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Providing a tolerably correct map of South Africa"¹: the cartography of Henry Hall

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Abstract

In 1856 Stanford's Geographical Establishment in London published Henry Hall's comprehensive *Map of the Eastern Frontier of the Colony of the Cape Good Hope*. Compiled from local authoritative information only, this map not only surpassed its predecessors in scale and completeness, but also achieved a marked degree of accuracy. In 1857 Hall became the first resident cartographer to publish a map of the entire African region south of 16°S. Entitled *South Africa*, this map was the first of its kind ever to be produced in South Africa as not only the compilation, but also the engraving, printing, colouring and mounting were undertaken locally. In 1859 Stanford's published two additional maps under Hall's name: one of the subcontinent south of 25° 30' S entitled *South Africa*, and another entitled *Map of South Eastern Africa from Algoa to Delagoa Bay*.

In spite of Henry Hall's rightful claim to fame as South Africa's foremost pioneer cartographer, little has been published on his cartographical work. This paper discusses his contribution to South African geography and cartography by reviewing his maps against the background of the available topographical information and the political situation of the day. Attention is given to his source material; his hitherto little known manuscript maps of South Africa in the British National Archives (BNA) and Cape Archives Repository (CAR); the significance of his published maps and his textbook on the geography of South Africa; his supervision of Thomas Baines' 1876 *Map of the Goldfields of South Eastern Africa* and his involvement with the official 1876 *Map of the Cape of Good Hope* and some divisional maps of the southwestern Cape compiled by the Surveyor-General.

INTRODUCTION

Henry Hall was born in Dublin in 1815 and came to the Cape in 1842. From the fact that he was privately educated² and had a good grasp of the classics and of foreign languages (German and French), one can deduce that he was born into a well-to-do and, possibly, a land-owning family.³ His initial intention was to enter Dublin University, but in 1828 the death of his father compelled him to seek work in order to support his financially embarrassed family. In 1839, after having worked for a builders firm for nine years, he entered the Government Service as Foreman of Works in the Royal Engineer Department. His appointment was greatly promoted by the fact that he gained first place in a competitive examination with eighteen other candidates, and in 1842 he was ordered to the Cape Colony. He served on the Eastern Frontier during the Frontier Wars of 1846 and 1851-52, first in Grahamstown and later in Fort Beaufort before moving back to Grahamstown. In 1852 he returned to England for health reasons where he was employed in the Office of the Inspector-General of Fortifications until he returned to Cape Town in 1853 at his own request.⁴ In 1858 he was promoted to the rank of Clerk of Works of the first class after which his designation was "Clerk in charge of Royal Engineer Department".⁵ In 1860 he was

requested to finally return to England as the Cape was not considered a station for officers of his class. Attached to the Portsmouth Royal Engineer Office for some time,⁶ he moved to London after his retirement where he died in 1882.

During his stay in South Africa Hall contributed richly to the scientific and cultural life of the mid-nineteenth century Cape. As engineer he was actively involved in the erection of fortifications on the Eastern Frontier⁷ and in later years he supervised the building of several public buildings in Cape Town, amongst which the current South African Museum and National Library.⁸ He was also a competent and avid writer who regularly contributed publications and translations of either a scientific or literary nature to the *Eastern Province Monthly Magazine* and the *Cape Monthly Magazine*. In June 1860, prior to his final departure from Cape Town, the Cape Parliament voted him a testimonial of £100 in recognition of his services to public life in general.⁹

The only person who has so far acknowledged Hall's contribution to South African geography and cartography was the well-known South African journalist S.A. Rochlin. In 1962 Rochlin wrote an article in which he discussed Hall's cultural contribution by listing his cartographical and literary publications during his stay in South Africa.¹⁰ Whilst fully acknowledging Rochlin's contribution, this paper attempts to give a more complete account of Hall's contribution to South African cartography by reviewing not only his printed maps, but also his unknown manuscript maps.

DEARTH OF MAPS

When Britain assumed control at the Cape in 1795 the British authorities were ignorant of the extensive surveys and mapping that had been undertaken under Dutch rule. They considered the country unmapped and with large parts of the colony already inhabited by frontier farmers, they were eager to obtain reliable maps. By 1819 the need for reliable maps was such that the Governor, Lord Charles Somerset, commissioned the officer commanding the local Royal Engineers' Department, Captain Richard Holloway, to undertake a general trigonometrical survey with the aim to "lay the foundation of a map of (the) colony".¹¹ Work on the project started on the Eastern Frontier and in the district of Graaff-Reinet, but in 1825 a lack of funding by the Colonial Office led to the early abandonment of the scheme.¹² For first-hand topographic information on the interior of the country the British Government had to rely for many years on travellers, hunters, traders and missionaries who penetrated northwards from the inhabited parts of the country. In 1836 the Surveyor-General of the Cape wrote that it was impossible to ascertain the real shape and size of the Colony "because no survey having ever been made whereby either could be obtained, that which we see in maps is but a compilation of the notes of travellers".¹³ The small-scale maps which many of these explorers produced, together with their written narratives, were sought-after reading material in Britain and Europe and fed into the range of wall and atlas maps of the newly-explored areas which was to be compiled by British and European map makers throughout the 19th century.

Military engineers were important collectors of topographical data during the 19th century and some of the most useful maps compiled of parts of the Cape Colony

before 1850 were based on surveys undertaken by the local Royal Engineer's Department. Most prominent amongst these were the maps of the Eastern Frontier zone which played an important role in South African history as it constituted the primary contact zone between whites and blacks. In 1790 the Dutch proclaimed the Great Fish River as the eastern frontier of the Colony. The various Xhosa tribes who had been moving west from the area beyond the Fish River failed to uphold this boundary and ongoing clashes between white and black follow throughout the 19th century. Nine Frontier Wars were fought between 1779 and 1879, many of them resulting in the redemarcation of the actual frontier line. To safeguard the contested area and to regularly report on the military situation, parts of the Frontier were periodically surveyed and mapped by military surveyors. A large part of the information thus collected would also find its way into the maps of professional British map-makers.

Although many of the travellers' maps and military maps were creditable achievements, they were of localized areas and therefore of limited use. By the 1820s the dearth of reliable maps of the Cape Colony presented such a practical problem to the Colonial Office that the Cape Governor was repeatedly urged to provide the British Government with "...such Maps as may obviate the inconvenience..."¹⁴ On the Cape's (and presumably also other British colonies') failure to comply with this request the Colonial Office was compelled to introduce some in-house cartographic activity to provide in the Empire's need for maps.¹⁵ In approximately 1830 a certain Mr Hebert was employed as cartographer with the commission to, inter alia, compile a large manuscript map of southern Africa¹⁶ to be used as a base map for plotting all existing and new topographic information on an ongoing basis. Although never published, this map, here referred to as "Hebert's map", can be looked upon as the most authoritative map of South Africa of the 1830s.¹⁷

By 1850 the following published maps were considered the most reliable maps of southern Africa:

- The British cartographer John Arrowsmith's map of the Cape of Good Hope, originally published in 1834.¹⁸ What makes this map interesting is that it mentions that it was "with permission copied from the original manuscript drawing in the Colonial Office by Mr Hebert, Snr". That this map was considered a comprehensive, if not utterly reliable representation of the level of geographical knowledge of southern Africa at the time is evident from the fact that it was reproduced in the official report on the *Condition and Treatment of the Native Inhabitants of Southern Africa*, Part II, which was presented to the British Parliament on 17 March 1835.¹⁹ It also served as base map for Harris' map in his book *Wild Sports of Southern Africa* which was first published in 1837,²⁰ and as late as 1887 the 1835 edition was included as reference map in the autobiography of the influential Sir Andries Stockenström,²¹ magistrate of Graaff-Reinet from 1815 to 1827 and later Lieutenant Governor of the Eastern Districts. Updated editions of Arrowsmith's map appeared in 1836, 1840, 1842, 1858 and 1875, each new edition being similar to the previous one except for new discoveries or settlements and administrative boundaries that have been added.

- James Wyld’s 1844 map of South Africa.²² The British mapmaker James Wyld was one of the foremost cartographers of the 19th century and his map of South Africa of which six subsequent editions were published provided a relatively accurate picture of geographical knowledge at the time. Although some of these maps are undated, it can be inferred from information on them that the second edition must have been published pre-1848 and the third post-1854.

HALL'S MAP OF SOUTH AFRICA

The fact that Hall was an engineer and surveyor by profession, made it logical that he would have experienced the acute shortage of reliable maps soon after his arrival. His position would also have brought him into contact with the Surveyor-General, Charles Michell, and Her Majesty’s Astronomer at the Cape, Sir Thomas Maclear, from whom he would have learnt that although different parts of the country had been surveyed at different times, the quality of these surveys was such that they were useless for topographical purposes.²³ That he had been working on a map of South Africa since the late 1840s is evident from a letter he wrote on 8 January 1852 in which he refers to “the three years I have devoted myself to African geography”,²⁴ and another letter of 17 March 1852 in which he asks the Cape Government for financial assistance “to visit certain localities of this Colony before the final completion of the Engraving of the ‘Map of South Africa’ compiled by me which is now in progress”.²⁵ In this same letter he continues to explain that “(t)he sixth copy of the Map in question containing all my final corrections will include, I believe, every existing survey and authority of any value that will tend to throw light on the geography of this Colony. To the improvement of the Western Districts I particularly devoted myself... districts that in my first attempts I had to compile from the erroneous existing Maps of Wyld, etc.”²⁶

It is obvious from the above that Hall dismissed the maps of Wyld and Arrowsmith as inadequate and made various “attempts” to compile his own map of South Africa. It will be argued in this article that the “sixth copy” referred to by him in his letter of 17 March 1852 was in fact the last map in a series of six provisional compilations for his map of South Africa which would eventually be printed in 1857. Although every subsequent manuscript map was to a certain extent a copy of the preceding one, it was also an update in that it depicted the new topographical information that had in the mean time become available. Of these six copies only three extant maps have been located. With the exception of one of them (map CAR M 4/53) briefly referred to by Forbes,²⁷ these manuscript maps are as yet unmentioned in the literature on the history of cartography and have to date gone uncited by historians working on the history of 19th century southern Africa. Given the contents and scope of each map, the fact that they have gone unexplored for so long is both strange and ironical as they certainly represent some of the most authoritative cartographical documents of their period. Similar to Hebert’s map of two decades earlier, they contain a vast volume of geographical material on the Cape Colony and the newly explored territories to the north and north-east.

The manuscript maps

Map CAR M 5/80 of 1849

Map M 5/80 in the Cape Archives is a large, heavily-lacquered manuscript map dated 1849. Although unsigned and in a poor condition, it can clearly be identified as a map by Hall when compared to the other two manuscript maps signed by him in October 1849 and May 1850 respectively. It is also evident that this map is the oldest of the three and most probably the first in the series of six compilation maps. Although as fully detailed as the other maps, the lacquer has given it a yellow-brown colour and has rendered much of the lettering barely legible. The quality of the lettering is also inferior to the elegant copperplate scribing used on the other two maps and more suited to a provisional sketch map than the final copy of a map which is to be published. The tables, legends and annotations around the edges of the map are lettered in a hand resembling an ordinary handwriting and although the title appears in somewhat decorated capital letters, the design is not nearly as decorative as the highly illuminated cartouche used on the other two maps. Cartographically CAR M 5/80 is much less polished than its two later copies.

Manuscript map BNA MR 1/144 of 1849

The magnificent large coloured manuscript map MR 1/144 of Hall, held by the British National Archives, is the best preserved of the three maps that have been located (see Figure 1). The topography of the country is elegantly depicted and the map has a professional appearance with the title enclosed in an ornamental coloured cartouche bearing Hall's signature and the date 20 October 1849. In the lower left corner appear the signatures of the commanding officer of the Royal Engineers in the Eastern Province, Captain Richard Howorth, R.E. (31 October 1849), together with that of Colonel John Cole, R.E. (7 December 1849), the officer commanding the Royal Engineers at the Cape of Good Hope

On close inspection BNA MR 1/144 seems to be the second or third in the series of six provisional maps. That it was preceded by at least one other version of the same map can be inferred from a letter dated 24 July 1850 written by the Colonial Secretary, John Montagu, to the Surveyor General, C.D. Bell. In this letter Bell is reminded that "You have been kind enough to undertake to have a copy made of the Map of South Africa prepared by Mr Hall. In the copy the Governor wishes "The Trans Garepine [sic] Province" as it is marked in the Map to be called the "Sovereignty" – will you kindly bear that in mind".²⁸ From this request can be deduced that the map which was to be copied by the Surveyor-General was one on which the area between the Orange and the Vaal rivers was still indicated as the "Trans Gareepine Province." Although the date of the letter renders map BNA MR 1/144 a possible candidate, the map actually used by the Surveyor General must have been an even earlier one as BNA MR 1/144 already bears the name "Orange River Sovereignty". So far the only map answering to this requirement is the map described above as map CAR M 5/80.



Figure 1 Extract from Hall's 1849 manuscript map of South Africa (BNA MR 1/144).

That maps CAR M5/80 and BNA MR1/144 were amongst Hall's earlier compilations is evident from the fact that the names of well-known early travellers and authors such as Sparrman, Le Vaillant, Lichtenstein, Thunberg, Barrow, Latrobe, Campbell, Burchell, Thompson, Kay, Arbousset, Gardiner, Isaacs, J.A. Alexander, Harris, etc., appear in red at selected places on the maps. An annotation on both maps refers to these names as "the authors in which the country so marked is described." The fact that this practice was discontinued on map CAR M4/53 of 1850 infers that Hall, when starting on his project, must have felt it necessary to acquaint himself with the travelogues of these early writers.

Manuscript map CAR M 4/53 of 1850

Hall's manuscript map M 4/53 of 1850 which is also held by the Cape Archives is similar in size and appearance to map BNA MR 1/144 (see Figure 2). Hall and his commanding officer at the Cape, Colonel J. Cole, R.E., signed the map on 1 May 1850 and 18 July 1850 respectively. The map is dedicated to the Governor of the Cape, Sir Harry Smith, and bears the inscription "Prepared from the original map and compiled by order of the Inspector-General of Fortifications & dated 5 May 1850". Working on the assumption that map BNA MR 1/144 was the third in the series of six compilation maps, it seems as if this map might have been the fourth.

Compiling map CAR M 4/53 gave Hall the opportunity to make small amendments such as omitting certain information he considered outdated and adding new information of importance. The latter was especially true of Natal and the area to the north of the Orange River. In Natal more place names appear around Durban than on the BNA MR 1/144 map and along the north coast the presence of a "Cotton Company's Estate" is indicated. To the north of the Buffalo River, at the location marked "Umkinglove" on map BNA MR 1/144, an annotation refers to the murder on Piet Retief and his men which had occurred here on 6 February 1838. The so-called "Transgareepine Province"²⁹ shows many new place names and Winburg is correctly spelt as opposed to "Wynberg" on the earlier maps. The area north of the Vaal River is described as "Country occupied by Emigrant Farmers" and the town of Potchefstroom, laid out in 1839, is indicated as "Potcherfstrom, An Emigrant Village". Further north is written "This country formerly occupied by the Matabili or Abaka Zuluz under Moselekatze, now driven by the Emigrant Farmers far into the interior".

Common features

All three maps roughly cover southern Africa south of 26° South. Map CAR M 5/80 has 26° 20' South as its northern border; map BNA MR 1/144 covers the area south of 26° South, and on map CAR M 4/53 25° 20' South forms the northern limit of the mapped area. That Hall tried to include the expansion of white settlement as far as possible is evident from similar annotations in this regard on all three maps. Maps CAR M 5/80 and BNA MR 1/144 both state that the Transgareepine Province/Sovereignty "includes all the country between the Vaal and Orange Rivers occupied by Emigrant farmers since 1836" whereas map CAR M 4/53 mentions that "the country occupied by the Emigrant farmers extends to about Latitude 22° South between the 27 and 30th Meridian".



Figure 2 Extract from Hall's 1850 manuscript map of South Africa (CAR M 4/53).

The three maps in question provide the same important administrative and demographic information in the form of the following tables around their edges:

- A matrix of the actual distances in English miles between the principal towns and villages.
- A matrix of the distances between Grahamstown and the principal military posts on the Eastern Frontier.
- The population numbers and density of the various districts of the Cape Colony for 1848 as compiled and corrected from the *Cape Almanack* for 1849. The table differentiates between males and females and the figures given are for whites and coloureds only. A note explains that the table does not include British Kaffraria, Transgareepine or Natal.
- The dates on which the various boundary lines and districts or divisions were proclaimed with an explanatory note giving the name of the old district or districts from which the newly proclaimed district has been formed. The information on map CAR M 5/80 and map BNA MR 1/144 is identical and states that the Transgareepine Sovereignty includes "all the country between the Orange and the Vaal Rivers occupied by Emigrant Farmers since 1836"; Natal includes "the country conquered by Boers from Dingaan"; and British Kaffraria includes the "Gaika T'Slambie & Congo Tribes of Amakosa & part of Tambookies". On map CAR M 4/53 a considerable number of Cape districts proclaimed on 8 March 1848 have been added and the references to the aforementioned areas changed. The Transgareepine Province now merely "includes country between the Orange and Vaal Rivers"; Natal includes "country between Tugela and Umzimculu Rivers; and British Kaffraria includes "country between Great Kei and Keiskamma Rivers".
- An exhaustive map legend explaining conventional signs which not only lists the various types of administrative boundary in the Cape Colony and the Orange River Sovereignty, but also the types of settlement such as principal towns, second rate towns, villages, and mission stations belonging to the various religious denominations. Hall's preoccupation with the Eastern Frontier is evident from the presence of occupied and unoccupied military posts, signal stations that had been dismantled, military posts beyond the Orange River, old forts occupied during the Frontier Wars of 1835 and 1846 and sites of engagements. Other point symbols indicating human-made structures are those for light houses, native villages and farm houses. The map also differentiates between periodical and perennial rivers and an effort was made to indicate the presence of forests or wooded country, especially alongside rivers.
- On map BNA MR 1/144 appears a small table listing the rainfall figures at the Cape Observatory between 1836 and 1847.

Sources of information

Apart from consulting the travelogues of early travellers and hunters, Hall also collected as much authoritative information as possible from contemporary travellers, civilian surveyors, military and marine engineers, missionaries and knowledgeable and scientifically-minded fellow countrymen, the names of which appear in a carefully detailed list on each of the three maps. It is obvious that he wanted to give

credibility to his map by enumerating the names of the authorities consulted for the cartography of each of the districts or regions; sources that we should take a closer look at in our attempt to assess the reliability of his maps.

By 1849 Hall had lived on the Eastern Frontier for seven years and his representation of the districts of Albany, Victoria, Somerset, Fort Beaufort and the eastern parts of Colesberg, Cradock and Graaff-Reinet is based on the surveys undertaken during 1819-24 by Royal Engineers under supervision of Captain Holloway³⁰ and surveys undertaken during the 1840s by Captain W.F.D. Jervois, R.E.,³¹ corrected from sketches available in the bureau of the Royal Engineers in Grahamstown as well as from his own personal observations. For the representation of British Kaffraria Hall used the topographical survey of the area between the Keiskamma en Kei Rivers executed by Captain Jervois in 1847-48³², but on map CAR M 4/53 also acknowledges the work of Colonel Michell³³ and surveyor C.L. Stretch.³⁴ Information on the district of Albert beyond the Stormberg Spruit, Kraai River, the upper reaches of the Orange River and the Witteberg Mountains was gleaned from sketches by J.C. Chase,³⁵ and sketches and oral communications provided by the Reverend William Shaw³⁶ and government surveyor C. Bird.³⁷ For the district of Victoria north of the Kei River on map CAR M 4/53 sketches by W. Shepstone, Esq.³⁸ and W. Orpen, Esq.³⁹ are acknowledged. For information on the district of Colesberg, Hall relied on the Civil Commissioner and Resident-Magistrate, Fleetwood Rawstone,⁴⁰ who had fitted the farm diagrams issued by the various surveyors in this district together to form a map which was published in London in 1842.⁴¹ Arrowsmith's and Wyld's representations of the districts of Graaff-Reinet, Richmond and the so-called Winterveld were corrected using information provided by William Southey,⁴² whereas for maps CAR M 5/80 and BNA MR 1/44 the representation of the Great Karroo and the district of Beaufort was corrected and updated following a sketch by Government surveyor H. Marriot.⁴³ On map CAR M 4/53 the contribution of A.G. Bain, Esq.⁴⁴ is also acknowledged for this area. The well-known medical practitioner, naturalist and geologist of Grahamstown, Dr Guybon Atherstone⁴⁵ was a friend of Hall and for maps CAR M 5/80 and BNA MR 1/144 provided him with information on the districts of Uitenhage and Somerset, as well as with sketches from the Surveyor-General's Office which were helpful in correcting the road system in the Eastern Cape. For the representation of Uitenhage on map CAR M 5/80 Hall also acknowledges the contribution of C.L. Stretch and the late Lieutenant White.⁴⁶ The geological sections at the bottom of the three maps were provided by Dr. Atherstone with one of the geological sections on map CAR M 4/53 being the work of A.G. Bain.

The Voortrekker Republic of Natal was established in 1838 but only lasted until 1843 when Natal was annexed by Britain. In 1844 the area became a district of the Cape Colony and in 1857 Natal received colonial status under the British Crown. Although the most recent editions of Arrowsmith's (1842) and Wyld's maps (c.1847) also covered Natal, these documents contained little information on this part of the country. Likewise the map compiled in 1836 by the missionary Captain William Gardiner was as sketchy.⁴⁷ In 1845, in an effort to remediate this situation, the Cape Government appointed a Surveyor-General for Natal in the person of Dr William Stanger. In 1848 Stanger produced a sketch map of Natal⁴⁸ which was used by Hall to correct the existing representation of the area between the Tugela and Umzimkulu Rivers. Additional information was provided by sketches which had been made by

Captain Jervois, R.E., on a visit to Natal in 1845.⁴⁹ For Kaffraria Proper (the area between the Umzimkulu and Kei Rivers) there were no surveys available with the result that for maps CAR M 5/80 and BNA MR 1/44 Hall had to correct Arrowsmith's and Wyld's maps by using information provided by the Reverend William Shaw, Messrs Hoole,⁵⁰ Driver⁵¹ and Southey (late of Corps of Guides).⁵² For map CAR M 4/53 the names of the British Resident, Henry Fynn, Esq.,⁵³ Lieutenant-Colonel Sutton⁵⁴ and Colonel Somerset⁵⁵ as informants on this area have been added.

In 1848 Britain annexed the area immediately north of the Orange River under the name “Orange River Sovereignty”. The emigrant farmers who resisted this intervention suffered military defeats, first at Touwfontein (May 1845) and later at Boomplaats (August 1848). Apart from Arrowsmith's and Wyld's maps the only other maps available of this area were the French missionaries Arbousset's and Dumas' map of their exploratory tour of 1836⁵⁶ and Sir William Cornwallis Harris' 1837 map⁵⁷ of his hunting expedition north of the Orange River, the topography of which was based on Arrowsmith's map of 1834. In his map legend Hall refers to this area as the “Transgareepine Sovereignty west of the Quathlamba Mountains, Caledon River” and mentions that his corrections for this part of the country are based on sketches by the Surveyor-General of the Cape, Charles Bell, a government surveyor Frederick Rex,⁵⁸ and Captain W.C. Harris;⁵⁹ information gleaned from publications of the French missionaries who worked amongst the Basuto in the Paris-based *Journal des Missions Évangéliques*;⁶⁰ the road map sketched by Captain Jervois, R.E. on a trip from Port Natal to Phillippolis in 1845,⁶¹ and information provided by the Reverend William Shaw. As General Superintendent of the Wesleyan Missions in South East Africa Shaw was also responsible for the mission stations at Platberg and Thaba 'Nchu north of the Orange River which he visited in 1848.

Due to the general problem of fixing longitude, the position of the coastline of especially south-eastern Africa had been subjected to changes since the sixteenth century. In his attempt to show the delineation of the coast as accurately as possible Hall corrected Wyld's map by using the hydrographic surveys of Captain W.F. Owen of 1822-24, the position of points fixed by Sir Thomas Maclear, H.M. Astronomer at the Cape, and the information available on charts made by Lieutenants Rice and Forsyth, R.N. To verify the position of the west coast he had the benefit of the triangulation Sir Thomas Maclear executed in 1840-48 between Cape Agulhas and Vogelklip in Namaqualand.⁶² The boundaries of the various divisions were corrected following the official list of boundaries as published in the *Government Gazettes of* 1848 and 1849.

Accuracy

Although Hall's compilation maps are contents-wise as reliable and complete as could be achieved under the prevailing circumstances, they are planimetrically not very accurate. Having plotted the latitudes of places more or less correctly, the corresponding longitudes are incorrect in that they are constantly plotted too far east. From the following table can be deduced that on Hall's maps towns such as Colesberg, Phillippolis, Graaff-Reinet and Cradock appear respectively 46 km, 42,5 km, 35 km and 26 km east of their actual positions. Although this phenomenon can be considered a gross error, this miscalculation was not peculiar to his work only. Due to

the inability of cartographers to calculate longitude without the aid of a reliable time signal other 19th century maps of southern Africa such as those of Arrowsmith and Wyld suffered from the same failure.

Longitudinal position of five towns

Town	Arrowsmith 1834	Wyld 1848	Hall 1857 & 1859	True longitude
Colesberg	25° 29' East	25° 41' East	25° 31' East	25° 06' East
Philippolis	25° 54' East	26° 14' East	25° 40' East	25° 17' East
Graaff-Reinet	24° 48' East	24° 51' East	24° 52' East	24° 33' East
Grahamstown	26° 25' East	26° 28' East	26° 31' East	26° 32' East
Cradock	25° 36' East	25° 37' East	25° 51' East	25° 37' East

Publication

Negotiations as regards the possible publication of Hall's map started as early as 6 April 1850 when an official of the Colonial Office, Cape Town wrote to the Ordnance Office that he was returning Hall's map which had been forwarded to him and that it was the opinion of the Governor, Sir George Grey, that the map should be published.⁶³ He also mentioned that “Mr Arrowsmith would probably willingly undertake its publication”.⁶⁴ Given the date of this letter, the map in question must have been the one which was to be copied by the Surveyor-General (see note 28). This map was however, not the final document to be published because on 31 October 1851 the Ordnance Department forwarded another copy of Hall's map to the Colonial Office, Cape, stating that “The Map has been altered and several Additions made, & is now set for publication, & confers a most valuable Amount of Information”.⁶⁵ Given the date of this announcement it seems as if the map thus received was map CAR M 4/53 of 1850. That Arrowsmith was indeed willing to engrave and publish the map at his own expense is evident from a letter written to him on 14 November 1851 by the Colonial Office, Cape Town.⁶⁶ It was set as a condition that Arrowsmith would not be required to furnish copies of the map free of cost but that two copies had to be supplied to the Cape Government for which he would be paid. In a letter to the Colonial Office dated 22 November 1851 Arrowsmith confirmed his commitment.⁶⁷

As Hall was in England during 1852, he probably left his map in Arrowsmith's hands himself. However, by 1854 very little if any progress had been reported. That this was to the annoyance of both the Ordnance Department and the Colonial Office is obvious from the numerous letters written to Arrowsmith during 1852, 1853 and 1854, urging him to complete the map.⁶⁸ Although the reason for Arrowsmith's lack of progress is not clear, a possible explanation might be that his work was in fact hampered by Hall himself as the cartographer kept supplying the Colonial Office with updated versions of his map. Documentary evidence of this occurs in an entry made in the general register of the Colonial Office, London with regard to a letter received

from Hall on 12 May 1852: "His Map of South Africa. Having made several Additions & alterations thereto, requests its publication is corrected & the suppression of the one now in course of engraving".⁶⁹ Given the date of this entry it seems as if the map in question was the same as the one Hall had two months earlier referred to as "the sixth copy... containing all my final corrections".⁷⁰

Regardless of whether it was Hall's final copy or not, Arrowsmith could not have been happy with these developments. Continuous new material seriously interfered with the engraving process with the result that Arrowsmith stalled on the map. On 3 December 1852 Hall complained to the Ordnance Department about Arrowsmith's reluctance to consult him on the publication or to submit to him the proof for his correction.⁷¹ By June 1854 Hall had ostensibly lost all patience with Arrowsmith when he submitted a memorial to the Governor of the Cape in which he asked that Arrowsmith should be called upon at once to complete the engraving of the map.⁷² Hall's memorial was forwarded to Arrowsmith on 12 September 1854 together with a letter stating that "the defects and errors of the existing maps are so numerous and of such a serious nature as to render the speedy publication of a more perfect & detailed Map a matter of interest and importance both to the Govt and to the inhabitants of the Cape Settlement."⁷³

Back in South Africa the lack of a reliable map of the country was indeed keenly felt and on 14 September 1854 the Legislative Council of the Cape of Good Hope accepted a motion by Robert Godlonton of Grahamstown that the Lieutenant-Governor should facilitate the completion of Hall's map, "a work of so much importance to the Colony".⁷⁴ To strengthen their case a petition to this effect was submitted to the Government.⁷⁵ Sir George Grey obviously considered this request a serious matter and on 17 January 1855 Arrowsmith was informed that no further delay should take place and that Sir George Grey should be notified how soon the map would be completed.⁷⁶ A lack of documentary evidence unfortunately prohibits us from knowing what happened next, but what is known is that Arrowsmith eventually returned the map unpublished as it was engraved and printed at the Government's expense by J.A. Crew, 8 Shortmarket Street, Cape Town in 1857 (see Figure 3). The total actual expenditure was £125, a sum Parliament already voted for in 1856.⁷⁷ According to the *Cape Monthly Magazine* of 1860 Hall's map entitled *Map of South Africa to 16° South Latitude* was the first of its kind ever to be printed in South Africa as "(t)he whole of the engraving, printing, colouring, and mounting – of upward of sixteen hundred copies – was performed with local resources, and the undertaking, small as at first it may appear, circulated £800 among the working classes of this city".⁷⁸



Figure 3 First edition Hall's 1857 map of South Africa.

Hall's map of South Africa of 1857

What makes Hall's map of 1857⁷⁹ of particular interest is that it is one of the earliest cartographical documents of southern Africa to include not only the newly-found Boer republics of the Orange Free State (founded 1854) and the Transvaal (founded 1852), but also the routes followed by the mid-19th century explorers) Orpen and Shelley (1852), Chapman (1854), Livingstone (1853 and 1856), C.J. Andersson (1853), Moffat and Edwards (1854), and Green and Wahlberg (1856) during their explorations into the vast area north of 20° South. By including these routes on his map Hall extended the northern limit of his manuscript maps of 1849 and 1850 with 10° and therewith consciously moved into the unknown parts of south-central Africa. Hall was a personal friend of almost all the above-mentioned explorers and a possible explanation for his bold decision is that he considered it his duty and obligation to make their geographical achievements known to the wider public.

On his map Hall mentions that it was compiled from "available official authorities" in the Surveyor-General and Royal Engineer Offices, as well from "numerous contributions" made by people whose names also appear on his manuscript maps of 1849 and 1850. "New" names that are mentioned are those of C.J. Andersson,⁸⁰ the Reverends Thomas⁸¹ and Frazer,⁸² J.M. Wentzel,⁸³ the surveyor Robert Moffat,⁸⁴ Dr. David Livingstone⁸⁵ and Messrs F. Green⁸⁶ and Chapman.⁸⁷ Of these individuals it is especially Moffat who is important and who is specifically acknowledged for the contribution of his "original maps" to the representation of "(t)he Sovereignty, Transvaal, and (the) Northern parts of the Cape Colony". His 1851 manuscript map of the Orange River Sovereignty and the area between the Vaal and Limpopo Rivers (the Transvaal)⁸⁸ was the most detailed and complete map of these areas ever to be compiled and comprises a wealth of information. That Moffat and Hall were in contact with each other is evident from a note on the map which mentions that Henry Hall will make use of the mapped information "by incorporating it with his New Map of South Africa". Mention should also be made of the fact that Moffat was the brother-in-law of David Livingstone and in this capacity probably often acted as a conduit to channel information about the travels of the latter explorer to Hall. On his map Hall mentions that information on the area "N of 20°" was obtained from Livingstone, and Green and Chapman.



Figure 4 Hall's map of 1857 superimposed on a modern map of South Africa

Hall's representation of the Orange Free State and Transvaal Republics comprised only the second printed map of these newly founded states, the first being a map by Hermann Berghaus published in the German periodical *Petermanns Geographisches Mitteilungen* of 1855.⁸⁹ Equally interesting is the fact that Hall's map is the first printed map on which the name "Pretoria", the capital of the Republic and founded in 1855, appear. Reliable geographical information on the Transvaal was, however, still scant and Figure 4 indicates that Hall's positioning of towns such as Pretoria, Lydenburg and Ohrigstad, as well as the delineation of the main river systems are not only situated too far to the north, but that the respective longitudes are also too far east. In spite of this obvious planimetric inaccuracy, the author nevertheless managed to achieve a remarkable degree of completeness and informity.

In a letter dated 8 January 1852 Hall brought to the Cape Government's attention that he had "completed a most interesting Physico Ethnological Chart of the country south of Lat 21° shewing the native tribes and European races inhabiting it as well as its principal physical features..."⁹⁰ Although the map alluded to here was never published, the spatial distribution of Hall's race classification appears on a copy of his 1857 map of South Africa currently held by the BNA.⁹¹ The map is marked "No 2 Ethnological" and is manually coloured according to an ethnological legend.

Henry Hall's efforts to improve public knowledge of the geography of the country were not restricted to matters cartographical and in 1856 and 1858 he published some major essays on South African geography. However, the work which brought him fame was his *Manual of South African Geography*, a volume of 183 pages which was published in Cape Town in May 1859.⁹² The title page characterizes this book as "A companion to the map of South Africa to 16° South Latitude intended for the use of the upper classes in government schools, and of candidates for the civil service". Part I of the *Manual* gives a general description of the geography of South Africa; Part II describes the various divisions of South Africa, and Part III furnishes a sketch of the physical geography of the country. The book also contains an appendix, extending over 50 pages, comprising tables of geographic, demographic and economic data, and a table of chronological events relating to South Africa. A new and revised edition of the *Manual* was published in 1866. In 1875 Hall, at this time resident in England, contributed a chapter on South African natural history to the first edition of Silver's *Handbook to South Africa*,⁹³ and in 1876 he contributed to another booklet for "the information of Colonial Engineers".⁹⁴

Soon after its publication in South Africa Hall sold the copyright of his map of 1857 to Stanford of London who used the existing plates to publish the complete map under both an English and a Dutch title.⁹⁵ However, in 1859 Stanford transferred the area south of 25° S to a conical projection, re-engraved it and published another edition, slightly updated⁹⁶ (see Figure 5). Except for the area between 16° S and 26° S which was discarded, all detail on the original 1857 map was retained. Although the actual reason for doing away with the area north of 25° S is not clear, especially as the map border now cuts through the Transvaal, the decision was probably based on the scanty information that was available on these areas.

Hall's map of South Africa was considered an authoritative map of the country for many years. On 19 October 1871, when the issue of the Diamond Fields of

Griqualand-West was at its most contentious, Stanford issued a revised edition.⁹⁷ On the map a paragraph headed "Notes and References" gives information on the contested area while an inset map furnishes information on the areas claimed by the various parties. On a later edition published on 1 March 1872⁹⁸ the "Notes and References" and the inset map have been removed. In the latter's place is the same table of abbreviations which appeared on the 1859 edition.. The "recently acquired district of Griqua Land West", and Lieutenant-Governor R.W. Keate's award, on the boundaries of the Orange Free State and Transvaal, are also depicted. On a later edition of the map published on 1 June 1876,⁹⁹ Keate's award is no longer shown.

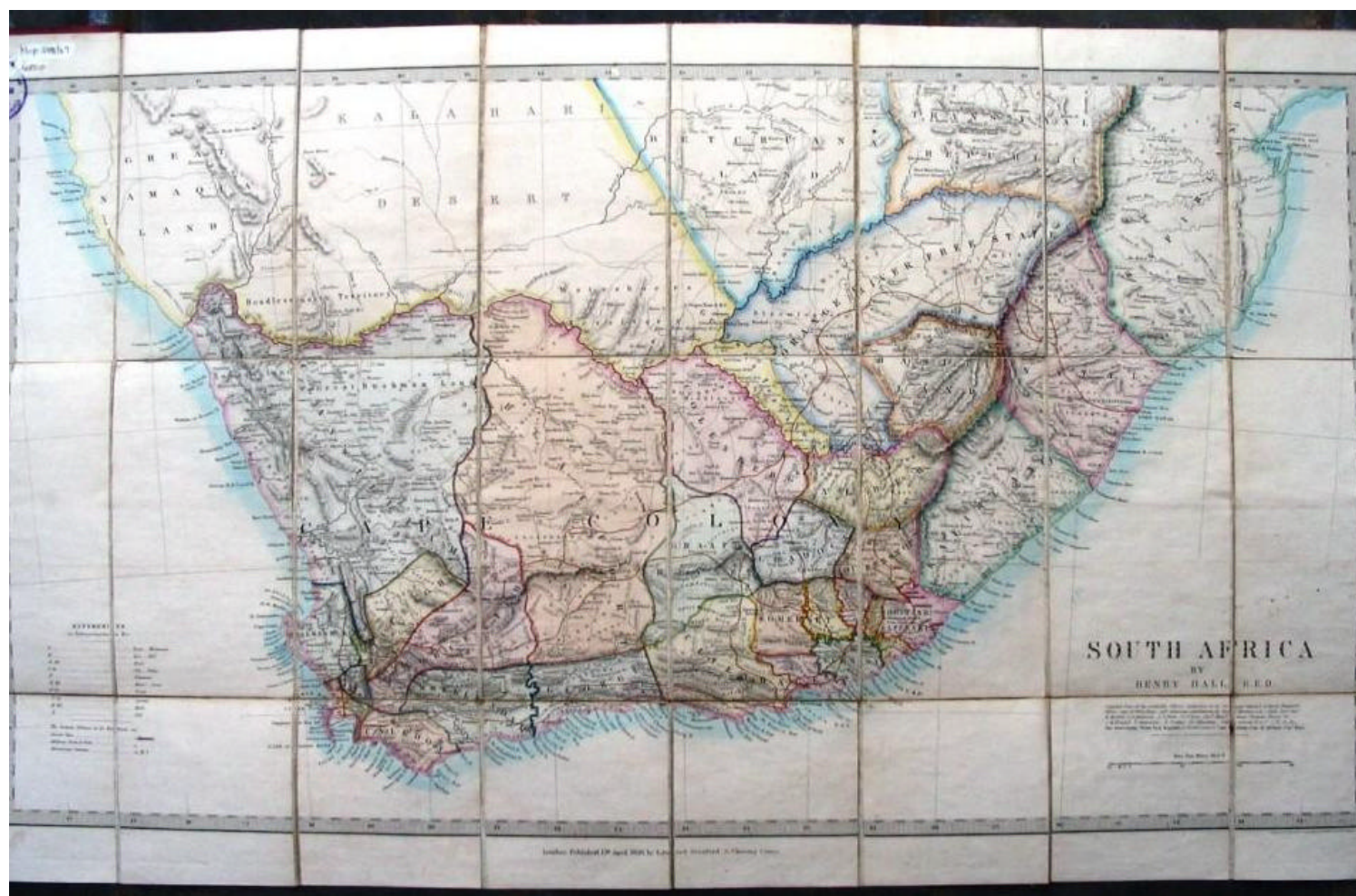


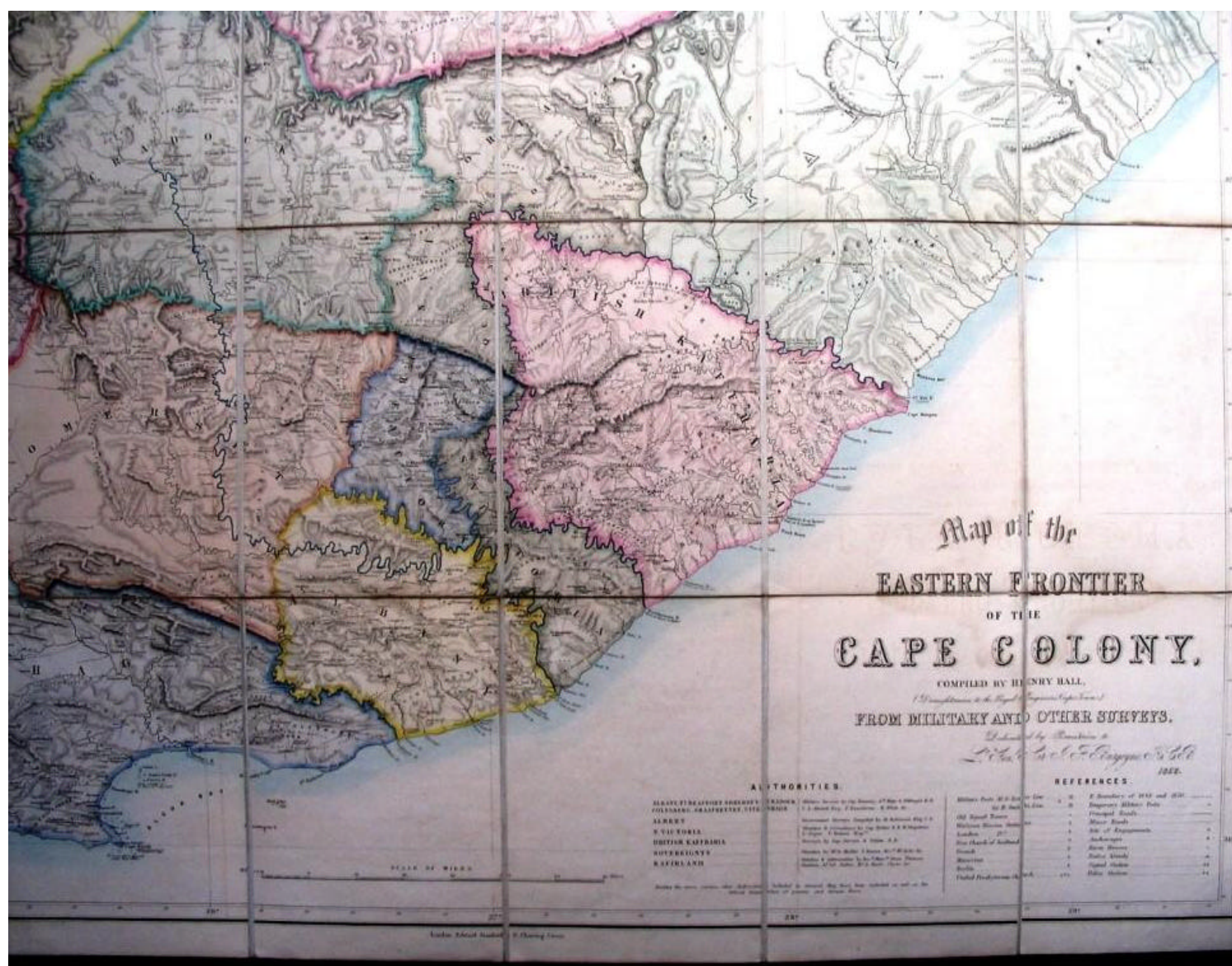
Figure 5 Stanford's 1859 edition of Hall's map of South Africa of 1857.

MAP OF THE EASTERN FRONTIER, 1856

Hall had spent ten years on the Eastern Frontier and it was to be expected that the ongoing violence and volatile political situation in this part of the Colony would influence his work. In a letter dated 8 January 1852 he wrote to the Cape Government that "I have at present in progress a very extended and comprehensive map of the seat of war of the campaigns of 1834.5, 1846.7 and 1851.2 which will be found most useful in illustrating his Excellency's dispatches as well as the Parliamentary papers on the subject".¹⁰⁰ The map thus mentioned was his attractive, coloured 1856 *Map of*

*the Eastern Frontier of the Cape Colony*¹⁰¹ which was dedicated to the British Inspector-General of Fortifications, Sir John Burgoyne (see Figure 6).

Hall had spent the period 1852-53 in London on sick leave until, by his own request, and by the special favour of the Inspector-General of Fortifications he was returned to Cape Town. Although no evidence in this regard could be found, he presumably took his manuscript map CAR M 4/53 of 1850 or a later version of it with him to England for inspection and it is fair to assume that his superiors returned him to South Africa hoping that he would continue his cartographic work. The fact that he dedicated his map of the Eastern Frontier to Sir John Burgoyne strengthens this supposition.



map was originally based on sketches communicated by the Surveyor-General, Colonel Charles Michell, during the Sixth Frontier War (1834-35). Significant changes on the Frontier necessitated a new edition in 1848, and in 1851 the map was completely re-engraved after Captain Jervois’ survey of British Kaffraria had become available. In 1853 a new edition was deemed necessary to accommodate the changes brought about by the Eighth Frontier War. Hall’s map is of the same scale (approximately 1 : 500 000) as Arrowsmith’s map, but covers a larger area. Contents-wise it is more informative as it differentiates between permanent and temporary military posts, old signal towers and signal stations in use, principal and minor roads, mission stations belonging to the various denominations, farm houses and native kraals. It also depicts the boundary lines of 1848 and 1850 which are absent on the Arrowsmith map.

To give credibility to his work Hall followed the same method as in the compilation of his previous maps and listed the “authorities” from whom information had been obtained. Many of these names also feature on his 1849 and 1850 manuscript maps. For the divisions of Albany, Fort Beaufort, Somerset, Cradock, Colesberg, Graaff-Reinet and Uitenhage he acknowledges the names of the surveyors who, from 1819-22, undertook a trigonometrical survey of the North-East Frontier¹⁰³ under the supervision of Captain Holloway, namely Captain Bonamy, Lieutenants Hope and Pettingall, R.E., surveyor C.L. Stretch,¹⁰⁴ and H. White. For the representation of the division of Albert, Hall relied on information provided by Government Surveyor M. Robinson¹⁰⁵, and for the area designated North Victoria he made use of sketches and corrections obtained from Captain Richard Tylden, R.E.,¹⁰⁶ and Messrs R.E.W. Shepstone¹⁰⁷, C. Orpen,¹⁰⁸ and T. Baines.¹⁰⁹

Hall’s depiction of the Orange River Colony was based on the 1851 map of Robert Moffat Junior, as well as on sketches provided by Thomas Baines and the Reverend Dyke.¹¹⁰ For British Kaffraria he relied on the surveys of Captains Jervois and Tylden, R.E., and for the area beyond the Kei River he obtained information from the Wesleyan missionaries Shaw, Thomas and Gladwin,¹¹¹ as well as from Lieutenant-Colonel Sutton, and Messrs. A. Hoole and J.C. Chase.

MAP OF SOUTH EASTERN AFRICA, 1859

The south-eastern part of South Africa underwent significant constitutional developments during 1850s. The most contentious matter was the possible partition of the Cape into an eastern and a western province. The Eastern group was in the end defeated and the new constitution of the Cape Colony took effect on 1 July 1853. Natal became a British colony in 1857. It was probably against this political background that Hall decided to compile a map of the area east of 25° East, lying between 26° and 34° South (see Figure 7). Published by Stanford of London in 1859, this map covers some of the Eastern Districts of the Cape Colony, the whole of Natal, Basutoland, Brits-Kaffraria and the area beyond the Kei River, as well as parts of the Orange Free State.¹¹² Although many of the topographical features on the 1857 map are also identifiable on this map, Hall had obviously updated much of his information. The rivers of Natal and the tributaries of the Umzimkulu River are all named; the delineation of the Transvaal and Northern Natal Drakensberg is more realistic; the physical topography of Basutoland differs from that on the 1857 map, and the 1859

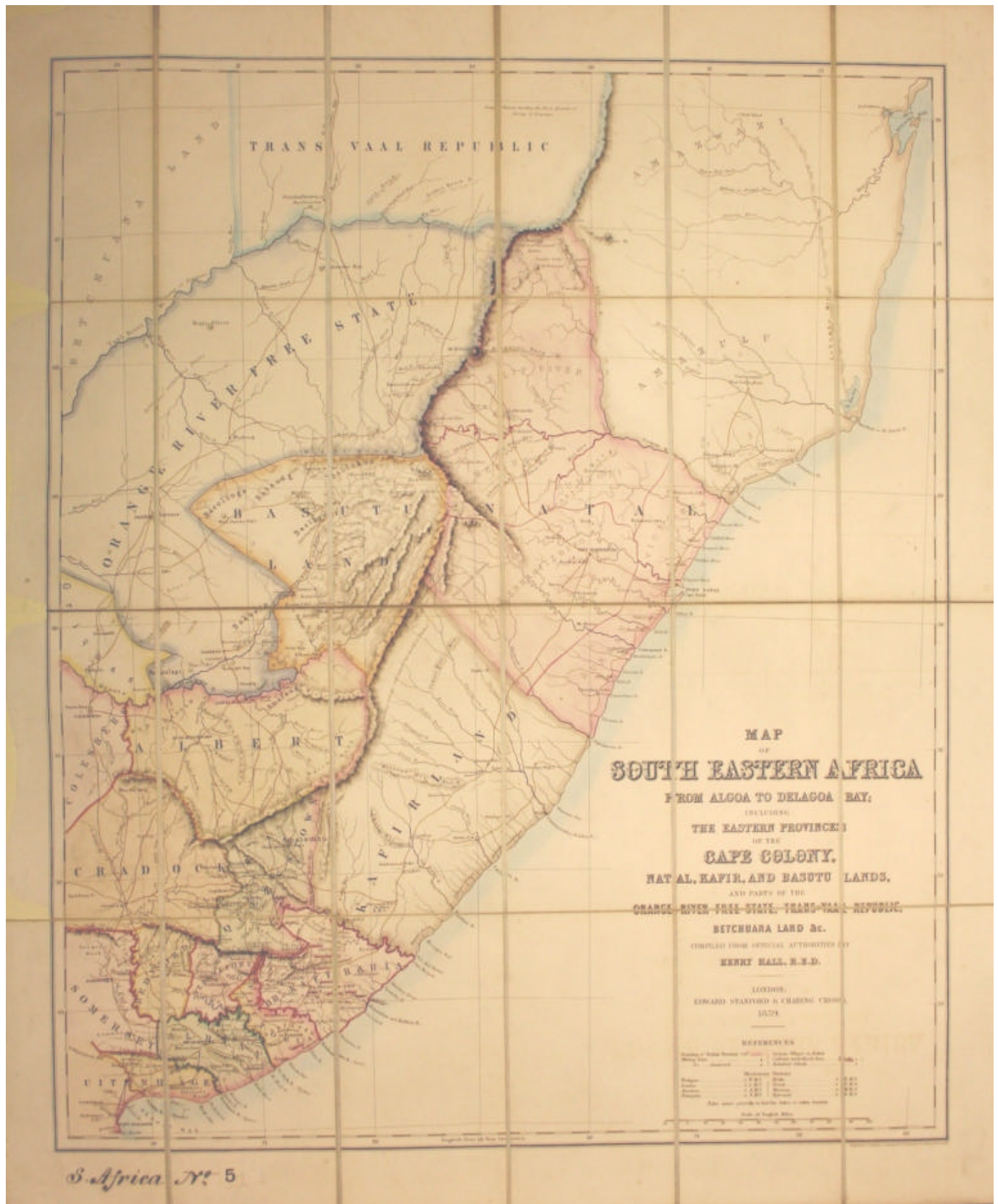


Figure 7 Hall's 1859 map of South Eastern Africa.

map shows the names of the black tribes that inhabited the eastern part of the Orange Free State. Unlike Hall's other maps, no authorities are mentioned.

BACK IN ENGLAND

Hall returned to England in 1860 and retired a couple of years later. Although no documentary evidence supporting it could be found, one can accept that he assisted Stanford in updating his map of South Africa for the 1871, 1872 and 1876 editions. What is interesting though is that in 1873 the Cape Governor refused a request by the War Office for a grant to aid Hall in compiling a new map of South Africa. The Governor reacted on the advice of the Surveyor-General whose Office was at that stage engaged in collecting data for a reliable map of the Colony and quite obviously did not want any competition from Hall.

The artist and explorer Thomas Baines was a personal friend of Hall. Based in Grahamstown during the years 1848-1853, Baines undertook many short expeditions which provided him with a sound knowledge of the physical topography of the area. He shared this knowledge with Hall and thus contributed to the latter's 1856 map of the Eastern Frontier. Both men were also involved in the Eighth Frontier War (1850-1853) - Hall erecting fortifications on the line of the Great Fish River and Kat River, and Baines acting as official war artist, sketching the localities and events of the war and often taking part in the fighting.¹¹³ After Baines died in 1875, Hall acted as editorial supervisor of the artist's posthumous *The Gold Regions of South-Eastern Africa* which was published by Stanford in 1876. Hall wrote the biographical sketch on Baines which precedes the contents of the book and on the map.¹¹⁴ It is mentioned that it was compiled from Baines' own observations but has been issued under the supervision of Henry Hall.

Hall made some of his last contributions to South African cartography when he supervised the printing of two mapping projects of the Surveyor-General's Office in England during the period 1875-1878. The first project comprised three sheets on a scale of 400 Cape roads to one inch of the Cape Peninsula and part of Malmesbury which were sent to Stanford to be lithographed.¹¹⁵ The second project involved the Surveyor-General's official *Map of the Cape of Good Hope and neighbouring territories*.¹¹⁶ In both cases Hall, at the Surveyor-General's request, corrected the proofs of the lithographed stones before they went to press.¹¹⁷ The engraving and lithographing of the official map was a lengthy process and although the official date on the map is 1876, it was not completed before January 1878.¹¹⁸ In spite of the fact that the Surveyor-General, Abraham de Smidt, later declared that the map was “far from being all that a map ought to be”, he did not hesitate to add that it “supplied in an urgent want for nearly 20 years”.¹¹⁹

CONCLUSION

To correctly assess Henry Hall's contribution to South African geography and cartography one should view his work against the geodetic and topographical information available at the time. By 1835 South Africa was still without a trigonometrical survey which could serve as a basis for accurate topographical maps. The available maps were considered unreliable and when asked to comment on

surveys which had been made at different times of portions of the country, the then Surveyor-General, Colonel Charles Michell, wrote “...it is impossible to obtain from them wherewithal to compile *even a tolerably correct map of the Colony*”¹²⁰ (my italics). This phrase would reverberate again and again in the history of South African cartography. Twenty years later the situation as regards a trigonometrical network was still unchanged, but on the mapping side Henry Hall had in the mean time tried his utmost to improve the situation. Disregarding the maps of Arrowsmith and Wyld, he painstakingly built his own cartographical database and in 1852 wrote to the Governor of the Cape Colony that he was almost ready to provide the country “with what hitherto has been so much required: *a tolerably correct Map of South Africa*”.¹²¹ His printed maps of 1856, 1857 and 1859 were cases in point and in 1857 Her Majesty’s Astronomer at the Cape, Sir Thomas Maclear, referred to Hall’s printed map of South Africa as “beyond question, far in advance of any previous attempt”.¹²² Maclear was, however, realistic, and whilst acknowledging Hall’s contribution, he concluded: “It would be unjust to Mr Hall to conceal the fact that neither he nor any other can produce *even a remotely accurate map of this Colony* (my italics), before certain steps have been taken which hitherto have been unaccountably neglected”.¹²³ The “steps” Maclear referred to was the geodetic survey of South Africa without which accurate mapping was impossible but which would only commence in 1883.

Endnotes

¹ CAR, C.O. 4604/127, Hall to Cape Government, 08.01.1852

² Rochlin, S.A. 1962. Henry Hall: Pioneer South African Cartographer and Littérateur. *Africana Notes and News* XIV, 251-265.

³ Cory Library, Grahamstown (hereafter CL), MS 5742. In a letter written to his father dated 9.6.1869, Henry Hall’s eldest son Harry wrote as follows about a visit the elder Hall had undertaken to Ireland: “Are you not afraid of an ‘agrarian’ outrage when you go over to inspect your Baltinglass estate? Being an ‘absentee’ landlord I’m surprised that under the present disturbed state of the Country you are not afraid to trust yourself in Ireland. I hope that you did not ‘evict’ any of the tenants”.

⁴ Rochlin, *op. cit.*

⁵ *Cape of Good Hope Almanac and Annual Register*, 1856-1861.

⁶ CL, MS 5711. In a letter to his parents dated 5 November 1866 Harry Hall refers to his father’s address as the Portsmouth RE Office.

⁷ Kirby, P.R. 1960. South Africa’s First Telegraph, *Africana Notes and News*, December 1960, pp. 123-129; Hall, Henry. 1859. On Telegraphic Communications, *Cape Monthly Magazine* 7, pp. 257-266.

⁸ *Cape Quarterly Review* I (4), July 1882, p. 715; Rochlin, S.A. *op. cit.*, p. 264.

⁹ Cape of Good Hope G. 18A – 1860, p. 43.

¹⁰ See note 2.

¹¹ CAR, CO 165, “Extracts of a Despatch ...”, Donkin to Bathurst, 15 June 1821.

¹² CAR, GH 1/56, General Despatches: Hill to Officer Commanding at the Cape of Good Hope, 30 June 1826, no. 801, p. 63.

¹³ Michell, C.C. 1836. On the Roads and Kloofs in the Cape Colony. *Journal of the Royal Geographical Society* 6, 1836, 168-174.

¹⁴ CAR, GH 1/48, General Despatches: Bathurst to Somerset, 14 June 1824, no. 666.

¹⁵ CAR, GH 1/23, no. 1651, pp. 21-29.

¹⁶ British National Archives (hereafter BNA), CO 700 Cape of Good Hope 12.

¹⁷ Liebenberg, EC. 2005. The Arrowsmith and S.D.U.K. maps of South Africa of 1834 – Source material and cartographical significance, *Proceedings of the International Conference of the International Cartographic Association*, La Coruña, Spain, July 2005.

¹⁸ Arrowsmith, J. 1834. *Cape of Good Hope*. London: J. Arrowsmith, 33 East St. Red Lion Square. Size: 47,5 x 60 cm.

¹⁹ *British Parliamentary Papers, 1826-1836*. Colonies Africa 20. Irish University Press 1970: Shannon, Ireland. Map opposite p. 620.

²⁰ Harris, W.C. 1852. *The Wild Sports of Southern Africa*. Fifth Edition. London: Henry G Bohn.

²¹ Hutton, C.W. (ed.), 1887. *The autobiography of the late Sir Andries Stockenström*, Bart, I-II. Cape Town: Juta.

²² Wyld, James. 1844. *South Africa* by Jas. Wyld, Geographer to the Queen and H.R.H. Prince Albert, Charing Cross East, London. London. Published by J. Wyld, London, 13 May 1844. Size: 52 x 81 cm.

²³ CAR, SG 1/1/3/1, Michell to Secretary of Government, 28 February 1831. In this letter the Surveyor General stated that he had examined all surveys which had at different times been made of portions of the Colony and that he found it impossible “to obtain from these wherewithal to compile even a tolerably correct general Map of the Colony”.

²⁴ CAR, CO 4604/127, Hall to Lieutenant-Colonel Garvock, 8 January 1852.

²⁵ CAR, CO 4604, 128, Hall to J. Montagu, 17 March 1852.

²⁶ *Ibid.*

²⁷ Forbes, Vernon S. 19.. Notes and queries: Henry Hall’s map of South Africa. *Africana Notes and News* 14, p. 43.

²⁸ CAR, SG 1/1/3/15, John Montagu to C.D. Bell, 24 July 1850.

²⁹ It is inexplicable why Hall, after using the the more correct “Transgareepine Sovereignty” on map BNA MR 1/144, on this map reverts back to the name “Transgareepine Province” for the area between the Orange and Vaal rivers . The correct name, Orange River Sovereignty, does appear on the map, but in an inferior type size.

³⁰ See notes 11 and 12. The surveyors mentioned by Hall on his manuscript maps are Captain Bonamy and Lieutenants Hope and Pettingal, R.E.

³¹ Captain W.F.D. Jervois, later Lieutenant-General Sir William Jervois, G.C.M.G., C.B., entered the Royal Engineers in 1838 and was ordered to the Cape in 1841 where he served until 1848, partly on the Eastern Frontier and partly in Cape Town.

³² In 1847 Captain Jervois was commissioned to carry out an exhaustive topographical survey of British Kaffraria. See Jervois, W.F.D. 1847-48. *Military sketch of part of British Kaffraria*. London: J. Arrowsmith. Scale 2 miles to 1 inch. Size: 74 x 100 cm.

³³ Colonel Charles Cornwallis Michell (1893-1851) was Surveyor-General of the Cape Colony from 1828 until 1848. During the Sixth Frontier War he was attached as Assistant Quartermaster-General to the staff of the Commander-in-Chief.

³⁴ Charles Lennox Stretch (1797-1882) trained as a military surveyor and came to the Cape in 1818. He helped the Royal Engineers build fortifications on the Eastern Frontier and during the 1820s he participated in the survey of the North-Eastern Frontier under Captain Holloway. During the Sixth Frontier War he was an officer in the Cape Corps and after peace was declared he served as a diplomatic agent amongst the Xhosa. After the Seventh Frontier War he practised as a surveyor and in 1869 he was elected a member of the Legislative Council for the eastern districts.

³⁵ James Centlivres Chase (1795-1877) arrived in South Africa in April 1820 as a member of a party of British Settlers. He took a lively interest in exploration and began collecting whatever information he could find on the various expeditions into the interior. He became secretary of the Cape of Good Hope Association for Exploring Central Africa; published articles on geographical discovery in the interior of Southern Africa, and compiled a few maps of which two were published. See Liebenberg, Elri. 2005. Mapping South Africa in the 1830s: The Cartography of James Centlivres Chase. Paper presented to the International Conference on the History of Cartography, Budapest, September 2005.

³⁶ The Reverend William Shaw (1798-1872) was the founder of the Methodist missions in South-Eastern Africa. He arrived in South Africa in 1820 as chaplain of a party of British settlers. He established a chain of Wesleyan mission stations eastwards from the colony right through Kaffaria as far as Natal; played an important role in Eastern Frontier politics and had an intimate knowledge of the topography of the Eastern Cape.

³⁷ Christopher Thomas Bird was a practicing land surveyor who took the oath on 6 November 1839.

³⁸ Probably Reverend (John) William Shepstone (1769-1873), a Wesleyan missionary of Kamastone near Queenstown

³⁹ No “W. Orpen” is on record. It is possible that a stylized “Mr.” was read as “W.” in which case the person referred to is probably Henry Orpen (1831-1908) who during the Eighth Frontier War fought with Captain Tylden, R.E. at Whittlesea as Field-Adjutant of the Whittlesea Levy.

⁴⁰ Fleetwood Rawstorne was a land surveyor and Assistant Guardian of Slaves at Worcester. In October 1835 he was appointed Special Commissioner for the location of the Ndlambe, and in

February 1837 he became the first Civil Commissioner and Resident Magistrate of the newly-established district of Colesberg.

⁴¹ Rawstorne, F. 1842. *Map of the Division of Colesberg, Cape of Good Hope*. London: Royston & Brown. Size: 48 x 61 cm.

⁴² William Southey (1806-?) was the eldest of the seven children of the 1820 British settler George Southey. In 1828 he and his brother Richard were granted a farm near Trompetter's Drift on the Great Fish River. In the 1834-5 Frontier War he served in the Bathurst Corps of Guides. In 1839 he married a daughter of Andrew Geddes Bain, and in 1858-9 he was a member of the Legislative Council for the Eastern Districts.

⁴³ Henry Marriot was a practising land surveyor who took the oath on 8 March 1848.

⁴⁴ Andrew Geddes Bain (1797-1864) emigrated from Scotland to South Africa in 1816. In 1822 he started a saddlery in Graaff-Reinet, and from 1825 he explored many parts of the interior of the country. Although untrained in the natural sciences, he received much praise at the Cape and in Britain for his contributions to geology and for his construction of mountain passes and military roads in the eastern districts of the colony.

⁴⁵ Dr William Guybon Atherstone (1814-1898) came to South Africa with his parents in 1820 and lived in Grahamstown all his life where he played a prominent role as medical doctor, surgeon and amateur geologist and paleontologist. His knowledge of the geology of the Eastern Cape was profound and in 1895 he became Vice-President of the South African Geological Society.

⁴⁶ Probably Thomas Charles White (1792-1835), a military land surveyor who came to the Cape as head of a party of 1820 Settlers. He was a lieutenant who had retired from the service on half-pay. When the Sixth Frontier War broke out he rejoined the service as a major in the Grahamstown Volunteers and was shortly afterwards appointed Assistant Quartermaster-General to the burgher forces. In May 1835 he was killed while busy executing a topographical survey.

⁴⁷ Gardiner, A.F. 1836. *Map of the Zoolu Country*. Size: 26 x 31,5 cm. In: *Narrative of a journey to the Zoolu Country in South Africa*. London: William Crofts.

⁴⁸ Stanger, W. 1848. *Sketch of Natal shewing its proposed divisions, projected towns, villages, etc.* Scale approx. 15 miles per inch.

⁴⁹ See notes 31 and 32. In 1845 Jervois accompanied the Commanding Royal Engineer, Colonel R.S. Piper, on a tour of inspection which took them to Port Natal and from there through the Orange River Sovereignty back to the Cape Colony.

⁵⁰ Probably A. Hoole, an interpreter who assisted the 74th Highlanders and the Cape Mounted Riflemen during the Eighth Frontier War.

⁵¹ Edward Driver (1797-1882) was an ivory-hunter in Kaffraria in the 1820s, and also had a trading station near the Mbashe River in Hintsa's country which was burnt down in 1833. In the 1835 war he served as a captain in the Albany Mounted Sharpshooters and he was also a member of the Bathurst Corps of Guides. His farm was on the road to Trompetter's Drift on the Great Fish River.

⁵² The brothers William, Richard and George Southey all served in the Bathurst Corps of Guides. The person referred to was probably (later Sir) Richard Southey (1808-1901) whose name is specifically mentioned on Hall's printed map of South Africa of 1857. He was commander of the Corps of Guides during the Sixth Frontier War, held important government positions since 1849 and was appointed Colonial Secretary in 1864.

⁵³ Henry Francis Fynn (1803-1861) was one of the first white traders who settled in Natal in the 1820s. He acquired an intimate knowledge of the customs and language of the Zulu nation and acted as headquarters interpreter to Governor D'Urban during the Sixth Frontier War (1834-35). From 1837 to 1851 he acted as diplomatic agent and later as British Resident for the Cape Government amongst the Xhosa. In 1852 he returned to Natal to become assistant-magistrate in Pietermaritzburg.

⁵⁴ Lieutenant William Sutton (1807-1864) was field adjutant of the 3rd Division during the 1835 war. In 1845 he acted as British Resident with Adam Kok III. In 1849 he married Fanny, daughter of Henry Somerset, whom he succeeded as Officer commanding the Cape Mounted Rifles in 1850.

⁵⁵ Lieutenant-Colonel (later Lieutenant-General Sir) Henry Somerset (1794-1862) was the eldest son of Lord Charles Somerset, Governor of the Cape from 1814 to 1826. He fought in the Peninsular campaign and at Waterloo, and served on the Eastern Cape Frontier almost continuously from 1819 until he left South Africa for India in 1852. In 1823 he succeeded to the command of the Cape Regiment, and in 1825 became Commandant of the Frontier.

⁵⁶ Arbousset, T. and Dumas, F. 1846. Map illustrative of tour of Messrs. Arbousset & Dumas. Size: 20 x 29 cm. In: *Narrative of an exploratory tour to the north-east of the Colony of the Cape of Good Hope*. Translated from the French by John Croumbie Brown. Cape Town: A.S. Robertson.

⁵⁷ Harris, William Cornwallis. 1844 *Africa North East of the Cape Colony*, exhibiting the relative positions of the emigrant farmers and the native tribes, May 1837. Lithography, J. and C. Walker. Size: 20 x 17 cm. London: John Murray. In: *The Wild Sports of Southern Africa*, 4th ed. London: Pelham Richardson.

⁵⁸ Frederick Rex (1811-1850) was the son of George Rex, founder of Knysna, and the son-in-law of the geologist Andrew Geddes Bain. He trained as a surveyor in Cape Town and after the outbreak of the Sixth Frontier War served briefly in the Port Elizabeth Yeomanry and as lieutenant in the Grahamstown Volunteers. In the early 1840s he worked as clerk and interpreter in Transorangia. After 1848 he was appointed land surveyor for the Land Commission in the Orange River Sovereignty.

⁵⁹ Captain (later Sir) William Cornwallis Harris (1807-1848) served as engineer in the Indian Army from 1823 to 1835. He arrived in the Cape in 1836 on two years' sick leave from where he set out on a lengthy hunting trip into the interior of the country. In December 1837 he was back in India and his book covering his trip was published in Bombay in 1838 (see note 57).

⁶⁰ The French missionaries belonged to the Paris Evangelical Mission Society, who first arrived in South Africa in 1826.

⁶¹ See note 49.

⁶² Maclear, T. 1866. *The verification and extension of La Caille's arc of meridian at the Cape of Good Hope*, I. London, 1866.

⁶³ CAR, CO 49/44, Merivale to Butler, 6 Apr 1850 (ff.411-412).

⁶⁴ *Ibid.*

⁶⁵ BNA, CO 336/1, no 9174 (entered 4 Nov 1851), Butler to CO, 31 Oct 1851.

⁶⁶ CAR, CO 49/46, CO to Arrowsmith, 14 Nov 1851 (pp. 242-243).

⁶⁷ BNA, CO 336/1, no 9865 (entered 27 Nov 1851), Arrowsmith to CO, 22 Nov 1851.

⁶⁸ BNA, CO 336/1, no 11635 (entered 21 Dec 1852), Ordnance to CO, 17 Dec 1852; CO 336/2, no 1695 (entered 26 Feb 1853), Ordnance to CO, 23 Feb 1853; CO 336/2, no 6194 (entered 10 Jun 1853), Ordnance to CO, 6 Jun 1853; CO 336/2, no 2752 (entered 29 Mar 1854), Ordnance to CO, 28 Mar 1854; CO 336/2, no 6671 (entered 4 Aug 1854), Governor (Cape) to CO, 24 Jun 1854; CO 336/2, no 9615 (entered 1 Nov 1854), Ordnance to CO, 31 Oct 1854.

⁶⁹ BNA, CO 336/1, no 6302 (entered 8 Jul 1852), Hall to CO, 12 May 1852.

⁷⁰ CAR, CO 4604, 128, Hall to J Montagu, 17 March 1852.

⁷¹ BNA, CO 336/1, no 11133 (entered 7 Dec 1852), Ordnance to CO, 12 May 1852.

⁷² BNA, CO 336/1, no 6671 (entered 4 Aug 1854), Ordnance to CO, 24 Jun 1854.

⁷³ CAR, CO 49/49, CO to Arrowsmith, 12 Sept 1854 (pp. 293-294).

⁷⁴ Cape of Good Hope, Votes and Proceedings of the Legislative Council (first session, 30.6.1854 to 26.9.1854), minute XXXVII, 14.9.1854, motion V.

⁷⁵ *Ibid.*

⁷⁶ CAR, CO 49/49, CO to Arrowsmith, 17 Jan 1855 (p. 334).

⁷⁷ Cape of Good Hope, A.12 – 1860, p. 18.

⁷⁸ Anonymous. 1860. Our Portrait Gallery, no. XVIII: Henry Hall, Esq., R.E.D. *Cape Monthly Magazine* 8, Dec 1860, p. 126.

⁷⁹ Hall, Henry. 1857. *South Africa, compiled from all the available official authorities in the Survey^r Gen^l & Royal Engineer Offices Cape of Good Hope & numerous contributions by ... most respectfully dedicated to His Excellency, Sir George Grey, K.C.B., by Henry Hall, R.E.D.* Engraved and printed by J.A. Crew, 8 Short market Street, Cape Town. Size: 82 x 70 cm.

⁸⁰ Charles John Andersson (1827-1867) was a Swedish ornithologist, explorer and hunter who came to South Africa in 1850. He travelled from Walvis Bay through Damaraland and Ovamboland to Lake Ngami and in 1859 discovered the eastward-flowing Okavango River. In 1860 he settled in Southwest Africa as a trader and hunter and gained political prominence in that he sided with the Herero tribe in their skirmishes with the Damara.

⁸¹ Probably the Reverend J.S. Thomas, a Wesleyan missionary who was killed near the mission station Clarkebury in Kaffraria in 1856.

⁸² Probably a Wesleyan missionary. No information could be found.

⁸³ J. M. Wentzel was a sworn surveyor who took the oath on 3 September 1836.

⁸⁴ Robert Moffat (1826-1862), a government surveyor, was the son of Robert Moffat Senior of Kuruman, the well-known missionary of the Bechuana Mission. Moffat compiled three maps which, although never published, all comprised pioneering cartographical work. Apart from his 1851 map of the O.R. Sovereignty he also compiled a “Map of Little Namaqualand and Bushmanland” (1856) and a “Plan of a Portion of the Kai ‘Garip or Great Orange River” (1857). Photocopies of these maps are held by the Cory Library, Grahamstown as MP 130 and MP 131.

⁸⁵ David Livingstone (1813-1873) came to South Africa in 1841 to work as missionary for the London Missionary Society. He married the daughter of Robert Moffat Senior and in 1849 embarked on the first of his many travels into the then unknown interior of southern Africa. He discovered Lake Ngami in 1849; the Victoria Falls in 1855 and Lake Nyasa in 1860. In 1873 he died while trying to find the source of the Nile.

⁸⁶ Frederick Joseph Green (1830-1876) was a hunter, explorer and adventurer who for more than 25 years criss-crossed virtually the whole of Bechuanaland and South-West Africa. In 1857 he joined C.J. Andersson in Walvis Bay and for some years these two traded and hunted together.

⁸⁷ James Chapman (1831-1872) was a hunter, trader and explorer who undertook extensive travels in Bechuanaland, the present Zimbabwe and South-West Africa in the company of people such as Frederick Green, the Swedish professor August Wahlberg, and Thomas Baines.

⁸⁸ Royal Geographical Society, London (hereafter RGS), MR South Africa, Div.6. Manuscript “South Eastern Africa shewing the Orange River Sovereignty and its proximity to the Port of Natal.

Constructed from notes and sketches made and collected during the years 1848, 1849 & 1850” by Robert Moffat, Jnr., April 1851. 4 sheets. Size: 94 x 88 cm.

⁸⁹ Berghaus, Hermann. 1855. *Natal und die Freistaaten der Boers*. Map 20 in *Petermann’s Geographische Mittheilungen* I, 1855.

⁹⁰ CAR, CO 4604/127, Hall to Lieutenant-Colonel Garvock, 8 January 1852.

⁹¹ BNA, MPH 693.

⁹² Hall, Henry. 1859. *Manual of South African Geography, forming a companion to the map of South Africa to 16° South Latitude*. Cape Town: Saul Solomon and Co.

⁹³ S.W. Silver & Co. 1875. *Handbook to South Africa*. London: S.W. Silver.

⁹⁴ Hall, Henry. 1876. Southern Africa, including the Cape Colony, Natal and the Dutch Republics, no. 2, in J.T. Hurst (ed.), *Spon’s Information for Colonial Engineers*. London and New York: E. & F.N. Spon.

⁹⁵ CL, Grahamstown, map MP 681. The publication date was presumably 1858 although no date appears on the map.

⁹⁶ Hall, Henry. 1859. *South Africa, by Henry Hall, R.E.D.* London: Published 15 April 1858 by Edward Stanford, no 6, Charing Cross, London. Size: 39 x 70 cm.

⁹⁷ BNA, Map CO 700 South Africa 7(1).

⁹⁸ BNA, Map CO 700 South Africa 7(2).

⁹⁹ BNA, Map CO 700 South Africa 7(3).

¹⁰⁰ CAR, CO 4604/127, Hall to Lt.-Col. Garvock, 8 January 1852.

¹⁰¹ Hall, Henry. 1856. *Map of the Eastern Frontier of the Cape Colony, compiled by Henry Hall, from military and other surveys, dedicated by permission to Lt.Gen.Sir I.F. Burgoyne, K.C.B.* London: Edward Stanford. Size: 96 x 101 cm.

¹⁰² Arrowsmith, J. 1847. *Eastern Frontier of the Colony of the Cape of Good Hope (and part of Kafirland), from Algoa Bay, to the Great Kei River*. Published January 1847. London: Arrowsmith. Size: 49 x 60 cm.

¹⁰³ See notes 11 and 12. Also Liebenberg, Elri. 2004. The mapping of South Africa, 1813-1912, in *Surveying and Land Tenure at the Cape, 1813-1912. History of Surveying and Land Tenure, Collected Papers, II*. Cape Town: Institute of Professional Land Surveyors and Geomaticians of the Western Cape.

¹⁰⁴ See note 34. In his journal Stretch observed that ‘As the work we performed was not published by the government, a clerk in the Engineer’s Office, having access to the papers and sketches, published our drawings some years after under the title of “Hall’s Map of the Eastern Frontier”’. See Le Cordeur, B.A. 1988. *The Journal of Charles Lennox Stretch*. The Graham’s Town Series no 8. Cape Town: Maskew Miller Longman.

¹⁰⁵ Probably M.R. Robinson who from 1856 to 1859 was stationed in Grahamstown as Deputy Surveyor-General of the Eastern Districts.

¹⁰⁶ Captain Richard Tylden (1819-1855) joined the ranks of the Royal Engineers in 1837 and was posted to the Cape command in 1848. When the Eighth Frontier War commenced on Christmas day 1850 he was in charge of survey operations in the District of Victoria (currently Queenstown). On 1 January 1851 he was appointed Commander of all forces in the Districts of North Victoria, Cradock, Albert and Colesberg and during 1851-52 he led several successful campaigns against large forces of Xhosas and rebel Coloureds.

¹⁰⁷ Probably Reverend (John) William Shepstone (1769-1873), a Wesleyan missionary of Kamastone near Queenstown. No “R.E.W. Shepstone” is on record, but it is possible that the lithographer mistook Hall’s “Rev^d” for the initials “R.E.W.”

¹⁰⁸ It is possible that the “C” stood for “Capt.” in which case the person referred to is probably Henry Orpen (1831-1908) who during the Eighth Frontier War fought with Captain Tylden, R.E. at Whittlesea as Field-Adjutant of the Whittlesea Levy. Although the map refers to “C. Orpen”, Henry’s brother Charles never served on the Eastern Frontier.

¹⁰⁹ Thomas Baines (1820-1875) was a professional artist and an explorer who travelled widely in southern Africa. He came to the Cape in 1842 and spent five years on the Eastern frontier where he participated in the Eighth Frontier War. In 1860 he joined James Chapman in travelling through South-West Africa to the Victoria Falls, and between 1869 and 1872 he led two expeditions to Matabele Land in search of minerals.

¹¹⁰ Hamilton Moore Dyke (1817-1898), a French missionary, came to South Africa in 1832. In 1839 he joined the ranks of the French missionaries who worked amongst the Basuto.

¹¹¹ Francis P. Gladwin was a Wesleyan missionary at Clarkeberg in Kaffraria.

¹¹² Hall, Henry. 1859. *Map of South Eastern Africa from Algoa to Delagoa Bay*. London: Stanford.

Size: 61 x 52 cm.

¹¹³ *Dictionary of South African Biography*, I.

¹¹⁴ Baines, T. 1876. *A map of the Gold Fields of South East Africa*. London: Edward Stanford; Port Elizabeth: J.W.C. Mackay.

¹¹⁵ SGO (Cape), vol 10, file S/25/3, Stanford to Hall, 3 Jan 1876; Stanford to De Smidt, 13 April 1876; Hall to De Smidt, 29 Mei 1876; Stanford to Hall, 26 May 1876; Stanford to De Smidt, 3 June 1876; and Hall to De Smidt, 20 June 1876.

¹¹⁶ Surveyor-General (Cape). 1876. *Map of the Colony of the Cape of Good Hope and neighbouring territories*. Scale 1 : 1 000 000. London: Edward Stanford. Size: 190 x 100 cm.

¹¹⁷ SGO (Cape), vol 10, file S/25/3, Hall to De Smidt, 4 Sept 1877.

¹¹⁸ SGO (Cape), vol 10, file S/25/3, Hall to De Smidt, 24 Jan 1878.

¹¹⁹ De Smidt, A. 1895. *A brief history of the Surveys and of the Cartography of the Colony of the Cape of Good Hope*, p.17. Brighton: J.G. Bishop.

¹²⁰ CAR, SG 1/1/3/1, Michell to Secretary of Government, 28 February 1831.

¹²¹ CAR, CO 4604/127, Hall to Lieutenant-Colonel Garvock, 8 January 1852.

¹²² Cape of Good Hope, *Report of the Surveyor-General for the year 1875*, p. 102.

¹²³ *Ibid.*

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