

The English hunger for desolate places

*The Royal Society Mato Grosso Expedition,
1967–1969*

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Introduction

From 1967 to 1969, upon invitation by the Brazilian government—then a military dictatorship—an *ad hoc* expedition from the Royal Society (RS) and the Royal Geographical Society (RGS) established a research station, in which 44 British and 20 Brazilian scientists performed studies relative to various fields of knowledge. The expedition targeted a practically unexplored area of Central Brazil, at the same time a road was being built to link Xavantina, Mato Grosso, and Manaus, Amazonas, which crossed still poorly known areas along the northern and southern borders of the Xingu National Park.

The Mato Grosso Expedition¹ took place amidst post-war debates on the future role of the RS, as well as on the need for a shift in the overall focus of research, i.e. from so-called ‘pure science’ to more practical approaches within the context of postcolonial interests. To the RS, the expedition provided an occasion to expand its international collaborations, as part of its new goal of overcoming the local boundaries of ‘pure science.’ It was not, thus, by chance that during the 1960s, the RS increased the number of expeditions to remote locations around the world, looking for data likely to contribute to the development of newly independent former colonies and underdeveloped countries. As Ross Corey pointed out, the multifarious nature of European environmental intervention did not only include the plunder of tropical ecosystems, but also efforts to limit, or reverse, damage: “Conservation was the flip-side of extraction.”²

British post-colonial science has been scarcely addressed in studies on the practice of scientists, research institutions, and scientific ideas in

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1900s. Therefore, the Mato Grosso Expedition represents a significant case: the British had access to still unexplored lands presenting their original ecological features, a situation favourable to the development of scientific approaches to the survey of a considerable part of Brazil, which only much later came to be explored by local scientists, i.e. when the environment had already changed following economic development.

The sources for the present study were unpublished documents deposited at the RS, catalogued as *The Central Brazil Expedition Papers* (EXP/6). This file adds up to about 2,000 pages which cover several aspects of the expedition in the period from 1965 to 1974. Previously allocated to the no longer existing Expeditions Unit, these documents were transferred in 2012 to the archive collection for on-site use.³ They include, among others, documents from expedition members (BP/RS), the Foreign Office (FO/RS) and the British Council (BC/RS), Expedition Committee files (EC/RS) and RS papers rated confidential (CP/RS) at the time the expedition unfolded.

The last grand expedition

In the front page of its March 31st, 1967, issue, *The Times*, under the flamboyant headline “Braving Wilds Where Others Have Died,” announced the departure of “a scientific expedition in the Mato Grosso state of Brazil where the Brazilian Government is making the last great land exploration in the world, and where members of two previous British expeditions have lost their lives.”⁴

This area had special appeal to the British imagination, since it was there that in 1925, Colonel Percy Harrison Fawcett (1867–1925) had conducted an expedition to find a lost city he called “Z.”⁵ Fawcett disappeared that same year, and in 1928, Commander George Miller Dyott (1883–1972) travelled to Mato Grosso looking for the lost party. Unable to find them, he inferred the natives to this “legendary and mysterious” region had killed the Colonel: “I do not know of any place in South America about which we have so little trustworthy information as the Central Brazil plateau. There, indeed, fact and fable are mixed in such a way that it is impossible to assert with any certainty where one begins and the other ends.”⁶ As the anthropologist David Maybury-Lewis wrote in 1965: “Nobody goes to Central Brazil. They make expeditions to it.”⁷

Englishmen would, indeed, return to this area—as unknown and as practically unexplored as in Fawcett’s times—now upon invitation by the Brazilian Government. In 1965, the British Foreign Office informed the RGS about an invitation made by the Central Brazil Foundation (Fundação Brasil Central, FBC) to various countries to send researchers to Brazil

to explore a region along a road under construction,⁸ linking Xavantina, Mato Grosso, and Manaus, Amazonas, and crossing poorly known areas along the northern and southern borders of the Xingu National Park. This road was intended to be the beginning of a system to be connected in the future to Brasilia and the more developed Southeast region. Within this framework, the FBC invited potentially interested countries to conduct a three-year scientific research programme.⁹

Founded in 1943, on the occasion of the Roncador-Xingu Expedition,¹⁰ the focus of the FBC was on conquering and colonising the area between the upper courses of the Araguaia and Xingu Rivers. Breaking new ground was the goal of the so-called ‘March to the West,’ namely, a colonisation and border occupation programme established by President Getúlio Vargas (1882–1954) in the first years of his long dictatorship (1930–1945).¹¹ Within this context, the role of the FBC was to extend the government’s authority into so-called territorial ‘gaps,’ Amazonia and the Central-West region in particular. Reporting directly to the president, the FBC fostered the colonisation of a vast area known as Central Brazil. With many, albeit vague attributions, until its closure in 1967 the FBC built towns, airfields and roads, established commercial areas, administered railways, and managed settlements and worker migration.¹² Nevertheless, such broad scope of activities was inversely proportional to the financial resources available, which was the cause of a large part of the Foundation’s problems, and together with other factors led to its extinction and incorporation into the Superintendence for Development of the Central West (SUDECO).¹³

Indefinite and empty, inhabited by people allegedly unable to enter rational economic life and scientific exploration, Central Brazil, according to the FBC, ought to be transformed into a kind of internal colony within Brazil, with emphasis on its integration into the national development ethos.¹⁴ This objective was even much more relevant, inasmuch as this area seemed to have substantial economic potential.

Science was expected to play a pivotal role in the actualisation of such potential. The overall goal was to create spots of civilization rationally distributed across regional ‘voids’ through also rational management. According to an FBC report, “although it is not a truly agricultural area, there are in Central Brazil spots of exceptionally fertile land for intensive agricultural exploitation, and formation of colonial centres.”¹⁵ Therefore, starting 1950, the occupancy of the Araguaia Valley lands accelerated, especially in locations with some transport and urban infrastructure.¹⁶

Along the 1950s the FBC gradually lost its role of spearhead in the exploration of unknown areas to become a local development agency.¹⁷ New government policies began to be implemented only with the onset

of SUDECO operations in 1968, a large part of which had been devised to promote agricultural modernisation. The Araguaia Valley became a target of private agricultural investment with governmental incentives. The conflict over the land, however, did not cease, but continued under new terms and the attentive eyes of the military dictatorship.¹⁸

While the FBC was charged of managing the new road, the invitation to foreign governments to send scientists to Brazil seemingly came from upper echelons, in relation with future projects of agricultural expansion to be carried out by SUDECO. While conserving many of the FBC attributes, SUDECO was designed basically as a planning agency, based on the ideology of scientific neutrality, class interests and rational development, shortly, “as an instrument that provided scientific support to the national development programme all across the Central-West region.”¹⁹

With the birth of SUDECO, Central Brazil came to be seen as an ‘economic border,’ which involved incorporating new ‘fronts’ of production. One example is the Cerrado—a vast savanna-like ecoregion in Central Brazil—where natural pastures had already begun to be sown during the period under FBC management. Much incentive was then given, over a short period of time, to the development of agriculture in the Cerrado through imported “technology packages.”²⁰

These contextual factors help explain why a scientific expedition bringing in British expertise awakened much interest in the government. Any scientific survey of this region—which the military considered crucial—required the presence of leading scientists to determine its agricultural, livestock production, and mining potential. Given the military government ‘mistrust’ of the Brazilian universities,²¹ such scientists had to be recruited abroad, preferably in countries with large experience in colonial scientific surveying. Foreigners ought to be reliable, and to know how to deal with regional agrarian and environmental issues, potential mineral discoveries, the native population, and political movements. One might say that a persisting relationship between science and empire made the British the natural choice, even after their colonial decline.

Shortly, a British expedition seemed the ideal solution to the military government, since it combined expertise and colonial experience in scientific exploration of areas untouched by modern science with foreign reliability—as was mentioned above, an essential aspect for any action in a still unknown region of an enormous complexity of environmental, indigenous, agrarian and political factors. The British colonial *modus operandi* matched the Brazilian military’s beliefs in neuter science and in the preservation of territorial integrity.

As Roy MacLeod observed,²² starting in the end of the nineteenth century the British had established a pattern of “imperial science,” consisting

of a network of structures, institutions and scientists from Cambridge, Edinburgh, London and Oxford, which could serve variable political ideologies and objectives. Following decolonisation, the British began investing in economic influence as a way to perpetuate their power. The formal Empire changed into informal influence, instead of direct intervention, and with this shift science gained an even more significant role than in colonial times.

To be sure, starting First World War, “imperial science” became “science for development,” according to which view science and scientists were catalysers of development.²³ Economic opportunities needed to be found, the tropical environment had to be transformed into a safe place, and technical issues relating to production, processing and distribution had to be solved, all in the name of greater return on investment. Agriculture, abandoned to the locals in imperial times, gained in relevance within the ‘science for development’ framework, under the Colonial Office’s administration until 1964. Improvement demanded science and planning, which therefore operated as the dominant ideology behind modernisation and change. Analysis and classification of plants and soils began to serve practical aims, and enabled demarcating natural areas as the basis for forestry and agricultural planning.²⁴ Protecting resources was crucial to optimise the long-term economic capacity of the land, through the promotion of a rational use by the more “primitive” inhabitants.²⁵ Technical reports, projects, and international missions contributed to the continuity of older practices, even in postcolonial times.²⁶ Ideas advocated by scientists and technicians at the end of the British colonial period were used to ground new notions of development and environmental conservation. As a result, modern conservationism, the model for planned use of the land, and the environmental evaluation programs of the 1970s and 1980s betrayed the age-old imperial concern with increasing the capacity of the land to meet the needs of the growing population.²⁷

“The Brazilians want us back”

In 1966, the RGS accepted the Brazilian invitation and extended it to the RS to form a joint committee, which was first chaired by Tom Harris (1903–1983), a botany professor at University of Reading, then by Sir Ashley Miles (1904–1988), the RS vice-president. George Hemmen, chair of the RS Expeditions Committee, observed that the road that was being constructed “will go across one of the few regions in the world still not open to scientific research, thus providing opportunities for original studies that are not possible elsewhere”.²⁸ In parallel, the Foreign Office had sought the opinion of the British Ambassador to Brazil, Sir John

Russell (1914–1984) on the actual relevance of the now designated “Mato Grosso Expedition.”²⁹ In December 20th the answer came through the Embassy advisor, Reginald L. Secondé (1922–2017):

According to McKenzie’s report to the RS and RGS, an Expedition of British scientists to Mato Grosso is a unique opportunity for the British Government. To the best of his knowledge, all expeditions of this kind only occurred in colonial Empire territories or were based on ships. Never before they were performed in an independent country. At most, they had their headquarters at some governmental organization, such as the case of the expedition to Borneo.³⁰

Archive review allows inferring that the British government had a political interest in the Expedition. In a letter to Lord Blackett (1897–1974) Russell, the RS President, asserted: “English participation in this international expedition will be optimal for the reputation of England in Brazil”.³¹ The same idea transpires in a report by Prof Eric H. Corner (1906–1996), advisor to the Mato Grosso Expedition and head of the RS expeditions to northern Borneo from 1961 to 1964. After a visit to the base camp, he observed: “The group needs to become aware that the Mato Grosso Expedition is highly relevant for the Anglo-Brazilian relations, as also the British Council and the Embassy made quite clear.”³²

The British concern with recovering their prestige and economic space in Brazil—lost to the United States since the 1903s—is perceptible in the reports written by British ambassadors to Brazil from 1964 onwards. In 1965, the ambassador, Sir Leslie Fry (1908–1976) complained, “the economic outcomes between our countries are still disappointing.” The following year, the new ambassador, Russell, reported there was a movement favourable to the British interests, which perhaps could explain why the Americans had not been chosen to lead the expedition:

There are strong anti-American feelings in Brazil. One day six Americans were jailed accused of smuggling Brazilian atomic materials. They find examples of American “imperialism” in everything, which, as they say, interferes with the Brazilian life: military missions, mapping teams, aid institutions, Alliance for Progress committees, technical aid commissions, Peace Corps volunteers. The list is endless, and all of them are somehow suspect of being a part of a strategy to keep Brazil as a subaltern nation.³³

In Russell’s view, the new military government felt compelled to achieve some independence from the United States, and with this the relations between Brazil and the United Kingdom had substantially improved: “Small changes in the older diplomacy, political contacts, cultural manifestations, invitations and visits, attention to Brazilian views, some flattery

and adulation suffice. The Brazilians, I believe, want us back. They resent our apparent indifference of the past years.”³⁴

Russell reported that 1968 was “a good year for us, British,” and among data showing a growth of plane and ship sales, he mentioned the Mato Grosso Expedition hovercraft that sailed the Amazonas River. Upon reporting on the unlikely occurrence of a Communist revolution, Russell used a metaphor he had learnt on a visit to the Mato Grosso base camp: “Nothing will happen, the overall poverty notwithstanding. The Brazilians, resigned, even make jokes about their misery. As they say in Mato Grosso, ‘when a poor eats chicken, one of either is sick’.”³⁵

To enable the expedition’s work, the RS and RGS signed agreements with the Brazilian National Research Council (CNPq), SUDECO, and University of Brasilia (UNB). Funding was obtained from the Aston Martin Foundation, in the United States, in addition to the support of the Ministry of Overseas Development (MOD), namely, an offshoot of the former Colonial Office created to manage post-colonial British interests in former colonies and underdeveloped countries. *The Times* signed an agreement with both societies to report on the expedition and entrusted this task to the journalist Anthony Smith (1926–2014), who was thus sent to Brazil. Later on, Smith wrote a book in which he described the experience.³⁶

A reconnaissance mission took place from April through October 1966, chaired by a former agricultural advisor to the Colonial Office, A.F. MacKenzie, and Iain Bishop (1938–2007). MacKenzie was an agricultural advisor to MOD and a member of the technical staff of the extinct Colonial Office. According to him, “the main interests of a British expedition should be the ecology of plants and animals and the potential use of the land.” His report further suggested, “an experienced scientist should precede the arrival of the main group to pave the road for the scientists.”³⁷ However, Bishop, the appointed head of the expedition, was not precisely an ‘experienced scientist.’ A zoology lecturer at University of Leicester, he had worked as assistant keeper of zoology section of the British Museum. Yet going for him, he had been the head of the Guy’s Hospital Expedition to Amazonas in 1964, and thus he stated:

I put at the RS’s disposal my information and the experience I acquired in this expedition and the contacts I made with Brazilian scientists. During my earlier visit to Brazil, I followed up the construction of a road from Manaus to Itacoatiara, also in Amazonas. I want to suggest that ensuring the cooperation of the highest-level Brazilian authorities is crucial, as well as including Brazilian scientists in the expedition, [as it is] the single way to relieve the English from the unavoidable countless administrative obstacles that impair the efficiency of working in Brazil.³⁸

It thus seems that the inclusion of Brazilians in the Mato Grosso Expedition—ubiquitously mentioned in the documents—was due to practical reasons, as is also evident in a letter sent by the British Council to the RS, dealing with the difficulty to find maps for the expedition members:

There is an increasing feeling among the Brazilians, sharp insecurity about foreign groups. We have examples of letters sent to journals by right-wing elements which raise suspicion on the RS expedition. A colonel even came to assert it would be composed of “scientists and soldiers.” To control such rumours, the involvement of Brazilian scientists and their organizations is crucial. Try to recruit one or two local investigators to work with the English in Xavantina. Without this, very hardly the War Ministry will deliver the maps to groups of foreigners.³⁹

Following the return of MacKenzie and Bishop to Britain, the latter was appointed head of the expedition and travelled to Brazil in April 1967 with his wife. In July, the British established a base camp in Serra do Roncador, about 260 kilometres away from Xavantina, this location having been selected as a function of the main scientific interests of the expedition: soil study, botany and geomorphology.⁴⁰ In time, the base camp became a research station, with 44 British—alternating every three months—and 20 Brazilian scientists who conducted studies across an area of 20 square kilometres around the base along the following two years. However, changes within the FBC resulted in the interruption of the road construction work in June.

This development caught the British unawares, as internal correspondence of the Foreign Office shows. The embassy First Secretary, R.G. Sheridan (1921–2013), thus described a meeting with the new president of the FBC:

Iain Bishop and I had a depressing meeting with the new President of the FBC, Colonel Alberto Fortunato. He told us he was appointed by the State Secretary to put an end to the Foundation, which will be replaced by a Superintendence following the SUDENE and SUDAM model. SUDECO will be responsible for the planning, development and capital investment in the area. The construction of the new road to Manaus was stopped. All the Expedition plans, which rely on the FBC’s logistic support, are worth nothing. Bishop will have to revise his plans quickly before the arrival of the first group of scientists.⁴¹

The head of the expedition came even close to cancel the project, but an anonymous memo from October 12th, 1967, warned him against such an idea: “This is unthinkable due to the campaign made by the Royal Society, which much wants to tighten the scientific relations with South America.”⁴²

This warning points to a singular moment in the history of the RS. Following a short and limited collaboration with the British government during World War I, in the interwar period the RS resigned its role as imperial catalyser.⁴³ In 1945, on the eve of the election of the new president of the Society, 20% of the fellows signed a petition requiring renovation, because they believed the RS had to play a more substantial role in the control of British science, which demanded greater integration with the political circles and society at large. Science should contribute to the national prosperity, and in consequence the emphasis shifted to its applications. The RS spared no effort to recover its prestige, and also to obtain more significant financial support.⁴⁴

Indeed, while by 1850 the RS received from the government 100% of what one might call its scientific budget, in 1945 this proportion had fallen to 1.9%, as a result of the creation of other agencies, such as the Department of Scientific and Industrial Research, which were endowed larger fractions of the public budget. In the 1960s the Society was suffering from a severe shortage of financial resources.

Therefore, when Howard Florey (1898–1968) was appointed president in 1960, along with the celebrations of the tercentenary, he decided to set a new agenda: “I hope to get something done even if I have to carry the Royal Society kicking and screaming into the twentieth century.”⁴⁵ The Society Executive Secretary D.C. Martin (1914–1976) was asked to prepare a report to the British government, entitled “The Encouragement of Scientific Research in the United Kingdom,” in which he made a list of problems which could be solved provided the Society was granted the necessary funding and autonomy. Among other issues, the report emphasised international exchange: “Relevant advances in some subjects often take place abroad, even when there is an advanced degree of activity in such subject in our country.”⁴⁶ Another central claim was to enlarge the size and number of projects involving international collaboration, including more expeditions and projects like the International Geophysical Year (IGY).

According to Peter Collins, “the IGY tested the Society’s ability to conduct large-scale scientific research in logistically challenging locations across the world, in a multinational and politically delicate context.”⁴⁷ The Society had close connections to the UK government, the Crown Agents of Overseas Government, and through them with relevant authorities in other countries, which were essential to sort out the countless administrative obstacles to international expeditions. The United Kingdom, says Collins, still held a powerful position in the scientific world which, unlike other sources of influence, had not diminished in recent years: “The prestige factor was, of course, key to being able to corral science to foreign

policy objectives in the first place [...] The Royal Society could play the prestige card effortlessly.” Collins points out that the Foreign Office set about initiating meetings with the RS leadership following a strategic logic, i.e. that of the immense influence of scientific developments on the political and economic relations between nations, combined with the lack of scientific expertise of the Foreign Office, and the expectation that the RS—“the supreme scientific body in this country”—would be able and willing to supply “the best scientific advice available.”⁴⁸

Within the new spirit of doing science globally, the RS sent at least 19 scientific expeditions to tropical forests, usually in the Southern Hemisphere. In 1965, Blackett was elected the new president. In his inaugural speech he reminded “Britain, having cast off an empire, became somewhat introspective in the subsequent years and concentrated on its own problems.” The same, he believed, was true for the RS.⁴⁹ At the 1967 Conference of Commonwealth Scientists, he stated that it was crucial “anybody like the Royal Society which is actively concerned with scientific development in the poor, underdeveloped countries, should look beyond science to the whole problem of development.”⁵⁰

The Mato Grosso Expedition took place amidst these debates on the role of the RS, which culminated in the actions developed during Lord Blackett’s tenure as president. The shift in the overall tone, from pure science to more practical approaches within a postcolonial setting, are visible in a report written by Peter Hewitt (1929–2010), from the British Council, after a visit to the base camp:

Most of the work being done is of academic interest, but the Expedition members believe it is crucial for the developed activities to result in a body of information to contribute to development in the use of the land in the area. The expedition believes that the Brazilians need to be encouraged to participate in the activities. The solution of the national problem of developing vast areas in the interior might be achieved from either the perspective of devastating areas through transient exploitation of grains, leaving the locations virtually desert two years later, or seeking conservation methods accompanying the intensive use of the land. The Expedition members consider we must be rather an integrated British effort and less, as currently, a kind of private enterprise. Also, the possibility to widen the present scheme into a technical aid programme for agricultural development in cooperation with FAO is considered.⁵¹

Brazil’s “powder keg”

The Mato Grosso Expedition yielded consistent scientific information on the local fauna and flora, which was divulged in articles published in scientific journals. However, its main focus was on soil studies, in addition

to plants considered relevant by the Brazilian military government vis-à-vis the occupancy and use of the Cerrado, given the pressing need to expand the country's agricultural borders. The enterprise, however, met hindrances in the Central-West, in addition to difficulties to penetrate Amazonia, since the concern with the Amazonian rainforest had already entered the Brazilian and global environmentalist discourse in the 1960s.⁵² The results of the studies performed by the British would prove essential for the adoption of a transformation model for the Cerrado, which as a function of its soil was still seen in the 1970s as lacking potential for productive exploitation, which discouraged financial investment.

The rationale underlying the Brazilian military government's thought was clear to the British, as can be seen in a report ambassador R.G. Sheridan sent to D.C. Martin and the British Council on May 21st, 1968, after a meeting with the new SUDECO superintendent, the engineer and former integralist (i.e. the Brazilian fascist party) Sebastião D. de Camargo Junior (1917–1986):

Mr. de Camargo made a briefing on SUDECO and its plans, which lines are quite similar to the later FBC. The idea is that the vast, empty and underdeveloped area in Central Brazil has a moderate climate and good conditions for cattle production, rice, maize and other grains. After all, there are rain and rivers sufficient for irrigation and so forth. It should become the new and large agricultural centre of the country. The natural resources exist already, although in the embryonic stage, and will be supplemented by the Government and private capital and know-how injections. The human resources will come from the excess population in poor areas of the Northeastern region, Brazil's "powder keg," where the danger of social and economic tensions concentrates. They want to populate the area through colonisation and private enterprises. There is already there a good number of large cattle farms, most of which are owned by Paulistas, even in the area where the RS/RSG expedition is based, and there's much room for future development. The Centre-West, thus, they expect, would become a factor of integration and balance for Brazil, linking the prosperous South and the impoverished North, creating a complementary agricultural complex for Sao Paulo and the embryonic industrial complexes in the Northeast.⁵³

The interest in the Cerrado was evident even to the local press. A copy of the issue of the newspaper *Folha do Norte*, published in Belem do Pará on June 13th, 1967, and conserved in the RS archives, evidences the Brazilians' enthusiasm with the expedition. Entitled "An English and Brazilian expedition will come to some unexplored areas in Pará," among other topics the article stated:

The expedition, in accordance to interests of the Brazilian government, will not only perform a survey of the fields and Cerrados in Central Brazil and the Amazonian Rainforest, but will also study the local ecology, soil conditions, climates, vegetation and animals, to contribute to the planning of the future occupation of these areas. This is scientific work of paramount importance for the modern technology of use of the unknown tropical areas, which will extend over three years. Only England answered the international call made by SUDECO (former Central Brazil Foundation), through its top agency for Biological Sciences, the Royal Society of Science, involving a group directed by the zoologist Iain Bishop [...] News on the expeditions' activities will be published in national and international scientific journals for the whole world to learn about the pioneering experiences that will be conducted in Brazil.

Therefore, both the British and the Brazilians were interested in the study of soils and use of the land. The chair of the Agricultural Mission to Brazil and at the service of MOD, A.F. McKenzie was called in October 1965 by the RS and RGS, following consultation to the Foreign Office, to discuss the scope of the expedition with the Brazilian authorities. In the first report sent to Sir Laurence P. Kirwan (1907–1999), the RGS president, MacKenzie stated:

I met professor Antonio Cordeira [sic], who was accompanied by Charles Skinner, First Secretary of the British Embassy in Brasilia, to whom was sent the FBC's original invitation to the British Government. Based on our discussion, it was difficult to get a clear picture of the work programme the Brazilians want. My impression is that they are still rather vague as to their ideas and what it might be done. As best as I could establish, it seems that Professor Cordeira, if not entirely responsible, chairs a programme that will be called Centre of Technological Investigation of the Cerrado (Centro de Pesquisa Tecnológica dos Cerrados-CEPETEC). It is within this research unit that Brazilian and foreign specialists are expected to work. I am afraid it was challenging to get out from Dr. Cordeiro specific work lines they would like the scientists to cover. However, he mentioned an agreement with the New York Botanical Gardens, directed by Dr. Irwin. He also spoke about a grant obtained from the Special Fund of the United Nations Technical Fund board for specialists from the UN Atomic Energy Unit to work on radiological biology to be linked to Applied Genetics.⁵⁴

According to MacKenzie's report, Cordeiro had emphasised that the soil studies were highly relevant, and that the British were expected to survey the use of the land, which results would be applied to the planning of the future development of this area. McKenzie had sent the work program to CEPETEC, and commented:

It is worth noticing that, following the initial scientific studies and investigations, they expect that the emphasis of the programme will shift from purely scientific to more applied research that contributes to the regional development. My impression is that the Brazilians do not clearly distinguish exploratory work from the more sophisticated research that will be conducted at the Centre in the future. On our side, all should move towards the economic worth of programmes that might interest us. Studies on the soil and the use of the land are a facet that will be of much value, not only due to their purely practical aspects but also to academic issues, such as Pedology. There is an omission, perhaps unintentional, in the academic and practical investigations on entomology, in search of predators for biological control of pests. Within the scope of botany, even though the New York Botanical Garden dominates it, there's room to discover plants of economic worth or to obtain genetic material for our technicians in plant reproduction and improvement. I know that the New York people will receive us with open arms and are interested in this area. Finally, there's much to discover in geological and mineralogical terms, which are also linked to the work on soils.⁵⁵

During a meeting held at the RS on October 20th, 1965, to define the expedition's procedures, it was observed: "An expedition in such field is of much interest to English scientists, as it concerns an area unknown from the scientific point of view. Above all, the greatest interests of a British expedition would be ecology of the vegetation and fauna and the potential use of the land."⁵⁶

The concern of the Brazilian government with how to deal with agriculture in the Cerrado is relevant to understand the invitation for expeditions to such strategic area as the Central-West. Since no more land was available for agriculture and livestock production in the Central-South, the movement of border extension was shifted to the Central-West and North.⁵⁷ Despite some natural soil limitations, the Cerrado exhibited physical characteristics favourable to receive the so-called 'technological packages,' more particularly, an overall flat relief that admitted mechanisation, certain climates, and relative proximity to main centres of distribution, such as ports in São Paulo, Paraná, Espírito Santo and Maranhão.

In opposition to the previous pattern of land occupancy, based on extensive agricultural growth with incipient, even primitive, technological requirements, the new one followed a 'modernising variant,' characterized by increasing use of innovative techniques for soil use and management to maximise benefits over a short period of time.⁵⁸ The technological packages for the Cerrado followed the pattern known as "Green Revolution," developed by institutions such as the Ford and Rockefeller Foundations, the World Bank and USAID.⁵⁹ The ideal of conservative modernisation, as it became known for not changing existing agrarian structures in the

areas where it was implemented, was to 'save' agriculture in developing countries from their alleged inability to overcome technological obstacles.⁶⁰

Behind all these efforts was the ubiquitous presence of the Brazilian government. The process of changing the technical and economic basis of agriculture in large areas of the Central-West Cerrado was the result of the strong desire of the government to integrate this area into the national economy. The first phase of the process, along the 1960s until the mid-1970s, was characterised by research to develop a kind of agriculture adapted to the local edaphoclimatic conditions and improvements of the regional infrastructure. One of the most significant factors that contributed to the development of agriculture and livestock production in the Cerrado was the construction of an appropriate transport network and an electrical grid fit to meet the technological needs of the local agriculture.⁶¹

The road system across the states of Goiás, Mato Grosso and Rondônia reached 6,481 kilometres in 1960. For being a major expanding Brazilian agricultural border, the Central-West was the region that received the largest governmental attention, corresponding to 37% of the enlargement of federal roads from 1950 to 1960.⁶² When the Mato Grosso Expedition arrived in Brazil, the country was engaged in establishing new agricultural and livestock production models for the Central-West area through research projects and road construction. However, there were not enough researchers, and the area was not yet appropriately known. One might thus infer that the British had come to help in this process.

Also, the expedition head, Iain Bishop, was interested in the relationship between science and practice, as manifested in a letter he wrote to the director of the Central Institute of Biology, UNB. In this letter, Bishop requested authorisation to visit the Suia-Missu Farm area, under UNB supervision and considered in the national project for agricultural development of the Cerrado in Mato Grosso:

The proposal is that along the next two years, British scientists, together with Brazilian colleagues, will study the plants and animals of the Cerrado area, as well as its forest and soils and physical environmental factors. We hope that the collected information will be valuable for the development of this area. The Societies do not want to work with scientists only, but also with the people involved in the development of this area, and we expect to establish warm and mutually beneficial relations with the owners of the largest farms in the area. I'm afraid that, in exchange for their help, we won't be able to offer any direct service, but I believe that the analysis of the forest, fauna, soil and meteorological conditions will not only be of interest Brazil, but of essential worth to entrepreneurs so that they open and develop the area.⁶³

Bishop considered soil analysis particularly significant, as shown in a letter he wrote on July 24th, 1968, to George Hemmen: “I send the latest report by Askew, Moffatt and Searl. It is essential, especially for circulation among Brazilian scientists. A copy of the report on soil analysis must be directly sent to the British Council in Rio de Janeiro, with instructions to be immediately sent to Couceira [sic] and the State Secretary.”⁶⁴

In this report, G.P. Askew (1927–2016), one of the expedition soil experts, observed that fast mineralisation of the humus following burning considerably reduced the soil ability to retain nutrients, while lixiviation of nutrients, released by mineralisation and ash, resulted in deficient nutrient levels in a period of few years. For this reason, continued grain production would be impossible without fertilisers, which use in the targeted area Askew considered unfeasible. Therefore, although the climate and physical characteristics of the soil were favourable to agriculture, livestock production would represent the best option for early use of the lands with dystrophic soils, while more intensive use would have to wait until later development of the area:

The opening of the territory is in motion, and it is interesting to notice that the settlements along the road are now located close to the Base Camp. The expedition became an important factor in the history of development. On a commercial scale, a large number of agricultural enterprises began to operate on the part of the road from Xavantina to the Camp. Large growth can also be observed on the dry forest more to the North, to the west of São Félix. There, large cattle farms seem to have much potential. The advantage of this kind of land use is that the involved companies are large enough to build roads, schools and medical clinics, and can perform the packaging or storage of their cattle products locally in freezers. It seems that for many years to come, this kind of operation will be critical to transforming Northern Mato Grosso.⁶⁵

The botanist Thom Harris, member of the Expedition Committee and RS vice president until 1961, was sent as observer to the road construction site in Xavantina in 1966, and emphasised the relevance of the study of the soil and vegetation for the British:

What kind of work can be done? If I were to work as a plant ecologist along the new road, I would focus my effort on making a precise survey of the vegetation. Such an analysis would be quantitative and would serve to find out what changes occurred together with the burnings made when the land is cultivated. They told me, with justified pride, that crops were harvested along the road in less than one year. One of my study subjects would be to find out how much (if at all) agriculture exhausts the already scarce nutrient supplies of the soil. In this regard, I would fertilize some areas of the dry forest and woods with several nutrients. I would not even wait to learn

enough to plan some experiments. I would immediately start the practical work, to gain as much time as possible to see what kind of response the plants would give me. There is much risk the expedition specialists will disperse their efforts. I recommend restricting the work to some habits and be strictly confined to the new road. I can already imagine the Valley of Dreams converted into the Valley of Mermaids.⁶⁶

Commenting on the observations made by the team geographer, Anthony Smith stated:

He is much concerned with the future of this area. "The know-how of international agencies and development programmes is simply not being used here, and to me, this is a tragedy." To the scientists, from the untouched Base Camp world, which they recognize as a Garden of Eden, to the universe of the large farms there's one single step. They notice that Eden is changing from night to day into a farm.⁶⁷

The members of the expedition were confused by the mixture of older and newer notions in use, and tried to reconcile order and progress with conservationist ideas:

The visitors to this area regret the forests being destroyed. Those who put it down, with an axe or paying for its devastation, are little concerned with such critical change in the landscape. The British, however, although they welcome the idea of greater productivity in such empty land, are essentially conservationist, but keep most of their grudge for the fact that the land transformation is not being carried out rationally. If the forest has to disappear, let it at least be replaced by something beneficial to the community. If it is for it to be exploited, to be then replaced by something similar to the devastation observed in other virgin lands around the world, it will be an even greater catastrophe, because it shows that terrible examples did not teach anything to the man.⁶⁸

Imperial ecology

In addition to the coincidences between the Brazilian and British agendas, one further factor contributed to determine the profile of the Mato Grosso Expedition involving the International Biological Programme (IBP). Formally established in 1964, following a proposal made in 1961 by the International Council of Scientific Unions, one of the aims of IBP was to encourage global ecologic research for acquisition of data on all fields of biological science. The focus of IBP researchers was on gathering data on the composition, structure and function of ecosystems; biological factors were recorded in quantitative databases through the use of a punched card system.⁶⁹ After the expedition to Brazil became officially established,

Hemmen received an internal memo from the RS, in which IBP participation was discussed:

The IBP manifested a strong interest in the plans for the expedition to Brazil and asked to be informed about its developments. I shall intervene for Professor P.W. Richards to be appointed a member of the Committee to represent the IBP's interests. [...] I know he plans the visit of a reconnaissance mission to Brazil in May this year, and it would be an advantage if these people were aware of the IBP's demands for the main expedition. It would be much useful if the new subcommittee could consider their proposals before the reconnaissance visit, thus allowing for the recommendations to be adopted by the reconnaissance group as a basis for its action in Brazil.⁷⁰

Paul W. Richards (1908–1995), who joined the expedition in August 1967, was a professor at the Department of Botany, University of North Wales, member of the IBP and the author of *Tropical Rain Forest: An Ecological Study* (1952). In an article published in 1965, he described his ideas, which were in full accordance with the IBP objectives:

The 'wind of change' has disturbed the academic calm of the biological sciences. Partly for economic and political reasons – the increasing concern of the Western nations with the needs of the 'underdeveloped countries' – [...] biologists in Europe, America and the U.S.S.R have in recent years become interested in tropical biology and in providing greater opportunities for biological research in the tropics. [...] Tropical biology cannot be best promoted only by research institutes in cities far from the forests, savannas, etc, but they must be supported by chains of field laboratories. This leads to the second point: conservation. Conservation is very urgent and cannot be left entirely to local initiative; one cannot expect struggling 'underdeveloped' countries to undertake nature conservation on a sufficient scale without outside assistance, however excellent their intentions.⁷¹

The most significant piece of evidence attesting to the RS interest in the IBP participation is the fact that the latter's request was openly accepted by the RS/RSG, as the Expedition Committee's minutes for July 1966 show: "Notice the interest of the IBP in the expedition and record that Professor P.W. Richards and Dr G.A. Harrison should be the liaisons with the IBP's subcommittees."⁷² Soon after, on August 30th, George Peterken (b. 1940), who was in charge of the development of the punched card system for data storage at IBP, contacted Bishop:

According to the information I received from Dr Hemmen, the expedition intends to perform scientific research in the area, without any specific concern for the large interest the region has regarding conservation. It is,

however, an excellent opportunity for conservationists to learn about this almost unknown place. The expedition would be of much value were it to obtain information on plants, animals, their groups, number and distribution, and would inform us of the potential for the use of the studied land. The IBP intends to launch a Project for Latin American along the same lines as the ones for the projects in Africa and Southeast Asia, both under the direction of Dr Talbot, from the Smithsonian, in Washington.⁷³

Contacts with Brazilian institutions directly involved the chair of the IBP British branch, Arthur R. Clapham (1904–1990), and his Brazilian counterpart, Amadeu Cury (1917–2008):

Many of the Expeditions' investigations are particularly relevant for the Section of Productivity and Conservation of Territorial Communities of the IBP. Dr E.B. Worthington, scientific director of the IBP and who recently visited Brazil, let me know that our committee is now working with the support of the CNPq. As you know, one of the main goals of the IBP is to encourage biological studies that benefit from international collaboration, and the British Committee expects for the IBP studies being conducted by the Expedition to Brazil to contribute to this. The initial IBP work done by the Expedition includes a survey of the local ecosystems, but it is expected that in future stages of the Mato Grosso expedition, it would be possible to obtain a more sophisticated study on the productivity of the ecosystem. If the Brazilian scientists linked to the IBP manifest interest in participating, I am sure that Dr Bishop would be fully available. The same applies to the President of the CNPq, Dr Couceiro, who is in contact with the Royal Society.⁷⁴

As Libby Robin pointed out, “the IBP was the last great imperial exercise in ecology, with information of the periphery being sent to a metropolitan centre to be converted into ‘science’.”⁷⁵ Ecology, as a scientific field, was associated with conservationism, since both were interested in protecting forests and species, while exploring natural resources in a more effective and refined manner. William M. Adams observes, “Science and conservationism developed hand-in-hand. Colonial conservation allowed resources to be appropriated, both for the use of private capital and as a source of revenue for the state itself.”⁷⁶ The same discourse might be found in the article on vegetation written by James A. Ratter (b. 1934), the second soil investigator with the expedition:

One of the chief reasons for studying the Serra do Roncador area was that it had been very little affected by human activities, [...]. The infertility of the soils must have always discouraged agriculture except on the limited tracts of mesotrophic soils. As soon as the road was made, settlers from Goiás and elsewhere began to move into the area and develop small farms

burning the cerrado to provide grazing for cattle and felling small areas in the gallery forests to grow food crops. At Suiá Missu, and Abelardo farms, and elsewhere much larger cattle-raising enterprises were started. [...] The human impact generally increased markedly. Since 1969 development has proceeded apace and the forest has been felled for at least 1 km on either side of the road from 23 km north of the base camp. From 1967 to 1969, the actual clearing and destruction of natural vegetation were limited in extent, but human influence by grazing and burning was pervasive.⁷⁷

In a report from 1968, the geographer and Secretary of the RGS, Eric H. Brown (1922–2018) echoed the changes which had occurred in the area after the onset of the agricultural and livestock production expansion:

The development of Northern Mato Grosso is moving in such a way that I feel it necessary to discuss at least the main methods through which it is being accomplished. Squatters burn the forest and the Cerrado to create small clearings, which also the large farmers do. I could see what large application of large capital can do to devastate the forest and open room for cattle farming. Along seven years they attacked more than one million hectares of forest and Cerrado and now they have more than 15 thousand cattle. My impression is that this kind of development along the road is so large, that combined with the action of squatters, the odds for us to preserve the 20 km² as a scientific reserve are small.⁷⁸

Starting 1968, Bishop had sought the help of the Brazilian institutions involved in the project to protect the base camp from agricultural development, which activities were not always legal. Bishop strove for the facilities to become a permanent scientific laboratory under Brazilian direction, however, the many attempts notwithstanding, the base camp was abandoned following the British departure in 1969:

I must admit that I no longer believe in the Brazilians' promises: they all say they are interested in taking charge of the Base Camp, but there is no concrete action whatsoever. The study area is already "decorated" with farmers' signs each demarcating his territory. Therefore, it seems unlikely that the Brazilian institutions will move fast enough to take charge of the Base. According to the experience, I gathered all this time here; I believe it would be more feasible for someone from the Embassy to approach the Paulista farmers interested in this area and ask them to take place or put some money to keep a small agricultural research station for their use, possibly open to receive visiting scientists. I have despaired enough of the Government and learnt to bet more on the private initiative. In Brazil, power, actions and money are in the hands of the Paulistas not of the Government.⁷⁹

Final remarks

The documents on the Mato Grosso Expedition available at the archives of the Royal Society of London represent a one-of-a-kind opportunity to analyse post-colonial patterns of the transit of knowledge and technology involving countries traditionally categorised as ‘centres’ and ‘peripheries.’ To the British, i.e. a former colonial power, the expedition was a relevant means to achieve economic proximity to the Brazilian government, precisely at a time when a part of the Brazilian society was calling the presence of the United States in the country into question. To the Royal Society, the expedition provided an occasion to expand its international collaborations within its new goal of overcoming the local limits of pure science. The Brazilian experience was important to the RS efforts to systematically collect data that could contribute to Britain’s post-colonial efforts to intervene, through science, in former colonies and underdeveloped countries, such as Brazil.

In the case of the Mato Grosso Expedition, the British efforts were channelled to the study of the soils and vegetation of the Central Brazil Cerrado, and the studies they conducted were pioneering in the analysis of the region, pointed to problems of soil fertility, and devised practical and innovative solutions several years before the first Brazilian studies on the economic potential of the Cerrado were performed in 1973. Up to that time, no one believed in the feasibility of the agricultural exploration of this area. Also the warnings made by Expedition members about the danger represented by intensive soil use, thus forecasting the current environmental damage, are deserving of mention.

Nevertheless, at the same time the British also helped to promote the exploratory ethos of the military government, which planned to occupy the Central Brazil ‘void’ through the ‘technological packages’ of the so-called ‘Green Revolution.’ The British somehow ‘compensated’ for the lack of specialised scientists at a time in which the Brazilian universities suffered military intervention for being seen as a potential source of communist ideas. The British pioneering role was impregnated by an ‘imperial ethos,’ which rejected any waste in the use of land in the hands of undeserving countries, albeit under the disguise of ‘conservationism.’

Reliable and skilled in the survey of untouched territories, the British were ‘awarded’ an opportunity to investigate a strategic area before the Brazilians themselves. Yet, the inconsistencies of the Brazilian government and institutions took them unawares: they failed to provide the promised support and did not make profit of their contacts with the British. The Expedition members continuously complained of the lack of interest in their studies, to finally lost all hope that their ‘outdoor

laboratory' would be preserved for future research. In the meanwhile, the military government had begun importing scientific and agricultural innovations from the United States, after having straighten up their ties again with the Americans.

Along the 1970s, a period of rapid growth of agricultural-industrial initiatives, the arrival of multinational companies in Brazil was facilitated by the incipient national research in agriculture, which led to the adoption of solutions generated in foreign countries, not entirely suited to the Brazilian economic and ecological needs. As Eric H. Brown had predicted, the "Garden of Eden" which was the untouched Central Brazil became a big *fazenda* almost overnight.⁸⁰

Notes

1. Not to be confounded with the University of Pennsylvania Museum of Archaeology and Anthropology's "Matto Grosso Expedition" (1931) to western Brazil that resulted in the first documentary with a synchronized sound recording made in the field.

2. Ross Corey, *Ecology and power in the age of Empire: Europe and the transformation of the tropical world* (Oxford, 2017), 417.

3. Keith Moore, the RS Chief Librarian, kindly granted me exclusive access to the papers, which are still undergoing proper cataloguing.

4. Michael Wolfers, "Expedition to Mato Grosso" in *The Times* March 31st (1967), 1.

5. Percy Fawcett & Brian Fawcett, *Lost trails, lost cities* (New York, 1953), 291.

6. G.M. Dyott, "The search for Colonel Fawcett" in *The Geographical Journal* 74: 6 (1929), 513.

7. Anthony Smith, *Mato Grosso, last virgin land: an account of the Mato Grosso based on the Royal Society and Royal Geographical Society expedition to central Brazil 1967–1969* (New York, 1971), 20.

8. L. Kirwan, "Expedition Committee, an expedition to the Middle West of Brazil (October 25th, 1965)," EC/RS.

9. Ibid.

10. From 1942 to 1960, the activists Orlando, Cláudio and Leonardo Villas-Bôas led the Roncador-Xingu Expedition, organised by the government to open up an unmapped region near the Araguaia River. The expedition resulted in about 1,000 miles of road construction through the jungle, charted six unknown rivers, and discovered 18 indigenous villages. See Seth Garfield, *Indigenous struggle at the heart of Brazil: state policy, frontier expansion, and the xavante indians, 1937–1988* (Durham, 2001), 45.

11. João M. Ehert Maia, *Estado, território e imaginação espacial: o caso da Fundação Brasil Central* (Rio de Janeiro, 2012), 40.

12. Ibid., 15.

13. Ibid., 176.

14. Ibid., 156.

15. Ibid., 159.

16. Dulce P. Maciel, “O Estado na integração de territórios vazios à nação brasileira (1943–1968): atuação da Fundação Brasil Central na região do Médio Araguaia” in *XXIV Simpósio Nacional de História (ANPUH)* (São Leopoldo RS, 2007), 10.
17. *Ibid.*, 14.
18. *Ibid.*, 10.
19. Silvana de Abreu, *Planejamento governamental: a SUDECO no espaço mato-grossense: contexto, propósitos e contradições*, PhD dissertation, University of Sao Paulo (São Paulo, 2001), 31.
20. *Ibid.*, 21.
21. According to Kirwan, “Report on a visit, RGS, 1966”: “The new military government sees universities as centres of leftist resistance. Most UNB professors were fired, and a similar number resigned. The government is desperately seeking to compensate for the lack of scientists by offering high salaries to attract low-level teachers. The latter are seen as traitors within the academic milieu, and the university reputation is falling.”
22. Michael A. Osborne, “Acclimatizing the world: a history of the paradigmatic colonial science” in *Osiris* 15 (2001), 132.
23. *Ibid.*, 134.
24. William M. Adams & Martin Mulligan, *Decolonizing nature: strategies for conservation in a post-colonial era* (Abingdon, 2003), 34.
25. *Ibid.*, 35.
26. Joseph M. Hodge, “Colonial experts, developmental and environmental doctrines and the legacies of the British Empire in cultivating the colonies” in Christina F. Ax, Niels Brimnes, Niklas T. Jensen & Karen Oslund (ed.), *Cultivating the colonies: colonial states and their environmental legacies* (Athens OH, 2011), 115.
27. Joseph M. Hodge, *Triumph of the expert: agrarian doctrines of development and the legacies of British colonialism* (Athens OH, 2007).
28. George Hemmen, “Expedition Committee [no date],” EC/RS.
29. Initially named by the RGS and RS as “Expedition to Central Brazil,” its name was then changed to “Xavantina-Cachimbo Expedition” and finally to “Mato Grosso Expedition.”
30. Reginald L. Secondé, “British Embassy, Brasilia, June 16th, 1966,” FO/RS.
31. John Russell, “Letter to Lord Blackett, December 20th, 1966,” FO/RS.
32. E.H. Corner, “Report, March 13th, 1967”. EC/RS.
33. Geraldo Cantarino, *A ditadura que o inglês viu: documentos diplomáticos sigilosos revelam a visão britânica do Brasil desde o golpe de 1964 até o processo de abertura política em 1979* (Rio de Janeiro, 2014), 170.
34. *Ibid.*, 182.
35. *Ibid.*, 186.
36. Anthony Smith, *Mato Grosso: last virgin land. An account of the Mato Grosso, based on the Royal Society and Royal Geographical Society expedition to Central Brazil, 1967–9* (London, 1971).
37. Royal Society, “Proposed expedition to Middle West Brazil: report of an ad hoc meeting held on October 20th, 1965,” M/RS.
38. Ian Bishop, “To the Executive Secretary of RS, January 28th, 1966,” EP/RS.
39. “Internal Correspondence, Confidential, British Council, November 30th, 1967,” FO/RS.
40. Ian Bishop, “RS/RGS Expedition to Central Brazil,” BP/RS.

41. "R.G. Sheridan to C.C.W. Adams, British Embassy, Rio de Janeiro, May 20th, 1967," FO/RS.
42. "[Anonymous] October 12th, 1967," FO/RS.
43. Roy MacLeod, "The Royal Society and the Commonwealth: old friendships, new frontiers" in *Notes & Records of the Royal Society* 64 (2010), 143.
44. Alan Hodgkin, "Edgar Douglas Adrian, Baron Adrian of Cambridge" in *Biographical Memoirs of Fellows of the Royal Society* 25 (1979), 53.
45. Peter Collins, "A role in running UK science?" in *Notes and Records of the Royal Society of London* 64 (2010), 121.
46. *Ibid.*, 122.
47. Peter Collins, *The Royal Society and the promotion of science since 1960* (Cambridge, 2016), 256.
48. *Ibid.*, 162.
49. MacLeod, "The Royal Society," 143
50. *Ibid.*
51. Peter Hewitt, "Report on a Visit at RS/RGS Base Camp [no date]," BC/RS.
52. Mauro O. Pires, "Programas agrícolas na ocupação do Cerrado" in *Sociedade e Cultura* 3:1 (2000), 112.
53. R.G. Sheridan, "Superintendência do Desenvolvimento to Centro-Oeste (SUDECO), British Embassy, Brasilia, May 21st, 1968," FO/RS.
54. McKenzie, "Expedition to the Middle West of Brazil, October 10th, 1965," M/RS.
55. "Proposed Expedition to Middle West Brazil: report of an ad hoc meeting held on 20th October 1965," M/RS.
56. *Ibid.*
57. Celso A. Salim, "As políticas econômica e tecnológica para o desenvolvimento agrário das áreas do Cerrado no Brasil: avaliação e perspectivas" in *Cadernos de Difusão Tecnológica* 3:2 (1986), 301.
58. *Ibid.*, 298.
59. José Graziano da Silva, "O progresso técnico na agricultura" in *Cadernos de Ciência e Tecnologia* 7:1/3 (1990), 45-46.
60. Bernardo C. Diniz, *O grande Cerrado do Brasil: geopolítica e economia*. PhD dissertation, University of Sao Paulo (São Paulo, 2006), 85-98.
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62. Jorge L.A. Natal, *Transporte, ocupação do espaço e desenvolvimento capitalista no Brasil*, PhD dissertation, State University of Campinas (Campinas, 1991).
63. Ian Bishop, "RS/RGS Expedition to Central Brazil, [no date]. BP/RS.
64. Iain Bishop, "IRB/AB, July 24th, 1968". BP/RS.
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68. *Ibid.*, 217.

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75. Libby Robin, "Ecology: a science of empire?" in Tom Griffiths & Libby Robin (ed.), *Ecology and empire: environmental history of settler societies* (Edinburgh, 1997), 72.
76. Adams & Mulligan, *Decolonizing nature*, 25.
77. Ratter et al., "Observations", 226.
78. E.H. Brown, "Report of Professor Brown, September 2–October 17, 1968". EC/RS.
79. "Iain Bishop to George Hemmen. Aragarças, February 21st," EC/RS.
80. Smith, *Mato Grosso*, 214.

Abstract

The English hunger for desolate places: The Royal Society Mato Grosso Expedition, 1967–1969.
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From 1967 to 1969, upon invitation by the Central Brazil Foundation, an *ad hoc* expedition from the Royal Society and the Royal Geographical Society, known as the Mato Grosso Expedition, took place in Brazil. The research then conducted was aligned to the Brazilian military government's plans to occupy and develop the area known as Central Brazil. Documents relative to the Mato Grosso Expedition indicate a resumption of post-colonial practices, as well as a shift from so-called 'pure science' towards applied science, in accordance with Brazilian developmentalism views. Analysis also shows that the British model for surveying unexplored territories was maintained, together with its consequences for science.

Keywords: Scientific expeditions, post-colonial, twentieth century, Royal Society, Brazil