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The British War Office 1:250,000 mapping of Cape Colony 1906-1914

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Abstract

After the second Anglo-Boer War when the two coastal colonies were joined by two new ones previously Boer republics the British were keen to remap the entire territory of South Africa. Despite plans drawn up in 1903 only three projects were begun. There are a few references to similar mapping of the Southern Transvaal and a preliminary paper on the Cape Colony Reconnaissance series by Board. The latter series at 1:250,000 covered the north-west region of the Colony, 35 sheets were surveyed and/or compiled but only 33 were published. The Royal Engineer Survey teams responsible for mapping the Cape Colony were withdrawn in November 1911 leaving most of the rest of the Colony to rely on poor maps of varying accuracy and quality dating to the recent war or before it.

This paper not only charts the progress of mapping the series known as GSGS1764 from analysing published maps, but draws on collections in London and Cambridge which contain unpublished compilation material and the elusive model sheet for the series. Its discovery and description throw light on the War Office's requirements for mapping in the dying days of an era of colonial mapping. Defence against invasion by hostile powers, and of civil defence when movement was by rail or by road using draught animals would eventually be achieved by the use of air photography and advances in survey technology.

Thus it will be shown that the mapping of the NW Cape in the decade before the First World War needs to be evaluated by the standards of that era. However as a resource for understanding the detailed geography of that region a century ago this mapping has no equal. This is particularly true of the military versions, which contained far more detail of the kind that assisted troop movements across very sparsely inhabited country. In particular there is considerable information on vegetation and water supplies and the nature of drifts across the major rivers. This were in addition to relief expressed by formlines and spot heights, settlements and their attributes.

Mapping involved the collection of more information than was recorded on the maps themselves. Unpublished compilation material from the War Office Map Room was deposited in the British Library, where it can be found under each sheet of the series. It seems that each officer in charge of a survey party had to compile a report on the country covered by the map sheet. The detailed insets at an enlarged scale of towns and villages on the sheets yield information about them found on few other maps. In the case of Kimberley we have a map dated 1912 which can be compared with one made during the siege in 1899-1900.

Introduction

It is a truism that the maps available for military use in the Anglo-Boer War of 1899-1902 were not fit for purpose. But they had been designed for another purpose and cobbled together to provide coverage at 1:250,000 for strategic use in a mobile campaign. The Cape Colony Reconnaissance series produced by the War Office between 1906 and 1914 was a genuinely military product designed for defence of a vulnerable area. This important contribution to mapping South Africa was addressed first by Liebenberg, who examined several collections in South Africa.¹ The paper

attempts to place this series in a broader political context and to evaluate maps and map-related material as sources for historical geographers.

Plans to map South Africa after 1902

After the Anglo-Boer War the defeated Boer republics became British colonies. The Royal Commission appointed in the aftermath of the war made much of the lack of mapping suitable for the campaign. Sir Alfred Milner, High Commissioner for South Africa backed a War Office plan for a topographic survey of the two inland colonies, Transvaal and Orange River Colony. But a case was also made for a properly grounded topographic survey for all the four colonies in South Africa.² Imperial policy favoured a strong South Africa guarding the route round the Cape of Good Hope secured by British influence over territory up to the Zambesi and secured at sea by the Royal Navy. Such a survey would be possible only by the joint effort of the War Office and the colonial governments. General principles established included the benefit of central control, uniformity of system throughout South Africa, an assurance of Imperial aid and demonstrating the advantages of inter-colonial cooperation with the ultimate aim of federation. (Gill, 1908)³ Sir David Gill, had been active in linking parts of South Africa by a geodetic survey. With the High Commissioner's full backing he proposed a conference of Surveyors-General over which he presided in March 1904. The War Office identified Colonel Sir William Morris as potential superintendent with Major Charles Close as assistant.⁴ Considerable progress was made, it being resolved that map series at four scales would be produced and specifications were laid down at the congress of Surveyors-General in Cape Town.⁵ Engraving would be done in Britain with printing by the Ordnance Survey on a repayment basis. Financial contributions of over £40,000 were required from colonial governments. but in the ensuing economic crisis of 1904, first the Cape Colony and then the other colonies withdrew from the scheme. It was recognised that for sparsely populated areas such as the North West Cape, survey at Half-inch and publication at Quarter-inch to one mile scales was adequate.

The War Office Reconnaissance Series of the Cape Colony; Preparation

Faced with the failure of the Cape Colony to live up to its promises, the War Office, advised no doubt by Close, decided to begin a reconnaissance series of maps at 1:250,000 of the sparsely populated North-West of the Colony next to German South West Africa. This was to be wholly financed from the Imperial Treasury since mapping was required for the defence of the Colony, which was an Imperial responsibility.⁶ A secret War Office memorandum of August 1906 drew attention to the risk of raids from the railway in South West Africa into the "most disaffected portion of Cape Colony".⁷ The absence of good maps in the guerrilla war phase of the Anglo-Boer War was to be remedied by the military versions of the the standard Africa maps at the Quarter-Million scale which informed the standardised design adopted by the Colonial Survey Congress in 1904 and which reached its apogee in the successful map of the Orange River Colony.⁸ As conflict with Germany became more likely, the desire by the German authorities to link up the railways of South West Africa with those of the Cape gave increased urgency to the completion of useful maps south of the Orange River frontier.⁹

The role of the Colonial Survey Committee

It is not surprising that the Colonial Survey Committee on which Close sat as Director, Geographical Section General Staff, devoted considerable space to this reconnaissance survey and charted its progress in some detail from 1905 to 1912. It was pointed out that the geodetic surveys of the Cape, Natal and the new colonies shortly to be completed had been wholly funded by the colonies themselves.¹⁰ Eleven officers were employed by the War Office under Capt C.G.W. Hunter. Extending from the geodetic triangulation of the Cape Colony, graphical triangulation to points from which plane-table sketching of the surrounding terrain was plotted. It was hoped that this procedure would be strengthened by instrumental chains at intervals. Accordingly 'the results will not be all that a geographer might desire, but they will be a great deal better than any maps which exist at present.'¹¹ Work in the field and the office was inspected in 1905 by Col. H.M. Jackson RE who reported favourably. Completed field sheets along the Orange River and two south of Kimberley (Strydenburg and Britstown)¹² totalled eight in this series during the year. The second report announced the publication of five sheets, the staff counted thirteen officers and there were six on the staff in the Cape Town office, two of whom were draughtsmen. Methods employed were similar to those used in the American West by the USGS. Six sheets were published during the year and another six had complete field work. The third report for 1907-08 reveals that there were six parties at work and that seven sheets had been published. By 1908-09 progress was measured in square miles surveyed, which amounted to nearly 100,000 square miles by 1910-11. After the creation of the Union of South Africa, the operation was closed down in November 1911.¹³ Several sheets had still to be compiled, engraved or printed up to 1914, when the outbreak of the war with Germany demanded respect for other priorities. Also in 1911 the War Office adopted a new sheet numbering system in conformity with that adopted for the International Map of the World (IMW). At the closing down of the Cape survey eight further maps were recorded as published. Writing just before the war broke out, Close considered that the series embodied work "though not of the precision of the OFS survey, is good and reliable,...."¹⁴ A quarter of a century later Winterbotham¹⁵ probably referred to this series when he described Close's "great work" giving us....that 'quarter-inch knowledge' which was almost sufficient for our purpose." Clearly the value of such a series has to be assessed as a strategic rather than tactical map. Nevertheless in the process of surveying and mapping this part of the Cape Colony a significant amount of geographical detail was amassed which is now of historical value, much of it in the military versions of the maps.

The model sheet for the Cape Colony Reconnaissance Series

Reference was made above to the Strydenburg sheet and its role as a model for the series. This was based on a remark by Close some years later, which named the Strydenburg sheet as the model for the series. Liebenberg and others had thought previously that the sheet in question was the half-inch to one mile map of Strydenburg which Close completed early in 1900 from field survey to printed map lithographed in colour. Since this was so very different from the 1:250,000 series the present author thought that the most probable candidate model was the Strydenburg sheet of GSGS1764.¹⁶ However, a chance encounter with another researcher¹⁷ in the British Library revealed the actual model sheet which was the adjoining Britstown sheet,

which just happens to be the earliest of the series to be published (May 1907). This sheet displays the standard features for the series: a border with marginal information, lettering styles, conventional signs and colour swatches or patches to be used. In effect it encapsulates the specification for the series, for all the maps in the series for the Cape Colony (and neighbouring Basutoland). (This will be illustrated at the meeting.)

The maps of the Reconnaissance Series of the Cape Colony (GSGS 1764)

Compilation and printing of unfinished sheets was undertaken by the War Office until 1914, but some maps remained FOR OFFICIAL USE ONLY and were never issued as Sales editions. The progress of publication of the military and the doctored civil editions must now be charted from the tables compiled from a study of surviving maps in major libraries.¹⁸ Liebenberg's thesis was the first to list dates of publication and has revealed either some discrepancies or new states. Jewett¹⁹ points out that this series was newly recast into sheets 1_ longitude by 1_ latitude and was a distinct section of the Africa 1;250,000 War Office series labelled TSGS or GSGS 1764. The use of the term Reconnaissance Series on military versions is not standard although notes on the survey, when they appear usually include "under the direction of (Officer rank and name) in charge Reconnaissance Surveys Cape of Good Hope". Although Jewett identified 13 sheets in the Reconnaissance series, there were in fact 30 military versions and only 20 sales editions, a more useful distinction. In general the latter appeared a year after the former.²⁰ If sheets were not published as military versions until 1912 or 1913, the more pressing work in Europe precluded further work to convert maps to Sales editions. Only Kimberley was favoured with a Sales edition as late as 1914.²¹ Only three sheets were revised and reissued in second editions (Strydenburg as Douglas, Naauwpoort, Prieska).

The characteristics of military and sales versions

The face of all maps follows the design envisaged in the 1904 Congress, doubtless influenced by contemporary practice. In general military versions are printed with very wide borders to accommodate additional information. Most frequently there are descriptions of the area under the heading General Note. Next come lists of Halting Places stating the availability of water, grazing and fuel for different numbers of men and animals in the wet and dry seasons. On the major rivers, such as the Orange there are surveyed sketches of drifts with notes about their ease of passage and approaches. Finally there are sketch maps of important settlements which mark, post and telegraph offices, churches, stores, schools, cemetery and "Kaffir location" where most Black people lived. Usually in colour these are embellished with brown form lines; and viewpoints, streams, irrigation furrows and wells all in blue. On the face of military maps are found numerous references to the nature of the terrain, vegetation and the state of roads most of which was edited out on Sales editions. For the student of historical geography the military maps provide by far the better picture of the country. Whereas the Imperial Map series bore details of farm boundaries, these were omitted from GSGS1764 allowing the visible topography to take centre-stage. In any case adding these would seriously conflict with the annotations and would have had to be provided by the Surveyor General's office.²² Much detail on the black plate relating to the state of roads, the

quality of grazing and the nature of vegetation as a cover for movement was deleted from the sales edition. However both editions carried evidence of smithies, police posts, stores and post offices as well as standard names of farms. Detail on the blue (water) plate generally appears the same on both versions. On the green plate three categories of woodland, and cultivation (rarely found in this region) are common to both editions.

Supplementary information: two examples

From supporting compilation material in the WOMAT class in the British Library, it is sometimes possible to derive a vivid account of life as seen by the Army surveyors in remote parts of the Cape Colony. The random survival of such source material allows the researcher to realise how thorough the surveyors were in collecting information.

Upington

A particularly fascinating record of the fabric, inhabitants and activities of the village of Upington is given.²³ A fairly full and frank typewritten report was provided for the compilers of the map, accompanied by a detailed town plan (now lost). Only the sketch survives in the margin of the military edition of the map. Captain H.A.P. Littledale of the King's Own Yorkshire Light Infantry dated his report on Upington in May 1911. Situated on the North bank of the Orange River, it had a mixed population split into Whites who lived in houses and Coloureds, whose 100 to 150 reed huts constituted the location. The report then describes the inhabitants of each house numbered on the lost two-inch to one mile map. At one house was a so-called doctor, self-styled Veterinary Surgeon, thought not to be certificated. He had been employed for malleining [inoculation] but not allowed to practise this. Inclined to drinking bouts, he might be employable as a farrier and nurser of sick animals. There are three churches with their ministers, a school for White children, several attorneys, a few shops, two doctors, a baker and a mill with an undershot wheel powered by water. This furrow led from the Orange River twelve miles upstream and allowed garden lands to be irrigated along this stretch. Unfortunately the location, pound, slaughter place, cemetery and rubbish dump all lay in places draining into the furrow. As an administrative centre for the Division of Gordonia, there was a resident magistrate, Cape Mounted Police station, a public library and (from other information) a Post Office. The district's agriculture chiefly along the River included wheat, mealies and beans with fruit, vegetables, and lucerne. Littledale had to buy mealies from the Army Service Corps depot as none were available in 1910. Approaches by road to the crossing points are carefully described. The unreliable drift had a shifting, gravelly bottom and was passable only in the three winter months. A full account of the steel pont [pontoon] manually operated by hauling on two fixed hawsers could carry a loaded wagon carrying 40,000 lbs. Close attention was paid to the approaches to the river crossing including the need for improvements to roads, which were often impassable after floods in spruits flowing into the Orange River. The report concludes with an analysis of the defensive situation of the village. By no means were all these details here summarised reproduced in the sketch maps and diagrams in the margins of the military versions. One must admit that the sketch map of Upington on the military version of the 1913 map gives a good indication of what to expect. It

would be too much to expect such a map to provide more than a starting point for proper town planning. Chance preservation of this report indicates that the GSGS Map Room was a good source of information held in London (where it was received on 12 November 1913).²⁴

Kimberley

For the Kimberley sheet, the file of material collected by the War Office Map Room includes the original map of the town and its environs. By chance another map of the town was compiled by a land surveyor caught up during the siege in 1899-1900.²⁵ (A very similar map is used by Christopher, 1976)²⁶ Thus there is an opportunity to compare 1900 with 1910, the date of the survey of the Kimberley sheet. When the town was besieged in 1899, it was barely 30 years old, but dominated by the De Beers Company and the diamond mining industry. Having quickly attracted an immigrant White and Black population from South Africa and overseas, the original tented town became a settlement of wood and corrugated iron shacks around the mines and related establishments. Interestingly no attempt is made to plot each street in the centre of Kimberley. These were not arranged on a grid but grew haphazardly as ways of getting through the shacks. Photographs show that the land between streets was almost completely built-up without the gardens typical of planned urban settlements. Hard by were Native Compounds (outlined in red) where the Black labour force on the mines was allowed a carefully controlled existence by the mining companies. By 1899 there were also Native Locations where other non-White persons were expected to live. Much of the surrounding land was sterilised by dumps of waste from the process of washing “blue ground” ore to extract diamonds. Situated on the North East were workshops, dynamite stores beyond the inner township of Gladstone, just across the railway tracks. The main station lay between two spur lines to the two main mines. Still further out are more townships catering to the White artisan and managerial class at Kenilworth and Beaconsfield. The former, a model village created for the employees of De Beers Mine,²⁷ was provided with a fruit and vegetable garden which supplied it and mine compounds. Both were connected with Kimberley by horse tramways. Water was brought in by pipeline from the Vaal River in the North, via filter beds, to a reservoir South West of the town. Kenilworth was supplied by another pipeline from a bore hole at a mine very close to the Free State border. To the West in swampy area called Dead Man’s Vlei was the town dump for rubbish and night soil. In such a dry environment the local opportunities for leisure were mostly sport and hunting, but there were botanical gardens and sports grounds. Fortunately several miles to the South lay a large pan (lake) adjoining which were the Alexandersfontein Hotel and gardens. Telegraph lines followed the railway and branched off to main towns nearby and are shown pictorially to suggest the number of wires. The map is evidently also a record of all the defence points:- forts, wire entanglements and searchlight stations and the like which were erected during the siege. These are regarded as ephemeral and do not figure on later maps.

Ten years of change sees a new tramway (1905) running out to Alexandersfontein via the Race Course. Beaconsfield and Kenilworth still have their horse tramways. A branch railway from Bloemfontein joins the main line in Beaconsfield. Some mines were now closed, old dumps remain as permanent

features. Wesselton Village near the mine of that name is now marked a Location presumably for Natives.

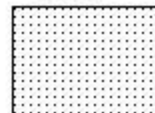
It will come as little surprise to learn that the first official 1:50,000 maps of Kimberley, which were completed in 1941, betray only a small amount of change in the first thirty years of Union. The rubbish dump was then a plantation of gum trees. The land between Beaconsfield and Kimberley itself had become more built-up.

Conclusion

The military version of GSGS1764 for the Cape Colony and the associated data not only provide the “quarter-inch knowledge” valuable for defence, but a rare picture of the geography of a substantial part of the Colony a century ago. Evidence contained in this systematically produced map series is invaluable for the study of local history and the study of environmental change. As such it offers a regional context for small-scale examples of changing in the landscape over a century of commercial farming in the North-West Cape. Taken together with contemporary accounts in guidebooks and from later historical-geographical studies this military map series enables the researcher or traveller to picture the landscape as it was and how much (or little) it has changed over the last century.

Cape of Good Hope. 1:250,000 G.S.G.S.1764. Sheet index of Military & Sales versions

German South West Africa										Bechuanaland																																																	
Orange River Mouth E					Stink fontein F					Warm bad A					Schuit Drift B					Kakamas C					Upington D					Kheis E					Griqua town F					Kimberley A																			
					Part Molloth K&L					Little Bushmanland G					Pella H					De Tuin I					Kenhardt J					Strydenburg L Douglas					Hopetown G																								
31°S					Bowes dorp R					Kamies berg M					Loeries fontein N					Brand vlei O					Van Wykes vlei P					Garnarxon Q					Brits town R					Philips town M					Aliwal North O					Zastron P					Mount Fletcher Q				
					18°E					32°S					Williston U					Fraserburg V					Loxton W					Victoria West X					Maarw poort S					N not publ					30°S														
H-33										H-34										H-35																																							
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Military & Sales Version



Military Version only

Note. This sheet index is derived from those published by the Geographical Section, General Staff and from examining the maps themselves. Size and shape are indicative only.

Endnotes

- ¹ Liebenberg, E.C. 1973. Die Topografiese Kartering van Suid-Afrika, 1879-1972: 'n histories-geografies ontleding. MA thesis University of South Africa, Pretoria. pp.228-231.
- ² Liebenberg, E.C. 1997. documents the development of mapping policy for South Africa, in, Mapping British South Africa: the Case of G.S.G.S. 2230. *Imago Mundi*, 49, 129-142. See p.134.
- ³ Geodetic Survey of South Africa. Volume V. Report on the Geodetic Survey of the Transvaal and Orange River Colony. Introduction by Sir David Gill. 1908.
- ⁴ Close's ideas on topographical maps, doubtless influenced by his time in the Survey of India, are set out in his paper, The Ideal Topographical Map, 1905. *Geographical Journal*.
- ⁵ Cape of Good Hope. Topographical Survey of South Africa. Proceedings of Congress held at Cape Town, March 1904. G77-1904. Annexures to the Votes and Proceedings of Parliament, vol VI, 1905. Of relevance here the proposed 1:250,000 map included generalised hill-shading by some photo-mechanical process resembling the 3rd edition of the Imperial Map Cape Colony.
- ⁶ Great Britain. Colonial Survey Committee Reports. First year to August 1906. Cd2684-46. p.37.
- ⁷ Louis, W.R. 1967. Great Britain and German Expansion in Africa 1884-1919. in Gifford, P. & Louis, W.R. (eds) *Britain and Germany in Africa: imperial rivalry and colonial rule*. p.33. Minutes by officials in the British Foreign Office had urged drawn attention to the threat from German expansion especially after German interference in Transvaal before and during the Anglo-Boer War and after the signing of the Entente with France in 1904.
- ⁸ *ibid* Liebenberg, E.C. 1997. endnote 4.
- ⁹ War Office. 1913. Military Report on German South-West Africa. Part I, pp40-41. Such railway connections also made the Cape Premier nervous. See Lewsen, P. 1982. *John X. Merriman: aradoxical South African Statesman*. Johannesburg (Donker).
- ¹⁰ Great Britain. Colonial Survey Committee Reports First year to August 1906.p.38.
- ¹¹ *ibid* p.39.
- ¹² Close said that the Strydenburg map was the model for the Orange River Colony 1:125,000 series as it employs similar symbology and presents military information in the same way. It is now accepted that he was referring to this 1:250,000 series not the 1:125,000 series of 1900. (See Liebenberg, 1997, pp.137-8).
- ¹³ Colonial Survey Committee Reports, 7th year, to 31 March 1912. p.25. Lists eight sheets published in the year. Liebenberg, 1973, quotes the sense of regret in the same report that systematic topographic mapping in South Africa ended, not to be resumed until 1936.
- ¹⁴ Close, C.F. The Mapping of British Territories, pp.306-341. in Herbertson, A.J. & Howarth O.J.R. 1914. *The Oxford Survey of the British Empire*. Volume VI General. Oxford, Clarendon Press.
- ¹⁵ Winterbotham, H.S.L. 1941. Under Five Sovereigns: or Military Surveys for the Last Fifty Years. *Empire Survey Review*, 6. (no. 40) 93-96.
- ¹⁶ This was reported to the ICA conference in A Coruña in July 2005.
- ¹⁷ Col.Mike Nolan, to whom I am grateful for drawing my attention to this map.
- ¹⁸ At the time of writing I have examined collections in the British Library, National Library of Scotland, Royal Geographical Society, Cambridge University Library.
- ¹⁹ Jewett, A. Crispin, 1992. *Maps for Empire. The first 2,000 numbered War Office Maps*. (British Library) See p.412 and illustration of Sheet 126-L (South. H-34-L) Strydenburg. This also figures in the cover of the book, either significant or a happy accident.
- ²⁰ The British Library's collection of materials used in compiling these maps in the class WOMAT contains several examples of military versions marked up for conversion to Sales editions. Much deletion from existing drawings and new plate-making would have been involved.
- ²¹ See Index map.
- ²² Liebenberg, 1997 describes how the cadastral information was added to the military maps at 1:125,000 of the Orange River Colony.

²³ In 1911 the census records a total population of 2,225 there while the current almanack states that there is a Standard Bank and Hotel in the “village” on the (upper) right bank of the Orange River. The 1913 edition of sheet South H-34-D says that the 1911 White population was 400 but the census records 659 Whites in 1911.

²⁴ Although supplementary information was retained by the War Office, copies of the military versions of these maps are to be found in the Record Library of the Trigonometrical Survey, Lands and Surveys now in Cape Town. The author is grateful for their help and for librarians in the UK whose collections have been examined. He also wishes to acknowledge assistance by Dr Ian Mumford and Professor Elri Liebenberg in compiling this paper.

²⁵ Barber, P. (ed.) 2005. *The Map Book* (Weidenfeld & Nicolson) War, diamonds and racism, p.298-9.

²⁶ Christopher, A.J. 1976. *Southern Africa*, Folkestone (Dawson). The source of this map is not given, but it may prove to be the source of the special Siege Map. That map can be consulted in the British Library as BL Add. MS 71232.A. and measures roughly 6 feet by 5 feet. The 1910 survey map is from BL WOMAT 120 under cover Sheet South H-35 A Kimberley.

²⁷ Noble, J. (ed.) 1893. *Illustrated Official Handbook of the Cape and South Africa*. Cape Town (J.C. Juta).