Goede Hoop

Oriented with north to the left

Listing: Hollway 363; located in CLP

1786 BARROW, Sir John, 1764-1848

Chart of Table Bay at the Cape of Good Hope, as taken in the year 1786 by order of the Governor van de Graaff; engr. by S J Neele

Shows area from Losperd Bay to Camps Bay

In: Barrow: An account of travels... 1804. vol.II.p.255;
2nd ed. 1806. vol.II. p.272

Listed: CartJ.54

-- French ed. 1806. Plan de la Baie de la Table au Cap de Bonne-Espérance. in: 2e voyage. 1806. Tom. II, p.15

-- Dutch ed. 1804

1790 DOUGLAS, Capt.

A new chart of Table Bay by Captain Douglas.
Shows area from Blue Hills to Lions Cove
Inset on: Heather: A new and improved chart of the Cape of
Good Hope. 1796

In: Heather: Marine atlas. 1808

Listing: MCS.61:152
Reproduced: MCS.61, pl. XI

-- Another edition. 1827
Inset on: Norie

1790 PATERSON, William

Plan de la ville et du fort
Copy of Sparrman

Inset on: View of Table Bay
In his: Reisen in das Land der Hottentotten. 1790

Listing: CartJ.56

1790 PATERSON, William, 1755-1810

Carte de la Baye
Inset on: View of Table Bay

In his: Reisen. 1790

Listing: CartJ.55

1793 GRANDPRE, Louis Marie Joseph O'Hier, comte de
Plan de la citadelle du Cap de Bonne Espérance, levé sur les lieux en 1793, par L. De Grand-Pré

In his: Voyage. 1801. Tom.2, p.206

Reproduced: Norwich 341

1795 FADEN, William, 1750-1836

A Plan of the Town of the Cape of Good Hope and its Environs
taken by Monsr. Bourset in December 1770. London:
Published with some additions and emendations by Wm.Faden...
Nov.25th, 1795
With inset: View

In his: New general atlas. 1790/99
In his: Atlas minimus universalis. 1798

Listing: JPL.155 MCS.17:8
Reproduced: MCS.17, pl.1

- 1804** **BARROW, Sir John, 1764-1848**
 Chart of Table Bay at the Cape of Good Hope, as taken in the year 1786 by order of the Governor van de Graaff; engr. by S. J. Neele. London: Cadell & Davies
 Based on Dutch chart
- In his: An account of travels. 1804
- Listing: CartJ.54
- French ed. 1806. Plan de la Baie de la Table au Cap de Bonne-Espérance
- 1818-1827** **NORIE, John William, 1772-1843**
 A plan of Table Bay
 Inset on: A new chart of the Cape of Good Hope...1818 corrected to 1827
- Listing: Mend. (1828) MCS.61:223-4
 reproduced: MCS.61, pl.XVIII
- Another ed. 1831-1857. Additional soundings
- 1822** **BIRD, William Wilberforce, 1758-1836**
 Plan of Cape Town & Harbour; lith. by B R Baker. Printed by C Hullmandel
- In his: State of the Cape of Good Hope. 1823. front.
- Listing: CartJ.57
 Reproduced:
- 1825** **KNOX, Robert, fl.1830-1855**
 Table Bay
 Shows area from Three Anchor Bay to Paarden Island
- In his: An examination of the merits of a variety of plans for...Table Bay. 1830. p.41, pl.1.
- Listing: CartJ.58
- 1825** **KNOX, Robert, fl.1830-1855**
 A plan of the Harbour and its Breakwater in Table Bay shewing how Ships may be birthed therein... By Robert Knox, 1825
- In his: An examination of the merits of a variety of plans for... Table Bay.... 1830. p.41, pl.2
- Listing: CartJ.59
- 1827** **THOMPSON, George, 1796-1889**
 George Thompson's Plan of Cape Town and its Environs. F Ross delt... Published Feb'y. 1827 by H Colburn, London

- Vignette of view 1700, and view of house in Long Street
 In his: Travels and adventures... 1827. vol.II, p.382
 Listing: SAip CartJ.61 MCS.61:237
- Dutch edition 1828. ... sculp. W H Hoogkamer
 In his: Reizen en ontmoetingen... 1828. p.216
 In: Teenstra: De vruchten myner werkzaamheden. 1828-9. p.177
- 1831 THOMPSON, George, 1796-1889
 Plan of Cape Town engraved (by permission of Geo. Thompson, Esq.) for the South African Directory for 1831, compiled by G Greig; drawn & engraved by A Reid
 In: Cape almanac. 1831. front
 Listing: CartJ.62
- 1832 GREAT BRITAIN. Hydrographic Office
 Table Bay.... Owen
 Admiralty chart: 123
- 1832 THOMPSON, George, 1796-1889
 Plan of Cape Town and Environs, lithographed for G Greig's Cape of Good Hope Directory & Almanac. London: Day & Haghe lith. by Day & Haghe
 Inset: view of Table Mountain
 In: Cape almanac. 1832. front.
 Listing: CartJ.62
- Another edition, with additions
 In: Cape almanac. 1833. 1834. ?? 1835 ???
- Another edition. Cape Town from Greig's Almanac
 Inset on smaller scale ?
 In: Steedman: Wanderings & adventures... 1835. vol.1, p.330
 In: Chase: The Cape of Good Hope... 1843. p.xxiii.
 Listing: CartJ.62
- 1834 THOMPSON, George, 1796-1889
 Cape-Town. From Greig's Almanac
 Inset on: South Africa
- SDUK (Baldwin & Cradock)
 In: Steedman: Wanderings & adventures. 1835
- (Stanford)
 In: Irons: The settlers' guide. 1858
 Listing: Mend. CartJ.62
 Reproduced: Tooley, p1.82 MCS.17, p1.XIII

- 1835 **MICHELL, Charles Cornwallis**
Table Bay shewing

In: Cape almanac
- 1837 **POORTERMANS, Johannes Cornelius**
Plan of Table Bay; lithogr. by J C Poortermans.

In: Cape almanac, 1837. Misc. p.22

Listing: CartJ.60
- 1843 **CHRISTOPHER, Joseph Steer**
Cape Town
Inset on: Cape of Good Hope

In: Chase: The Cape of Good Hope. 1843

Listing: CartJ.31
- 1846 **GREAT BRITAIN. Hydrographic Office**
Africa south west coast: Table Bay, surveyed by Sir Edw.
Belcher, Walker sculpt.
Admiralty chart: 1849

-- Revised. 1858

Listing: none traced; located in JP
- 1847 **SWART, Jacob**
De Tafelbaai. Lith. T.Ettling
Inset on: Kaart van Zuid Afrika

Listing: none traced; located in CS
- 1851 **CREW, J**
Plan of Cape Town, engraved & published for the Cape of Good
Hope Almanac and Directory. Engraved & printed by J Crew,
Cape Town
Inset: view of Table Bay

In: Cape almanac. 1851

Listing: none traced
- 1851 **WALCKENAER, Charles Athanase, Baron**
Plan de la Ville du Cap
Inset on: Colonie du Cap

Listing: none traced; located in CS

- 1852 **LOWRY, Joseph Wilson, 1803-1879**
 Environs of Cape Town. [London: Chapman & Hall]
 Inset on: South Africa
- In his: Table atlas. 1852
- Listing: MCS.61:192
- 1854 **DAY, John & Son**
 Plan of Cape Town, Cape of Good Hope. 1854. Day & Son, lith.
 to the Queen
 Insets: view of Table Bay by Bowler, Cape Town coat of arms
- Reproduced: Norwich 343
- 1857 **GREAT BRITAIN. Hydrographic Office**
 Africa south west coast: Table Bay, by Belcher....
- 1858 **GREAT BRITAIN. Hydrographic Office**
 Table Bay... Skead
 Admiralty chart: 1920
- 1859 **COODE, Sir John**
 Table Bay Harbour: Plan of proposed new works to accompany
 Mr Coode's report of 30th November 1859. London: Waterlow
 & Sons
 Incorporating designs 1823 to 1859
- Listing: PRO.2640
- 1867 **PETERMANN, August Heinrich**
 Table Bay und False Bay
 Inset on: Süd-Afrika & Madagaskar
- Listing: none traced; located in CS
- Revised 1876
- 1869 **INRAY, James**
 Table Bay
 Shows area from Camps Bay to Blouberg
 Inset on: The Coast of Cape Colony
- Listing: none traced; located in CS

- 1870 **GREAT BRITAIN. Hydrographic Office**
 Cape of Good Hope: Table Bay Breakwater and Docks. Surveyed
 by... W E Archdeacon & A C Jenour. 1870. Drawn by A J Boyle,
 Hydrographic Office. Engraved by Davies, Bryer & Co.
 Published at the Admiralty 30 Aug. 1870
 Admiralty chart: 123
- Listing: Hollway 973
- Corrected to Aug. 1880
- Listing: PRO.2653
- 1875 **PETERMANN, August Heinrich 1822-1898**
 Die Capstadt und Umgebung, bearbeitet von H.Habenicht
 Inset on: Das Capland
- In: Stielers Hand-Atlas, No.72
- Listing: Hollway 1085 MCS.61:268 (1876)
- Other editions. 1880, 1881
- 1876 **STIELER**
 Table Bay and False Bay.[gezeichnet v.H.Habenicht]
 Inset on: Süd-Afrika & Madagaskar
- In his: Hand-Atlas. 1876
- Listing: MCS.61:267
- 1876 **SILVER, S. W. & Co.**
 Plan of the city and suburbs of Cape Town
- In his: Handbook, 2nd ed.
- Listing: Mend.
- 1879 **[SOLOMON, Saul]**
 Plan of Cape Town, lithographed by Saul Solomon & Co.
 Shows area extending beyond the Castle and District 6
- In: Guide to the Cape Colony. [1879]
- Listing: Mend.; located in CS
- 1886 **NOBLE, John**
 Plan showing existing and authorized Table Bay Harbour
 Works. Lithogr. Surveyor-General's Department, printed by
 Solomon...
- In his: Official handbook. 1886
- Listing: Mend.

- 1888 WATERLOW & SONS
A street plan of Cape Town

Listing: Cory
- 1891 CAIRNCROSS, T W
Map of Cape Town

Listing: Tooley DOM
- 1892? BACON, G. W. & Co
Environs of Cape Town
Inset on his: South Africa

Listing: none traced; located in CS
- 1892 LUDDECKE, R
Cape Town und weitere Umgebung
Inset on: Afrika
Shows area from Robben Island to Cape Point

Listing: none traced; located in CLP
- 1894 WATSON, D. Colquhoun
Map of Robben Island reduced from survey map and revised &
completed to date...12/7/94

Listing: none traced; located in CS
- 1895 BACON, G. W. & Co
Environs of Cape Town
Inset on his: New map of Africa
Shows area from Camps Bay to beyond Paarden Island, and as
far as Claremont

Listing: none traced; located in CS
- 1895 GOAD, Charles E.
[Insurance plans]: Cape Town
Key plan and 24 sheets; updated regularly

Listing: none traced; located in CS
- 1895 PHILIP, George
Cape Town

In: Castle Line: Atlas of South Africa. 1895. No.11

Listing: none traced; located in CS

- 1896 BARTHOLOMEW, John George, 1860-1920
[Cape Town and environs]. Edinburgh Geographical Institute
Inset on: Southern section: general map of South Africa

In: Wallace: Farming industries of Cape Colony. 1896

Listing: Mend.
- 1899 PHILIP, W B
Philips' New plan of Cape Town. Cape Town: W B Philip;
London: G Philip & Son
Shows area from Fort Knokke to Sea Point
Fold. title: Philips' New plan of Cape Town with an inset
map of the Cape Peninsula
Inset: The Cape Peninsula

Listing: none traced; located in CS

6872 WEST COAST

- 1606 **BRY, Theodore de, 1528-1598**
 Aguada de sardeijne Tafelberg C de Bonesperance
 Headed: III Delineatorio sinus illius, quem Hollandi
 mensalem, sua lingua Taffel Baje, nominarunt
 In his: Indiae orientalis. 1601-1607
 Listing: Nord.361
- 1659 **DONCKER, Hendrick, 1626-1699**
 Bay de S. Martin [to] Cabo de bona Esperanca
 Shows coast from St Martin's Bay to False Bay
 Inset on: Pascaart van de zee-custen van Angola
 In his: De Zee-atlas. 1666
 Listing: MCS.61:133 Nord.67
- 1683 **KEULEN, Joannes van, 1654-1715**
 Aldus verthoont Agoa de Saldanha
 Inset on: Pascaert van de Costa de Caffres... 1683
 With silhouettes of coast, soundings and rhumb lines
 In his: Zee Fakkel. 1683
 In his: De groote nieuwe vermeerderde Zee-atlas. 1694
 Listing: Hollway 211 MCS.61:169 Nord.121
 Reproduced: Tooley, pl.44 Norwich 275
 -- Reissued 1716
- 1683 **KEULEN, Joannes van, 1654-1715**
 Dassen Eylandt
 In his: Zee Fakkel. 1683
 Listing: Hollway 211
 -- Reissued 1753
- 1684 **BOUGARD, René**
 Baye de Saldagne
 In his: Description des principaux ports et bayes. 1684
 Listing: none traced; located in CLP
- 1700 **MORTIER, Pierre, 1661-1711**
 Baye de Saldagne
 Inset on: Carte particulière des costes de l'Afrique depuis
 Cabo Ledo jusques au Cap de Bone Esperance.
 In his: Suite du Neptune françois. 1700.
 Listing: Hollway 219 MCS.61:212
 reproduced: Norwich 264

- 1729 MOLL, Herman, d.1732**
 The Bay of Agoa de Saldanha...By H.Moll Geographer. 1729.
 Together with: St.Helena.
 In his: Atlas minor. 1729
- Listing: Mend. Tooley, p.80 MCS.61:205-6
 Reproduced: Tooley, pl.61
- Another edition: date erased. [1735]
 -- Another edition. Pirated version by Grierson, Dublin. [1739]
 -- Another edition by Grierson. [1745]
- 1747 BOWEN, Emanuel, d.1767**
 The bay of Agoa de Saldanha.
 Inset on sheet: Particular draughts of some of the chief
 African islands...
- In his: Complete system of geography. 1747. p.508.
 In his: Complete atlas. 1752.
- Listing: JPL.154 CartM.63
 Reproduced: Norwich 338
- 1747/8 ROBSON, Capt.**
 A plan of Saldanha Bay
 Inset on: A chart of the south-east coast of Africa
- Listing: NMM.351; located in CS and JP
- 1748 BELLIN, Jacques Nicolas, 1703-1772**
 Carte de la Baye de Sainte Helene dressée sur les remarques
 des navigateurs, par N.B.... J. V. Schley direx
- In his: Petit atlas maritime. 1764
 In: Prevost: Histoire générale. 1748. v.6
- Listing: CartM.60 MCS.61
- Swedish ed.? 178- Kort over Bayen St. Helena
 Lettered: No.15. VII D
- 1748 BELLIN, Jacques Nicolas, 1703-1772**
 Carte de la Baye de Saldana ou Saldane, dressée sur les
 remarques des navigateurs par N. B
 Lettered: Tome V No.4
- Another edition. J.V.Schley direx. 1748
- In: Prevost: Histoire générale. 1748. v.6
- Listing: CartM.62 MCS.61:64-65 Tooley, p.22 Nord.638
- Swedish edition. [1770 ?] Kort over fiorden Saldana eller
 Saldane...
 Lettered: No.3. VII D.

- 1753 KEULEN, Joannes van II**
 Baya de S. Helena. t'Inkoomen van de Saldanha Baay
 Inset on: Paskaart van het Zuydelykste Gedeelte van Afrika
 strekkende van Moros da Pedra

 In his: [Collection of charts...]. 1753
 In: Le grand nouvel atlas de la mer. 1680

 Listed: Tooley, p.62 Nord.128
 Reproduced: Tooley, pl.45
- 1764 BELLIN, Jacques Nicolas, 1703-1772**
 Baye de Saldane au Nord-Ouest du Cap de Bonne Esperance
 Lettered: Tom III No.112

 In his: Le petit atlas maritime. 1764

 Listing: MCS.61:67 Tooley, p.24 NMM.211 Nord.10
- 1764 BELLIN, Jacques Nicolas, 1703-1778**
 Plan of St Helena Bay
 Lettered: Tom. III No.

 In his: Le petit atlas maritime. 1764

 Listing: none traced; located in CLP
- 1778 LOTTER, Tobias Conrad, 1717-1777**
 Sinus Saldanhae of Saldanha Baay
 Dedicated to "Domino Wilhelmo", hereditary prince of Hesse,
 by I A Iassoy
 Inset on: Africae pars meridionalis

 In his: Atlas géographique. 1778

 Listing: MCS.61:191 JPL.129
 Reproduced: Norwich 177
- 1781 AUVERGNE, Phillip d', 1755-1816**
 Plan of the bay of Saldanah on the S.W. coast of Africa
 shewing the operations of the squadron of Comodore[sic]
 Johnstone, in the attack upon Five Dutch East India ships on
 the morning of July 21st AD.1781. Drawn by Lieut. D'Auvergne
 of the Navy, commanding the Lark
 Oriented with north to the left

 In: Letter to Lord Viscount Howe.... 1787. front.

 Listing: none traced; located in CS
- 1781 SAYER, Robert and BENNETT, John**
 A Plan of Saldanha Bay geometrically surveyed in 1752
 Inset on: A new chart of the southern coast of Africa

 Listing: MCS.61:244
 Reproduced: MCS.61, pl.20

- 1782 DALRYMPLE, Alexander, 1737-1808**
 Plan of St. Helena Bay, on the west coast of Africa, taken from a plan by N. Bellin... writing by W H. Published 17th Feby. 1782 by A Dalrymple
 Oriented with north to bottom
 In his: Explanations... 1784. pl.12
 Listing: none traced; located in CLP
- 1786/91 DALRYMPLE, Alexander, 1737-1808**
 St. Helena Bay... 1786, W Harrison sc., J Walker sculpt.
 Publishd by Dalrymple July 4th 1791
 Oriented with north to left
 Insets: Elevations
 In: Dalrymple: Explanations.... 1784. pl.13
 Listing: none traced; located in CS
- 1789/91 DALRYMPLE, Alexander, 1737-1808**
 Plan of St. Helena Bay on the west coast of Africa, laid down by order of Cornelis Jacob van de Graaff... 1789, done by Chevalier Duminy, Capt. Lieut. Valkenburg, Capt. Lieut. De Baer, Lieut. of Artillery Frederici & Cadet Josephus Jones, 1791. Published by A Dalrymple June 19, 1797.
 Insets: Walvisch Bay 1793, Beschermer's Harbour 1793
 In: Dalrymple: Explanations.... 1784. pl.4
 Listing: Mend.; located in CLP
- 1796 DALRYMPLE, Alexander, 1737-1808**
 Plan of St. Helena Bay on the west coast of Africa... laid down from observations in H M Sloop Star 1796 obligingly communicated by Com: Blankett to whom this plate is inscribed. A Dalrymple Sept.7, 1796
 In: Dalrymple: Explanations.... 1784. pl.14
 Listing: none traced; located in CLP
- 1796 DAMPIERRE, Capt.**
 A new chart of Saldanha Bay
 Inset on: Heather: A new and improved chart of the Cape of Good Hope... 1796
 In: Heather: Marine-pilot. 1808
 Listing: MCS.61:152 NMM.343
 Reproduced: MCS.61, pl.11

- 1801 **LUFFMAN, John, fl.1776-1820**
Saldanha Bay engraved for Luffman's Select Plans, vol.II.
miniature map
- Listing: MCS.108
Reproduced: MCS.108, pl.16
- 1803 **KERSTEMAN, Major**
Saldanha Bay surveyed by Major Kersteman of the Royal
Engineers. 1803. Soundings by Captn. Cramer, H M S Rattlesnake
- In: Raymond: Saldanha Bay harbour. 1867
- Listing: none traced; located in CS
- 1804
- Coast of Africa from Table Bay at the Cape of Good Hope, to
Saldanha Bay; engr. by S J Neele. London: Cadell & Davies
Oriented with north to the left
- In: Barrow: An account of travels... 1804. v.2
- Listing: CartJ.49
- French ed. 1801. Côte d'Afrique depuis la Baie de la Table
au Cap de Bonne Esperance jusqu'au la Baie de Saldanha,
gravé par B. Tardieu
- Dutch ed. 1800. Kust van Afrika van de Tafel Baay aan Kaap
de Goede Hoop tot de Saldanha Baay; Dl. Veelwaard sculp., F.
Bohn excud.
- 1812 **GOLD, Joyce**
Saldanha Bay. Drawn by J Gold, Naval Chronicle Office. Aug.
31, 1812
- In: Naval chronicle, v.28, p.148
- Listing: Mend. CartJ.63
- 1796-1813 **ELPHINSTONE, Capt. J**
Saldanha Bay. Admiralty 1813
Admiralty chart: 1232
- Listing: Tooley DOM

1816 NELLISON, Robert

[Chart of Saldanha Bay by Mr Nelson]
 Reduced copy of Nelson's chart. Mr Nelson was master of the
 Victory
 Oriented with north to the left

In: Fisher: The importance of the Cape of Good Hope...
 3rd ed. with additions. 1816

Listing: CartJ.64

1818-1827 NORIE, John William, 1772-1843

A plan of Saldanha Bay from a late survey
 Inset on: Norie: A new chart of the Cape of Good Hope...1827

Listing: Mend. (1828) MCS.61:221-2
 Reproduced: MCS.61, pl.XVIII

-- Another ed. March 1st 1831-1857.
 Additional soundings Table Bay etc.

1869 IMRAY, James, d.1870

St. Helena Bay

Inset on: The Coast of Cape Colony... 1869

Listing: none traced; located in CS

1869 GREAT BRITAIN. Hydrographic Office

Chart of South-West Coast. Saldanha Bay, 1869. London:
 Hydrographic Office, 1870
 Admiralty chart: 1232

Listing: BM Hollway 971

1873 FRANCE. Dépôt de la Marine

Afrique côte sud-ouest. Baie de Saldanha

Listing: Hollway 1046

1879 GREAT BRITAIN. Hydrographic Office

Africa, West Coast. Donkin Bay to Milkbosch Point. London:
 Hydrographic Office, 1879
 Admiralty chart: 802

Listing: Hollway 1326 BM (1872)

1879 GREAT BRITAIN. Hydrographic Office

Africa, West Coast. Melkbosch Point to Orange River.
 London: Hydrographic Office, 1879.
 Admiralty chart: 897

Listing: Hollway 1327

6873 SOUTH COAST

- 1598 **HOUTMAN, Cornelis de, ca.1540-1599**
 De Baij van A. de S.Bras
 Inset on: Caerte van der zuyderhoek van Africa

 In his: Prima pars descriptionis itineris navalis. 1598
 Dutch ed. 1598; French ed.1598
 In his: Reis na Indien. 1617
 In: Commelin: Begin ende voortganh. 1646

 Listing: CartM.59, 57 (French) Nord.399
 Reproduced: MCS.61, pl.6 (1646)
- 1598 **LODEWIJCKSZ, G.W.A. Willem, fl.1598**
 Cap d'Aguilhas

 In his: Prima pars descriptiones itineris navalis.1598
 In his: 't Eerste boeck. Historie van Indien.1598
 In: Commelin: Voyages 1725

 Listing: Nord.566
- 1666 **GOOS, Pieter, ca.1616-1675**

 Vlees bay. Ahoa de S.Bras
 Inset on: Pas-kaarte van de Zuyd-west-kust van Africa

 In his: Zee-atlas. 1668. 24
 In his: Atlas de la mer. 1673

 Listing: MCS.6:1 Nord.80
 Reproduced: Norwich 243
- 1753 **KEULEN, Joannes van**
 De Mossel Baay In't ligt gebragt door Joannes van Keulen
 Together with: Pas-caart van de Baay de Lagoa

 Listing: MCS.61:174 Tooley, pl.63
- 1753 **KEULEN, Joannes van**
 Vleesch-Baay of Baya de S. Braz
 Inset on: Paskaart van het zuydelykste gedeelte van Afrika,
 strekkende van Moros da Pedra

 In his: Collection of charts, De nieuwe groote lichtende
zee-fakkell, part six

 Listing: Nord.128

- 1774 **DALRYMPLE, Alexander, 1737-1808**
 Mossell Bay on the So. coast of Africa from Vankeulen... W. Palmer sculp. Published A Dalrymple, 5th Feby. 1774
 Inset above: Bay St. Sebastian
- In his: Explanations. 1784. pl.22
- Listing: MCS.61:122
-
- 1705/6 - 1774 **DALRYMPLE, Alexander, 1737-1808**
 Bay St. Sebastian... from a MS in the Journal of the ship Northumberland 1705/6. W Palmer sculp. Published A Dalrymple 5th Feby. 1774
 Together with: Mossel Bay
- In his: Explanations. 1784. pl.22
- Listing: BM; located in CLP
-
- 1774 **DALRYMPLE, Alexander, 1737-1808**
 Flesh Bay or Bay St Bras from Van Keulen... W Palmer sculp. Published... by A Dalrymple 5th Feby. 1774.
 Note: "In the Journal of the first voyage of the Dutch there is a plan of this port which they entered 4th Augt. 1595..."
- In: Dalrymple: Explanations. 1784. pl. 23
- Listing: MCS.61:121
-
- 1775 **APRES DE MANNEVILLETTE, Jean Baptiste N.D, 1707-80**
 Plan de la Baye de Formose ou Mossel-Baye
 Inset on: Carte reduite de la cote meridionale d'Afrique
- In his: Neptune oriental. 1775
 In: Robert de Vaugondy: Atlas universel. 1793
- Listing: JPL.133 MCS.61:19 NMM.204
-
- 1775 **APRES DE MANNEVILLETTE, Jean Baptiste N.D, 1707-80**
 Plan de la Baye St. Blaise
 Inset on: Carte reduite de la cote meridionale d'Afrique
- In his: Neptune oriental. 1775
 In: Robert de Vaugondy: Atlas universel. 1793
- Listing: JPL. 133 MCS.61:19 NMM.204
-
- 1778 **SAYER, Robert and BENNETT, John**
 Plan of Mossel Bay on the south coast of Africa from Van Keulen. London: Robt. Sayer & Jno. Bennett, 20 Jan. 1778
 Together with: Bay of Algoa, and Plan of Flesh Bay
- Listing: JPL.158 MCS.6:
 Reproduced: Norwich 274

- 1778 **SAYER, Robert and BENNETT, John**
 Plan of Flesh Bay or Bay St. Bras from Van Keulen. London:
 Robt. Sayer & Jno. Bennett, 20 Jan. 1778
 Together with: Bay of Algoa, and Mossel Bay
- Listing: JPL.158 MCS.6:
 Reproduced: Norwich 274
-
- 1778 **RENNELL, James, 1742-1830**
 A chart of the Bank of Lagulhas
- Listing: none traced; located in JP
-
- 1791-93 **GOWER, Richard Hall, 1787-1833**
 Chart of the Worcester's track over the Cape Bank, by R H
 Gower 1791; W Harrison sculpt. Published by A Dalrymple
 Feb.15th 1793
- In: Dalrymple:Plans of ports. pl.20
- Listing: none traced; located in CLP
-
- 1794 **LAURIE, Robert and WHITTLE, James**
 Mossel Bay after Van Keulen... Published 12th May 1794 by
 Laurie & Whittle...
 Together with: Bay of Algoa, and Flesh Bay
- Listing: MCS.61:182
-
- 1794 **LAURIE, Robert and WHITTLE, James**
 Flesh Bay or Bay St. Bras. Published 12th May 1794 by
 Laurie & Whittle
 Together with: Bay of Algoa, and Mossel Bay
- Listing: MCS.61:182
-
- 1797 **RICE, William McPherson**
 Mossel Bay, on the s.e. coast of Africa...surveyed in
 Sept.1797. Engr. by S.J. Neele
 Admiralty chart: [639]
- In: Barrow:An account of travels. 1804
 In: Barrow & Park:Travels. 1806
 In: Laws:Mossel Bay as a harbour of refuge. 1860
 In: Nautical magazine, Nov.1861
- Listing: Hollway 392 Mend. CartJ.71

- 1834 SOCIETY FOR DIFFUSION OF USEFUL KNOWLEDGE
 District of George; [J & C Walker sculpt.]
 Inset on: South Africa
 Published by Baldwin & Cradock 1834-44; Charles Knight
 1844-52; George Cox 1852-53; Edward Stanford 1857-70

 In: Steedman: Wanderings. 1835

 Listing: CartJ.69
 Reproduced: MCS.17, pl.XIII Tooley, pl.82
- 1839-1845 MICHELL, Charles Cornwallis
 South Africa, Cape Agulhas. C.C. Michell. Hydrographic
 Office
 Shows anchorage of Cape Agulhas and Struis Bay to illustrate
 proposed sites of lighthouses
 Inset views
 Admiralty chart: 1225

 Listing: none traced
- 1851 GREAT BRITAIN. Hydrographic Office
 Africa South Coast Sheet III Cape St. Blaise to Zwellendam
 Pt, engraved by J & C Walker Published... Octr. 20th 1851
 Admiralty chart:

 Listing: MCS.61:12
- 1853 GREAT BRITAIN. Hydrographic Office
 Chart of the South Coast of Africa from Cape Hanglip to
 Dyer's Island, surveyed by Lieuts. Dayman and Simpson.
 1853
 Admiralty chart:

 Listing: Hollway 628
- 1853 GREAT BRITAIN. Hydrographic Office
 Chart of the South Coast of Africa: Dyer's Island to
 Struijs Bay, surveyed by Lieuts. Dayman and Simpson
 Admiralty chart:

 Listing: Hollway 629
- 1857 MACLEAR, Sir Thomas
 Africa south coast

 Listing: Tooley DOM
- 186- GREAT BRITAIN. Hydrographic Office
 Africa, south coast... 7 sheets
 Admiralty charts:

186- GREAT BRITAIN. Hydrographic Office
 Mossel Bay to Cape St Francis
 Admiralty chart: 2084

1862 GREAT BRITAIN. Hydrographic Office
 Vleesbaai Visbaai, surveyed by Skead
 Admiralty chart:

1863 GREAT BRITAIN. Hydrographic Office
 Mossel Bay
 Admiralty chart: 639

-- Reissued 1864

1865 GREAT BRITAIN. Hydrographic Office
 Struisbay, surveyed by Capt. Daniel May
 Admiralty chart:

1865 GREAT BRITAIN. Hydrographic Office
 St. Sebastian Bay, surveyed by Capt. Daniel May
 Admiralty chart

1867 GREAT BRITAIN. Hydrographical Office
 Chart of Coast of South Africa, Cape Agulhas to Mossel-bay
 Admiralty chart: 2083

listed: Hollway 918

1869 IMRAY, James
 Mossel Bay
 Inset on: The Coast of Cape Colony... 1869

Listing: none traced; located at CS

-- Revised 1874, 1879



REFERENCES

- BM British Museum. (1967) Catalogue of maps. London. 15v.
- CartJ Cartwright, J.F. (1955; 1976) Maps of Southern Africa in printed books, 1750-1857. Cape Town: University of Cape Town Libraries
- CartM Cartwright, M.F. (1955; 1976) Maps of Africa and Southern Africa in printed books, 1550-1750. Cape Town: University of Cape Town Libraries
- Cory Rhodes University. Cory Library. (1958) Catalogue of the map collection. Grahamstown
- DOM Tooley's Dictionary of mapmakers (1979) New York: Liss; Amsterdam: Meridian Publishing Company
- Hollway Hollway, H.C.S. (1897) Bibliography of books...relating to South Africa. South African Philosophical Society. Transactions, 10 (2)
- JPL Johannesburg Public Library. (1952) Exhibition of decorative maps of Africa up to 1800: descriptive catalogue. Johannesburg: Public Library
- MCS Map collectors' series. (1963-1975) London: Map Collectors' Circle
- MCS.6 Tooley, R.V. (1963) Early maps... London: Map Collectors' Circle
- MCS.17 Schrire, D. (1965) The Cape of Good Hope... London: Map Collectors' Circle
- MCS.29-30 Tooley, R.V. (1966) Printed maps of Africa. London: Map Collectors' Circle
- MCS.47-48 Tooley, R.V. (1968) Maps of Africa: a selection. London: Map Collectors' Circle
- MCS.61 Tooley, R.V. (1970a) Printed maps of Southern Africa and its parts. London: Map Collectors' Circle
- MCS.76 Verner, C. (1971) Maps by John Arrowsmith. London: Map Collectors' Circle
- MCS.82 Tooley, R.V. (1972) A sequence of maps of Africa. London: Map Collectors' Circle
- MCS.88-89 McGechaen, A and Verner, C. (1973) Maps in the parliamentary papers by the Arrowsmiths. London: Map Collectors' Circle
- MCS.108 Hoppen, S. (1975) Small maps of Africa. London: Map Collectors' Circle
- NMM National Maritime Museum, Greenwich. (1971) Catalogue of the Library; vol.3, Atlases & cartography. London: H. M. S. O.
- Nord. Mickwicz, A-M. (1979-84) The A.E. Nordenskiöld Collection: annotated catalogue of maps made up to 1800 vols. I-III. Helsinki: University Library; Stockholm: Almqvist & Wiksell International
- Norwich Norwich, O. (1983) Maps of Africa. Johannesburg, Donker
- PRO Penfold, E. (1982) Maps and plans in the Public Record Office, part 3: Africa. London: H. M. S. O
- SAip South Africa in print = Boekspieël van Suid-Afrika. (1952) Cape Town: Van Riebeeck Festival Book Exhibition Committee
- Stell. Stubbings, E.O. (1981) Catalogue of maps published before 1860... Stellenbosch: University Library
- Tooley Tooley, R.V. (1969) Collectors guide to maps of the African continent and southern Africa. London: Carta Press
- Tooley DOM Tooley, R.V. (1979) Tooley's Dictionary of mapmakers. New York: Liss; Amsterdam: Meridian Publishing Company

8.4 CONCLUSION

The checklist of maps (supra) is generally speaking a workable list, although it has yet to be tested over a long period in a practical reference situation. There are, however, some reservations.

The arrangement by DDC seems to be satisfactory, although the dilemma of overlapping areas remains a problem. This was particularly apparent with the stretches of coastline along the west coast, which touched on the Cape Peninsula. The proposed new area tables (-68) might well be more satisfactory as 9683 extends over a wider area (from Saldanha Bay to Cape Agulhas) and is therefore not so constrictive. Another difficulty was the problem of distinguishing between maps of the "Cape district" and maps of "Cape Town", the former being spread over a slightly wider area than the latter. In the checklist it has not always been possible to decide precisely which area is a truer reflection of the situation, and there could have been misplacings. The testing period will straighten out many of these problems.

The amount of information necessary to identify a map sufficiently was tested and found to be satisfactory. The checklist in this respect has proved to be a workable model for handling early maps. The fuller details considered indispensable for carto-bibliography can be traced satisfactorily in the reference sources quoted.

The checklist, however, cannot be accepted as definitive. The authoritative reference sources were found in many cases to be inconsistent and conflicting, so that each of the entries in the checklist presents an on-going challenge and further investigation. This work is hampered by the impossibility of

examining each map personally, either through the original or a copy.

It is, however, hoped that the present checklist will act as the first stage towards the goal of presenting a full and definitive list of maps of the south western section of the Cape of Good Hope.

CHAPTER 9 C O N C L U D I N G R E M A R K S

9.1 Some of the findings that have emerged from this survey of the literature on map librarianship (in particular bibliographic description) and carto-bibliographical sources for maps of the Cape of Good Hope, together with the testing of these ideas by the compilation of the checklist, can be summed up as follows:

It is clear that an understanding of maps as well as a general knowledge of the history of geography and cartography is an essential part of handling maps in libraries. The short historical background of maps and map makers, together with comments on the peculiar characteristics of maps themselves, is an invaluable preparation for anyone working with maps.

In investigating the organisation of maps in libraries it is clear that the material has to be processed and organised efficiently, and that only a catalogue can achieve maximum use with minimum withdrawal of sheets. Map cataloguing is the key to solid bibliographic control of the map collection.

The historical or early map is an exacting ^{type of} research material, requiring the cataloguer to provide as accurate and as exact a description as possible to aid researchers. Although carto-bibliographic description was examined, it is considered inappropriate for the daily routines in a general library. The map cataloguer's role is to record all details accurately, and refer researchers to carto-bibliographical sources for further information.

These basic carto-bibliographical sources have been discussed and commented upon. References to maps of the southwestern section of the Cape of Good Hope were recorded, with special attention being paid to the whereabouts of the original maps or reproductions available.

The problems of compiling a comprehensive checklist were discussed briefly, and detailed bibliographic descriptions were provided for a small sample of maps. In this way a common element of map description was worked out.

The final checklist is an attempt to collect and compile a model checklist for further investigation. It cannot be complete, because only a small proportion of maps have been handled personally. The information collected from the various sources has, in some cases, been conflicting, and needs to be re-evaluated. The lack of reproductions for so many of the maps listed inhibits proper analysis.

9.2 FURTHER INVESTIGATIONS

This lack of reproductions of the maps recorded is a major topic still to be investigated. The "shows" note in the checklist is a temporary solution, until such time as the ideal is reached of providing the researcher with a facsimile or micro-image of each map, together with the bibliographic description. Such a combination would go a long way towards providing instant satisfaction to the user.

The lack of appropriate analytic indexing of the contents, and specifically of place names found on the map, hampers the task of providing satisfactory map reference service. In lists, catalogues and bibliographies of maps, the contents of the map

are seldom listed in detail, except perhaps for brief notes that the map is topographical.

In so far as such lists do contain details of the contents (for example, the two De la Rochette maps of the Cape Colony recorded in Tooley, 1969:40-41), these details are merely added as a means of dating or identifying specific variant editions. No serious attempt has yet been made to analyse the information content of maps dealing with the Cape of Good Hope. Tooley himself draws attention for the need for such a geographical gazetteer based on the early maps of Southern Africa (ibid.:v). This is major topic still to be investigated.

9.3 CONCLUSION

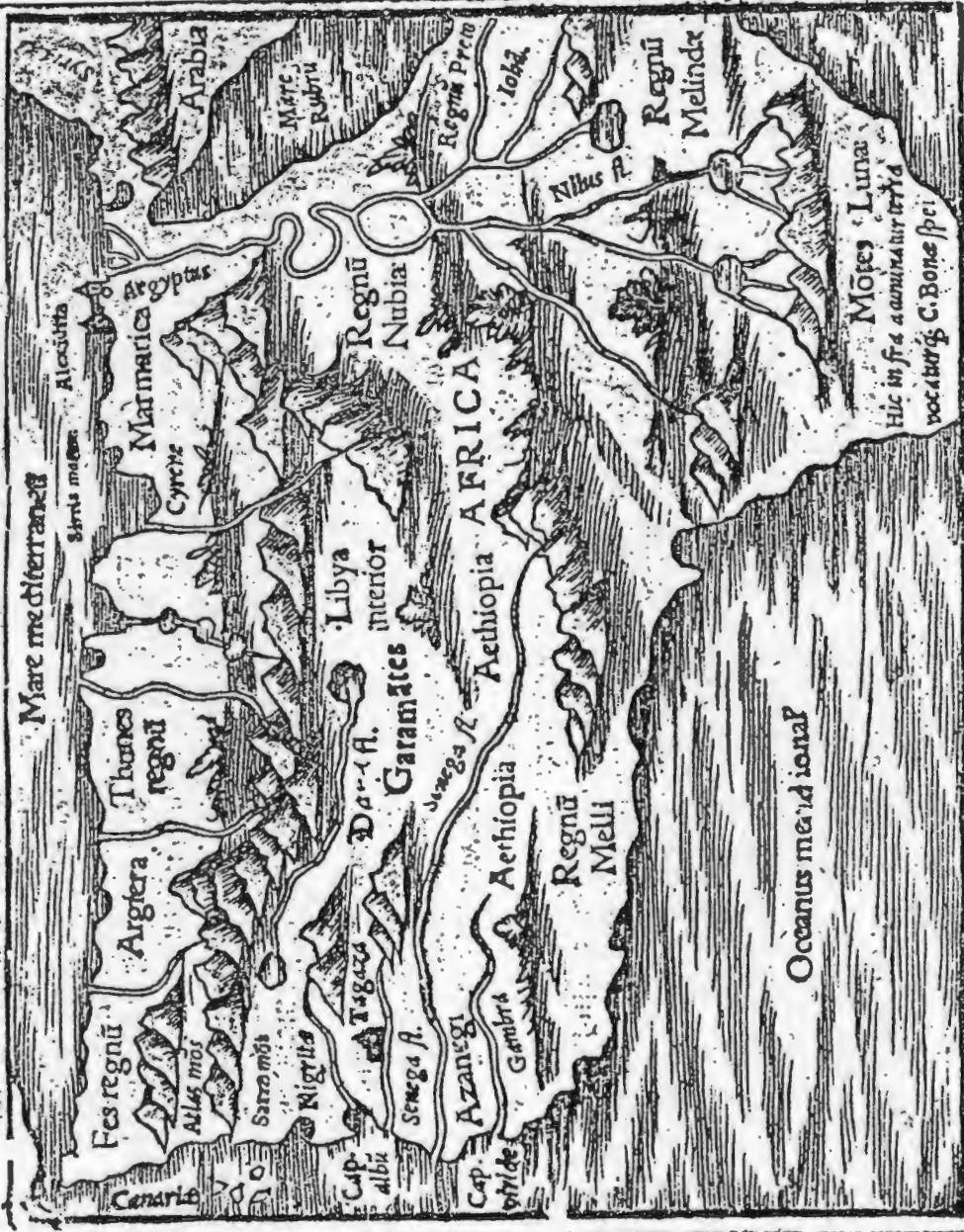
It is hoped that this investigation, coupled with the checklist of maps of the Cape of Good Hope, will in the long run result in a better and more satisfactory map service to researchers.

Conclusion:

It has been possible to provide a comprehensive list of maps of the south western Cape of Good Hope, together with supplementary references to further sources of information, especially reproductions.

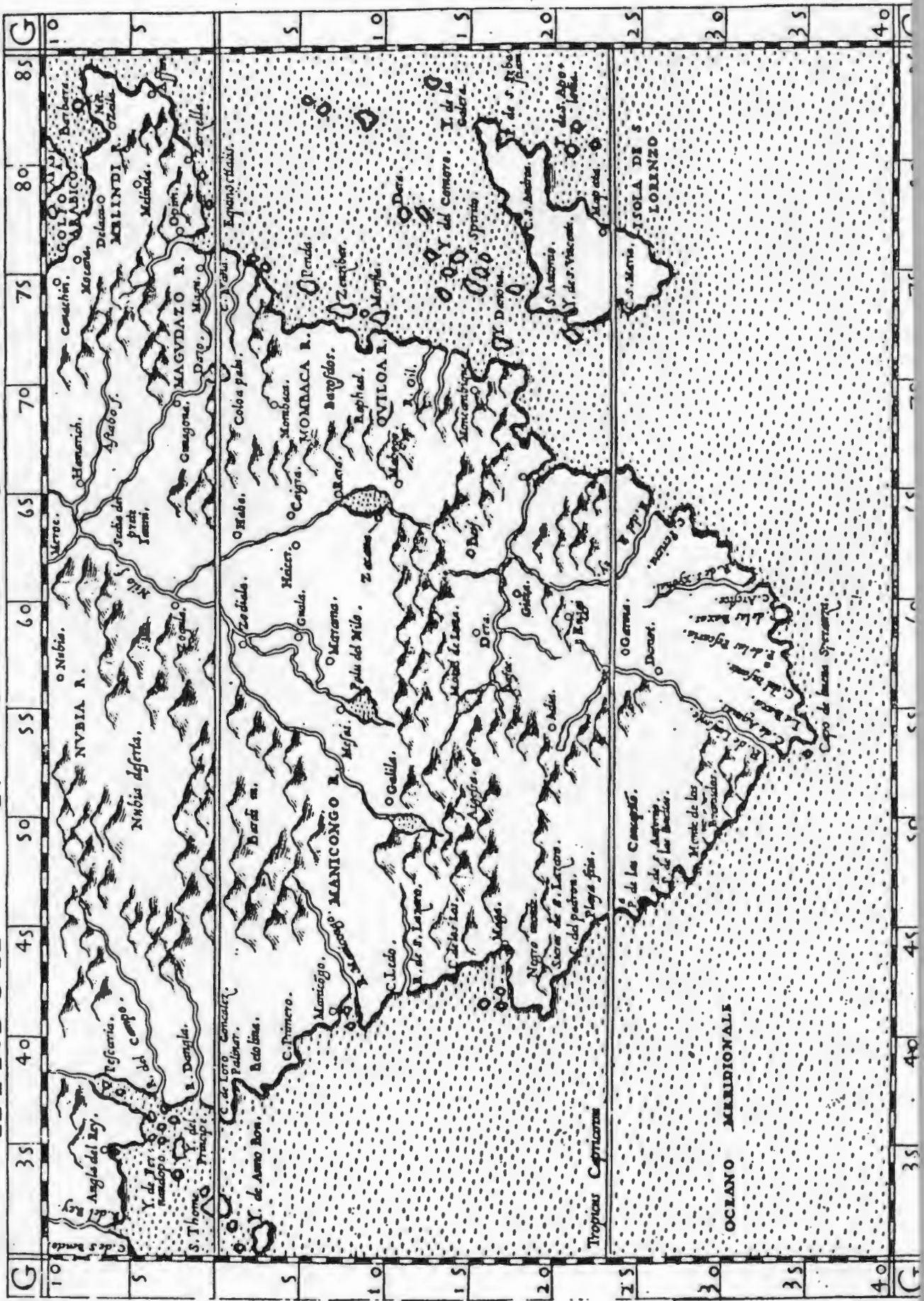
It can be claimed that by providing this checklist and supplementary lists it has been possible to provide improved access to maps of the Cape of Good Hope.

Africa mit seinen besondern Ländern/Lhiere/
vnd wunderbaelichen Dingen. Cap. I.



Sample 1
MUNSTER
Africa. [1540]

AFRICA NVOVA TAVOLA

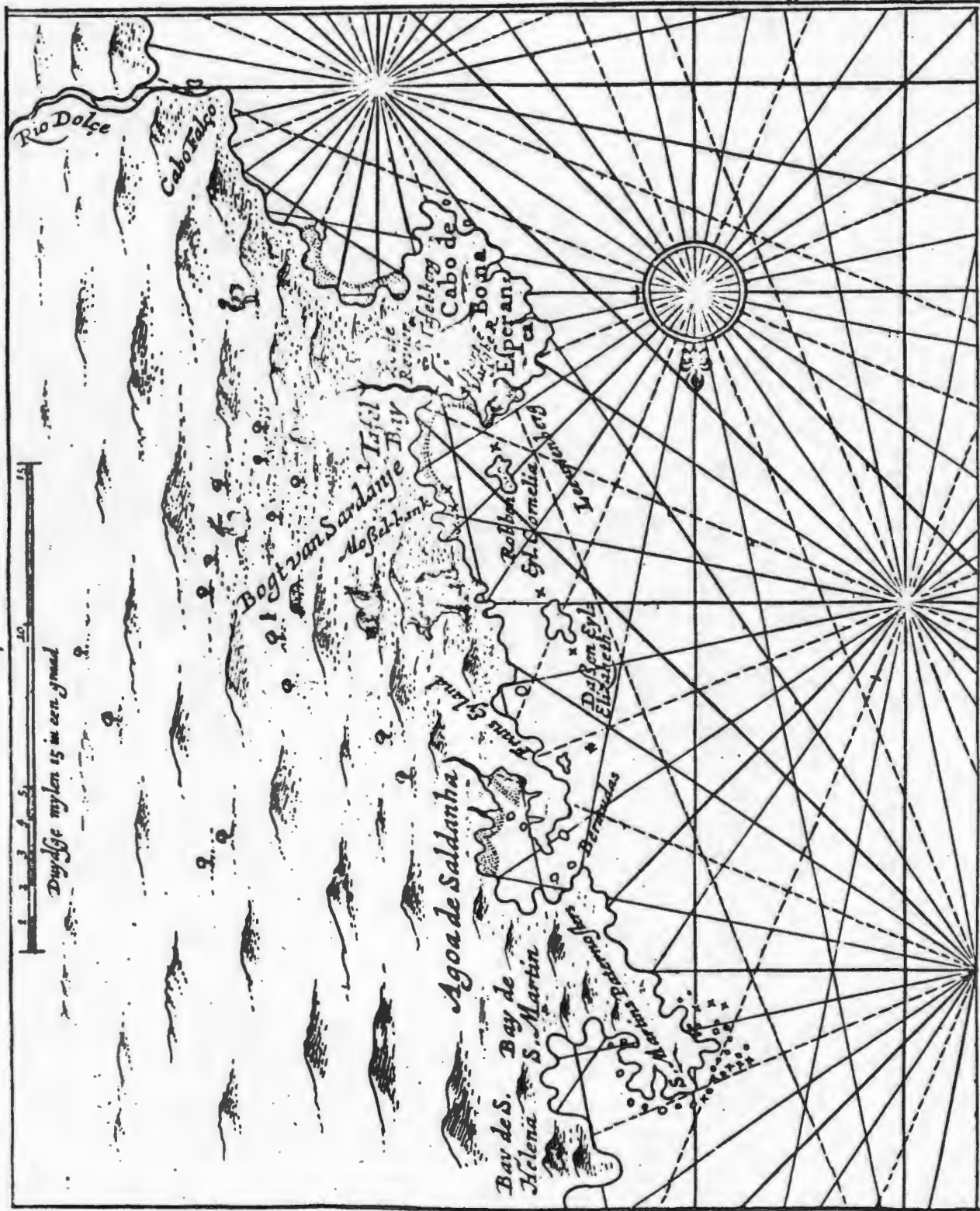


Sample 2
 GASTALDI
 Africa nuova tabula
 1595

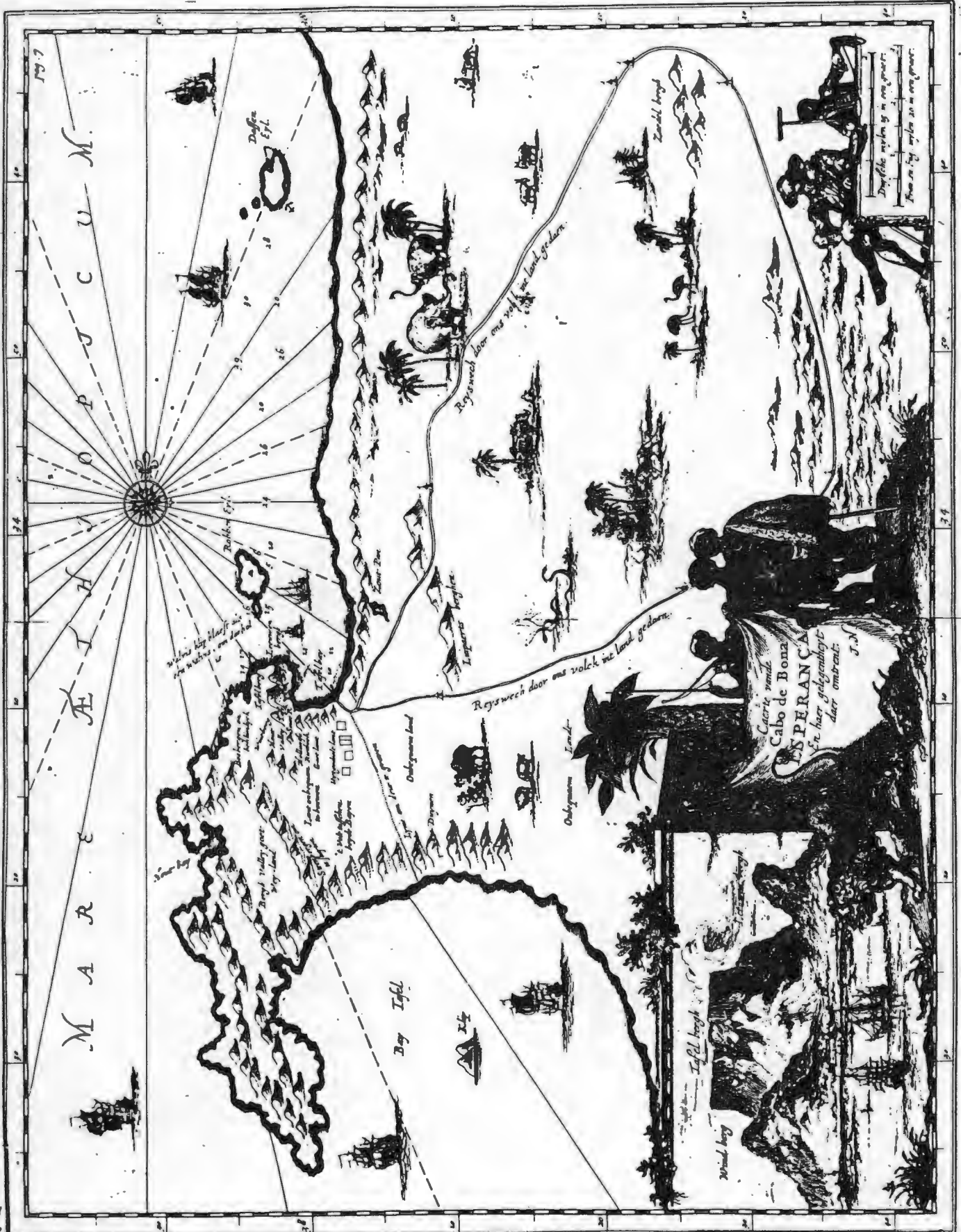


Sample 3
HOUTMAN

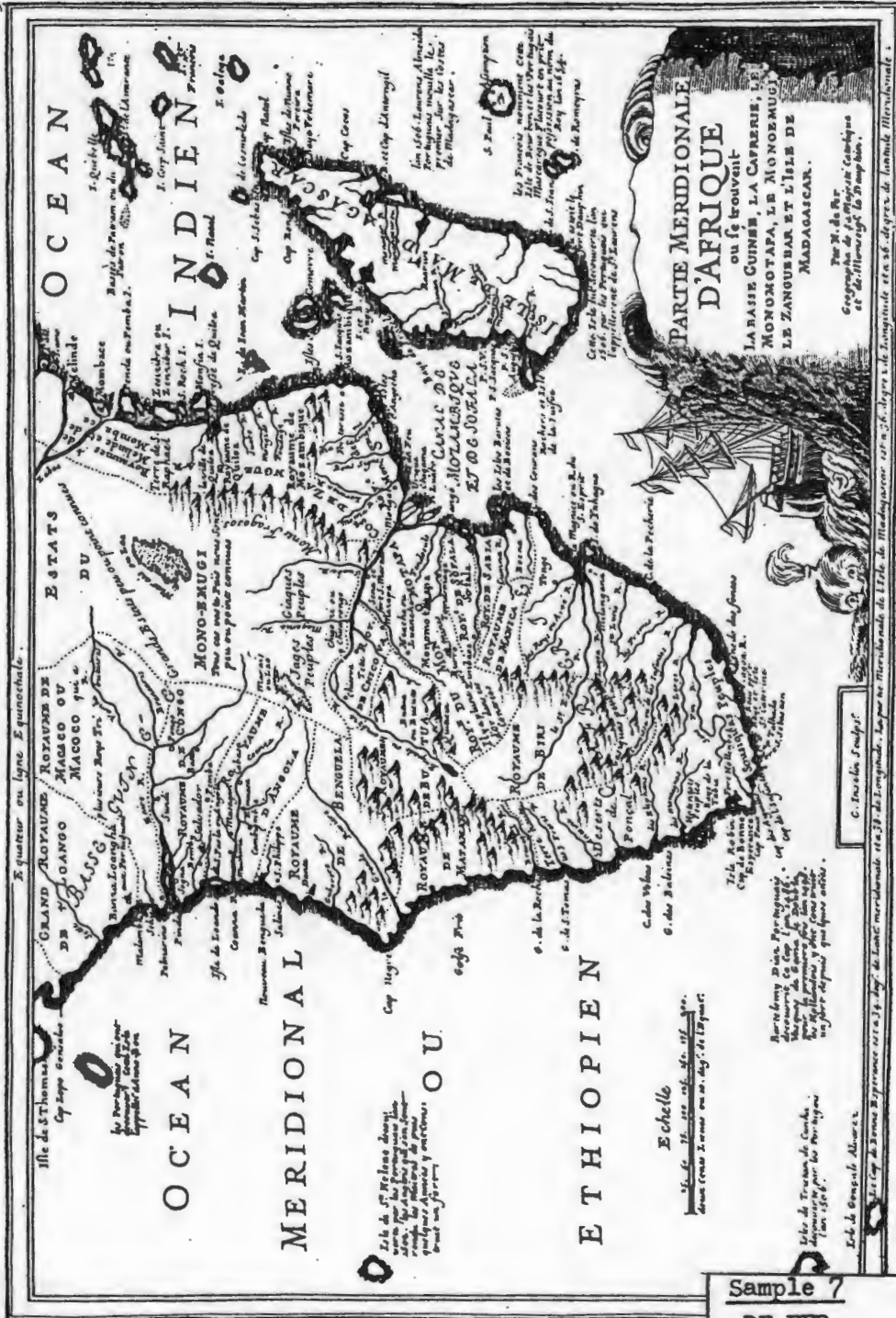
Caerte van der
zuyder hoek van
Africa. 1595



Sample 4
GOOS
Cabo de Bona
Esperanca. [1660]

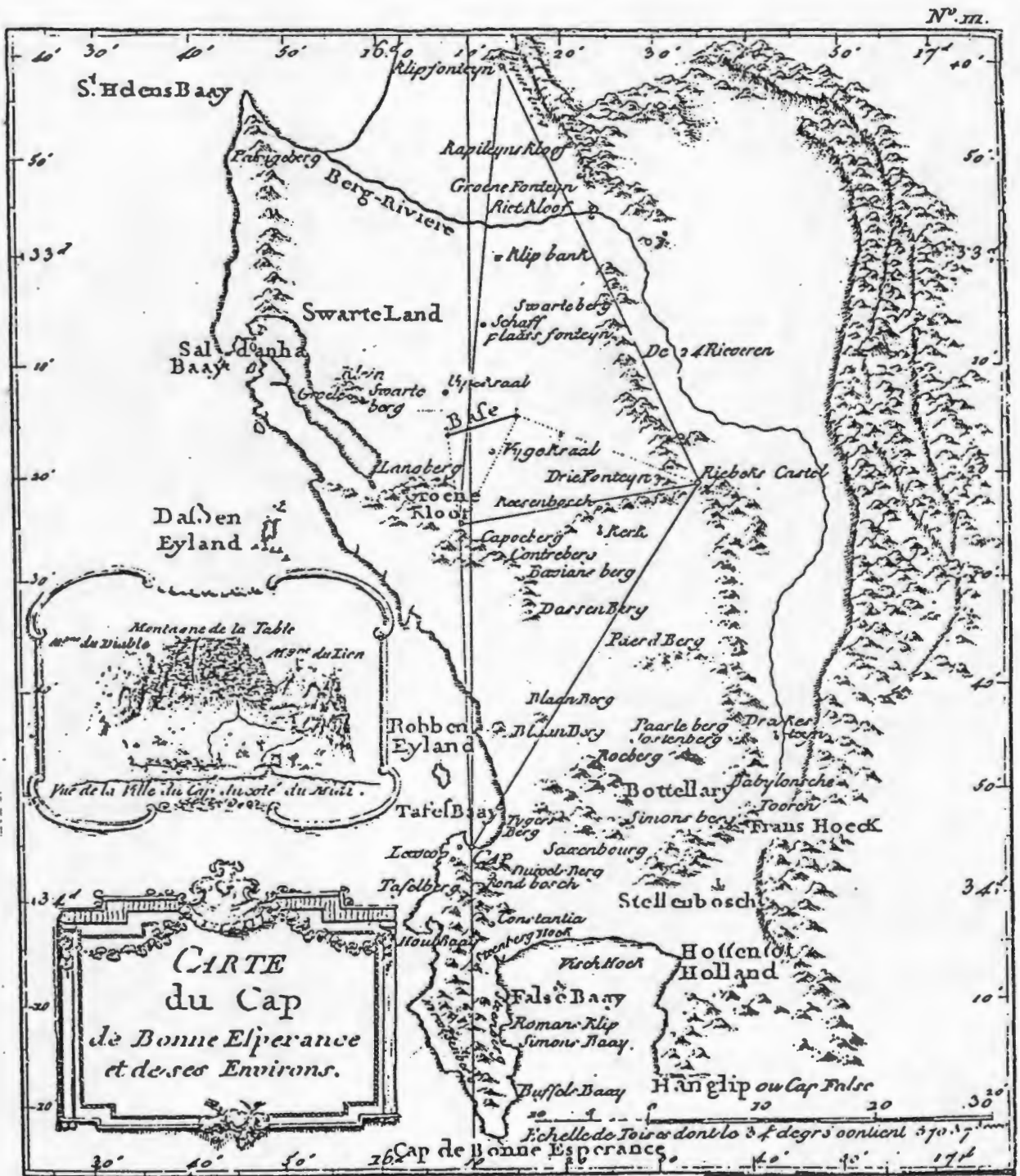


Sample 5
 NIEUHOF
 Caerte van de Cabo
 de Bona Esperança
 1682



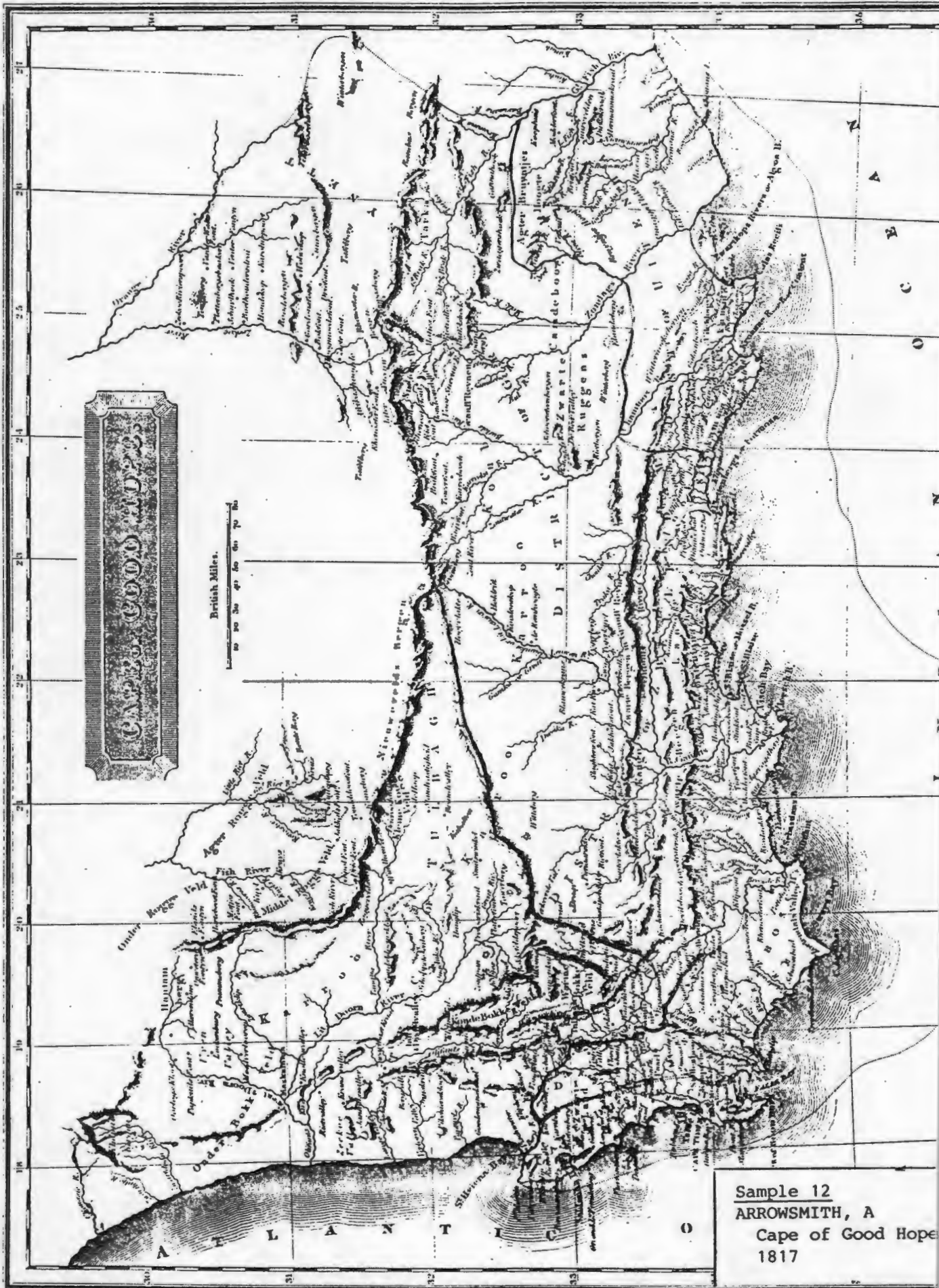
De Fer. Afrique Meridionale [1715]

Sample 7
 DE FER
 Partie meridionale
 d'Afrique. 1715



M. Philippe, 1787.

Sample 9
 PHILIPPE
 Carte du Cap de
 Bonne Esperance
 1787



Sample 12
 ARROWSMITH, A
 Cape of Good Hope
 1817



Sample 13
 TALLIS
 Cape Colony. [1850]

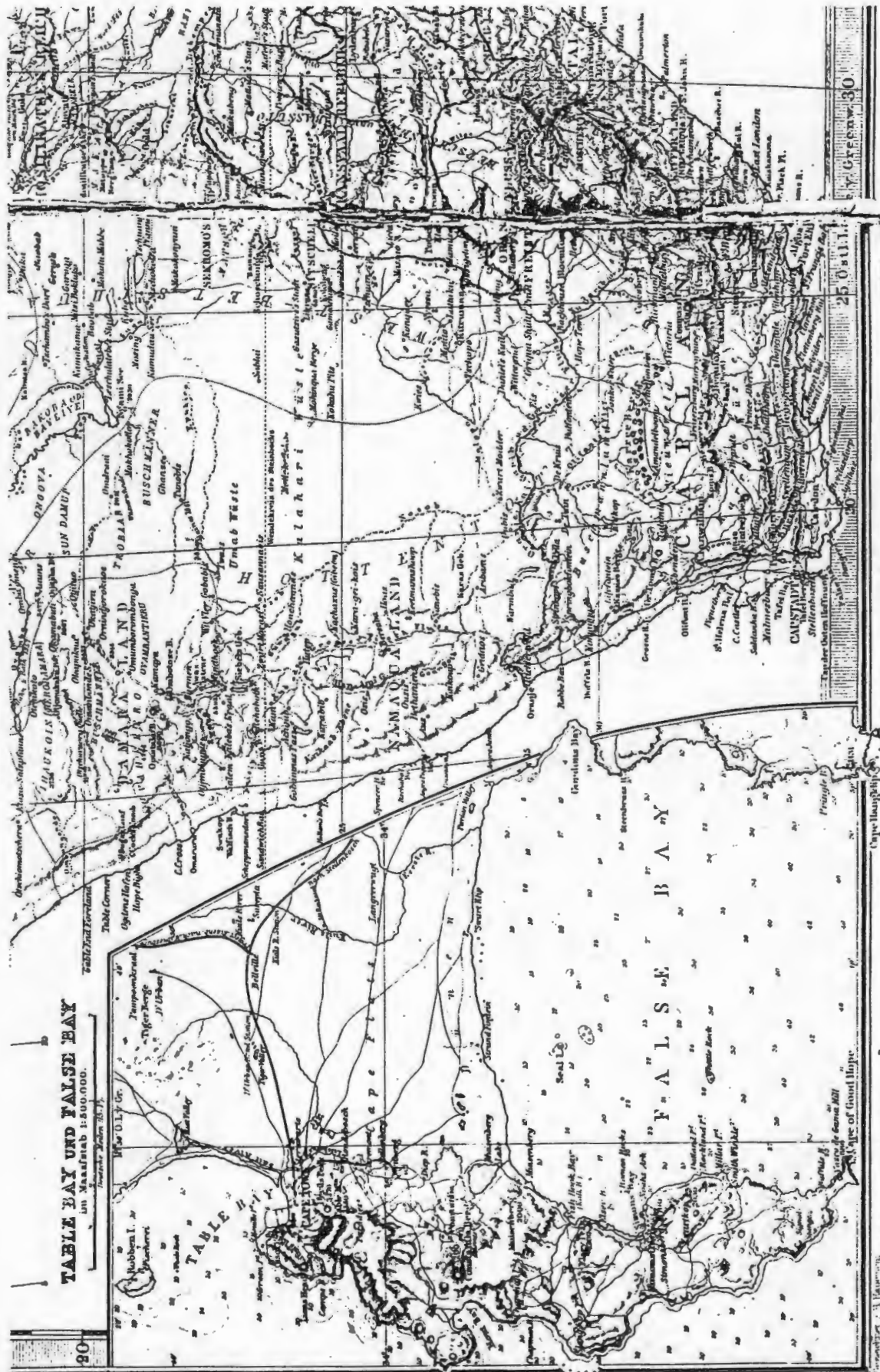


TABLE BAY UND FALSCH BAY
im Maßstab 1:500,000.

Sample 14
PETERMANN
Das Capland. 1868

GLOSSARY OF TERMS USEFUL TO THE MAP CATALOGUER

Based on lists in Boggs & Lewis, Brown, Lister, Tooley

- APUD = printer or publisher. Other terms employed: ex, exud., ex officina, formis sumptibus.
- ACADEMIES = established as early as 1253 at Sorbonne, Paris
- AREA = extent of the earth's surface; often termed "locality" or "place"; ordinarily comprises a geographical, administrative or economic unit. In map cataloguing the area is considered to be distinct from the subject of a map.
- ASTRONOMY = Babylonia as early as 223 B.C.; China in 1100 B.C.; meridian by Cassini in France 1655; Greenwich 1675
- ATLAS = term first used by Mercator in 1595 to describe a collection of maps bound in a volume (known formerly as Theatrum, Speculum, Geographia, Tabula, Cosmographia, Chorographia, Prospect, Waggoners)
- ARABIA = Arab geographers preserved knowledge of Ptolemy's Geographia.
- AUCTORE = author or cartographer. Other terms employed: del. delin. delinavit. descript, inventit.
- BOOKSELLERS = controlled map trade as publishers in 15th century, jointly published atlases in 17th and 18th centuries
- BORDERS = frame of map
- CADASTRAL = boundaries of land laid out so that individual ownership can be defined.
- CAELEVIT = engravers; see also sc.
- CARTOGRAPHER OR MAP MAKER = auct., auctore, del., delt., delineavit, descriptit
- CARTOUCHE = term employed to describe the decoration round a title, scale, or other text.
- CHARTS = Greek word chartes (leaf of paper) adopted to describe special maps for the use of navigators, depicting features below sea level; marine charts (14thC: carta nautica).
= see also portulans
- COLOUR = colouring of printed maps continued conventions of earlier manuscripts. 15th C.: thick opaque tints/ 17th C: light washes, shaded gold / 18th C: rarely coloured.
- COMPASS / COMPASS ROSE = device printed on nautical charts, showing a series of compass directions round a circle in order to show orientation & prevailing winds; first used in China and brought back by Marco Polo.
- COMPASS VARIATION = discovered by Columbus; first used in 1532.
- COMPOSITE ATLASES = collection of maps by individual collectors of various cartographers; or large atlas extended by addition of other maps not called for in the collation, e.g. Lafreri
- CONTOURING = imaginary line joining all immediately adjacent points which are at the same height; indicates relief; used first by Buache in 1756.
- CONVENTIONAL SIGNS = distinctive marks & characters used on a map to represent topographic features, etc.
- CO-ORDINATES = used for locating the position of an object, e.g. in relation to lines of latitude & longitude.
- COPPERPLATE = an intaglio process of printing; up to about 2 000 to 3 000 copies from a plate; devised by goldsmiths, universally used from 15th to 19th centuries
- COPYRIGHT = early protection of publishing rights
- COSMOGRAPHY = description of the world

- DATING = few maps dated; date on map not necessarily true indication of publication but of its engraving; geographical discoveries or events can give limits; publisher's address can provide clues.
- DECORATION = used not only for visual delight but to provide additional information (Lynam, 1953)
- DEDICATIONS = prominent place, for patronage and testimonial
- DEL, DELIN, DELINEAVIT = author, cartographer
- DESC., DESCRIPSIT = designer or cartographer
- DIRECTION OR ORIENTATION = fundamental part of map; mediaeval maps had centre Jerusalem, east at top; Arabs had east at top; direction shown by compass rose pointing to the north.
- DISTANCE = statute mile (1760 yds) by Ogilby 1676
- EDITION = terms used to distinguish the maps printed at one time from maps printed at another time; printed from same plates without change or revision. Other terms (state, issue, impression) indicate different printings with or without revisions; slight variations.
- ENGRAVER = translator of the geographer's design onto the wood or copperplate for the printer to pull an impression.
 terms: cartographer or draughtsman = auth(ore), del(inavit), desc(ripsit), in(ventit)
 engraver = sc(ulpsit), fec(it), caelavit, Inc(idit), incidente; grave, gestochen
 publisher = ex(udit) apud, formis, sumptibus, ex officina imp(rime); Verlag
 scripsit = text engraver [in 18th century France, specialist in letters only]
- ENGRAVING = general term covering prints from woodcut, copper & steel plates
- EX, excud., excudit = publisher
- FACSIMILE = faithful and nearly exact reproduction of a map, usually made by lithography, photography, or some mechanical or photomechanical process. It need not reproduce the colour or size of the original
- FEC, FECIT = engraver
- FORMIS = publisher
- GRAPHIC SCALE = scale shown graphically on marked "ruler"; see also Scale
- GUARD = narrow strip of paper to which map is pasted, so that the whole map is visible, and atlas can be closed.
- HACHURES = relief; short lines drawn in the direction of the steepest slope, giving some idea of shape of the ground.
- HAIRY CATERPILLAR = relief; old crude method of showing mountains & hills in a sort of chain formation somewhat resembling a hairy caterpillar or a row of tents.
- HILL SHADING = relief; system of showing hills by means of brush-shading or very fine hachure lines.
- HYDROGRAPHIC CHART see Chart
- "IATO" = Italian assembled-to-order atlases, notably those published by Lafreri in 16th century (Beans, 1952, 9:7)
- IMPRESSION see Edition
- INCIDIT, INCIDENTE = engraver
- INCUNABULA = books printed before 1500; few maps were issued before 1500.

- INDEX MAP = map or diagram which serves as a guide to a map in two or more sheets or sections, by showing the placing of the sheets in relation to each other; key sheet
(German: "Übersichtskarte"; French: "Carte d'ensemble")
- INSET MAP = map supplementary to the main map on the sheet on which both appear, often included within the neat line of main map
- INV., INVENTIT = author or cartographer
- ISSUES see Edition
- LATITUDE = angular distance of a place on the earth's surface, showing how far north or south of Equator; length of a degree of latitude varies somewhat on account of the flattening of the earth near the poles; used by Kepler 1627
- LEGENDS = term employed to describe passages of printed text, engraved on a map; key to symbols, etc.; explanatory statement on face of map to assist in reading or interpreting the map.
- LONGITUDE = angular distance east or west from the meridian (of Greenwich) to the meridian passing through a given point on the earth's surface
- MAP = representation of the earth's surface or a part of it (or of the heavens) delineated on a flat surface.
- MERIDIAN = "medius dies" middle of the day, the noon line; points of equal distance east or west of zero meridian, shown by longitude.
- NATURAL SCALE see Scale
- NAUTICAL MILE = mile employed by navigators
- NEAT LINES = innermost lines of the borders of the map
- ORIENTATION see Direction
- PARALLELS = lines on map marking points of equal distance from the Equator.
- PATRONS = played an important role in early map production
- PLAGIARISM = common among map publishers, frequently used copies of earlier maps; [estimated that in 1747 of 16 000 maps only one in nine original].
- PLAN = a large scale map or drawing in a horizontal plane
- PLATE LINES = impression left on paper indicating edge of plate used to print map
- PORTULANS = "portulanos" ("port-finding" charts); mediaeval sailing charts, mainly manuscript, 13th to 16th century, bound with seaman's manuals; generally of Mediterranean Sea or of the Atlantic coasts of Europe and Africa.
- PRIME MERIDIAN = initial or zero meridian from which longitude east or west is reckoned; Greenwich universally used 1884
- PROJECTION = pattern or framework upon which a map is constructed, as a means of controlling locations on a map; the network of co-ordinates taken off the globe and projected upon a flat surface; method of avoiding distortion. = devised by Mercator in 15.., tables worked out by Wright in 1595 and pirated by Hondius in 1599.
- PRINTING = the invention of printing from movable type between 1440/1450 and maps from the 1470s brought maps within range of far greater number of people

PUBLISHING = early printer sold his own maps, drawn, engraved, printed and coloured by himself or his apprentices; later copied, sold and altered other dealers' output. Great merchant houses gradually accumulated all activities under one roof.

RELIEF = Italian "relievo" (raised or embossed work); means of representing relief or topography of surface of earth.
= see Contour; Hachures, etc.

RHUMB LINES = lines radiating from a compass rose to indicate direction

SCALE = relation existing between distance on the map and the corresponding distance on the earth's surface; defines the size of the map in relation to the earth.

"Large scale" = large detail; "small scale" = small detail.

= Natural scale

= Representative Fraction (RF), if written as fraction.

= Bar scale = set or series of graduation (marked along a straight line or curve) used for measuring distances.

SCRIPSIT = lettering or script; usually applied to a specialist engraver, often employed in 18th-century French maps.

SCULP(SIT) = engraver

STATE see Edition

SUBJECT = relates to the content of a map, or to the type of information which it portrays

SUMPTIBUS = publisher

SYMBOLS = small designs to supply information in concise form

TOPOGRAPHIC = showing the geographical features

TRADE AND TRADE PRACTICES = Map dealer originally did everything, but gradually the work was done by a master and apprentices, and engraving became a separate skill. In the 15thC the printing of maps was controlled by the book trade; maps and printsellers were apprenticed to the weavers, grocers, merchant taylor, etc., and not to stationers; chartmakers were apprenticed to drapers.

VARIANT = slight differences requiring somewhat different treatment, or a least separate mention

WATERMARKS = various designs introduced into paper at time of making by means of a wire, leaving an image that can only be seen when paper held up to the light. The design can indicate the actual maker, and helps in dating.

WOODCUT = relief process, the design standing out with the background cut away; older history than copperplate - centres at Augsburg, Basle, Nuremberg & Strassburg up to 1550. Only light press necessary

LIST OF READINGS

Important carto-bibliographical sources are marked #

- ACTA CARTOGRAPHICA:** a series of monographs and studies on the history of cartography; reprinted from periodicals since 1800. Amsterdam, Theatrum Orbis Terrarum, 1967 +
- AKERS, B.** (1978) Care & handling of a map collection. Map collector, 4:2-3
- #ALGEMEEN RIJKSARGIEF.** (1914) Inventaris der verzameling kaarten. 's Gravenhage
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