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Acclimatization: The Schomburgk brothers in South Australia

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Acclimatization: The Schomburgk brothers in South Australia

Engelhard Weigl, University of Adelaide

Abstract

Together with their wives Otto and Richard Schomburgk arrived in Port Adelaide (South Australia) on August 16th 1849. The essay looks at how these two brothers, who had received their scientific training and promotion in the circle surrounding Alexander von Humboldt, reacted to the unfamiliar conditions in the young British colony. Some indication will be given as to the differences between the Schomburgk brothers treatment of the natural resources of the new colony and that of the English colonists of the time.

Zusammenfassung

Otto und Richard Schomburgk erreichten zusammen mit ihren Frauen Port Adelaide (Südaustralien) am 6. August 1849. Der Beitrag geht der Frage nach, wie die Brüder, die ihre wissenschaftliche Ausbildung und Förderung im Umkreis von Alexander von Humboldt erhalten haben, auf die unbekanntlichen klimatischen Bedingungen in der noch jungen englischen Kolonie reagierten. Dabei soll die Differenz der Schomburgk Brüder zu den englischen Kolonisten im Umgang mit den Ressourcen der neuen Kolonie sichtbar werden.

* * *

Über den Autor

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Acclimatization: The Schomburgk brothers in South Australia¹

Engelhard Weigl, University of Adelaide

„So new to the world is the subject of acclimatisation, as now understood, that it has little literature, and the advocates of it little experience.“
George William Francis: *The Acclimatisation of Harmless, Useful, Interesting, and Ornamental, Animals and Plants*. Adelaide 1862.

Chapter 1

Alexander von Humboldt had always been fond of the Schomburgk brothers. He had backed Robert Hermann's journey to Guayana from 1835 to 1839 and had later written the preface to his travel journal.² Otto, who in 1839 had been arrested for his political activities, was soon freed again after Humboldt had intervened at the Prussian court. With a letter of recommendation Humboldt had also supported the publication of a travel journal written by Richard Schomburgk, who had accompanied his brother Robert Hermann on a journey to British Guayana from 1840 to 1844.³ And finally, Humboldt and his friend, the geologist Leopold von Buch, had helped to secure financial backing for the costly voyage to Australia of two of the Schomburgk brothers.⁴ In a letter to the astronomer Friedrich Wilhelm Bessel, written on August 11th 1844, Humboldt describes his relationship with the Schomburgk brothers in vivid terms:

„It will be a great joy to me when you confer a doctorate to Robert H. Schomburgk during the celebration. He is a man, who, completely self taught and with a lot of hard work and exposed to great dangers [...] discovered and opened up an important part of South America. His geographical and natural history collections are equally important. And on top of that he is a kind man, highly regarded by our royal couple, a man, who has enriched our museums without any reimbursements. He has been in London since July to complete the trigonometric map of British Guyana. His younger brother Richard, who the king sent out as botanist and gardener has proved to be equally bright. He has just brought back the greatest collection of living palms and orchids the botanic garden has ever received, as well as live animals from the Rio Essequibo and beautiful collections of stuffed birds and mammals, fishes in alcohol and minerals. A third very talented brother, Otto, was tormented by Mr. von Kamptz and incarcerated in a fortress and then, honoured and lamented, he was liberated by me in 1839. It is a very distinguished family, in which a small demagogue should not be missing, if only as an ornament.“⁵

Together with their wives Otto and Richard Schomburgk arrived in Port Adelaide on August 6th 1849. In this paper I would like to explore how these two brothers, who had received their scientific training and promotion in the circle surrounding Alexander von Humboldt, reacted to the unfamiliar conditions in the young British colony. I would also like to give at least some indication as to the differences between the Schomburgk brothers' treatment of the natural resources of the new colony and that of the English colonists of the time. The two brothers did not come to South Australia as explorers, though, they were immigrants seeking a new livelihood for themselves and their families. But their endeavor to report on the newly settled continent in a scientific manner was not at all diminished by this fact. From the very beginning the brothers had to meet two challenges: They had to survive as gardeners and farmers under largely unfamiliar conditions and they had to live up to the expectations of the Berlin Academy of Sciences, which had supported them financially. In a letter Otto Schomburgk wrote to Alexander von Humboldt on December 25/26th 1849 this objective is expressed in the following words: „[...] that here, too, all our efforts and endeavors will be focused on making ourselves worthy of the love you have shown us, as it will always be our aspiration, as much as it is within our feeble powers, to contribute to the expansion of

the realm of sciences, which honour you as their great and unparalleled master.“⁶

I have chosen the title „Acclimatization“, because it seemed most appropriate to illustrate both the living conditions and the area of work of the brothers Otto and Richard Schomburgk. This term, according to a neutral definition, means „gradual adjustment of living organisms to climatic conditions other than those to which they are accustomed.“ The meteorological diary Otto Schomburgk had kept during the long voyage provides us with all the data on their date of arrival: southwesterly winds, water temperature 11.6 degrees Réaumur (i.e. 14 degrees Celsius) air-temperature at 2 pm 10 degrees (12.5 C). If one compares these temperatures to the ones they had measured on their date of departure from Hamburg on April 14th - they are nearly the same.⁷ The climatic adjustment seems not to have been all that difficult, at least in the beginning. Today we know, however, as Jared Diamond puts it „Australia stands out from all the other continents: the differences between Eurasia, Africa, North America, and South America fade into insignificance compared with the differences between Australia and any of those other landmasses. Australia is by far the driest, smallest, flattest, most infertile, climatically most unpredictable, and biologically most impoverished continent. It was the last continent to be occupied by Europeans.“⁸ But the Schomburgk brothers did not know that in 1849, and what I would like to do in a kind of microanalysis of a few documents is to investigate how this particular German family, who were unusually well educated, coped under these new and challenging conditions. I would also like to include the expectations the brothers had built up while still in Prussia, to the extent that this can be reconstructed from the texts. The conclusions the Schomburgk brothers came to on the basis of their experiences in the first few years can, however, only be mentioned briefly. But I hope that the detailed account of the first years will throw a new light on the later works of Richard Schomburgk, who in many areas supported agricultural reforms in South Australia.

Acclimatization as such is of course one important aspect of colonialism. The survival of the settlers depended to a large degree on the successful acclimatization of the plants and animals they brought with them. And this was especially true for the colonization of Australia, because „Australia is probably the only country in the world in which, with a single exception (*Macadamia*, the Queensland nut), every edible cultivar and every crop plant is, or has been derived from, an introduction, as indeed is true of most of the ornamentals, lawn grasses and sown pasture species. The first Fleet and its colonist successors were to provide Australia not only with a new human population, but also with an almost completely new economic flora. Pike has summarized the reports of the early explorers in these words: „No local plant could be coaxed to make food; no indigenous animal gave milk for human use; no native tree yielded edible fruit.“⁹ The remark by the Frenchman Auguste Hardy: „The whole of colonization is a vast act of acclimatization.“¹⁰ thus holds true especially for Australia. And it is no wonder that Australian science in its beginnings was engaged mainly in acclimatization. „Australian science of the 1860s and beyond was closely associated with the acclimatization movement. The early phase witnessed the serious involvement of such scientific figures as W. L. Martin, A.R.C. Selwyn, A.A.C. Le Souef, Ferdinand von Mueller, Frederick McCoy and Dr. Thomas Black (Victoria), G. W. Francis and R. M. Schomburgk (South Australia) and George Bennett, W.B. Clarke and W. J. Stephens (NSW).“¹¹ All the directors of the Botanical Gardens in Australia were closely associated with the acclimatization movement. In addition „Acclimatization Societies“ were founded in all colonies, supported by unusually high government subsidies.¹² In Australia the lack of crop plants was noticed at the very beginning. To the early settlers the country seemed deficient in flora and fauna, which - in comparison to New Guinea for example - is an accurate impression. Diamond in his book „Guns, Germs and Steel“ describes the contrast as follows: „New Guinea is covered with young fertile soil, as a consequence of volcanic activity, glaciers repeatedly advancing and retreating and scouring the highlands, and mountain streams carrying huge quantities of silt to the lowlands. In contrast, Australia has by far the oldest, most infertile, most nutrient-leached soils of any continent, because of Australia's little volcanic activity and its lack of high mountains and glaciers. Despite having only one-tenth of Australia's area, New Guinea is home to approximately as many mammal and bird species as is Australia - a result of New Guinea's equatorial location, much higher rainfall, much greater range of elevations, and greater fertility.“¹³ So what was wrong was not the failure to notice this deficiency but rather the erroneous belief that one could correct it by introducing all sorts of plants and animals thus creating a new paradise - replete with all plants and animals to which they were attached.

To us today the fantasies of the acclimatization societies seem naive in their beliefs and ruthless in their aims. Their lack of knowledge about the complex interdependence of the forces of nature and their inability to perceive and appreciate the particular qualities of the landscape make them see it merely as something that can be transformed at will. One exponent of this attitude is George Francis, the first director of the Botanic Garden in Adelaide. He had arrived in Adelaide from England in the same year as the Schomburgk brothers and he liked to call himself a „cultivator of plants in England, and a lover of and writer upon botany.“¹⁴ As early as 1850, Francis saw the need for a botanical garden and approached the governor of the province with the proposal to establish one. The main task of the botanical garden would be the introduction of new plant species. In 1862, after the successful establishment of the Botanic Garden he went public putting forth the proposal to establish an acclimatization society¹⁵. Societies of this kind were novel in those days, and so Francis goes into some detail describing the importance and the history of such societies, introduced to supplement the work done in botanical gardens. He quotes Isidore St. Hilaire, the French founder of such societies, who stated that it should „be composed of agriculturalists, naturalists, landholders, all the scientific men - not only in France - but of every civilized country, all of whom would aid in a work which required the help of everybody, because it was for the good of everybody.“ The aim is to „people our fields, our forests, and our rivers with new guests; to increase and vary our alimentary resources; and to create other economical or additional products.“¹⁶ Francis concludes his talk thus: „Let me express a hope that future generations may hunt their deer, their giraffes, their antelopes, and their ostriches, without either lions, tigers or gorillas; that they may have, American like, flocks of pigeons without destructive herds of buffalo; that they may have domestic fowls and game birds surpassing those common to us now; that they may have swifter bullocks, longer and finer fleeced sheep from at present; with dromedaries traversing the desert; and that desert itself, notwithstanding its drought, teeming with animal and human food.“¹⁷ The Schomburgk brothers also had their dreams and had brought seeds with them from Germany, but their background was quite different.

Richard Schomburgk, trained as a gardener, had worked in the Royal Gardens of Sanssouci in 1840 and had then - with the help of his older brother Robert - had the rare opportunity to accompany Robert on an expedition to British Guyana. After his return he had published an extensive travel journal in three volumes about this expedition. His brother Otto was the only one in the family who had received an academic education. He studied theology and then medicine. As a student he came into conflict with the authoritarian Prussian state and was sentenced to a few months in jail, from whence, as previously stated, he was freed by Humboldt. He translated into German the expedition report of his brother Robert, which had originally been published in English. All three brothers were strongly influenced and sponsored by Alexander von Humboldt, who had returned to Berlin in 1827 after his long stay in Paris to become the central promoter and patron of the sciences. Humboldt wrote a detailed foreword to the expedition reports of Robert and Richard and he also organized the finances for Richard's participation in the expedition as well as for Otto and Richard's emigration to Australia. The exceptional closeness to Alexander von Humboldt is evident in the two letters handed down to us, the first is written by Otto just before embarking for Australia in Hamburg,¹⁸ the second is written in Buchsfelde, near Gawler in South Australia.¹⁹ It is the second letter I will mostly refer to in the next part of my talk.

Chapter 2

It is Christmas Day, December 25th 1849 on the newly-founded farm. The harvest has mostly been brought in; on December 20th Richard's first daughter was born. After having searched for suitable and affordable land for quite some time, having built houses for the two families and having worked on the unfamiliar land in their gardens and fields, the brothers allow themselves for the first time to look back and take stock. The day is dedicated to letter-writing. Three letters still exist, letters Otto wrote on December 25th and 26th to three eminent scientists and friends in Germany. The first is addressed to Alexander von Humboldt, the second to Heinrich Wilhelm Dove²⁰, and the third to Christian Gottfried Ehrenberg²¹, a widely-travelled naturalist and professor in Berlin, whom Otto refers to as his teacher. All three scientists are members of the Academy of Sciences in Berlin. As far as I know there are no other letters Otto wrote from Australia, at least none that have been preserved. Writing letters seems to have been a task that

Richard left to his brother in the beginning. Only after Otto's death in 1857 does he start writing letters to Berlin, which are still kept there. For the first five months after their arrival, however, the brothers remain silent. One has the impression that they did not want to make contact before being in a position to report on their first successes. No document has been preserved that gives a description of the voyage and of their first impressions of the new country.

The letter to Humboldt is well composed and starts with a description of Adelaide and its surrounds. The brothers are quite aware of the changes to the coastal landscape brought about by white settlement. After only 13 years, Adelaide was already quite a developed colonial town, similar to many places in Europe; hardly anything reminded one of its original state. It is as if the Schomburgks had left Germany to go on a long journey and then arrived back in Germany again. Otto describes the arrival thus: „On the 5th of August - after much yearning - Kangaroo-Island, its elongated stretch of coast quite sterile with hardly any trees or shrubs, lay in front of us, and there I brought another young citizen of the world into existence, and on the 6th, at noon, in the harbor of Port Adelaide, the anchor was cast into the ground of the new homeland, which welcomed us with its green fields and forests. A long, from the outside quite monotonous past, full of bitter experiences, lay behind us - with the first steps on firm land a new life began for us - new in every respect; but from the first moments on shore the eye found so many links connecting us back to our loved native country we had left behind, though we were reminded of it with nearly every step we took. The long wavy mountain range, which cuts South Australia from Southeast to North, reminded us of the familiar southern slopes of the Harz Mountains, and in Mt. Lofty, we could see a striking similarity to the Brocken, while the verdure of the meadows was made up of various German species, and the lush wheat fields and the numerous cow herds made us feel welcome. No wonder therefore, that we soon felt at home, especially since we also met some upright Germans. Our wish to find a plot of land as soon as possible, where we could build our huts, sow and harvest our grains, was not granted quite so speedily as we hoped, since in the immediate vicinity of the city of Adelaide all the land had been sold already and could only be bought again at enormous prices, which we could not afford. And it was important to us to stay as close to the present centre of the colony as possible, since we can only there find a market to sell our future produce profitably. In Mid-September, after having walked about in the surrounds of Adelaide for a long time, we found a section for sale right on the Gawler River, 27 miles from Adelaide, 4 miles from Gawler-town, the second city of the colony, consisting of 84 acres, already fenced and meeting more or less all the requirements we had put forward. [...] On September 26th 1849 the friendly spot was baptized ceremoniously in which act it received the name Buchsfelde [...].“²² The living quarters are described in the letter: „two caves, a shack built into the slope of a considerable depression and a small cabin“, the latter being the only one built above ground. The other abodes did not have windows. 25 acres had already been plowed and sown with wheat and barley. Otto reports that these fields had been harvested on December 24th at 43 degree Réaumur. And he stresses time and time again that the construction of the houses, as well as the harvesting, had to be achieved without any outside help. The lack of workers in the new colony, a result of the restrictive British emigration policy, made hiring day labourers or contract workers prohibitively expensive for the new settlers.²³ Otto tries to describe the working conditions on the new farm with a considerable degree of humour, even though they must have been hard for him, a man, who had formerly been an academic. There is no time for science when you have to fight for your „existence and subsistence“ every day „from 3 or 4 in the morning to 8 o'clock at night in temperatures frequently more than forty degrees Réaumur, working as „gardener, farmer, carpenter and bricklayer with axe, spade and scythe.“²⁴ But the seeds they brought from Germany had germinated and grown and so they were full of hope that their living conditions will improve quickly. „Melons and cucumbers in abundance [...] many garden fruits grow to such a size in the new Fatherland, that they are hardly recognizable.“²⁵ The Schomburgk brothers do not seem to be surprised by the harshness of the working conditions they are encountering in this first founding phase, but they are full of optimism and convinced that they will succeed, „in a climate so thoroughly healthy and on „fertile ground, which rewards all efforts a thousand times.“²⁶ As much as this letter is written in the conviction of having found in South Australia a country, which in many ways resembled and even exceeded their native country, there are already aspects mentioned in this first analysis of the climatic condition that will later endanger their endeavours. In the letter to Humboldt Otto writes: „During the whole harvest the thermometer never showed less than 29 degrees Réaumur in the shade at 2 o'clock in the afternoon,

but the heat did not have as exhausting an effect on us as 20 degree would have done in Germany, in spite of the fact that the work was hard and we unaccustomed to it. Only „the hot wind“ is a dreadful guest, which luckily to date has only descended on us once. On October 24th at 11 o'clock my brother and I were in the nearby woods to cut trees for our new dwellings, when we were suddenly prevented from it by a truly suffocating heat. When we left the woods, we felt the hot wind breathe on us: It continued until 3 o'clock in the afternoon, when a cooling south-easterly triumphed after a long fight, bringing with it some refreshing rain. The thermometer, exposed to the wind, while being in the shade climbed to 36. 7 degrees; with the south-easterly it fell to 17. 3 degrees. The effect of the wind on the young vegetation [...] is completely devastating. Luckily these winds usually only occur towards the end of December, when they cannot damage the harvest anymore, because it has already been brought in.²⁷ This quote shows that Otto Schomburgk not only observed the weather meticulously, but that he also tried to verify his impressions with precise measurements. As important as the report of the brothers about their personal experiences and their first successes in agriculture might have been, what was really expected of them by their correspondence partners in Berlin was a contribution to science, something along the lines of the report Alexander von Humboldt produced after his travels in the Americas. Humboldtian science - the combination of precise observations of flora and fauna with an accurate analysis of climatic conditions based on measured data - that is what the brothers were supposed to undertake in South Australia, a place still largely unknown in Germany. Such were certainly the expectations of the three scientists to whom the letters were addressed. It comes therefore as no surprise that the letter to Humboldt starts with a detailed definition of the geographical position of the author in „Buchsfelde at 34 degree 41 seconds southern latitude, 138 degree 54 seconds eastern longitude.“ The Academy of Sciences in Berlin seems to have been interested in accurate data on the climate in Australia. On his expedition to British-Guyana Richard had already shown that he was capable of undertaking successful scientific research.

It was, however, the independent scholar Otto Schomburgk, who had applied to the Academy requesting a „microscope and other necessary meteorological instruments“²⁸ (with the exception of a barometer which he had already received from a private individual). Otto gives the following reasons for his application: „On April 3rd this year I will, together with my brother Richard Schomburgk, leave our Fatherland to establish a new home for myself in South Australia. The conviction that I will be able, through diligence and serious and honest efforts, to contribute a lot to further the knowledge about the flora and fauna and the climatic conditions of this country, about which so little is known as yet in this respect, has had a considerable influence on my choice.“²⁹ The Academy granted the request on account of to the high esteem in which they held his brother Richard; and Otto received the microscope and various meteorological instruments. In the Academy's reply to Otto, written by Professor Encke on March 16th 1849 it says „that the Academy learnt with greatest interest that your and your family's imminent move raises the prospect of our receiving extensive and ground-breaking information about a hitherto rather little known continent which has not yet been the subject of much scientific research. This information would be especially relevant to the natural sciences. The reputation your family's name has gained through one member of your family in another part of the world will certainly be a great pledge for you to take scientific research as much into account as the conditions will allow, in spite of the efforts necessary for the new settlement.“³⁰ The instruments were handed over to Otto Schomburgk with the proviso that they always be kept „by your family and within the circle of your new collaborators in the service of the sciences and in memory of the Academy.“ The instruments could not be disposed of but should rather be handed on to suitable scientists working in support of the sciences. In exchange for its generosity the Academy expects to be informed of the „characteristics of natural conditions in those regions.“³¹ In his first letter to Heinrich Wilhelm Dove, written on December 25th 1849, Otto actually keeps his promise to the Academy by sending them the meteorological data (mainly temperature and barometer measurements) he had gathered during the voyage to Australia.³² In his letter to Humboldt he also reports on the construction of his own small weather station, so that Buchsfelde can from now on be seen as the meteorological station for South Australia.³³ But Otto's main scientific undertaking was ill-fated. It turned out that his thermometer was not well chosen. The temperature range of his precision instrument only went up to 30 degrees (that is 37. 5 degrees Celsius). And Otto seems to have found out about it only once he was in Adelaide. He writes to Humboldt: „As happy as I was when I opened my box of packed instruments after landing and found them all well preserved, so bitterly painful for me now is an error of

Greiner, who packed a psychrometer for me, which does in fact go down to minus 30 degrees Réaumur, a temperature unknown here, but it also is only capable of measuring up to plus 30 degrees Réaumur, which is now, when we often have 33-34 degrees in the shade [41.25-42.5 Celsius] quite useless for my observations. I therefore have to draw your attention to the fact that my observations can only claim to be completely accurate up to 30 degrees, because if the temperature is any higher I have to resort to an ordinary everyday thermometer, since another instrument from Greiner, that I brought with me, broke.³⁴ The carelessness and also the ignorance about climatic conditions in Australia seem to have had a detrimental effect on Otto Schomburgk's scientific ambitions. He begs Prof. Ehrenberg and Prof. Dove to send him an instrument capable of measuring higher temperatures. „With the present instrument my tables would only be patchwork, since the extreme temperatures are only based on an ordinary thermometer, made by some obscure mechanic in Berlin, which was given to me by a helpful neighbour.“³⁵ In his letter to Prof. Dove, Otto stresses that „until now no observations have been made in South-Australia“ and gives that as a reason for the „total ignorance about temperatures and climate, which is so full of contrasts, as anywhere in Germany.“ And he adds in explanation: „We have had a difference of 20 degrees within 24 hours numerous times.“³⁶ The three letters Otto sent to Germany at Christmas 1849 are the only evidence we have documenting his scientific endeavours. After five months he seems to have fallen silent and there are no observations of climate from Richard either. Otto continued to live in Buchsfelde for another 8 years, where he died in 1857. But in the minutes of the Academy of Sciences traces of Otto can still be found. It says in the minutes of April 10th 1851: „Mr Dove has informed us of news about Mr. Schomburgk from Adelaide and proposed that an excerpt of the scientific part be accepted into the monthly journal. signed Ehrenberg.“³⁷ Other minutes of Nov. 6th 1851 reveal the following: „Mr Dove read out a letter from Schomburgk from Australia containing a complete year's meteorological observations.“ The last entry is on January 12th 1854: „Mr Dove presented a meteorological diary by Mr. Otto Schomburgk from Buchsfelde near Adelaide in South Australia, ranging from July 1851 to June 1852 (the 3rd year), and made some accompanying remarks concerning the relevance of these observations. The journal contains observations of temperature, atmospheric pressure, humidity, wind direction and warmth of the soil to a depth of three feet.“³⁸ In spite of an intensive search in the archives of the Academy in Berlin I have been unable to locate these journals. There was also no indication that these journals had ever been published. It seems therefore that an interesting document detailing climate data from the early years of the colony has been lost.

In the early 1850s, to be precise in July 1851, a well-known liberal German travel writer by the name of Friedrich Gerstäcker, who took part in the 1848 revolution, visited Buchsfelde and wrote about it in his travel journal: „While Richard Schomburgk is an excellent gardener, his brother Otto combines all three academic faculties in one person, he does not only work in the fields and the garden and helps out as an architect and veterinarian, he also runs significant medical practice in the area, mainly in obstetrics, and has also been appointed justice of the peace of his small district and will soon also preach - once the Buchsfelder people have built a church, which is happening at the moment.“³⁹ Otto also worked as a journalist, he was co-founder of the „Südaustralische Zeitung“. Gerstäcker describes their situation as follows: „A large garden, laid out by Richard Schomburgk, which has taken him a great deal of trouble and hard work, is nearing completion, vines and orchards have been planted, several buildings, which they started in order to be more comfortable will probably also be finished this coming winter, and they can say that in this foreign country, after having left their homeland, the worst is over for them.“⁴⁰ Gerstäcker, however, does not stop there, on this conciliatory note. He realizes that a price has been paid for this arduous and fragile success, a price we would today describe with the modern notion: „Migrants face a death of self“. First the Schomburgks leave behind friends and family, then on Christmas Day 1849 they receive the news that their father has died of Cholera in Berlin. This affects the brothers deeply and makes the separation from their world of origin painfully clear. The challenges they are confronted with in their new environment also demand that they let go of ambitions which formerly were integral parts of their identity. One can only meet these new demands, if one is ready to part with some aspects of the old self. Grieving about the loss of the old identity coincides with the construction of a new identity. Otto tries to meet the various new demands by committing himself to an enormous workload. But already in his first letter to Ehrenberg, after only 4 months in South Australia, Otto implores him not to forget him: „If you leave me I will sit here at the end of the world like Emperor Redbeard in the Kyffhäuser mountains, not

having the slightest idea of what is sought and achieved in the fields of science in Germany.⁴⁴¹ For Richard, who quite consciously always called himself only a gardener, the move from Berlin to Adelaide might have been easier. We do not have any documents pertaining to this period of his life. His later letters are full of complaints about the difficult working conditions. The journalist Gerstäcker uses a simple picture to impressively illustrate the problems of identity. „It is much easier to transplant a turnip than a rose, the one can be pulled up as it is from the soil and then stuck and patted down elsewhere; after the first rain or the first can of water it will be completely at home. But with the rose, the thousands of roots and fibres, if not torn off when it is taken out, have to be cut back to prepare it for the chosen cramped accommodation, and that often hurts the poor rose terribly. It will, nevertheless, grow and flower, and in the following year put forth the most beautiful buds and flowers.“⁴⁴² We do not know how much Otto's new life in Buchsfelde was influenced by mourning about the old life he had left. At the age of 47 he died in Buchsfelde.

Chapter 3

It is only after the death of his brother Otto that Richard's voice can be detected. The Museum of Natural History in Berlin preserves not only his animal collection but also the letters he wrote to colleagues at the museum. Most of the letters are largely devoted to precise descriptions of the specimens he sent over, but there are also remarks about the progress of his agricultural endeavours. As an illustration I will give you some samples. The „hot wind“, this dreadful guest, capable of destroying the efforts of a whole year with its suffocating heat, has become Richard's permanent companion. He writes in a letter dated April 24th 1861: „I have already informed Prof. Ehrenberg that seven successive bad years, which not only devastated all sorts of garden and field crops but also the greatest part of my extensive vineyard and orchard have taken me back rather than forward! That is why the fight for my existence has left me little or no time to continue my favourite studies, the natural sciences, in such a way, as I would have wished for. I hope things will take a turn for the better, the seven lean years are behind us and I hope the seven prosperous are before us. Then my circumstances will improve and I will have more time and means at my disposal to satisfy your wishes.“⁴⁴³ Nearly a year later, on January 21st 1862, Richard writes, that he has „rather exploited“ his „neighbourhood“, meaning that he has already sent to Berlin all the specimen he could find in his area. And he asks for financial support of 30-40 pounds for a trip to the Murray. „Everything is very expensive here.“ But the hopes for an improvement of his condition have been dashed. „Unfortunately a fierce storm raging for three days followed by 11 days of heat, when the thermometer often climbed to 39 degree Réaumur in the shade and seldom dropped below 30 degrees Réaum. at night has again destroyed all our crops. The apples and pears were literally fried on the trees and the grapes turned into raisins. This is the 8th year of crop failure!!!“⁴⁴⁴

The following letter later that year giving advance notice of a consignment of a substantial collection of animal specimen also contains some more upbeat news. He proudly writes about two cases of Buchsfelder wine which were also packed in the big boxes and were meant for His Royal Highness the Crown Prince. Richard explains this consignment: „During his visit to the world exhibition [in London] he [the Crown Prince] took a very special interest in the products of our young country exhibited there, but he did not have the opportunity to taste the South Australian wine on exhibition, especially since the local promising viniculture is probably going to be our main product in the future. And South Australia owes this solely to the Germans and among these especially the Prussians.“ With regard to the state of his garden he writes: „Even though until now the vintage looks promising for this year, you cannot count on it - in this strange land - until it is safely in. One day of hot wind often dashes the highest hopes.“⁴⁴⁵ And the word strange (in strange land) is underlined. Richard's understanding of the complex climatic condition of his new home grew with every year, but he had not yet had any experience with the irregular cycle of ENSO (El Niño Southern Oscillation). It was in 1865 that the economic growth cycle, in evidence since the 50s, came to a halt. The Atlas of South Australia tells us: „A severe drought occurred in 1864-65. Eighteen sixty-five was the first year in which the numbers of sheep were fewer and the production of wheat and wool less than the previous year. The Government Statistician's annual report to Parliament stated „... the immense wheat field to the north of Gawler, averaging in ordinary seasons from 15-17 bushels per

acre, only yielded from five to eight.”⁴⁶ On May 21st 1865 Richard reports to Berlin: „Unfortunately my financial conditions have not permitted me to travel to the Murray. The promising harvest which I had hoped would provide the means for this journey was again, as so often, a failure. The seedlings were destroyed partly by Black Rust followed by a new even more damaging ally „the Red Rust“ and partly by the terrible drought. The latter also destroyed the fruit in the orchards and vineyards. From October to April only a few showers occurred - hardly settling the dust. (I have sent Dr. Ule notes about this drought and its repercussions for the magazine „Nature“.) The yearly rainfall in the plains was only 15 and a half inches. The herds of cattle and sheep suffered terribly from water and feed shortage so that thousands fell victim to it. The prolonged drought sent many strange guests from the outback to the coast, especially birds, who had never before ventured into the settled districts and that is why the oldest colonists did not recognize them.“⁴⁷ At the end of this letter Richard once again mentions a parcel with „Meteorological Observations. South Australia“ sent to Prof. Dove.

Chapter 4

The year 1865 was probably the hardest year that Richard Schomburgk experienced in Buchsfelde when „all the work in fields and garden“ rested on his shoulders alone, but it also finally freed him from the insecure existence of a farmer and gave him more time for his scientific research. After the death of George William Francis, the first Director of the Botanic Garden, Schomburgk, now in his 54th year, was offered the position of director.

Francis and Schomburgk agreed in their critique of the exclusive concentration on the three Ws: wheat, wine, and wool as the economic basis of the colony. (Schomburgk, however, would not have include viniculture.)⁴⁸ But the reasons given by them vary considerably. While Schomburgk’s recommendations are based on the experience of the exhausted state of the soil, the susceptibility to diseases and the special climatic conditions of the Australian continent, Francis seems to be motivated more by the extravagant needs of the English upper classes who want more than mutton and damper for dinner every day. They would also like to recreate the familiar backdrop of the mother country: „How delightful, of a summer’s evening, to hear the English blackbird, and in the morning the English skylark? I should like to see again my old impudent friend the sparrow, and the robin, and the wren; even the cuckoo would remind us of merry England; and a run for a few miles over our broken mountains after a wily old fox would be no bad sport (to those who like it).“⁴⁹ Francis hardly mentions economic and environmental arguments.

Schomburgk’s work however as Director of the Botanic Garden, was most certainly marked by his experience of the devastating drought and the intensive work in his garden and on his fields. 15 years of agricultural experience and on top of that - on Sundays - meticulous observations of the native flora and fauna were an arduous but also very useful learning process. The naive optimism of the first years has given way to a more careful analysis. His recommendations to farmers and politicians are clear enough. He criticizes the imbalance caused by monoculture as well as the rapidly progressing deforestation due to the expansion of the colony. He says in a meeting of the Chamber of Manufactures: „It must be evident to all that the period has arrived for a change in our system of husbandry. The efforts of our agriculturists have now to a considerable extent to be directed to other objects than that of wheat-growing, which has reached its utmost limits - [...] The fertility of large tracts of our soil has been already exhausted for want of attention to the warnings of science. Warnings such as these, constantly repeated, have been less heeded than they ought to have been. ... The vital question with us is, what shall we do - which are the plants practical and useful to add to the ordinary occupation of our agriculturists? I am sorry to say they are not so very numerous. The peculiarity of our climate, especially the continuous droughts, are not favorable to many useful commercial plants - they are decidedly adverse to tropical and subtropical agriculture. ... We may know all about the structure of such a plant, its life, its distribution, its culture, its use - we do not know it completely because for our particular purpose we must know also its natural enemies.“⁵⁰ The multitude of initiatives he proposed, spanning from the recommendation to establish Forest Reserves⁵¹ to the discussion about the negative effects of introduced plant species, I cannot

elaborate on. The reconciliation of climate and flora with successful and profitable agriculture which does not ruin the environment were the practical objectives of Richard's work in his remaining years in South Australia. He never lost sight, though, of the importance of economic factors, but for him expansion did not necessarily mean progress. As the Atlas of South Australia states plainly: „For the first 125 years of European settlement the clearance of native vegetation was usually equated with `progress'.⁵² But this was most certainly not Schomburgk's position: „It is an historical fact that whenever man settles in a new country he not only carries the weeds that are most troublesome in cultivated ground along with him, but he also exercises a potent influence over the indigenous vegetation, especially when he engages in agricultural and pastoral pursuits. The plough, the axe, the flocks and herds, are enemies to the existing vegetation, and as cultivation advances each representant of the herbaceous flora, perennial and annual, succumbs to the foreign influence. But the plough, the axe and herds are not the sole destroyer of the native herbage, for with cultivation are introduced noxious weeds, and the new-comers, finding a suitable soil and climate, spread with alarming rapidity, and become possessors of the ground, ejecting the indigenous herbaceous plants, and taking their places.“⁵³

Richard Schomburgk was not a theoretical mind, purely academic work was relegated to the after hours out of sheer necessity and consisted mainly in the collection and description of the native flora and fauna. Until now this part of his life's work has remained large unacknowledged, because it is all still hidden in letters and collection in museums and archives.

Endnoten

- 1 Paper delivered, Adelaide, South Australia, June 2003
- 2 Alexander von Humboldt: Vorwort [and] über einige wichtige Punkte der Geographie Guyana's. In: Otto A. Schomburgk (Ed.): Robert Hermann Schomburgk's Reisen in Guiana und am Orinoko während der Jahre 1835-1839. Nach seinen Berichten und Mitteilungen an die Geographische Gesellschaft in London. Leipzig, XV-XXIV, 1-39. See also Ulrike Moheit: Alexander von Humboldt und Australien. In: Petermanns Geographische Mitteilungen, 138, 1994/3, pp. 171-181.
- 3 Richard Schomburgk: Reisen in Britisch-Guiana in den Jahren 1840-1844: nebst einer Fauna und Flora Guiana's ...; mit Abbildungen und einer Karte von Britisch-Guiana. 3 Vols. Leipzig 1847-48.

In a reference written for Richard Schomburgk Humboldt emphasizes the importance of this journal and recommends that the varied botanical and zoological discoveries be recorded in an appendix. See letter by A. v. Humboldt to Richard Schomburgk, Potsdam 6. 1. 1846; in: Staatsbibliothek zu Berlin, Hs.-Abt., Autographensammlung I/184.
- 4 See letter by Otto Schomburgk to Alexander von Humboldt, Hamburg, 21. 3. 1849; manuscript in Museum Jijón y Caamaño, Quito. The letters are probably now kept in Banco Central del Ecuador. Manuscritos (Serie 14, Colección 37 Archivo Histórico) 02489.
- 5 Humboldt to Bessel, Berlin 11. 8. 1844. In: Briefwechsel zwischen Alexander von Humboldt und Friedrich Wilhelm Bessel. Ed. Hans-Joachim Felber. Berlin 1994 (Beiträge zur Alexander-von-Humboldt-Forschung; 10), p. 199. Translation from the German (my translation)
- 6 Otto Schomburgk to Alexander von Humboldt, Buchsfelde 25./26. 12. 1849; manuscript in op. cit. (n. 4).
- 7 See Otto Schomburgk: [published under the name Richard Schomburgk with the title] „Herrn R. Schomburgk meteorologisches Tagebuch seiner Reise von Hamburg nach Adelaide im Sommer 1848 [!]“ in: Monatsberichte Über die Verhandlungen der Gesellschaft für Erdkunde zu Berlin. Red. von Dr. T.E. Gumprecht. Neue Folge: Achter Band. Berlin 1851, pp. 268-282.
- 8 Jared Diamond: Guns, Germs, and Steel. The fates of Human Societies. New York 1999, p. 296.
- 9 R. L. Burt and W. T. Williams: Plant introduction in Australia. In: R. W. Home (Ed.): Australian Science in the making. Cambridge 1988. p. 252.
- 10 Auguste Hardy: L' Algérie agricole commerciale, industrielle. Paris 1860. p. 7. (my translation)
- 11 Ian Inkster and Jan Todd: Support for the scientific enterprise, 1850-1900. In: R. W. Home (Ed.): Australian

- Science in the making. Cambridge 1988. p. 119-20.
- 12 J. M. Powell: Environmental management in Australia, 1788-1914. Oxford 1976, p. 72: „Whatever the mixture of motives, the acclimatization societies at their worst made gigantic and notorious errors, and at their best greatly assisted the establishment of agriculture and rural industry. In the seventies, long before the colonial governments chose to make a direct and committed entry into the field via specially-created resource management agencies, these voluntary bodies were generally very active and influential.“
- 13 Diamond, op. cit. (n. 8), p. 302-3.
- 14 Barbara J. Best: George William Francis: First Director of Adelaide Botanic Garden. Adelaide 1986, p. 24.
- 15 George William Francis: The Acclimatisation of Harmless, Useful, Interesting, and Ornamental, Animals and Plants, Being a Paper read before the Philosophical Society, Adelaide, South Australia on May 13th, 1862. Published by the Philosophical Society for gratuitous distribution. Adelaide 1862. See Louise Ashmore: Harmful, Useful, Interesting and Ornamental: Perceptions of Diversity in Nature. Honours Thesis University of Adelaide 2002.
- 16 Francis, *ibid.*, p. 7.
- 17 *Ibid.*, p. 20.
- 18 Otto Schomburgk to Alexander von Humboldt, op. cit. (n. 4)
- 19 Otto Schomburgk to Alexander von Humboldt, op. cit. (n. 6)
- 20 Heinrich Wilhelm Dove (1803-79) German meteorologist, born in Liegnitz. He was professor of natural philosophy at Königsberg and Berlin. His *Distribution of Heat* was published in 1853 by the British Association, and his *Das Gesetz der Stürme* (1857) has also been translated.
- 21 Christian Gottfried Ehrenberg (1795-1876) German naturalist, born in Delitzsch in Prussian Saxony. Professor at Berlin from 1839, he travelled in Egypt, Syria, Arabia and Central Asia. His works on microscopic organisms founded a new branch of science, and he discovered that phosphorescence in the sea is caused by living organisms.
- 22 Otto Schomburgk to Humboldt, op. cit. (n. 6).
- 23 Alan Atkinson and Marian Aveling (Ed.): *Australians 1838*. New South Wales 1987, p. 125: „In South Australia there were no convicts at all, and the principles by which the colony had been founded, aiming as they did at a thoroughly British settlement, made it hard for the settlers to hope for many Asians.“
- 24 Otto Schomburgk to Christian Gottfried Ehrenberg, 25. 12. 1849, Buchsfelde, in Archiv der Berlin-Brandenburgischen Akademie der Wissenschaften, Nachlaß Christian Gottfried Ehrenberg.
- 25 Otto Schomburgk to Humboldt, op. cit. (n. 6).
- 26 Otto Schomburgk to Ehrenberg, op. cit. (n. 24).
- 27 Otto Schomburgk to Humboldt, op. cit. (n. 6).
- 28 Otto Schomburgk to the Royal Prussian Academy of Sciences, Berlin, 17. 1. 1849 manuscript in: Archiv der Berlin-Brandenburgischen Akademie der Wissenschaften. Bestand Preußische Akademie der Wissenschaften (1812-1945), II-VII, 76. Unterstützte Unternehmungen der physikalisch-mathematischen Klasse 1847-1859, p. 22.
- 29 *Ibid.*
- 30 Prof. J. Encke, Berlin, 16. 3. 1849, op. cit. (n. 28) p. 52.
- 31 *Ibid.*
- 32 Otto Schomburgk to Heinrich Wilhelm Dove, Buchsfelde, 25. 12. 1849, manuscript in: Staatsbibliothek zu Berlin - Preußischer Kulturbesitz. Handschriftenabteilung, Slg. Darmst. Australien 1849: Otto Schomburgk.
- 33 Otto Schomburgk to Humboldt, op. cit. (n. 6).
- 34 *Ibid.*
- 35 Otto Schomburgk to Ehrenberg, op. cit. (n. 26).

- 36 Otto Schomburgk to Dove, op. cit. (n. 32).
- 37 Archiv der Berlin-Brandenburgischen Akademie der Wissenschaften. II-V, 32 Protokolle der Sitzung der Gesamtakademie (10. 4.1851), p. 88.
- 38 Archiv, op. cit. (n. 37), II-V, 35 Protokolle der Sitzung der Gesamtakademie (12. 1.1854), pp. 3-4.
- 39 Friedrich Gerstöcker: Reisen. Stuttgart. Tübingen 1853, Vol. 4 (Australien), pp. 328-9.
- 40 Ibid., pp. 327-8
- 41 Otto Schomburgk to Ehrenberg, op. cit. (n. 24).
- 42 Gerstäcker, op. cit. (n. 39), p. 328.
- 43 Richard Schomburgk to Wilhelm Peters, Buchsfelde, 24. 4. 1861, in: Museum für Naturkunde der Humboldt-Universität zu Berlin. Historische Bild- u. Schriftgutsammlungen. Bestand: Zool. Mus. Signatur: S 1, Schomburgk, R. I, pp. 1-2.
- 44 R. Schomburgk to W. Peters, Buchsfelde, 21. 1. 1862, op. cit. (n. 43), p. 14.
- 45 R. Schomburgk to W. Peters, Buchsfelde, 24. 11. 1862, op. cit. (n. 43), pp. 18-19a.
- 46 Atlas of South Australia. Ed. by Trevor Griffin and Murray McCaskill. Adelaide 1987. p. 16.
- 47 R. Schomburgk to W. Peters, Buchsfelde, 21. 5. 65, op. cit. (n. 43), pp. 50-54.
- 48 Atlas of South Australia, op. cit. (n. 46), p. 42: „In 1865 South Australia had one-half of the land under wheat in Australia, a position it still maintained in 1890. ... Throughout the nineteenth century, wheat growing on family farms was seen by politicians and public alike as the firm and certain basis for future prosperity.“
- 49 Francis, op. cit. (n. 14), p. 10.
- 50 Richard Schomburgk: Capabilities of the various districts in the colony. Read before the Chamber of Manufactures. In: Richard Schomburgk: Papers read before the Philosophical Society and the Camber of Manufactures. Adelaide: 1873, p. 102.
- 51 See Richard M. Schomburgk: Influence of Forests on Climate. In: Richard Schomburgk: Papers read before the Philosophical Society and the Camber of Manufactures. Adelaide: 1873.
- 52 Atlas of South Australia, op. cit. (n. 46), p. 57.
- 53 Richard Schomburgk: On the naturalised weeds and other plants in South Australia. Adelaide 1879, p. 3.