

# White settlement and irrigation schemes: CF Rigg and the founding of Bonnievale in the Breede River Valley, 1900-c.1953<sup>1</sup>

Wessel Visser

*University of Stellenbosch, South Africa*

wpv@sun.ac.za

## *Abstract*

The idea to initiate irrigation development as part of a white colonisation scheme and a political movement to settle Britons on land in South Africa dates back to the culmination of British imperialism in the late nineteenth century. Such schemes were envisaged by imperialists such as Cecil Rhodes, Thomas Smartt and Percy Fitzpatrick and became more viable with the promulgation of the Cape Colony's Irrigation Act of 1893 which extended the facility of government loan funds to private individuals. In 1900 a Scottish immigrant, CF Rigg, obtained land on the Breede River in the Western Cape which was divided after a survey into irrigation plots for private purchase. Thus, Rigg began one of the first private real estate schemes in South Africa. Apart from a number of poor white Afrikaner ostrich farmers, who left the drought-stricken Oudtshoorn district in search of better agricultural conditions by purchasing plots from Rigg, he also targeted British World War One veterans. Rigg compiled an elaborate and professional recruitment brochure which included detailed information on aspects such as soil conditions, climatology and geographical features, agricultural possibilities, transport facilities and shipping fares from Britain to South Africa. This article explores the historical development of Rigg's irrigation settlement and infrastructural development such as the construction of a weir and canal system (which included the drilling and blasting of an irrigation tunnel) under the guise of white colonisation and settlement in the age of empire in early twentieth century South Africa. As the number of purchasers of irrigation plots increased over time, Rigg's scheme, originally called Riggton, would gradually develop into the town and agricultural community of Bonnievale, derived from the Scottish word for "beautiful" and the local railway siding Vale.

---

<sup>1</sup> Research for this paper was made possible by the National Research Foundation and the HB and MJ Thom Trust of the University of Stellenbosch. I am also indebted to Mr Bennie Schloms of the Department of Geography at the University of Stellenbosch for providing valuable information regarding agricultural conditions in the Breede River Valley. I am equally thankful to Mr Pieter Roussouw of the law firm Van Niekerk & Linde at Bonnievale and secretary of the Zanddrift Irrigation Board, for his cordial assistance and for allowing me unrestricted access to the board's archives and minutes.

**Keywords:** CF Rigg; Breede River; Bonnievale; Irrigation; White settlement; British imperialism; Brandvlei Dam.

## **Introduction**

In the introduction to the Southern African Development Community report, *Water in Southern Africa*, the editors boldly state: “Everything in southern Africa starts with water”.<sup>2</sup> South Africa, it could be said, is a country defined by water, or rather the lack of an abundant supply of water. The names of countless towns, hamlets and farms end on an Afrikaans suffix indicating “water”, “fountain”, “river”, “well”, “drift”, “creek”, “pool”, “dam”, “pan”, “stream” or “marsh”. These suffixes in Afrikaans geographical name-giving are indicative of an awareness among its people of a predominantly arid country with an average low annual rainfall and therefore scant water resources. As early as 1970 the then Minister of Water Affairs, SP Botha, was quoted as saying: “Water is by far the most important factor in South Africa’s future economic growth, even more important than gold or [industrial] production”.<sup>3</sup> The availability of water, therefore, had a major impact on the historical development of all South African communities and in particular, on white settlement and irrigation schemes in this country.

Where irrigation technology could be implemented successfully it played a major role in securing permanent residency for whites in the interior of South Africa. More importantly, irrigation technology created opportunities for a denser settlement in rural areas and this phenomenon in turn increased the possibilities of greater permanence on the land considerably. This situation corresponded with contemporary strategies implemented by governments in the USA and Australasia to connect people to the land.<sup>4</sup> Although studies on irrigation schemes had been published earlier in the twentieth century, South African historians began to focus more intensely on water histories as a sub-discipline of history only since the 1990s.<sup>5</sup> Between 1924 and 2012 some noticeable academic studies on irrigation in South Africa have been

---

2 M Chenje and P Johnson eds., *Water in Southern Africa* (Harare, SARDC, 1996), p. xv.

3 FA Venter, *Water* (Johannesburg, Afrikaanse Pers-Boekhandel, 1970), pp. 22, 563-567.

4 JWN Tempelhoff, “Omgewingslagoffers of armlankes? Water en welvaartskepping in die era van Hertzog 1924-1939” (Genl. JBM Hertzoggedenklesing XXXV, S.A. Akademie vir Wetenskap en Kuns, Pretoria, 21 September 2006), p. 9.

5 JWN Tempelhoff, “Recent trends in South African water historiography”, *The Journal for Transdisciplinary Research in Southern Africa*, 4, (1), July 2008, pp. 273-296.

published.<sup>6</sup> However, only three academic publications exist on the history of irrigation in the Western Cape,<sup>7</sup> except for other snippets in books about rural town histories and regional histories. The occasional, odd histories published on water or irrigation are usually done by local lay historians as a “labour of love” to their communities, but these are often marred by an amateurish approach that is characterised by a lack of scientific research methodology, inaccuracies, anecdotes and a lack of a proper synthesis.<sup>8</sup> This article investigates the establishment of a private land and irrigation settlement scheme in the period of British imperialism in South Africa and forms part of an extensive research project initiated by the author since 2011 to record the history of water procurement for irrigation purposes in the Western Cape.

Image 1: Christopher Forrest Rigg, 1861-1926



Source: Bonnievale Museum, Le Roux Collection: Photos.

- 
- 6 See e.g. CO Linscott, “A short history of irrigation development in South Africa”, *SA Irrigation Magazine*, 3 (2), June 1924, pp. 50-57; PJ Roussouw, “Die arbeidskolonie Kakamas”, *Argief-jaarboek vir Suid-Afrikaanse Geskiedenis*, 14 (II), 1939; PJ Cornelissen, “’n Geografiese studie van die besproeiingsnederstelling Kanoneiland” (MA, US, 1950); JM Meiring, *Sunday River Valley. Its History and settlement* (Cape Town and Amsterdam, AA Balkema, 1959); JC Kotzé, “Die Vaalhartsbesproeiingskema. ’n Ekonomiese en sosiaal-geografiese studie” (MA, US, 1961); K Shillington, “Irrigation, agriculture and the state: The Harts Valley in historical perspective”, W Beinart et. al, eds., *Putting a plough to the ground. Accumulation and depression in rural South Africa 1850-1930* (Johannesburg, Ravan Press, 1996), pp. 111-115; G Verhoef and A du Plessis, “State involvement in the rehabilitation of poor whites by means of land settlement at the Hartbeespoort irrigation scheme”, *South African Journal of Economic History*, 5 (1), March 1990, pp. 67-80; N Jacobs, “The flowing eye: Water management in the upper Kuruman Valley, South Africa”, *Journal of Southern African History*, 37, 1996, pp. 237-260; T Clynick, “Reformers, rural rehabilitation and poor whites on the Hartebeestpoort Dam irrigation scheme under the Pact Government in South Africa, 1924-1929”, AH Jeeves and OJM Kalinga, eds., *Communities at the margin. Studies in rural society and migration in Southern Africa, 1890-1980* (Pretoria, Unisa Press, 2002), pp. 103-124; W Beinart, *The rise of conservation in South Africa. Settlers, livestock, and the environment 1770-1950* (Oxford, Oxford University Press, 2003), pp. 158-195; D Lavin, “Irrigation development in South Africa – the Smartt Syndicate and the Cape Sundays River Settlement Co.”, JWN Tempelhoff (ed.), *African Water Histories. Transdisciplinary discourses* (Vanderbijlpark, Vaal Triangle Faculty, North-West University, 2005), pp. 133-149; K Visser en K du Pisani, “Die vestiging van Skanskopeiland-besproeiingsnederstelling as ’n mylpaal in selfwerksame armoedeverligting”, *Historia*, 57 (1), Mei 2012, pp. 103-126.
- 7 CJ Swanevelder, “Die Olifantsrivier-Besproeiingskema” (MA, US, 1953); JH Vorster, “Die beheer, bewaring en gebruik van afloopwaters in die Suidwestelike Kaapprovinsie”, *The South African Geographical Journal*, XXXVII, December 1955, pp.19-40; P Scholtz, “Die historiese ontwikkeling van die Onder-Olifantsrivier 1660-1902”, *Argief-jaarboek vir Suid-Afrikaanse Geskiedenis*, 29 (II), 1966.
- 8 See e.g. P van Niekerk, *Bonnievale se groot sloot* (Bonnievale, Private Publication, Bonnievale Museum, 2009).

## **Irrigation legislation, white settlement schemes and the creation of an imperial mind-set**

Since the sixteenth century travellers in the interior of South Africa, almost without exception, have spoken of the aridity of the country and the lack of pastures and water. Throughout the country irrigation was practised from the very beginning of white settlement and there are numerous references by travellers and explorers emphasising the need for irrigation in order to ensure crops.<sup>9</sup> As early as the 1660s sources referred to the regulation of tributaries, running from Cape Town's Table Mountain, for irrigation purposes. By 1775 irrigation was already practised on the banks of the Small Fish River in the Eastern Cape and Venter mentions that an irrigation-furrow dug from the Hex River near Worcester existed by 1781. By 1792 water was also diverted for irrigation purposes at the Genadendal Moravian Mission Station in the Western Cape.<sup>10</sup> Water rights were jealously guarded by farmers and many civil court cases from the eighteenth century onwards dealt with water affairs.<sup>11</sup> It is for this reason that the traveller John Barrow observed in 1797 that "water in fact is everything in Southern Africa".<sup>12</sup> Travellers to the interior of South Africa also refer to irrigation works which existed at Cradock in the Eastern Cape and at Griekwastad and Kuruman in the Northern Cape by 1823.<sup>13</sup> According to DF Kokot, chief engineer (planning) of the Department of Irrigation by the mid twentieth century, the inadequacy and uncertainty of the rainfall necessitated irrigation.<sup>14</sup>

The Cape Colony paved the way for water legislation in South Africa. Since the late nineteenth century various commissions of inquiry into water affairs were conducted and water acts promulgated. In 1873 the colonial government appointed JG Gamble as colonial hydrologist and since 1875 an active irrigation policy were being pursued. Historians regard 1877 as the beginning of modern irrigation in South Africa. Under the instigation of Gamble and

---

9 DF Kokot, *Irrigation Department Memoir. An investigation into the evidence bearing on recent climatic changes over Southern Africa* (Pretoria, Government Printer, 1948), pp. 52, 54.

10 FA Venter, *Water*, p. 301.

11 See e.g. HEP Watermeyer ed., *Decisions of the Water courts of the Union of South Africa from October 1928 to June 1936* (Pretoria, Government Printer, 1937); L Guelke and R Shell, "Landscape of conquest: Frontier water alienation and Khoikhoi strategies of survival, 1652-1780", *Journal of Southern African Studies*, 18 (4), December 1992, pp. 803-824.

12 For example, J Barrow, *Travels into the interior of Southern Africa, Vol. I* (London, Cadell and W Davies, 1806), p. 35.

13 FA Venter, *Water*, p. 301.

14 DF Kokot, *Irrigation Department Memoir...*, p. 42. See also W Westhofen, "The irrigation question in South Africa", *Report of the South African Association for the Advancement of Science* (Cape Town, Cape Times Ltd., Printers, 1903), p. 373.

John X Merriman, Commissioner of Crown Lands and Public Works, an irrigation act, Act 8 of 1877, was promulgated. The Act constituted irrigation districts and irrigation boards, defined their powers and duties, the raising of loans and fixing of rates of interest and repayment, provided for irrigation schemes promoted by private individuals and granted them powers to raise loans in districts where irrigation boards had not been constituted. This Act was clearly aimed at the sources from which irrigation could take place as it regulated streams subject to competitive use.<sup>15</sup>

Another example was Act 24 of 1897, which made provision for advances to irrigation boards, municipalities or private persons in order to initiate irrigation schemes.<sup>16</sup> Two prominent politicians who later served in the Union Parliament, Sir Percy Fitzpatrick and Sir Thomas Smartt, also helped to set policies for later irrigation developments, based on their own experiences, and shaped the debate about how the interdisciplinary problems of irrigation settlements might best be addressed by the different government departments involved. Smartt, an Irish-born medical practitioner who would become the South African Minister of Agriculture from 1921 to 1924, and who according to Lavin was known as “the father of irrigation”, directly influenced the course of state policy as the author of the Cape Irrigation Act of 1906.<sup>17</sup> This Act was concerned mainly with defining and determining the exact nature of riparian rights as it consolidated the rules of regulating the use of streams.<sup>18</sup>

Two factors influenced the development of colonial irrigation legislation. Between 1896 and 1903 international specialists from India, Egypt and California were invited to South Africa in order to investigate irrigation possibilities and recommend an overarching irrigation strategy. South African irrigation prospects were beginning to be conceived in the context of recent spectacular achievements in the control of water in the Punjab, in Egypt and the American West. It is also interesting to note that Reenen van Reenen, the dam engineer on Smartt’s private irrigation syndicate, completed his training in the United States where he was strongly influenced by the conservation

---

15 W Westhoven, “The irrigation question in South Africa...”, p. 374; JWN Tempelhoff, *Omgewingslagoffers of armblankes?...* (Genl. JBM Hertzoggedenklesing XXXV, S.A. Akademie vir Wetenskap en Kuns, Pretoria, 21 September 2006), pp. 15-16; H Thompson, *Water law. A practical approach to resource management and the provision of services* (Cape Town, Juta & Co Ltd, 2006), p.51; GR Backeberg, “Die politieke ekonomie van besproeiingsbeleid in Suid-Afrika” (Ph.D, UP, 1994), pp. 72,100.

16 W Westhofen, “The irrigation question in South Africa...”, p. 375.

17 D Lavin, “Irrigation development in South Africa...”, JWN Tempelhoff ed., *African Water Histories...*, pp. 133-135.

18 Colony of the Cape of Good Hope, *Acts of Parliament. Session of 1906, being the third session of the eleventh parliament* (Cape Town, Cape Times Limited, 1906), pp. 5138-5177; H Thompson, *Water law...*, p. 52.

and reclamation policies of Theodore Roosevelt's presidency.<sup>19</sup> WH Hall, Hydraulic Engineer to California State, observed in 1896 "the strange fact that the two peoples of the world who colonize arid regions in America and South Africa, namely the English and the Dutch, come from lands where interest has generally been shown in how to get rid of the water, not how to get it, and prize its use".<sup>20</sup>

Secondly, agri-economic factors played a role in the development of colonial irrigation legislation. In the late nineteenth century progressive farmers and officials saw dam construction and irrigation as a highway towards development both for pastoral and arable farming. The two branches of agriculture were often linked, in that fodder production was one major purpose of irrigation. They believed that large-scale water conservation would be a weapon against drought, enhance pastures, constrain trans-humance and expand exports. The key economic factor stimulating irrigation was the burgeoning trade in ostrich feathers. Ostrich numbers increased from 22 000 in 1875 to 260 000 in 1899 and 726 000 in 1911. It was more efficient to enclose ostrich flocks in a paddock and provide them with fodder of which lucerne proved most effective. Lucerne in turn necessitated irrigation but gave a higher yield and protein content than grain crops grown for fodder. The only disadvantage to this "miracle crop for the Cape", as Beinart refers to it, was that it required a great deal of water. Irrigation development in the colony gained momentum after 1906, following an economic improvement brought by the demand for ostrich feathers as a fashion article. Ostrich production became quite profitable and in the period between 1908 and 1914 co-operative irrigation activities increased considerably.<sup>21</sup>

It was servants and supporters of the British Empire who strongly promoted the notion of white settlement schemes in South Africa and linked it, *inter alia*, to irrigation. As early as the 1880s the mining magnate Cecil Rhodes envisioned the damming of the Harts River as an opportunity to increase

---

19 GR Backeberg, "Die politieke ekonomie van besproeiingsbeleid...", pp. 73,101-102; W Beinart, *The rise of conservation in South Africa...*, pp. 160, 166, 176-178.

20 Quoted by W Beinart, *The rise of conservation in South Africa...*, p. 177. However, Beinart, pp. 158,192 concedes that the Cape Colony did not become a hydraulic society after the model of the American West. For instance, Worster's model of a hydraulic society, created by federal intervention such as the 1902 Newlands Reclamation Act, was the result of corporate investment in water provision in the USA. The vast majority of irrigation investment at the time in South Africa had been by private landowners on their own land. See also D Worster, *Rivers of empire. Water, aridity, and the growth of the American West* (New York and Oxford, Oxford University Press, 1985), pp. 160-164,167-169.

21 W Beinart, *The rise of conservation in South Africa...*, pp. 158, 161-162, 173; GR Backeberg, "Die politieke ekonomie van besproeiingsbeleid ...", p. 102.

both food supplies to the diamond fields of Kimberley and local employment, although the scheme never materialised.<sup>22</sup> Smartt and Fitzpatrick also ventured into private irrigation and land settlement schemes advanced as tributes to two of Cecil Rhodes's passions – irrigation development and the settlement of Britons on the land. In 1895 Sir Thomas Smartt formed the Smartt Syndicate as an irrigation and settlement project near Britstown in the semi-arid Karoo in the hinterland of the Cape Colony and in 1913 Sir Percy Fitzpatrick launched the Cape Sundays River Settlements Company at Kirkwood in the Eastern Cape. But despite the enthusiastic support by their initiators, financially both projects would eventually fail owing to problems such as lack of development capital, droughts, floods, an insufficient depth of technical information, mismanagement and a shortage of engineering expertise.<sup>23</sup>

It was upon irrigation ideas such as those of Rhodes and Smartt that Sir Alfred Milner, British High Commissioner for South Africa and Governor of the Cape and Transvaal colonies between 1897 and 1905, would build his imperial vision for Southern Africa. Marks and Trapido argue that the interests of imperial ends determined imperial means and Milner expressed the vision of “self-governing white communities” on the sub-continent of Southern Africa under British rule. In the run-up to the Anglo Boer War (1899-1902), in the construction of a new South African colonial state and in drafting an imperial blue-print for the region as a whole, Milner played a significant role. Together with his administrative coterie of young Oxford graduates, contemptuously dubbed the “Kindergarten”, he laid the foundation for a new state which not only reflected the demands of twentieth-century British imperialism but also tried to fulfil them.<sup>24</sup>

Anglicisation was revived during the Anglo Boer War, motivated by the British government's attempt to foster white racial harmony and create a new rural order in South Africa. A key ingredient of that policy was immigration, which was designed to bolster colonial defense, promote colonial development and sustain the British imperial connection. The political and military subjugation of the Afrikaners in the Anglo Boer War was to be completed by an inward flow

---

22 W Beinart, *The rise of conservation in South Africa...*, p. 161.

23 See JM Meiring, *Sundays River Valley its history and settlement...*; D Lavin, “Irrigation development in South Africa...”, JWN Tempelhoff (ed.), *African Water Histories...*, pp. 133-149; M Harper and S Contantine, *Migration and Empire. The Oxford History of the British Empire Companion Series* (Oxford, Oxford University Press, 2010), p. 133; W Beinart, *The rise of conservation in South Africa...*, pp. 166-167, 187-188.

24 S Marks and S Trapido, “Lord Milner and the South African State”, *History Workshop*, 8, Autumn 1979, pp. 52, 54. See also M Streak, *Lord Milner's immigration policy for the Transvaal 1897-1905* (Johannesburg, Rand Afrikaans University, 1969), pp. 12, 21, 67.

of British immigrants in an attempt to diminish the demographic superiority of Afrikaners. In order to offset Afrikaner political power, in particular in the two former Boer republics of the Zuid-Afrikaansche Republiek (ZAR) and the Orange Free State, Milner sought large numbers of loyal, English-speaking settlers to settle in the rural districts.<sup>25</sup>

Milner's imperialist views for Southern Africa and South Africa in particular were shared and vigorously supported by influential political and powerful economic servants of empire. These were Rhodes; Smartt; Fitzpatrick, a staunch South African-born Milnerite and partner of the gold mining house H Eckstein and Co in the 1890s; Patrick Duncan, a former member of Milner's reconstruction administration; Rider Haggard, imperial adventure novelist, agricultural reformer and active member of the London-based Royal Colonial Institute, as well as later members of the ultra-loyalist Unionist Party of South Africa (established in 1910) such as Sir Charles Crewe, a prominent Eastern Cape politician, soldier and newspaper proprietor and JW Jagger, a successful Cape businessman and the founder of the South African Settlers' Information Committee.<sup>26</sup>

While the War was still being waged, Milner assumed the duties of Governor of the new crown colonies of the Transvaal and the Orange River in March 1901 after the fall of the capitals of the two former Boer republics. He mapped out a scheme for reconstruction in the devastated areas. Milner had two immediate objectives: to restart the gold mines of the Transvaal at the earliest possible moment and to make special efforts towards the resumption of agriculture. Experts were summoned from India and Egypt to serve in commissions which were to investigate the settlement of British immigrants in South Africa.<sup>27</sup> The duties of the Lands Settlement Commission, appointed

---

25 See GB Pyrah, *Imperial policy and South Africa 1902-10* (Oxford, Clarendon Press, 1955), pp. 39, 82-83, 156, 183-185, 198-199; M Streak, *Lord Milner's immigration policy...*, pp. 8, 14-17, 33, 61-69; K Fedorowich, "Anglicization and the politicization of British immigration to South Africa, 1899-1929", *The Journal of Imperial and Commonwealth History*, XIX (2), (May 1991), pp. 222-224, 228-229; S Marks and S Trapido, "Lord Milner and the South African state", *History Workshop*, 8, Autumn 1979, pp. 63, 66, 69; M Harper and S Contantine, *Migration and empire...*, pp. 123, 129-130.

26 See JPR Wallis, *Fitz. The story of Sir Percy Fitzpatrick* (London, Macmillan & Co Ltd, 1955), pp. 84, 90-91, 95, 124; AH Duminy and WR Guest, *Fitzpatrick. South African Politician Selected Papers, 1888-1906* (Johannesburg, McGraw-Hill Book Company, 1976), pp. 264, 296; AH Duminy and WR Guest, *Interfering in politics. A biography of Sir Percy Fitzpatrick* (Johannesburg, Lowry Publishers, 1987), pp. 89, 95, 100; M Streak, *Lord Milner's immigration policy...*, p. 32; K Fedorowich, "Anglicization and the politicization...", *The Journal of Imperial and Commonwealth History*, XIX (2), (May 1991), pp. 224-228.

27 JPR Wallis, *Fitz...*, p. 92; M Streak, *Lord Milner's immigration policy...*, p. 19; GB Pyrah, *Imperial policy and South Africa...*, p. 186; V Halpérin, *Lord Milner and the empire. The evolution of British imperialism* (London, Odhams Press Limited, 1952), pp. 126, 134.



under the chairmanship of HO Arnold-Forster, were to enquire, *inter alia*, whether land suitable for settlement in terms of being “well watered” was available or whether land was available or obtainable which could be rendered suitable by irrigation.<sup>28</sup> These initiatives were undertaken because irrigation promised huge increases in the value of land and production. In the first decade of the twentieth century there was even growing concern that mineral wealth might run out, and that the Transvaal Colony would be thrown back on its agricultural resources. In this context, water conservation for agriculture was a national issue.<sup>29</sup>

In concurrence with Milner and Fitzpatrick’s views the Commission recommended, that besides civilians, a large number of soldiers from the British forces could be settled on farms which would be made available after serving a short or temporary period in the paramilitary police force. Soldiers therefore, should form the backbone of the immigration scheme after the War in order to anglicise the Transvaal.<sup>30</sup> For Milner and the Colonial Office such immigration schemes were to be effected through government agency and in July 1903 the Transvaal Immigration Department was established in Pretoria.<sup>31</sup> On the other hand, Rider Haggard and some of the leading future Unionist Party politicians were in favour of land settlement through private enterprise.<sup>32</sup>

Nevertheless, the *Report of the Lands Settlement Commission*, as well as its supplementary appendix, emphatically stated that “drought has been the curse of South African agriculture” and that “no man, rich or poor, can hope to carry on agricultural or pastoral industries in South Africa successfully without a regular supply of water”.<sup>33</sup> Perhaps somewhat overtly negatively the report declared that there were probably few districts where any considerable agricultural settlement could be formed with a prospect of permanent success, without the aid of a system of irrigation. However, the commissioners were

---

28 South African Colonial Blue Books (hereafter Cd.) 626, *Report of the Lands Settlement Commission, South Africa* (London, Wyman and Sons, 1901), p. 4.

29 W Beinart, *The rise of conservation in South Africa...*, p. 177.

30 Cd. 626, *Report of the Lands Settlement Commission, South Africa* (London, Wyman and Sons, 1901), pp. 5-24; M Streak, *Lord Milner’s immigration policy...*, pp. 18-31; AH Duminy and WR Guest, *Interfering in politics...*, p. 90; GB Pyrah, *Imperial policy in South Africa...*, pp. 198-199; K Fedorowich, “Anglicization and the politicization...”, *The Journal of Imperial and Commonwealth History*, XIX (2), (May 1991), p. 224, 229; M Harper and S Constantine, *Migration and empire...*, p. 130.

31 M Streak, *Lord Milner’s immigration policy...*, pp. 19, 34, 44-47; GB Pyrah, *Imperial policy in South Africa...*, p. 199.

32 K Fedorowich, “Anglicization and the politicization...”, *The Journal of Imperial and Commonwealth History*, XIX (2), (May 1991), p. 228.

33 Cd. 626, *Report of the Land Settlement Commission, South Africa*, p. 13.

quite confident that much of the land could be improved by irrigation.<sup>34</sup> In the wake of the *Report of the Lands Settlement Commission*, Milner commissioned another one in November 1901, namely W Willcocks's *Irrigation in South Africa*. Willcocks, who also worked in India and then Egypt, was aided by Sir Thomas Smartt, who served at that stage as Commissioner of Public Works for the Cape Colony. The Willcocks report was a comprehensive overview of the state of water and the potential for irrigation in South Africa at the turn of the century. Willcocks was convinced that the permanent development of the agriculture of South Africa "would depend on irrigation and irrigation alone", thus echoing the sentiments of the *Lands Settlement Report*.<sup>35</sup>

Milner's policy of white settlement schemes to anglicise the new Transvaal and Orange River colonies, especially by means of ex-soldier immigrants in an effort eventually to balance out the Afrikaners demographically, failed miserably. Of the thousands of imperial troops who had fought in the Anglo Boer War fewer than 2 000 participated in the government-sponsored resettlement programme.<sup>36</sup> A typical example was a citrus farming scheme which became known as the Milner Settlement of White River (later restructured and renamed the White River Estates) in the present-day Mpumalanga Province.<sup>37</sup> However, his constructionist policies for the post-war colonies, enthusiastically supported by other influential servants of Empire, did create an imperial mind-set and a connection of British immigration, land settlement and agricultural development and irrigation schemes for a future South African state.

Thus, at the beginning of the twentieth century, favourable conditions existed for private entrepreneurs such as CF Rigg to establish a land settlement and irrigation scheme in the lower Breede River Valley in what was to become the future town of Bonnievale.

---

34 Cd. 626, *Report of the Land Settlement Commission, South Africa*, pp. 12-13, 23; Cd. 627, *Report of the Lands Settlement Commission, South Africa, Part II. Documents, evidence, &c.* (London, Wyman and Sons, 1901), p. 3.

35 W Willcocks, *Irrigation in South Africa* (Johannesburg, 1901), pp. 1-52.

36 GB Pyrah, *Imperial policy in South Africa...*, pp. 157, 200; K Fedorowich, "Anglicization and the politicization...", *The Journal of Imperial and Commonwealth History*, XIX (2), (May 1991), p. 224; M Harper and S Constantine, *Migration and empire...*, p. 130.

37 JWN Tempelhoff, *An introduction to the history of water in South Africa* (Vanderbijlpark, North-West University Vaal Triangle Campus, 2011), p. 102.

Image 2: A contemporary view of the Bonnievale weir-diversion



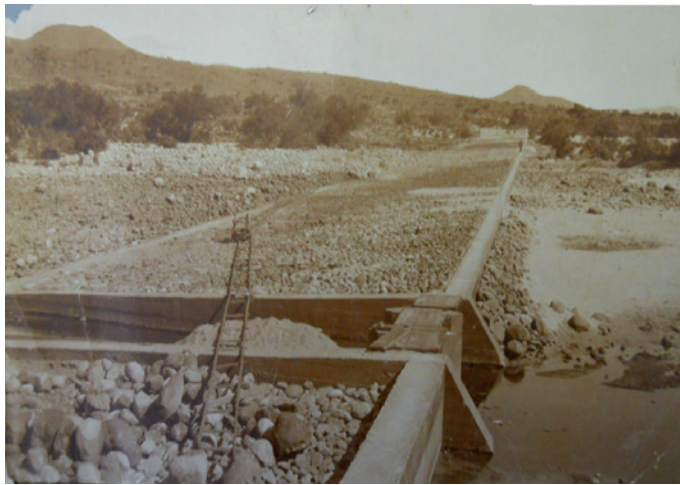
Source: Private Collection, WP Visser.

### **CF Rigg and the establishment of a land settlement and irrigation scheme at Bonnievale**

The town of Bonnievale is situated in the Breede River Valley in the Western Cape region of South Africa, approximately 260 km east of Cape Town. The river's name is derived from its wide basin during abnormal winter floods when it can reach widths of between one and two km at places. The Breede River, with a total drainage of 15 000 square km, originates in the Skurweberg mountains northwest of the Valley and flows 320 km further into the Indian Ocean at Cape Infanta where its estuary is also approximately 900 meters wide. The river Valley is surrounded by high mountain ranges on both sides, from which tributaries feed the main river. Withdrawal of water from the river through a system of weirs and canals is facilitated by the fact that the stream falls approximately 65 metres over a distance of 60 km between the first and last withdrawal point. The soil types of the catchment area are predominantly shale, sandstone and sandy silts. The alluvial soils on the river banks in particular are very fertile for agriculture. However, the shale

contains considerable levels of mineral salts such as sodium and sulphured hydrogen as a result of the decomposition of iron pyrites and organic material within the shale. Consequently, a salinity problem tends to occur in the waters of the Breede River, especially in the Bonnievale district and usually in summer when the river levels are low and the stream flow decreases. The greater part of the Breede River catchment area receives winter rains from the northwest. Although the Breede River is a perennial river, and precipitation in the catchment area very reliable, in general the Valley has a relative low rainfall. For example, Bonnievale receives only approximately 0.23 cm per annum. Without irrigation, agriculture would thus not be possible in the region. With fertile soils, a warm climate and an irrigation infrastructure the river Valley is extremely suitable for the production of deciduous fruit, vines, grapes, vegetables, citrus, alfalfa, grain and dairy products. Today the Breede River Valley is one of South Africa's most intensively irrigated agricultural regions. The first white pastoralists moved into the Valley in the early eighteenth century to occupy land close to the river and its tributaries.<sup>38</sup>

Image 3: Construction of the Bonnievale weir c. 1900



Source: Bonnievale Museum, Le Roux Collection: Photos.

<sup>38</sup> CJ Swanevelder, "n Geografiese opname van die Breërivier-opvangsgebied met klem op die landelike grondgebruik" (Ph.D, US, 1965), pp. 4-6, 36-51, 127-142, 183-189, 246-297, 302-319; BW Ritso, "The Artesian Wells of the Cape Colony", *Report of the South African Association for the Advancement of Science* (Cape Town, 1903), pp.388-389; FJ Stemmet, *Die Robertson-kontrei ABC* (Swellendam, Private Publication, 2004), pp. 4-17, 21, 27-82; IL de Villiers red., *Bonnievale en die Gemeente Vandermerwe Feesalbum, 1922-1972* (Bonnievale, NG Gemeente, 1972), pp. 4-8, 15; AH Tromp, *Robertson, 1853-1953. Gedenkboek by geleentheid van die honderdjarige bestaan van die dorp en die N.G. Gemeente Robertson* (Robertson, Eeufeeskomitee, 1953), pp. 1-10; C Daryll Forde, "Irrigation in South Africa", *The Geographical Journal*, 65 (4), 1925, pp. 346-349.

In 1741 the 6073 hectares loan farm Bosjesmansdrift (Bushmen's drift) in the Breede River Valley was granted to Gideon van Zijl. Although most of the farmland consisted of fertile soil it was used initially for stock farming, predominantly with goats. Indeed, for almost a century the whole Breede River Valley was deemed suitable for stock farming only and the river itself was utilised mainly as a watering place for the animals. By the nineteenth century the farm was leased from the colonial government by a certain Mr Morkel of Stellenbosch under the leasehold system. By 1843, Morkel, who had since obtained ownership of Bosjesmansdrift, subdivided the original farm into six sections and sold it to other farmers. The future irrigation settlement scheme and town of Bonnievale was to develop on these sub-divisions.<sup>39</sup>

By 1827 the first furrow, the so-called Moordkuilsloot, was diverted by W.H. Naudé from the left bank of the Breede River in the vicinity of Worcester.<sup>40</sup> However, from 1860 onwards a language of river diversion and irrigation began to emerge from colonial water reports on the Breede River and the possibilities of irrigation in the Valley were constantly brought to the attention of the colonial authorities. In 1865 the civil commissioner at Robertson, 37 km upstream from Bonnievale, observed that the Breede River brought into the district, carried through the district, and drained off from the district of Worcester “a great quantity of water which might be stored up for the promotion of agriculture”. He was of the opinion that “a copious supply of water” was all that was required to render the whole of the Valley “most productive”. Le Seur, the Commissioner, concluded somewhat frustrated: “The great want is water... It is quite disheartening to see hundreds of acres of the most fertile soil along the Breede River lying waste and comparatively unproductive, owing to no other cause than the want of capital to lead out (*sic*) the Breede River, whereby the whole may be placed under cultivation”.<sup>41</sup>

In 1905 the then Director of Irrigation of the Cape Colony, WB Gordon, stated that “cultivation of any kind without irrigation is almost impossible in all that portion of the main Valley which lies between the town of Worcester [85 km upstream of Bonnievale] and the junction of the Breede and Zonder End [Rivers]” (48 km downstream of Bonnievale).<sup>42</sup> In describing

---

39 IL de Villiers red., *Bonnievale...*, pp. 5, 10, 12-13; P van Niekerk, *Bonnievale se groot sloot*, pp. 6-7, 15; AH Tromp, *Robertson, 1853-1953...*, p. 132.

40 AH Tromp, *Robertson, 1853-1953...*, p. 118; P van Niekerk, *Bonnievale se groot sloot*, p. 15.

41 JC Brown, *Water supply in South Africa and facilities for the storage of it* (Edinburg, Oliver & Boyd, 1877), pp. 335, 415, 417.

42 Government reports (hereafter G), 44 – 1907, FE Kanthack, *Report on the proposed Ashton Canal Irrigation Project* (Cape Town, Cape Times Limited, 1907), Appendix B, p. 46.

the geological formations of the Breede River Valley, Gordon's successor as Director of Irrigation, FE Kanthack, who had worked between 1899 and 1906 in the Public Works Department in the Punjab and who was deeply aware of developments in irrigation and forestry in the United States, France and Germany,<sup>43</sup> declared:<sup>44</sup>

Much of [the sand] is washed down into the Valley below, and during the high winds which blow up or down the Valley in the summer, this sand is transported in large quantities, and causes considerable damage to the lands. It appears, however, that with water these dunes can be reclaimed and converted into valuable lands, so that with the extension of irrigation the dunes will gradually disappear and a considerable area of valuable agricultural land will be added to the Breede Valley.

It seems clear therefore that the geological and climatological conditions were ample inducements for agricultural entrepreneurs to engage themselves in irrigation settlements in the Valley. In 1893 Hendrik van Zyl made the first effort at irrigation in the district of Bonnievale, using a rudimentary bucket pump. In 1897 Van Zyl sold his portion of the original Bosjesmansdrift farm for £2 000 to a German, called Dieterlie. Dieterlie and his partner, Ernst de Wet, began with great enthusiasm a canal system to divert water at the confluence of the Breede and Kogmansklouf Rivers on the present wine estate of Van Loveren, 18km upstream from the town of Bonnievale. Dieterlie imported expensive agricultural equipment for the cultivation of beetroot and potatoes, but the enterprise failed when he and De Wet ran into financial difficulties and they were forced to abandon their scheme. They had to excavate a deep canal under very difficult conditions, and after about three km their progress was stopped by the vertical rock-face of the Olifantskrans. In 1900, CF Rigg, Dieterlie's mortgagor, bought the land with the canal on the left bank of the Breede River. When De Wet died in 1902 Rigg also acquired his portion.<sup>45</sup> Venter confirms that many private enterprises trying to divert water from the Breede River in order to irrigate farm land, failed

---

43 W Beinart, *The rise of conservation in South Africa...*, pp. 177-178.

44 G 44 – 1907, FE Kanthack, *Report on the proposed Ashton Canal Irrigation Project...*, p. 2.

45 DL van den Berg, *Gedenboek van die Nederduitse Gereformeerde Gemeente, Vandermerwe (Bonnievale) 1922-1947* (Paarl, NG Kerkraad Vandermerwe, c.1947), pp. 4, 31-32, 34; AH Tromp, *Robertson, 1853-1953...*, p. 119; IL de Villiers red., *Bonnievale...*, p. 13-14, 16; P van Niekerk, *Bonnievale se groot sloot*, p. 11; FJ Stemmet, *Die Robertson-kontrei ABC*, p.82; CJ Swanevelder, "'n Geografiese opname van die Breërivier-opvangsgebied..." , p. 188; Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa under one flag. C Forrest Rigg's colonization settlement Cape Colony* (Cape Town, 1901), p. 16 and Appendix 4, p. 52; *Ibid.*, Undated article clippings, "The Irrigation Scheme" and "Christopher Forrest Rigg 1861-1926"; Anon., "Successful irrigation estates", *The East London Daily Dispatch*, 6 September 1909, p. 7; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, pp. 60-61; I Bigalke, "Olifantskrans se Geheim", *Bylae by Die Burger*, 4 April 2006, p. 6.

because of a lack of capital.<sup>46</sup>

Image 4: An aerial view of the typical, long, rectangular-shaped irrigation lots at Bonnievale. The town lies between the road and the canal towards to top end of the photo



Source: Bonnievale Museum, Le Roux Collection: Photos.

Rigg renamed the portions of the original Bosjesmansdrift farm that he bought “Bonnie Vale”. According to Van Niekerk, the word “Bonnie” was derived from the Scottish word for “beautiful”. By 1898 the railway line of the New Cape Central Railway (NCCR) already reached Swellendam, 48 km downstream of Bonnievale. The line had a siding at Drew, a few miles downstream from Bonnievale, but Rigg, who wanted to further his own business interests, apparently influenced the manager of the NCCR who lived at Robertson. Thus in 1902 the railway company erected a siding called “Vale” closer to the irrigation settlement scheme, which was to become Bonnievale’s railway station.<sup>47</sup> Rigg also bought another portion of the original Bosjesmansdrift farm from the De Wet estate adjacent to “Bonnie Vale” for £10 000 and named it Riggton. The property was eventually incorporated into the town of Bonnievale and the name has become obsolete in recent

<sup>46</sup> FA Venter, *Water*, p. 303.

<sup>47</sup> P van Niekerk, *Bonnievale se groot sloot*, pp. 8-9; DL van den Berg, *Gedenkboek...*, pp. 4, 35; IL de Villiers red., *Bonnievale...*, pp. 12-14; M Brink, “Breyten se Bonnievale”, *Mooiloop*, 8 October 2008, pp. 60-61. Van Niekerk states that the Vale siding came about in 1905 but considering Rigg’s entrepreneurial skills and powers of persuasion to further his own business interests this date seems unlikely and somewhat belated. Some sources indicate that the name “Bonnie Vale” also referred to “beautiful Valley”. According to Van den Berg, p.5, the words “Bonnie” and “Vale” were spelled as one as from 1927. For the purposes of this article the spelling of “Bonnie Vale” will be used when referring to Rigg’s farm and “Bonnievale” when referring to the namesake town.

years.<sup>48</sup>

Only scant and sometimes conflicting biographical information could be found concerning CF Rigg. It appears that Christopher Forrest Rigg was born in Phyton in Scotland, apparently in 1861, but the family emigrated to South Africa in 1863. His parents settled in Port Elizabeth during his infancy. Christopher's career started when he joined the legal firm of which his father was the head. Owing to hearing difficulties he turned to other pursuits, notably in the ZAR and the Orange Free State. At Barberton in the former Eastern Transvaal he qualified as a blaster and prospected for gold, albeit unsuccessfully. In the interior Christopher ventured into agriculture and stock farming and also stayed in places such as Lindley in the Free State and in Johannesburg. He claimed to have secured several irrigation propositions, three of which were in the ZAR, *inter alia*, the "Vaal River Irrigation Scheme". Rigg's first wife, Petronella, was Dutch, and they had two sons. Probably as a result of his first wife's influence it was also claimed that he spoke Dutch (or rather Afrikaans which was the vernacular of the Breede River Valley) fluently. He divorced Petronella in 1893 but, at the age of 43, was remarried to Lilian Moon from the Robertson district adjacent to Bonnievale in 1894. Rigg and his second wife had three daughters and moved to the present Bonnievale area in 1900. He died in November 1926 at the age of 69 on board the "Grantully Castle" while returning from a holiday in Britain and was buried at sea.<sup>49</sup>

In October 1901 Rigg issued an information and recruiting brochure, *New South Africa Under One Flag. C. Forrest Rigg's Colonization Settlement Cape Colony* with the idea of promoting what he called "the first Irrigation Colonization Scheme in [the Cape] Colony". The subtitle was "A Bright Future for Agriculturists or those desirous of taking up that remunerative occupation". The 64 page brochure was remarkable for its time in terms of advertising skills and comprehensive information on agriculture and mirrored

---

48 Communique from Mr Piet Coetzee, Bonnievale resident, 12 February 2013. See also DL van den Berg, *Gedenkboek...*, pp. 31-32, 34; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, p. 61; IL de Villiers red., *Bonnievale...*, p. 13; P van Niekerk, *Bonnievale se groot sloot*, pp. 15-16.

49 Western Cape Archives and Records Service, Cape Town (hereafter WCARS), Estate Files, 6/9/3057, Christopher Forrest Rigg, Correspondence, L Rigg – Secretary Orphan Chamber & Trust Company (19 November 1926); *Ibid.*, Estate Files, 13/1/6222, Christopher Forrest Rigg, Ante-nuptial Contract; Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 10, 12; *Ibid.*, Handwritten memorandum by Mrs C Geister, nee Moon and niece of Mrs Rigg, undated; *Ibid.*, Biographical notes, CF Rigg; *Ibid.*, "Christopher Forrest Rigg 1861-1926" (Undated article clipping); P van Niekerk, *Bonnievale se groot sloot*, pp. 13, 22; P Grütter, "Leiklip vir 'n lieflike kind", *Sarie Marais*, 30 Mei 1979, p. 106; Anon., "Successful irrigation estates", *The East London Daily Dispatch*, 6 September 1909, p. 7. No other information on Rigg's alleged Vaal River Irrigation Scheme could be found.



his astute business acumen. Between 1901 and 1902 5,000 free copies were printed by the Cape Times Printers and distributed by Rigg. To draw attention, both the front page, containing, *inter alia*, images of a farmer with a horse and plough, and the back page, were printed in colour.<sup>50</sup>

Although no direct evidence could be found to link him to Milner's imperialist ideas it seems likely that Rigg, as a loyal subject of the British Empire, was quite aware of, and supported Milner's reconstructionist plans for a post-war South African colonial state, including such means as white settlement and irrigation schemes. A prominent illustration of the Union Jack and a photo of Milner appeared on the front page of Rigg's brochure. In disclosing his earlier irrigation exploits in the Transvaal he used typical Milnerist language by stating that one of these schemes would "be ready for occupation so soon as the country is settled", thus referring to finishing the Anglo Boer War in Britain's favour. Hence also the title of his brochure *New South Africa Under One Flag*. One of the prime target groups Rigg had in mind for recruitment was the British forces in South Africa during the War. On the preface page he wrote: "Dedicated to the Imperial Yeomanry, Volunteers from over the Sea, and the Colonial Forces". He expressed the wish "that many parts of South Africa hitherto unoccupied may become inhabited by loyal subjects of the Empire".<sup>51</sup> Rigg wrote to Sir Pieter Faure, the Cape Colony's Minister of Agriculture, explaining that in the near future he might also publish his brochure in England "in the hope that I may thereby entice some people to migrate to my scheme, or induce some of the Yeomanry and others at present in this country to remain here and settle".<sup>52</sup>

The recruitment brochure also advertised the shipping fares of the Bucknall Steamship Lines and the Union Castle Lines from British ports to Cape Town. These fares were more or less the same as steerage class rates to Quebec and a first class fare between Cape Town and England was cheaper than between Australia and Britain.<sup>53</sup> According to Harper and Constantine, passenger agents were responsible for booking berths on ships and, in some cases, for promoting particular destinations and orchestrating the campaigns of professional recruiters. Shipping companies themselves competed directly

---

50 See accompanying memo by Piet Coetzee to Rigg's brochure copy in the Bonnievale Museum, dated 4 September 1991, and P Grütter, "Leiklip vir 'n lieflike kind", *Sarie Marais*, 30 Mei 1979, p. 106. Rigg's claim of having started the "first irrigation colonization scheme" in the Cape Colony is of course incorrect as Sir Thomas Smartt's irrigation syndicate, discussed earlier, had been launched in 1895 already.

51 Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 1, 7, 10.

52 *Ibid.*, Appendix 4, p. 52.

53 *Ibid.*, pp. 1-2; M Harper and S Constantine, *Migration and empire...*, pp. 302-303.

for clients through their offices or indirectly through agents.<sup>54</sup> Rigg probably also had an inquisitive foreign clientele in mind when he included a report by Dr Lewis Stevens, the district surgeon of Robertson, into the brochure. Stevens stated that the districts of Robertson and Swellendam (which included Bonnievale) had a climate, which, “upon the whole may be considered as eminently suitable for delicate people of all ages”. The local climate was much less subject to violent changes of temperature than those usually prevailing in South Africa at higher altitudes as many winters passed without frost. Malarial fever “may be quoted as non-existent” while enteric fever was “simply ... an occasional epidemic occurrence”.<sup>55</sup>

Rigg, however, was shrewd enough not to focus his recruitment campaign only on the British forces in South Africa or potential British civilians. Apart from representatives in Britain, New Zealand, Australia, India, Sri Lanka, Pakistan and the USA he also appointed local recruitment agents in rural towns of the Cape Colony. In the Eastern Province these included Adelaide, Barkly West, Burgersdorp, Cathcart, Colesburg, East London, Grahamstown, Pearston, Queenstown, Seymore, Somerset East, Tarkastad and Uitenhage, as well as Kimberley and Warrenton in the Northern Cape. In the Western Cape agents were appointed at Beaufort West, Ceres, Fraserburg, Knysna, Montagu, Paarl, Robertson, Swellendam, Victoria West, Worcester and especially in the towns of Ladismith, Calitzdorp and Oudtshoorn in which regions ostrich farming was widespread.<sup>56</sup> There was no hidden agenda in terms of Rigg’s intentions. He was described as no philanthropist but as a “level-headed businessman” whose object from the start “was to develop his land and to dispose of it at a profit”.<sup>57</sup>

One of the objects in the preface to the document stated clearly: “that I may reap a reasonable return from capital and time expended in connection with my Irrigation undertaking”, although he also wished that each individual settler might become prosperous.<sup>58</sup> Rigg reiterated what was emphasised by so many observers before him: the indissoluble link between water and the

---

54 M Harper and S Constantine, *Migration and empire...*, p. 300.

55 Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 39, 41 and 59 (Appendix 7).

56 *Ibid.*, List of Agents; IL de Villiers red., *Bonnievale...*, p. 14; P van Niekerk, *Bonnievale se groot sloot*, p. 13. Although the brochure included recruitment agencies for India, Sri Lanka and Pakistan it can be assumed that they were only applicable to the white English-speaking communities of those countries.

57 P van Niekerk, *Bonnievale se groot sloot*, p. 13; Anon., “Successful Irrigation Estates”, *The East London Daily Dispatch*, 6 September 1909, p. 7; I Bigalke, “Olifantskrans se Geheim”, *Bylae by Die Burger*, 4 April 2006, p. 6.

58 Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 7-8 (Preface).

land by claiming that although this land was rich and fertile, it was of little value except for grazing cattle unless it could be irrigated.<sup>59</sup> The brochure explained that the canal was designed to carry 10 000 000 gallons of water per twenty four hours so that there was “no fear that the water supply will be in anyway inadequate to the demand”.<sup>60</sup> It stated that although the Breede River ceased to flow in February and March, the dry summer season, there were large standing lakes or pools in the river bed which never dried up and that vines and fruit trees did not require water in this period. This was, of course not a true reflection of the actual flow capacity of the river in the dry season. The regular low river levels in summer would give rise to constant problems with irrigation and water quality problems and would eventually give rise to the building of the Brandvlei Dam, which will be discussed later. Nevertheless, Rigg guaranteed each agricultural lot holder “sufficient water” to irrigate their holdings at the “nominal charge” of ½d. or not exceeding 1d. per 1 000 gallons used. Although accounts would be rendered monthly, Rigg generously waived any charge for water supplied during the first six months from the date of purchase, in order to assist settlers at the commencement to get on their feet financially. The income derived from water rates would go towards the maintenance of the irrigation works and initially settlers would not have any responsibility with regard to the canal.<sup>61</sup> But Rigg was a strict person. After the initial concessions, water was cut from those settlers who could not pay their rates.<sup>62</sup>

Originally the irrigable area of land was 453 hectares, laid out in 116 available freehold agricultural lots and 128 building sites. The agricultural allotments varied from two to twenty four acres. They were priced according to position, size, quality of soil, etc. Although the brochure did not indicate the actual price of the allotments – this could be deduced from a lithographic plan available at the agents mentioned in the brochure upon payment of two shillings and six pence each – they were valued between £50.00 and £150.00 per acre. Adjoining the arable area were between 5 000 and 6 000 acres of grazing ground, upon which each lot-holder had the right to graze a number of cattle, according to the size of his or her holding free of charge. The agreement of purchase was very favourable for land settlement. The brochure stated that the purchase of one or more lots of “Bonnie Vale” as an investment

---

59 *Ibid.*, pp. 8, 10.

60 *Ibid.*, p. 16.

61 *Ibid.*, pp. 16, 19, 21. With reference to the Brandvlei Dam, see pp. 25-27 hereunder.

62 DL van den Berg, *Gedenkboek...*, p. 5.

would prove “very profitable and safe” and that there were many poor people who would be willing to occupy and improve the lots in consideration of half the profits made out of them. The purchase amount bore interest at six per cent, payable half-yearly, and was payable in yearly instalments of at least £50.00, transfer being given as soon as £20.00 per acre was paid off and a mortgage bond had been passed for the balance due. Lot no. 7 was reserved for the development of the central business district of Bonnievale which would also make provision for a mill, a distillery, a general store, a butchery and a bakery, a hotel, a telegraph or “telephone office”, and a library, a school and a church. The government was to be approached for the formation of a village board consisting of five lot holders as soon as half the lots were occupied. Until such a board had been formed Rigg reserved the rights and control as such a board was empowered to exercise.<sup>63</sup> By 1911, a newspaper, quoted by Van den Berg and Van Niekerk, summarised Rigg’s unmistakable presence at Bonnievale as follows: “Mr Rigg is engineer, irrigationist, farmer, Justice of the Peace, arbitrator, councillor, judge, jury, chairman of the Board, Post and Pound Master and Lord of the Manor”.<sup>64</sup>

Rigg’s previous experiences and knowledge of farming and irrigation activities are clearly reflected in the brochure. The completeness, thoroughness and quality of information provided to prospective buyers who had no knowledge of the area and conditions, were striking. Rigg planned and prepared carefully before launching the scheme. Nothing was left to chance and this was a paramount factor in the eventual success of his irrigation settlement scheme, which probably distinguished it from the failed schemes mentioned earlier. He emphatically stated that “I have endeavoured to exercise the utmost care and forethought in order to meet all contingencies that may arise at any future date”.<sup>65</sup>

Apart from appointing a resident “reliable Colonial farmer”, to advise farmers on sowing, planting and harvesting methods, Rigg published thorough, but positive soil reports of the land at Bonnievale compiled by Dr Rudolf Marloth, Professor of Chemistry in Science to the Government School of Agriculture at Stellenbosch and Dr Daniel Hahn, Professor of Analytical Chemistry at the

---

63 WCARS, Estate Files, Accounts, 13/1/6222, Christopher Rigg, Deed of Sale, CF Rigg – GH van Zyl, p. 3; Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 14-44, 52 (Appendix 4) and 61 (Appendix 8); P van Niekerk, *Bonnievale se groot sloot*, p. 28; Anon., “Successful irrigation estates”, *The East London Daily Dispatch*, 6 September 1909, p. 7. DL van den Berg, *Gedenkboek...*, p. 5 claims that the size of the allotments were between ten and fifteen acres each.

64 DL van den Berg, *Gedenkboek...*, p. 5; P van Niekerk, *Bonnievale se groot sloot*, p. 21.

65 Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, p. 10.

South African College. The brochure contained information on agricultural products and animals suitable for husbandry and breeding in the area, its yield and values. Information on agricultural requisites and building rates for dwellings was also provided. Even temporary accommodation provisions were made, which were available gratis for three months for a number of newcomers until their dwellings were ready for occupation. Although the average monthly wages for Coloured labourers were published, Rigg made it clear that his was a white settlement scheme and that he was “anxious” that very little of this labour should be required as he desired that the people settling on the land “will be those who will not be above doing a good day’s work themselves”. Rigg argued that should extra labour be required “from one to three [Coloured] hands” would be able to accomplish all work connected with the lots according to size of the lot. In addition, advertisements catering for every conceivable need of prospective settlers were interspersed throughout the brochure: breweries, favourable NCCR agricultural produce transport and passenger rates, hydraulic and irrigation contractors, building contractors, cement works, hotel accommodation, mineral baths and sanatorium amenities in towns adjacent to Bonnievale, general dealers and furniture stores, bakers, timber merchants, bicycle and motor car suppliers, farm literature, stationery sellers, real estate and financial agents, insurance societies, agricultural implements and machinery companies, tailors and clothing stores, nurseries, cold storage companies as well as distilleries. All facilities could be reached or products ordered via the NCCR’s Vale siding.<sup>66</sup>

Against the background of the prevailing imperial mind-set of the early 1900s, as discussed before, it seems that Rigg had a preference for English-speaking settlers, and his London and Cape Town agents recruited mainly English prospective farmers. In January 1908 the irrigation scheme was re-advertised in the Cape Town daily *Cape Argus*. Van Niekerk, quoting the reminiscences of one of the original settlers, wrote that in 1913, when a new school principal was to be chosen, Rigg was instrumental in the appointment of John Edward Irving from the south-east of England. To the detriment of the Afrikaans-speaking children, Irving knew neither Dutch nor Afrikaans. It was impoverished farmers who came to work on the scheme. Many were English-speaking, some of them veterans from the First World War, and for their labour they had received irrigation allotments. Rigg’s attachment to the military could also have been affected by the fact that his nephew, the

---

<sup>66</sup> See *Ibid.*, pp. 6-64.

Reverend Arthur Rigg, was military chaplain to the British Army in India. It also appears that many of the English relatives of Rigg's second wife came and settled in the Valley. At first a thriving majority English-speaking community developed at Bonnievale; testimony to which are farm names such as Nordale, Norriston and Parkstone. Personalities such as Major Fuller, Powrie, Norrie and Wilhelm became prominent in the community.<sup>67</sup>

However, in the brochure Rigg declared that the Bonnievale area was extremely suitable for the breeding of ostriches and the cultivation of lucerne. Therefore one of his agents, Matthys Lourens, did a lot of recruiting in the districts of Ladismith, Calitzdorp and Oudtshoorn. In the light of the profitability of ostrich farming, as discussed earlier, Rigg's recruitment focus on ostrich farmers made economic sense. But it was particularly after the collapse of the ostrich feather industry in Oudtshoorn in 1914 when many Afrikaner farmers came from that area to Bonnievale in search of economic deliverance and new farming opportunities. Pioneer Afrikaner settler families were those of Swanepoel, Beukman, Joubert, Trytsman, Wolfaart, Lategan, Moelich, Du Preez, Meiring, Jonker, Rheeder, Breytenbach, Fourie, Coetzee, Le Roux, Van Eeden, Wentzel and others. While the Afrikaans-speaking community grew in numbers the English-speaking community dwindled. Even the original estate-owning Rigg and Moon families disappeared from the scene eventually.<sup>68</sup> In this regard C. Geister, a niece of Mrs Rigg, wrote that eventually the English-speaking community became very small so that the latter "found the life in Bonnievale too lonely".<sup>69</sup>

## **The development of the Bonnievale irrigation scheme and community and the construction of the Brandvlei Dam**

When Rigg bought the farm of Bonnie Vale he was confronted by the same

---

<sup>67</sup> Anon., *Die mense van Vandermerwe 1922-1997*, n.p., n.d., p. 13; DL van den Berg, *Gedenkboek...*, pp. 5, 35, 40-41; IL de Villiers red., *Bonnievale...*, pp. 12, 41, 43; P van Niekerk, *Bonnievale se groot sloot*, pp. 13, 21, 23; Bonnievale Museum, Le Roux Collection, Memorandum by Mrs C Geister, née Moon and niece of Mrs Rigg (Undated); P Grütter, "Leiklip vir 'n lieflike kind", *Sarie Marais*, 30 Mei 1979, p. 106; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, pp. 60-61; Anon., "Sale of Bonnie Vale", *Worcester Advertiser*, 22 August 1919.

<sup>68</sup> Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, pp. 34, 36, 39; DL van den Berg, *Gedenkboek...*, pp. 5, 34-35; P van Niekerk, *Bonnievale se groot sloot*, pp. 9, 13, 15, 17, 19, 23-27; IL de Villiers red., *Bonnievale*, p. 14; P Grütter, "Leiklip vir 'n lieflike kind", *Sarie Marais*, 30 Mei 1979, p. 106; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, p. 61.

<sup>69</sup> Bonnievale Museum, Le Roux Collection, Handwritten memorandum by Mrs C Geister, nee Moon and niece of Mrs Rigg (Undated).

problem that had caused the blocking of Dieterlie and De Wet's canal, viz. the vertical rock-face of the Olifantskrans. The attempted solution consisted of constructing a wooden flume, 1.22 metres wide and 0.61 metres deep, in which the water was conveyed around the cliff, partly supported on trestles and chains and partly fixed to the cliff itself. Thick spikes were dug into the cliff to secure the cable which held them in place. Seven meter pillars were mounted on thick poles set into the river bed. The first water reached Bonnievale in 1900. Although Rigg euphemistically referred in the brochure to "some engineering difficulties that had to be overcome", the canal and flume caused endless problems. At first the canal was small and in winter debris from the Breede River clogged the system, causing the suspended channels to collapse. Dislodged rocks from the cliff fell into the flume and high winds and floods regularly damaged it. There were problems with leakages as well. Work on the canal then had to be started all over again, with the result that the water supply was disrupted. This became an annual struggle until 1906.<sup>70</sup>

At this point, applying his blasting expertise, Rigg decided to construct a tunnel through the Elephant Cliff. Work on the 214 metres tunnel began on 1 January 1906. About 80 to 100 people worked on the project, among whom "Transkeians" (Xhosa-speaking African migrant labourers). Two tons of bar steel and 80 cases of dynamite were used to remove 2 000 tons of hard rock. Rigg excavated from two sides, north and south, making six access tunnels. The tunnel was 2.135 metres wide and the depth varied between 1.22 and 2.135 metres. Sluice gates were installed for diverting flood waters and to shut off the flow to allow for cleaning or making good any necessary repairs. Like his predecessors Rigg ran into financial problems, but in December 1906 a bank in Robertson came to his rescue with a loan of £18 000.00. Smaller setbacks as a result of the canal's collapsing were still experienced from time to time, such as the porous soil structure of "Vrotkop" (Rotten Hill) just outside the town. But once the tunnel was completed, the canal and irrigation scheme was a success. The canal was enlarged at several places and in 1910 the system was developed further east of Bonnievale with a team of Coloured labourers. In 1914 cement was used for the first time to repair and strengthen

---

<sup>70</sup> Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, p. 29; *Ibid.*, "The irrigation scheme" (Undated article clipping) and irrigation scheme display notes; P van Niekerk, *Bonnievale se groot sloot*, pp. 13-15, 36, 116.

the construction of the canal. Newspapers described the undertaking as “the greatest engineering project of its time in South Africa by one man”.<sup>71</sup>

Image 5: Rigg’s tunnel soon after completion, c. 1906



Source: Bonnievale Museum, Le Roux Collection: Photos.

With the success of the irrigation scheme ensured, community development followed suit. A village board, consisting of five “lot holders” was elected with Rigg as the obvious chairperson. The first statutory town management board was established in 1922 and the town received municipal status in 1953. The first state-sponsored elementary school was erected in 1906 and a high school in 1939. When the ostrich feather industry collapsed in 1914 the enterprising Rigg and his irrigation settlers switched to producing lucerne hay, a nutritious cattle fodder. He also established Bonnievale’s first cheese factory.<sup>72</sup>

Ownership of the canal, or “Rigg furrow” as it was also known, was transferred to the Zanddrift Irrigation Board, which was established in 1909. The purchase price was £7 000.00. The first executive consisted of AI van Zijl (chairperson), JM van Zijl, FJ van Zijl, NL Jonker, SW Rabe, PJ Trytsman, JS Marais and AGH Teubes (secretary). Van den Berg claims that Rigg’s condition for transferring the canal was that he wanted a seat on the board. Although this claim could not be verified, it is clear from various sources that he was regarded as a “difficult customer”. His relationship with the all-Afrikaner-controlled board and the congregation of the Dutch Reformed Church was, at times, problematic and abrasive until his death. The biggest differences occurred with regard to the interpretation of the purchase-deed. Apparently

71 Bonnievale Museum, Le Roux Collection, CF Rigg, *New South Africa...*, p. 29; *Ibid.*, “The irrigation scheme” (Undated article clipping) and irrigation scheme display notes; P van Niekerk, *Bonnievale se groot sloot*, pp. 13-15, 36, 116; DL van den Berg, *Gedenkboek...*, pp. 4-5, 31-32; Anon., “Successful irrigation estates”, *The East London Daily Dispatch*, 6 September 1909, p. 7; M Brink, “Breyten se Bonnievale”, *Mooiloop*, 8 Oktober 2008, p. 61.

72 DL van den Berg, *Gedenkboek...*, pp. 5, 34, 40, 69, 71; IL de Villiers red., *Bonnievale...*, pp. 17, 35; P van Niekerk, *Bonnievale se groot sloot*, pp. 19-20, 28.



Rigg and the original water users of Bonnievale and Riggton were exempted from paying water tariffs but were responsible for the maintenance costs of their portion of the canal. Over time, however, this exemption became an increasing source of irritation to the board. Rigg was sued for money due to the board and after his death there was even a claim against his estate for outstanding debts.<sup>73</sup>

A huge problem the Zanddrift Irrigation Board had to deal with was the low levels of the Breede River in the summer months – an issue that was completely underplayed by Rigg in his original recruitment brochure. At times these levels caused the canal to run dry, presenting a serious obstacle towards agricultural expansion in the whole Valley. For instance, farmers could only plant crops such as grain, lucerne and potatoes. The lack of consistent, reliable irrigation water precluded the survival of more expensive vines and deciduous fruit trees during the dry months. Another problem which occurred especially when the river levels were low was the salinization of the water quality, which, in turn, inhibited the growth and shortened the lifespan of agricultural crops and plants. To counter this problem a huge fresh water reservoir was needed to raise the river levels in the dry season and also to flush saline water. A perusal of Kanthack's report reveals that the farm Brandvlei of the De Wet brothers, in the vicinity of Worcester 85 km upstream of Bonnievale, was considered a suitable area to build a storage dam already as early as 1907. Brandvlei lies in the catchment area of the Du Toitskloof and Stettyns Mountains west of Worcester with high winter rainfall.<sup>74</sup>

But the actual lobbyist for the construction of the dam was J.P. (Kowie) Marais, a Robertson farmer who realised the potential of Brandvlei and began to engage with Kanthack's office. Marais was instrumental in establishing the Breede River Conservation Board in 1913, which became the water controlling body for the whole Valley. This board sent a commission to the De Wet brothers regarding the purchase of their farm but the final purchase price of £15 000.00 for the land could only be settled by a decision of the water

---

73 "Proposed constitution of irrigation district", *The Cape of Good Hope Government Gazette*, 11 August 1908; Zanddrift Irrigation Board (hereafter ZIB), Minutes of Meeting of proprietors of the farms Langverwacht, etc., 16 April 1908; *Ibid.*, Minutes of the Meeting of the Zanddrift Irrigation Board, 27 July 1909; WCARS, Estate Files, Accounts, 13/1/6222, Christopher Forrest Rigg, Liquidation & Distribution Account; DL van den Berg, *Gedenkboek...*, p. 5; AH Tromp, *Robertson, 1853-1953...*, pp. 119; Anon., *Die mense van Vandermerwe 1922-1997...*, p. 15; P van Niekerk, *Bonnievale se groot sloot* pp. 12, 21, 30-35, 100, 102, 108.

74 G. 44 – 1907, FE Kanthack, *Report on the proposed Ashton Canal Irrigation Project*, p. 22; Bonnievale Museum, Le Roux Collection, "Gesiedenis van Edendale" (Undated handwritten memorandum), pp. 6-9, 12; CJ Swanevelder, "n Geografiese opname van die Breërivier-opvangsgebied", pp. 129-132; P van Niekerk, *Bonnievale se groot sloot*, pp. 57, 83; Anon., "Die Brandvlei Dam", *The South Western News*, 10 October 1919.

court. In 1914 Parliament voted £100 000.00 for the building of the dam, but the collapse of the ostrich feather industry and the outbreak of the First World War temporarily put the project on ice. Construction work finally got underway in February 1920 and the dam wall was completed in July 1922. On 31 October 1923 the Brandvlei Dam, also known as Marais Lake in recognition of JP Marais who had died two months before the inauguration, was officially opened by Mr CJ Krige, the MP for Caledon. The final cost of the dam was £78 629.00. However, it soon became apparent that the dam's capacity was insufficient, being limited to holding storage water for only four months during peak demand. Therefore between 1946 and 1953 the wall was raised to 10.68 metres at a cost of £140 000.00 in order to provide for the increased demand of irrigation water. This was achieved through a government loan secured by the MP for Swellendam, SE Warren. When full, the dam water stood 7.32 metres deep and the dam had a capacity of 43 million cubic metres extending over an area of 9.654 square km. The increased capacity also went a long way towards addressing the salinization problem which affected the water quality especially during summer.<sup>75</sup> It is an irony that Rigg, who was not afforded a seat on the Zanddrift Irrigation Board in his hometown, became a member of the Breede River Conservation Board in 1914 which, through the Brandvlei Dam, played such a great role in improving the supply of irrigation water to Bonnievale.<sup>76</sup>

Another problem which the Zanddrift Irrigation Board had to solve was seepage through the canal floor and walls. This led to waterlogged land and consequently to salinization of the soil. In the early years it was still a ground canal, except for a few places where, due to certain weakened geological structures, cement was used to strengthen it. Therefore the board obtained a government loan of £33 975.00, the cementation of the canal was started in January 1937 and the work was completed in 1942, although Van Niekerk

---

<sup>75</sup> Breede River Conservation Board (hereafter BRCB), Constituted by Proclamation No. 124, 21 May 1913; Anon., "Die Brandvlei Dam", *The South Western News*, 10 October 1919; Anon., "Brandvlei-Dam geopen", *Die Burger*, 1 November 1923; Anon., "Brandvlei Besproeiings Skema", *Bijvoegsel tot het Zuid-Westelik Nieuws*, 5 Maart 1920; Anon., "Opening of the Brandvlei Dam, Worcester", *Die Landman*, 9 November 1923, p. 6; *Ibid.*, "Maraismeer word vergroot", 29 Maart 1940; *Ibid.*, "Die vergroting van Maraismeer", 17 Mei 1940; Anon., "Brandvlei scheme", *Worcester Standard & Advertiser*, 12 September 1919; *Ibid.*, "Water capacity to be doubled", 20 July 1946; *Ibid.*, "Brandvleidam sal nou groter wees", 26 Mei 1950, p. 1; Bonnievale Museum, Le Roux Collection, "Geskiedenis van Edendale" (Undated handwritten memorandum), pp. 6-8,12; DF Kokot, "Irrigation possibilities in the Union of South Africa", *Minutes of Proceedings of the South African Society of Civil Engineers*, XL, Fortieth Session (Cape Town, SA Society of Civil Engineers, 1942), p. 185; AH Tromp, *Robertson, 1853-1953...*, pp.121-122; IL de Villiers red., *Bonnievale...*, pp. 16-17; P van Niekerk, *Bonnievale se groot sloot*, pp. 57-63.

<sup>76</sup> BRCB, Notulen van de Vergadering van de Breede Rivier Waterbewarings Raad te Robertson, 9 January 1914; P van Niekerk, *Bonnievale se groot sloot*, pp. 33, 58.

indicates that the cement lining of sections of the canal system continued until the early 1950s.<sup>77</sup>

Thus, the construction of the Brandvlei Dam and the cementation of the canal system finally solved the water problems and stabilized and ensured agricultural development in the Bonnievale district so that farming became more profitable. The problem of seepage water was contained and irrigation soil improved. Where previously farmers had stuck with cash crops predominantly, they could now begin to diversify their agricultural activities and utilize the district's huge potential for vines and deciduous fruit to its fullest extent, as irrigation water was ensured all year round. The production of vegetables and dairy products also flourished. Progress was stifled during the economic depression of the 1930s as there was no market for agricultural produce. Many settlers were unable to pay their water tariffs and the government was obliged to drastically lower the tariffs and also to remit their debts in this regard.<sup>78</sup> However, during the Second World War, prices for farm produce improved because of an increased demand. In the 1950s co-operative wine cellars were established which also stimulated the expansion of vines and production of wine. The 1950s saw the extension of electricity to the Bonnievale district by Escom (the national electricity utility). Electricity increased the potential of the land even further as farmland above the canal, which had previously been underutilised, could now be developed and put under irrigation through the use of electrical irrigation pumps.<sup>79</sup>

## Conclusion

For Sir Alfred Milner as a Colonial Administrator, the role of the government was to undertake an interventionist, massive re-engineering of nature and

---

77 ZIB, Notule van 'n Vergadering van die Zandrif Besproeiingsraad, 10 Desember 1936, pp. 60-61; *Ibid.*, Notule van 'n buitengewone vergadering van die Zandrif Besproeiingsraad, 15 April 1937, p. 66; Bonnievale Museum, Le Roux Collection, "Geschiedenis van Edendale" (Undated handwritten memorandum), pp. 5, 8; IL de Villiers red., *Bonnievale...*, p. 17; FJ Stemmet, *Die Robertson-kontrei ABC*, p. 82; P van Niekerk, *Bonnievale se groot sloot*, pp. 77-82. Although De Villiers and Stemmet claim that the cementation of the canal began in 1938 the minutes of the Zandrif Irrigation Board indicates that work started in January 1937 already.

78 ZIB, Notule van 'n gewone vergadering van die Zandrif Besproeiingsraad, 27 September 1934, p. 3; *Ibid.*, Notule van 'n buitengewone vergadering van die Zandrif Besproeiingsraad, 19 September 1935, p. 32; Bonnievale Museum, Le Roux Collection, "Geschiedenis van Edendale" (Undated handwritten memorandum), pp. 5, 9, 11-13; DL van den Berg, *Gedenkboek...*, p. 32; IL de Villiers red., *Bonnievale...*, p. 17; FJ Stemmet, *Die Robertson-kontrei ABC*, p. 82; P van Niekerk, *Bonnievale se groot sloot*, pp. 61,70-75; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, p. 61.

79 Bonnievale Museum, Le Roux Collection, "Geschiedenis van Edendale" (Undated handwritten memorandum), pp. 5,10-11; IL de Villiers red., *Bonnievale...*, p. 17.

society in the form of large-scale river diversion and irrigation settlement schemes. On the other hand, the willingness to engineer South Africa's water resources through private enterprise by entrepreneurs such as CF Rigg reveals a striking commitment to an agrarian future of progressive and modern farming – a Darwinian process in which only those prepared to run farms like a business would remain in agriculture.<sup>80</sup> In an age of imperialism white domination did prevail in South Africa after the Anglo Boer War as manifested, *inter alia*, through land and irrigation settlement schemes. Politically, however, it took a different turn to what was visualised by Empire builders such as Milner and his supporters and admirers. Despite Milner's pro-British reconstruction plans for the post-war Transvaal and Orange River colonies, Afrikaners would eventually dominate the political domain until 1994. In this instance there is also a correlation with CF Rigg's irrigation settlement scheme, where after the establishment of the Zanddrift Irrigation Board in 1909, the canal system and irrigation supply were also controlled by Afrikaner farmers. However, Christopher Rigg secured a reliable and constant supply of water to a previously barren district and this in itself was a remarkable feat. As extensive crop farming would have been impossible without water being diverted from the Breede River, Bonnievale and its community owe their existence in the first place to irrigation, but also to the visionary CF Rigg. He was a man ahead of his time and due to his entrepreneurial skills, perseverance and business acumen<sup>81</sup> his private settlement scheme was one of few in South Africa to have succeeded without initial government support. Today (2013) agriculture in the Bonnievale district boasts, *inter alia*, of two cheese factories and well-developed wine estates such as Arendsig, Van Loveren, Weltevrede and others which produce premium export wines and fruits<sup>82</sup> - a testimony to Rigg's pioneering endeavours.

---

80 For a detailed discussion of these concepts see M McKittrick, "A miracle in the North. The scheme to flood the Kalahari, 1918-1945" (Unpublished paper presented at the North-eastern Workshop on Southern Africa, Burlington, Vermont, April 2013), p. 5; GR Backeberg and JA Groenewald, "Lessons from the economic history of irrigation development", *Agrekon*, 34 (4), December 1995, p. 169.

81 IL de Villiers red., *Bonnievale*..., p. 17; P van Niekerk, *Bonnievale se groot sloot*, pp. 20, 122; M Brink, "Breyten se Bonnievale", *Mooiloop*, 8 Oktober 2008, p. 61.

82 See e.g. Anon., "Bonnievale" (available at <http://www.bonnievale.co.za>), as accessed on 1 March 2013; Anon., "Arendsig Wine Estate" (available at <http://www.arendsig.co.za>), as accessed on 1 March 2013; Anon., "Van Loveren Wine Estate" (available at <http://www.vanloveren.co.za>), as accessed on 5 March 2013.