LIVINGSTONE
AS AN EXPLORER

An Appreciation

By

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PROFESSOR OF GEOLOGY IN THE UNIVERSITY OF GLASGOW

Delivered in the University of Glasgow on the occasion of the Centenary of David Livingstone, 18th March, 1913

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At the dawn of the nineteenth century European ignorance of the interior of Africa was at its nadir. In the sixteenth and seventeenth centuries Portuguese missionaries and travellers had penetrated far inland, and their observations were supplemented by information collected from Arab traders. The maps compiled by European cartographers from the Portuguese reports were full of information about the geography of Central Africa. Thus the map published by Sanson of Abbeville in 1635, truly represented tropical Africa as a land rich in rivers and lakes (Map I); Tanganyika, the Victoria and Albert Nyanzas, Lakes Rudolf, Moero and Chad can all be recognized. Hence, in spite of their blunders, these seventeenth century maps contain so many of the main facts of Central African geography that they must have been based on actual observation.

But the men who had made these discoveries were not trained explorers; they kept no regular journals; they made no astronomical observations to determine their positions; and on their return they could only spin such yarns as those on which Defoe, in 1720, founded his story of Captain Singleton's journey across Africa. As European geographers became more critical and scientific, and

as these Portuguese pioneers were gradually forgotten, the knowledge they had gathered was either lost or dismissed as fabulous. The lakes, rivers, goldfields, mountains and Portuguese stations were omitted from the maps, and the interior of tropical Africa was represented as one vast uninhabitable desert; there remained two fabulous mountain chains, " the Mountains of the Moon " on the north and the " Spine of the World " (" the Mountains of Lupata ") on the east.

The maps of the interior of Africa issued between 1800 and 1850 (*e.g.* Maps II. and III.) contained less information and were less accurate regarding the interior of Africa than those of the sixteenth century. By the end of the nineteenth century the map of Africa had been again filled in; the deserts had been reduced to their true proportions; every important river had been tracked from source to sea; the highest mountains had been climbed; steamers were plying on the lakes and rivers; railways were superseding the slow and costly caravans of porters; and instead of only the Portuguese, Dutch and Turks holding extensive possessions in Africa, almost the whole continent had been partitioned between seven European states.

This revolution in the condition of Africa was mainly due to the great Scottish explorer whose memory we are assembled to honour.

David Livingstone's world-influencing achievements were the result of his own personal efforts and character. He had no social advantages, and his influence was due to his dogged persistence, utter fearlessness,[1] noble

[1] His superb courage was one of his most striking personal characteristics.

ambition, and his genius for travel. For he left school at the age of ten to begin work in the Blantyre cotton mills; and his education was continued at a night school after the day's millwork was done. At the age of nineteen he was promoted to the grade of cotton spinner; he then earned enough in the summer, with some help from his brothers, to support himself during the winter, as a student at this University and at Anderson's College.

That he was a student at the University has been denied; but his own testimony is conclusive. He referred in a letter to Murchison, printed in the *Journal of the Royal Geographical Society* (vol. xxvii. 1857, p. 386), to the encouragement he had received from "my former instructors in Glasgow University." In a speech [1] at the University Union in 1858, he told the students that "I remember well when I was among you," and he reminded them that "When Sir Robert Peel addressed us here in 1837, he told us that it was not genius that ensured success but hard, earnest working." Livingstone, therefore, attended that address as one of the Lord Rector's constituents, and he was clearly then a student of the University. Hence, on the evidence of Livingstone's statements, apart from the abundant testimony of his friends,[2] he was a son of this University.

We may also reflect with pleasure that the University of Glasgow was the first to recognize Livingstone's

[1] For reference to the report of this speech, in the *Glasgow Herald* of 26th February, 1858, I am indebted to Mr. E. G. Hawke.

[2] *E.g.* Prof. Adam Sedgwick, in his introduction to *Livingstone's Cambridge Lectures*, said that Livingstone had attended three courses of Lectures at the University of Glasgow, 1860, p. 55. The reference to Sir D. K. Sandford on p. 16 of the *Missionary Travels* supports the tradition that Livingstone attended the Greek class at the University.

geographical work; for in 1854, while he was making his journey across Africa, the University conferred on him, "free of cost," the honorary degree of LL.D., "in high appreciation of his services in the cause of science and Christian philanthropy." Letters announcing this fact on his arrival on the east coast were especially welcome and contrasted strangely with a communication from the Missionary Society, which he received at the same place.[1]

Livingstone's father was a deacon of the Congregational Church at Hamilton, and when he resolved to become a missionary, he naturally offered his services to the London Missionary Society, and was one of the many illustrious men whom the Congregational denomination sent into the mission-field. He was provisionally accepted and went to London in 1838. He was never a fluent public speaker and narrowly escaped rejection; but after an extension of his period on probation he was accepted and continued his medical studies at Charing Cross Hospital. He returned to Glasgow in November, 1840, to pass his final examination and receive his medical diploma; and he sailed the following month for South Africa. It was symptomatic of Livingstone's interests that during the three months' voyage to the Cape he learnt from the captain of the ship how to determine geographical positions; and this training, combined with subsequent instruction from Maclear, the Government Astronomer at Cape Town, enabled Livingstone to fix his routes with the precision of an experienced navigator.

Livingstone arrived at the Cape during a critical time

[1] Livingstone forgave but could never forget this letter, which probably helped his severance from Congregationalism.

in South African history. There, the ideal of the missionary party was to develop the country as a group of native states ruled by native chiefs, who were to be guided by missionary advisers—states, in fact, like Madagascar before its conquest by France.

The Reform Bill of 1832 had placed political power in the hands of the aggressive philanthropists; and under their influence the British Government adopted a policy in South Africa, which events, and the almost unaminous verdict of historians, have emphatically condemned. The Dutch farmers at the Cape found their position intolerable; and they sought freedom by emigration to the north of the British territories. They there proclaimed a free republic. The feelings of these emigrants towards the missionaries can be judged from one article of the constitution which was adopted by the Boers at Winburg on 6th June, 1837; for it decreed that no man should join the republic unless he would take an oath to have no connection with the London Missionary Society or with any of its agents.

The success of a free Boer state to the north of the Cape would have been fatal to the missionary policy; so the British Government was persuaded to establish a chain of native states across South Africa extending from Natal to the deserts north of the Orange River. This chain of states was completed in 1844. But the scheme proved a fiasco; the native states collapsed, and in 1852 the British Government acknowledged the independence of the South African Republic.

Livingstone arrived in South Africa at the time when the effort to establish missionary supremacy to the north of the Cape was being actively pursued; and he was sent to Bechuanaland to help the development of the northern

outposts. He went at first to Lattakoo, or Kuruman, the most northern of the mission stations, then under the charge of the famous missionary Robert Moffat, whose daughter Livingstone married in 1844.

From 1841 to 1849 Livingstone was engaged in mission work on the south-eastern border of the Kalahari Desert in the district to the north of Mafeking. The history of this period of Livingstone's career has never been adequately written. His relations with many of his fellow-missionaries were not always harmonious. Livingstone had more practical insight than many of his colleagues, and he expressed his opinions of them and of the results of missionary enterprise in South Africa with ruthless candour.[1] Owing to the smallness of the native population, he was disappointed with the field which the London Missionary Society was then tending so diligently.

There is a striking contrast between his reports to the London Missionary Society and those of his colleague, the Rev. William Ross, who was ordained at the same service and went out with him to South Africa. Mr. Ross's letters to the Directors of the Society report "the delightful progress of his work"[2]; "that the conduct of the believers has afforded him great comfort"[3]; "at no

[1] For example, the letter published in Sir H. H. Johnston's *Livingstone*, 1891, pp. 64-69. In an unpublished letter (now in the British Museum, No. 36525 f 9), written from Tette in 1856 to his colleague, Rev. Joseph Moore, he remarked, "The natives too behaved liberally to us except when we came near to this. We Christians have not given the heathen fair play with our glorious Christianity. They believed my statements of all my goods being expended until we came into the vicinity of the Christians. It is not so only among R. Catholic Christians but everywhere. I often feel my own share of the guilt to be great."

[2] *Miss. Mag. and Chron.*, vol. xi., 1847, p. 25.

[3] *London Missionary Society, Report of Directors*, 1848, p. 115.

period have there been so many enquiring the way to Zion." Livingstone's reports describe his sewing school, and his industrial work, and are full of ethnographic information; he depicts the extreme barbarity of the natives and frankly admits that he has no converts to report; when drought drove a crowd of other natives to his station, he refers to them as "a fresh infusion of heathenism added to the present unchristianized mass." [1] Livingstone also sent his Directors trenchant criticisms of their South African policy.

Mr. Ross's communications were naturally the more popular at headquarters. The Society's magazine records, "At Mamusa, the station in charge of our devoted brother, Mr. Ross, the blessings of the Gospel are seen breaking out on the right hand and on the left; the number of converts is rapidly multiplying" [2]: whereas, regarding Livingstone, the Directors plaintively remark "though, as yet, there has been no ascertained instance of conversion to encourage our brother in his work, his zeal and perseverance, under divine favour, have already wrought a considerable improvement among them." [3]

Livingstone's colleagues clearly objected to his outspoken criticism; they deplored what they called his wandering spirit, a phrase which hurt Livingstone deeply, and they attributed his scheme for a college for native teachers to personal ambition.

Livingstone had meanwhile abandoned medical work, a course which seems to have been partly due to his dialectic defeat on the question of rain-making. He

[1] *London Missionary Society, Report of Directors*, 1850, p. 92.

[2] *Miss. Mag. and Chron.*, vol. xiii., 1849, p. 43.

[3] *Ibid.*, vol. xi., 1847, p. 154.

endeavoured to convince the people of their folly in trying to make rain; he insisted that there was no visible connection between their medicines and the clouds; the natives replied that there was none between his medicines and the diseases they were given to cure; he argued that as their medicines often failed, the rain that sometimes fell after their use was not due to them; they retaliated that his medicines sometimes failed, yet he attributed to them whatever good results followed; and they concluded that as he persevered with his medicines, although his patients sometimes died, there was no reason why they should cease using theirs, because their methods were not always successful. Livingstone recognized that he had lost the argument, and gave up medical practice, except on special occasions, so that it might not hamper his spiritual work.[1]

In 1848 Livingstone settled at Kolobeng, the village of a chief Sechele, who was converted next year. After Sechele's abandonment of polygamy, Livingstone baptized him, amid his weeping people, who were terrified at the loss of their best rain-maker. With deplorable ill-fortune, the year following the country was stricken with so severe a drought, that the men had to scatter far and wide to hunt, while the women and children tried to avert starvation by collecting locusts,[2] and later on Kolobeng had to be removed owing to the failure of water.

[1] Thus he wrote to Cecil, his tutor at Ongar: "I did not at first intend to give up all attention to medicine and the treatment of disease, but now I feel it to be my duty to have as little to do with it as possible. I shall attend to none but severe cases in future, and my reasons for this determination are, I think, good."

[2] Livingstone notes in his journal, with characteristic resignation, the local failure of the rains and their continuance in adjacent districts.

While Livingstone had been gradually growing less satisfied with his mission-field, the fascination of the unknown land beside him had captivated his mind. Livingstone was one of the idealists described in Kipling's lines :

> "We were dreamers, dreaming greatly, in the man-stifled town ;
> We yearned beyond the sky-line, where the strange roads go down."

The fine imagination which changed the mill-hand at Blantyre into the missionary to the Bechuanas was leading Livingstone to another change in his career. He daily looked out into the wide waste of the Kalahari and yearned to follow the strange roads that went down into it, in the hope that they might lead to a better watered, more fertile, more populous country, where missionary work might be more profitable than among the small poverty-stricken tribes hemmed in between the Boers and the desert.

In the year of his worst troubles at Kolobeng his chance came. Two famous hunters, Cotton Oswell and Murray, visited his station and made the offer that, if Livingstone would find guides across the desert to the lake reported to exist on the other side, they would pay the expenses of the expedition. The evidence is contradictory as to who proposed this journey. According to the magazine of the London Missionary Society, Livingstone was afforded an opportunity for his " long-cherished purpose, by the visit of two benevolent travellers, Messrs. Murray and Oswell, who requested his co-operation in attempting to cross the Desert and exploring the unknown regions to the north. This overture Mr. Livingstone gladly

embraced, unintimidated by the hardships or dangers of the undertaking." [1]

The party left Kolobeng on the 1st June, and after a journey of two months reached Lake Ngami on 1st August, 1849. The country around the lake proved malarial and unpromising, but the rivers that discharged into it indicated the existence of higher and therefore probably more salubrious land to the north. The travellers endeavoured to reach this better land, but they were stopped by a large river. They resolved to try again; so Oswell went to the Cape to buy a boat, while Livingstone awaited him at Kolobeng.

This journey to Lake Ngami settled Livingstone's future. It completed his conversion from a missionary into an explorer, a change which had been in progress throughout his residence in South Africa. Livingstone never again settled down to live on a mission station. He wrote to his Directors: "I hope to be permitted to work, so long as I live, beyond other men's line of things, and plant the seed of the Gospel where others have not planted." [2] Livingstone had enlisted for life in that pioneer regiment whose mission is

> To "preach in advance of the Army,"
> To "skirmish ahead of the Church."

[1] *Miss. Mag. and Chron.*, vol. xiv., 1850, p. 34. This version is supported by Sir Samuel Baker, Sir Francis Galton, and the correspondence published in the *Life of Oswell*. According to Livingstone, he proposed the expedition and Murray and Oswell came from England to be present at the discovery. (*Miss. Mag. and Chron.*, vol. xiv., 1850, pp. 35-37.) Oswell appears certainly entitled to more credit in connection with this expedition than he has generally received. He seems to have deliberately effaced his share in the undertaking, as he knew that the reputation would be far more useful to his friend than it could be to himself. He sacrificed geographical fame, but gained an enduring reputation for chivalrous generosity.

[2] *Ibid.*, p. 36.

Livingstone heard at Lake Ngami of people who had come from the west coast and were probably Portuguese, and he saw there a coat which, he remarks, " we believe to be of Portuguese manufacture." It seemed probable that there was a practicable route from Lake Ngami to the west coast; and Livingstone was confirmed in this conclusion shortly after his return to Kolobeng by some envoys who brought him an invitation to visit Sebituane,[1] the famous chief of the Makololo. Some of this party had been to the west coast, and they described to Livingstone how they had seen ships there, " and called out to them, 'Hey, come and tell us the news,' " a request to which these indifferent ships paid no attention.

Livingstone was delighted to accept this invitation. His convert, Sechele, purchased a waggon, and together they started off on this journey into the unknown north. The effort failed, but it was renewed next year with Oswell, who had come back from the Cape, and it was then successful. Livingstone and Oswell reached Sebituane, who gave them a most friendly reception—but died a few days after their arrival. He was succeeded by his daughter, who subsequently resigned the chieftainship to her brother Sekeletu.

Sebituane had invited Livingstone because he needed the help of a British traveller, and he could not have made a better selection. Linyanti, his capital, was situated on the Chobe River, near its junction with the Zambesi, in a district equidistant from the eastern and western coasts. The country abounded in elephants, that were killed by the bold native hunters, and Sebituane wished

[1] The spelling of most of the personal and place names is that adopted by Livingstone in his two chief books.

to establish commercial relations for the sale of his ivory with the towns on the west coast. The road southward to the Cape skirted the Kalahari desert, and was always difficult and sometimes closed by war. The route to the east coast was also precarious, for impis of rebellious Zulu had settled in positions which commanded the lower Zambesi. Some slave traders from Benguella had recently visited Sebituane and exchanged guns for slaves, and as the way to the west coast was therefore practicable Sebituane wanted to use it independently of the Portuguese traders.

The scheme was delayed by Sebituane's death and Livingstone's preliminary arrangements. In order to send his wife and children to England, he returned with them to Cape Town where he found that he had overdrawn his salary, and a further advance was refused. From this strait he was relieved by the wealthy and generous Oswell, who was fortunately then at the Cape. Livingstone returned northward to find that his house at Kolobeng had been destroyed by a party of Boers, who had also attacked and burned the adjacent native settlement. Livingstone wrote an indignant protest and predicted the extermination of the natives unless the Boers were controlled; and Sechele went to Cape Town to demand redress. Neither of them gained any satisfaction from the British officials, who were no longer in political co-operation with the missionaries: according to Dr. Moffat, the authorities at Cape Town paid Sechele "no attention, nor would even regard his tale of woe." [1]

Sir George Cathcart, the Governor and High Commissioner at the Cape, thought the incident only what

[1] *Miss. Mag. and Chron.*, vol. xviii., 1854, p. 75.

Livingstone might have expected, and what Sechele deserved. He declared, in reference to Livingstone, "that the losses and inconveniences sustained do not amount to more than the ordinary occurrences incidental to a state of war, or to which those who live in remote regions beyond Her Majesty's dominions must be frequently liable." [1]

Sir George Cathcart threw the blame for the incident on Sechele and his too friendly relations with some gun traders, "with which class of adventurers he has been on good terms, and whose undue and indiscreet dealing in arms and gunpowder may not improbably have got him into his recent troubles." [2]

Livingstone had applied to the Directors of the Society for sanction of his projected expedition, and characteristically closed his letter by telling them that he was going with or without their permission. The Directors had previously remarked that Kolobeng was too contracted a sphere to justify Dr. Livingstone devoting to it his exclusive attention,[3] and so they had felt "constrained to sanction" Livingstone's second visit to Lake Ngami in his search for a more promising mission-field; but they received this new proposal with marked coldness, an attitude which was only changed, and then abruptly, on Livingstone's triumphal welcome in London.

Livingstone reported that he found the tribes in the interior "just as anxious to have a path to the seaboard

[1] "Further Correspondence Relative to the State of the Orange River Territory," *Parl. Pap.*, 1854, vol. xliii., p. 5.

[2] "Further Correspondence Relative to the State of the Orange River Territory," *Parl. Pap.*, 1852-1853, vol. lxvi., p. 111.

[3] *London Missionary Society, Report of Directors*, 1851-2, p. 68.

as I was to open a communication with the interior." [1] Hence he had little trouble in persuading Sekeletu, the new chief of the Makololo, to adopt his father's policy. Sekeletu fitted out a caravan, provided ivory for the expenses in Angola, and sent instructions throughout his extensive sphere of influence that the travellers were not to feel hungry. Livingstone left Linyanti on the 11th November, 1853, and travelling to the north of the route used by Portuguese traders, he arrived at Loanda on the 31st May, 1854. He was received with the greatest kindness by the Portuguese authorities. "The Portuguese have been amazingly kind," he wrote of them.[2]

After a residence of some months at Loanda, in a house which is now in ruins, but which the Governor-General has arranged shall be marked with a memorial tablet, he left on 20th September for Linyanti. Not contented with the great feat of having crossed from the middle of the continent to the Atlantic, he resolved to continue down the Zambesi valley to the east coast. The Chief provided him with a still larger escort and fresh supplies, and thus reequipped Livingstone left Linyanti on 3rd November, 1855, and reached Quilimane on the east coast on 22nd May, 1856. He was thus the first white man, other than Portuguese traders, to cross tropical Africa from shore to shore.

The previous trans-African journeys of the Portuguese have been often ignored or discredited; but they may be fully admitted without detracting from Livingstone's merit. The evidence appears conclusive that Portuguese and Portuguese half-castes had occasionally crossed from

[1] *Proc. R. Geog. Soc.*, vol. ii., 1858, p. 126.

[2] *Miss. Mag. and Chron.*, vol. xx., 1856, p. 196.

the Portuguese West African to their East African colonies. This journey was made both ways at the beginning of the nineteenth century by two men, P. J. Baptista and A. José Francisco, who were probably half-castes.[1] Their approximate route and that claimed for the famous Portuguese merchant, Silva Porto, from Benguella to Mozambique in 1853 and 1854, are marked on Map IV.[2]

Livingstone returned home and was rightly welcomed as a national hero, for his long journey, with its chain of well-fixed positions, is generally regarded as the most important contribution to the geography of tropical Africa that has ever been made. The feat was all the more magnificent as it was achieved by help enlisted from a negro chief. It showed that both Africa and its people had been unjustly maligned. The power of one man to persuade a Central African chief to equip so great an expedition aroused high hopes of what might be done in Africa by adequate use of native help.

Public opinion was well guided in its estimate of Livingstone's work by leading geographical experts. Sir Roderick Murchison, then President of the Royal Geo-

[1] These men have been generally referred to as negro slaves; but the word "bondsmen" as used by Beadle, who translated their journal, better represents their class. They were described as "white men" on their introduction to the chief Cazembe.

[2] According to the account given by M'Queen in the *Journal of the Royal Geographical Society* (vol. xxx., 1860, pp. 136-154), Silva Porta left Benguella on 9th June, 1853, with some Arabs who had gone there overland from Zanzibar; he arrived at Ibo, on the east coast of Africa, on 23rd August, 1854. He is said to have returned to Benguella from Mozambique on a Portuguese frigate. Livingstone, however, did not believe that this journey was made. Silva Porto committed suicide, in 1890, owing to his distress at the proceedings of the Portuguese authorities at Bihé; he lay down on some kegs of gunpowder, and exploded them. He was blown through the roof of his house, fell some distance away, and died next day.

graphical Society, proclaimed the greatness of Livingstone's achievements. The Geographical Society gave the traveller his first public welcome. Livingstone gratefully dedicated his *Missionary Travels* to Murchison,[1] whose death he deplored as the loss of the truest friend he had ever had. Sir Thomas Maclear, the Government Astronomer of the Cape, testified to the unusual accuracy with which Livingstone had determined his positions. Honours and honorary degrees were showered upon him. It was soon recognized that he was not only in the front rank of explorers, but that he had the practical insight of a statesman and was animated by lofty philanthropic ambitions. He was appointed British Consul for the East African coast, and " the independent districts in the interior," and went back to East Africa as head of a well-equipped Government expedition.

He was at the time criticised for exchanging a missionary for a consular appointment ; the change was not only natural, but almost necessary. Rev. W. G. Blaikie, D.D., the author of *The Personal Life of Livingstone*, remarks that " the London Missionary Society were not willing that he should be to so large an extent an explorer," and the relations between the Society and its independent agent were by no means cordial. The injured, but forgiving spirit with which Livingstone regarded the Missionary Society, and what he called " the Veto of the Board," is indicated on p. 677 of his *Missionary Travels* as well as in private letters.[2] Years later, he wrote : " I

[1] He wished to dedicate also to Murchison his book on the Zambesi expedition.

[2] Livingstone expressed (*Missionary Travels*, p. 93) his indebtedness to the Directors for acting " with as much liberality as their constitution would allow "—a significant qualification.

never felt a single pang at having left the Missionary Society."

The remark in the Report of the London Missionary Society that his former colleagues might still receive "from Dr. Livingstone, though no longer a missionary, kind and valuable assistance," shows that it regarded his missionary career as closed.[1] Livingstone, however, still regarded himself as a missionary, though, thereafter, he used the term in a wide and unusual sense. "I have been a missionary," he said in 1858, in an address to the students at this University Union; and added, "I hope still to be a missionary." He explained his double use of the word in a passage of which the first sentence has been very often quoted: "I view the end of the geographical feat as the beginning of the missionary enterprise. I take the latter term in its most extended signification, and include every effort made for the amelioration of our race." [2]

The master idea of all the later part of his life was the suppression of the slave trade by the introduction of European commerce and colonization.

During Livingstone's development his views on mission work passed through four stages. From 1840 to about 1848 was the period of his first enthusiasm and his first disillusionment due to disappointment with the personality of his colleagues and loss of faith in the London Missionary Society's policy in South Africa. From 1848 to 1856 was the period of his efforts to discover a better mission field to the north of the Transvaal and Bechuanaland, and it ended with his intense disappointment at

[1] *London Missionary Society, Report of Directors*, 1858, p. 16.
[2] *Missionary Travels*, pp. 673-674.

what he considered the Board's refusal to develop the promising field he had discovered. The third period, from 1856 to 1864, began with his appeals to the Universities and to various missionary societies to undertake the work; and it ended with the frustration of his hopes by the withdrawal of the Universities' Mission from the Lower Zambesi and of the Congregational Mission from the Upper Zambesi, and by the unfavourable report which delayed the establishment of a Presbyterian Mission in Nyasaland. From 1864 till his death he laboured with the conviction that commercial colonization would do more to civilize and Christianize Africa than ordinary mission work. His views during this period were forecast in 1850, when he wrote that the Christianization of the world "will be increased more by emigration than by missionaries."

That the object of the Zambesi expedition was mainly geographical has been clearly stated in the beginning of Livingstone's book upon its work.[1] The mission appealed to him, for he trusted that it might strike a great blow at the slave trade throughout the world. He was convinced from the excellent results of the Portuguese ad-

[1] "The main object of the Zambesi expedition, as our instructions from Her Majesty's Government explicitly stated, was to extend the knowledge already attained of the geography and mineral and agricultural resources of Eastern and Central Africa—to improve our acquaintance with the inhabitants, and to endeavour to engage them to apply themselves to industrial pursuits and to the cultivation of their lands, with a view to the production of raw material to be exported to England in return for British manufactures; and it was hoped, that, by encouraging the natives to occupy themselves in the development of the resources of the country, a considerable advance might be made towards the extinction of the slave-trade, as they would not be long in discovering that the former would eventually be a more certain source of profit than the latter" (*Expedition to Zambesi*, 1865, p. 9).

ministration in West Africa, where he described the slave trade as practically dead, that, if the Africans were allowed to develop their keen instincts for trade, slavery would prove unprofitable, and would collapse. He believed that the Lower Zambesi contained the best cotton-growing land in the world. "I think," he wrote, "the most important part of the discoveries I was privileged to make is, that there is an immense extent of country where sugar and cotton might be cultivated." [1] Livingstone believed the country could be so developed as to grow all the cotton and sugar required by the British markets, and thus render them independent of the slave-grown products of America. Slavery on both sides of the Atlantic might be slain with one blow.

The expedition with its official position, ample funds, and large expert staff appeared to give Livingstone the chance of his life. Its geographical results, though important, were less striking than those from his two other main journeys. Livingstone was away on this expedition from 1858 to 1864, and during that time surveyed the course of the Zambesi from the Victoria Falls to the sea; he explored its tributary the Shire, discovered Lake Shirwa, and marched up the western coast of Lake Nyasa nearly to its northern end. The most important discovery was that the region around Lake Nyasa has a dense population, a fertile soil, large tracts of healthy highlands, and is near extensive coal-fields. The work of the expedition thus led to the foundation of the British Protectorate of Nyasaland. The botanical collections made by Sir John Kirk, the medical officer of the expedition, were a most valuable

[1] *Proc. R. Geog. Soc.*, vol. ii., 1858, p. 58.

contribution to African botany. In spite of all these results, the expedition was generally judged a comparative failure. Murchison expressed the current view by remarking in a letter to Livingstone, " the little success attending your last mission." [1]

Success in the main object of the expedition was, however, at the time impossible. Its work was hampered by three difficulties. The boat, the *Ma-Robert*, which had been especially built for the expedition, proved a failure. Livingstone denounced its builder as a worse thief than any of the Africans who had robbed him; but as the boat was passed by the Admiralty, it was probably well built, and Murchison expressly exonerated the builder from blame. The trouble apparently came from overloading a boat which had been designed to have a draft of sixteen inches till it drew two and a half feet. No wonder it was slow and leaky.[2] Livingstone, at his own expense, replaced the *Asthmatic*, as he nicknamed the first boat, by the *Lady Nyasa*. It was built in sections for portage past the Murchison Falls to Lake Nyasa; but before it could be used there the expedition was recalled. He sailed the *Lady Nyasa* to Bombay, where she was sold; and, with his usual financial ill-luck, he placed the money in a bank which failed, and he lost it all.

The second trouble was the despatch in 1861 of a Church of England mission in the wake of the expedition. Murchison strenuously objected to this proceeding, for

[1] Blaikie, *Personal Life of Livingstone*, p. 297.

[2] This overloading appears to have been first due to the officer in charge of the boat, whom Livingstone described as his " naval donkey " (*Life of Oswell*, vol. ii. p. 59).

there was ample room elsewhere in Africa for missionary enterprise; and he pointed out that the establishment of a Protestant mission, in territory claimed by Portugal, must lead to trouble between the expedition and the Portuguese.[1] Livingstone, however, welcomed the mission and was deeply disappointed at its failure, for which he blamed the Bishop in charge.

Murchison's objections proved only too well justified, and Livingstone became involved in a bitter feud with the Portuguese. He still referred with sympathy to their administration of Angola, but he denounced that in East Africa with characteristic vehemence. As the British Government recognized that it was impossible for a British mission to suppress the slave trade, in an area that was isolated from the coast by a wide tract of Portuguese territory, the expedition was recalled. The justice of this decision was sadly admitted by Livingstone.

On Livingstone's return home he suffered a second period of lionization; from this he escaped in August, 1865, when he left England on the expedition that lasted till his death in 1873. Its object was clearly and repeatedly explained by Murchison. It was to determine between the view that Tanganyika was the source of the Nile as held by Beke, Findlay and Burton, and the contrary view indicated on Speke's earlier map. Livingstone inclined from the first to believe that Tanganyika discharged to the Nile.

Though Livingstone retained his official position as British Consul, he did so without salary or claim to pension. Most of the expense of this expedition he con-

[1] The Prince Consort's refusal to become Patron of the Universities' Mission may have been due to the same view.

tributed himself or obtained from personal friends. The largest donation, £1000, was contributed by his devoted Glasgow friend, James Young, founder of the Scottish oil industry.

Livingstone often declared that he would only go to Africa as a missionary. In the introduction to his book on the Zambesi Expedition, Livingstone has clearly explained the scope of his investigations during the trans-African journey described in his *Missionary Travels*. "In our exploration the chief object in view was not to discover objects of nine days' wonder, to gaze and be gazed at by barbarians; but to note the climate, the natural productions, the local diseases, the natives, and their relation to the rest of the world." Since that journey his geographical interests had been steadily growing; and his diary during his last expedition shows that he had become intensely interested in the problem of the Nile, and was anxious to crown his African career by settling that most prolonged of geographical controversies. "The object of my expedition", he wrote to his son Tom, in explanation of his last journey, "is the discovery of the sources of the Nile." [1] He also welcomed the mission owing to its new opportunities for furthering his schemes of African development; and owing to his quarrel with the Portuguese he was glad to explore a new road into the interior north of their dominions, and yet south of the region where an arid belt intervenes between the coast and the fertile interior. The last six years of the expedition was devoted exclusively to the Nile problem.

The zone of Africa north of the Zambesi is geographi-

[1] Blaikie, *Personal Life*, p. 332.

cally more interesting than the country to the south; but the conditions of travel there are more difficult and annoying. Large tracts of South Africa were occupied by comparatively organized tribes. A traveller who had secured the friendship of a leading chief could explore safely far and wide under his authority; but north of the Zambesi there were no great chiefs. The country was occupied by small, independent tribes, who maintained perpetual blood feuds, so that inter-tribal intercourse was restricted. Travel was precarious, and in some districts impossible except to large well-armed caravans. The natives were ignorant of the power of the white man. They had had no experience of punitive expeditions, and the massacre of a caravan usually secured rich loot and no punishment. For the conditions of travel south of the Zambesi Livingstone was ideally suited; but in the region of his last expedition his very virtues told against him. He was bored by the continual wrangles with village elders, and in his later years he appears to have been too kind-hearted, or perhaps too indolent, to discipline his caravan.

The geographical results of Livingstone's last and longest expedition were most important, but the story, how its great discoveries were made, is one of the most pathetic in the annals of African exploration.

On the Zambesi expedition Livingstone's relations with his European comrades had not been happy, so this time he wisely went alone. He started with a caravan of 57 men and boys; he trusted for transport to camels and buffaloes, as he hoped that they would resist tsetse disease. His drivers were a party of sepoys, who soon lost heart, and tried to secure the return of the expedition

by killing the transport animals. Livingstone, in his journal and still more in private letters, complained of these men's brutality. He said he had to hurry on ahead of the caravan so that he might not hear the groans of his baggage animals. Some of them, he says, were deliberately beaten to death, and others died through the torturing of their wounds. His experiment in transport had, therefore, no chance of success. The beasts of burden were soon dead and the men out of control.

The expedition began by the ascent of the Rovuma River, across what is now German East Africa. Livingstone's most direct route to his special field of work would have been past the northern end of Lake Nyasa and thence to Tanganyika along the route followed by the Stevenson road; but Livingstone was gradually pressed southward by the timidity of his men. He passed around the southern end of Lake Nyasa and began the exploration of what is now north-eastern Rhodesia.

Shortly after leaving Lake Nyasa the sepoys deserted in a body; and to excuse their return and secure their pay, they told a dramatic story of how Livingstone had been killed in a fight, after he had heroically slain several of his opponents. The two most competent authorities at Zanzibar, Dr. Seward, the Consul, and Sir John Kirk, the Vice-Consul, believed the men's story, which was also accepted by Sir Samuel Baker. It was scouted by Murchison and Oswell, and finally disproved by a search party under Young, which, though it failed to reach Livingstone, obtained conclusive evidence that he was alive after the date of his reported murder.

After the desertion of the sepoys Livingstone met some Arab traders, and the happiest part of the expedition was

during his journeys with them. Livingstone wrote from Bangweolo (8th July, 1868), "The Arabs have all been overflowing in kindness."[1] He had lost his stores and had only a few men left. The Arabs at once supplied him with provisions, cloth and beads; and "showed", said Livingstone, "the greatest kindness and anxiety for my safety and success."[2]

Livingstone still loathed the slave trade, but he had come to recognize that a certain measure of domestic slavery was inevitable in that stage of African development; and he drew pleasing pictures of the kindly relations between his Arab friends and their slaves. "I was glad", he wrote, "to see the mode of ivory and slave trading of these men, it formed such a perfect contrast to that of the ruffians from Kilwa, and to the ways of the atrocious Portuguese from Tette".[3] At Nyangwe, however, he again saw the full horrors of the slave trade.

Livingstone's work during this part of the expedition disproved the supposed connection between Lakes Tanganyika and Nyasa; he discovered Lakes Bangweolo and Moero, and evidence which convinced him that the rivers of that district were the head streams of the Nile. "I have found what I believe to be the sources of the Nile between 10° and 12° S.," he wrote joyfully home.[4] In one of his waking dreams he speculated as to the possibility of Lake Moero being the Meroe where, according to ancient tradition, Moses lived for some time with his Egyptian foster-mother, the Princess Merr.[5]

[1] *Proc. R. Geog. Soc.*, vol. xiv., 1870, p. 8.
[2] *Ibid.*, p. 10. [3] *Ibid.*, p. 10. [4] *Ibid.*, p. 8.
[5] *Last Journals*, vol. ii. p. 59.

In a journey westward from Tanganyika, he reached the Lualaba River at Nyangwe, and from its vast volume feared that it might be the head stream of the Congo, as Stanley afterwards proved to be the case. Any water that flowed to the Congo had no interest for Livingstone. In one entry in his journal, he described himself as "oppressed with the apprehension that after all it may turn out that I have been following the Congo; and who would risk being put into a cannibal pot, and converted into black man for it." [1] He clung tenaciously to the idea that the Lualaba discharged to the Nile, and, in a letter to Oswell, written in October 1869, said: "there can be little doubt that such is its destination." He wrote to Murchison: "the sources of the Nile are undoubtedly between 10° and 12° S." [2]

He was, however, unable to trace the Lualaba northward in order to determine whither it flowed. He returned to Ujiji, where, to his bitter disappointment, he found that his stores had been sold by an Arab. Another of the Ujiji Arabs at once called on him with the offer to sell some ivory and replace the stolen goods. Livingstone temporarily declined this generous offer, and a few days later his wants were relieved by the arrival of H. M. Stanley.

Livingstone's long stay to the west of the lakes had naturally occasioned great anxiety at home, for it had been thought that the expedition need not spend more than a year in the field, and the contribution from the Geographical Society had been given on that estimate. The news of the death of his transport animals, and the deser-

[1] *Last Journals*, vol. ii., p. 188.
[2] *Proc. R. Geog. Soc.*, vol. xiv., 1870, p. 12.

tion of his sepoy escort, revealed his difficulties and danger, and repeated rumours of his death reached the coast.

After his long absence, and the failure to obtain news of him, Mr. Gordon Bennett of the *New York Herald* sent Stanley to find the lost explorer. The authorities regarded the quest as hopeless. Stanley reached East Africa in 1871, when Livingstone had a five years' start, and it was thought by some of his friends that he would certainly cross Africa to the west coast. But Stanley's pursuit was swift; he crashed through every obstacle which could not be avoided. He left his two European comrades buried beside his path, and after a rapid march of five months found Livingstone at Ujiji, the Arab settlement on the eastern shore of Tanganyika.

Stanley was then a young and adventurous journalist, and appears to have had no special interest in Livingstone, or sympathy with geographical research. Stanley found a man surprisingly unlike his expectations. The two men must have been extraordinarily different in original disposition, and Livingstone's thirty years' residence in Africa had left its mark on his temperament. In spite of his many trials there, he doubtless much preferred life in Africa to that in Europe. Sir Francis Galton, in explanation of Livingstone's long absence, remarked that "there was no ground for crediting Livingstone with any excessive home-sickness. He was as much at home in Africa as in England . . .; therefore, when he received his supplies, if he had more work to do, no doubt he would remain." [1] But in spite of Stanley's first disappointment with Livingstone, he gradually fell under his influence during their four months' residence together. Livingstone was

[1] *Proc. R. Geog. Soc.*, vol. xv., 1871, p. 209.

anxious to determine whether the river at the northern end of Tanganyika flowed into the lake or out of it, for, according to the Royal Geographical Society, that was "the great object of Livingstone's journey".[1] The Arabs who had seen the river said it flowed into the lake. Livingstone expected it to flow out of the lake. Stanley probably thought the difference immaterial, but that if Livingstone really wished to know he might as well satisfy this whim. So he made the necessary arrangements to visit the locality, and invited Livingstone to go as his guest. They found the Arabs were right; but the journey settled far more than that question.

Around the camp fires at night, Livingstone told Stanley the story of his life and wanderings, and explained his theories of the Central African river system. He seems to have laid in Stanley's mind the germ of the belief that knowledge is worth something for its own sake alone. Stanley, having supplied Livingstone's immediate needs, returned to the coast, and sent him back ample supplies, with a caravan of carefully selected and thoroughly reliable Zanzibari. Thus re-equipped, Livingstone started west again in 1872. He travelled slowly, for his usual deliberation was increased by growing weakness. He struggled on to Lake Bangweolo, where he died between the 1st and 4th of May, 1873. To prove his death, the men embalmed the body, and, after many difficulties, carried it back to the coast, and it was buried in Westminster Abbey.

The geographical results of this long expedition were most important. Though they did not conclusively settle the problem which Livingstone had started to solve, they

[1] *Proc. R. Geog. Soc.*, vol. xi., 1867, p. 144.

showed that Tanganyika had no northern outlet, and was not connected with Lake Nyasa. The freshness of the water of Tanganyika indicated that it had an outlet somewhere, which was subsequently found by Stanley. Livingstone proved that the river known as the Chambesi was not, as had been thought from its name, a tributary of the Zambesi, but that it flowed through Lake Bangweolo and thence discharged northward; but whether the northward-flowing rivers to the west of Tanganyika joined the Congo, or whether, as Livingstone both thought and hoped, they were tributaries of the Nile, was not settled until Stanley's epoch-making expedition, described in *Through the Dark Continent*. Nevertheless, Livingstone's exploration of the region to the south and west of Lake Tanganyika was a contribution of fundamental importance to African geography.

In the previous attempt to summarize Livingstone's thirty years' geographical work in Africa in less than thirty minutes it has been only possible to refer to the general outline of his travels. His results were so great that Livingstone is universally accepted as one of the world's greatest explorers.

His fame rests mainly on the first of his three chief expeditions, owing to the great extent of new country it explored, the unexpected nature and practical value of its discoveries, and its achievement at the cost of a native chieftain. Sir Roderick Murchison proclaimed this journey as "the greatest triumph in geographical research which has been effected in our times."

The outstanding features of Livingstone's explorations were the great length of his new routes and the precision

with which he determined his positions. He travelled about 29,000 miles in Africa, and traversed so much new ground that, to quote the authoritative opinion of Dr. Scott Keltie, "no single explorer ever did as much for African geography as Livingstone." "No explorer on record has determined his path with the precision you have accomplished," wrote Sir Thomas Maclear to Livingstone.

The accuracy of his work may be shown by comparison of some of the positions he determined in Angola with those adopted by the official Portuguese map of the area published in 1910; his results, as shown by the following list, are extraordinarily accurate, considering the conditions under which he worked.

		Portuguese Map, 1910.
Katema's, near Lake Dilolo,	11° 35′ 49″ S.	11° 20′ S.
	22° 27′ E.	22° 2′ E.
Golungo Alto, - - -	9° 8′ 30″ S.	9° 4′ S.
Ambaca, - - - -	9° 16′ 35″ S.	9° 14′ S.
Probably, -	15° 23′ E.	15° 12′ E.
Pungo Andongo, - - -	9° 42′ 14″ S.	9° 40′ S.
	15° 30′ E.	15° 34′ E.

His first journey, with its chain of accurately determined stations, gave the first reliable section across tropical Africa, and represents the greatest single contribution to African geography which has ever been made. His account of the country was a revelation to European geographers. The Kalahari had been regarded as part of a vast desert, which was believed to occupy the whole interior of Southern Africa, and had been called the Southern Sahara, from the belief that it corresponded in size to the Sahara of Northern Africa. Livingstone's discovery that southern tropical Africa was watered by large rivers, contained many great lakes, and a fertile soil which

grew excellent cotton, sugar, indigo and other tropical produce, and that its inhabitants were keen traders, expert agriculturists, and skilled craftsmen, was a discovery as momentous as it was unexpected.

Livingstone therefore discovered that southern tropical Africa, instead of being a useless desert, is a land of incalculable commercial possibilities. Europe was given an interest in Africa, which has never ceased to grow; Livingstone was thus the most influential pioneer in opening tropical Africa to civilizing influences.

Livingstone's views as to the geographical structure of Equatorial Africa were of less merit than his practical achievements; but his lack of training in geography is responsible for any deficiencies in his theoretical conclusions. He represented Africa as a plateau bordered by two mountain chains which run north and south and are separated by a great central depression. This view had been advocated by Murchison in 1852, and Livingstone independently arrived at the same conclusion; and as a simple generalized statement of the structure of southern tropical Africa it is essentially correct.[1] Sometimes, however, probably under Murchison's influence, Livingstone over-estimated the depth and nature of the central depression, and imagined that it had been filled by one vast fresh-water sea, which had been drained by the formation of cracks through the mountain ranges on each side. The gorge of the Zambesi below the Victoria Falls, one of his most famous discoveries, he regarded as

[1] According to Dr. Scott Keltie, in the article on Livingstone in the last edition of the *Encyclopaedia Britannica*, vol. xvi., 1911, p. 841, "The conclusions he came to have been essentially confirmed by subsequent observations."

the most conspicuous of these cracks. The existence of this sea has not been confirmed, and the gorges on the margins of the plateau were doubtless cut by the rivers that flow through them.[1]

In some of the statements of his theory Livingstone represented Africa as consisting of a low, malarial plain, enclosed by a rim of mountains which he described as "perfect sanatoria." Such a conception of the structure of Africa is only partially true. But Livingstone clearly recognized that Equatorial Africa is essentially an ancient plateau, of which the jagged sides look from below like mountain ranges. His account of the descent from the eastern plateau of Angola to the western coast shows that he understood its real geographical structure;[2] and his conclusion: "The continent seems to be an elevated tableland sloping chiefly towards the east" was quite correct for the zone he was describing.

Livingstone's views as to the structure of Africa were a great advance on the ideas of most of his contemporaries. Thus, the *Encyclopaedia Metropolitana*, in its article on Africa, in 1845, adopted a classification of African mountains which was very crude in comparison with Livingstone's explanation of their nature; and it described as the most striking feature of Africa, "the immensity of its deserts." In addition to the Sahara, it says (p. 195), the continent is "everywhere intersected with deserts of an inferior, but still of great extent; and these are to

[1] The formation of the gorge by the cutting back of the Victoria Falls has been proved by Mr. G. W. Lamplugh (*Quart. Journ. Geol. Soc.*, vol. lxiii., 1907, pp. 162-214.)

[2] The essential accuracy of Livingstone's interpretation of the mountains of Angola I had the pleasure of confirming last summer by a journey along a parallel line to the south of his route.

be found even in the southern parts, towards the European settlements. There is, probably, a wide wilderness of this nature, between the east and west ranges of mountains, pervaded by the race of people called Jagas, who sometimes are said to wander into the vicinity of the Cape."

Regarding the sources of the Nile, the problem to which Livingstone devoted the last six years of his life, his theoretical conclusions were less correct than those on the structure of the continent. The facts that he discovered during his last expedition would, no doubt, have led him to recognize, if he had been spared to write a connected summary of his results, that his view was practically impossible. But while in the field he was under the conviction, which almost amounted to an obsession, that he was extending southward the basin of the Nile. This view was probably a reaction from the supposed former limitation of the Nile to the mountains north of the Equator; Speke's work had extended the Nile basin south-eastward by the inclusion of the Victoria Nyanza, and Livingstone hoped to extend it still further south and south-westward to include the basin of Tanganyika. When his visit with Stanley disproved the supposed northern outlet from Tanganyika to the Albert Nyanza, he clung to the hope that the waters on the highlands west of Tanganyika flowed north-eastward into the Nile; and he probably died all the happier from the belief that he had been mapping the head waters and adding an enormous area to the basin of the Nile.

Livingstone is to be judged by his achievements as an explorer and a pioneer of civilization rather than by his views as a geographer. The spiteful criticism that,

as an explorer, he stands in the highest rank and as a geographer in the very lowest, is only worth quoting as an illustration of the undoubted superiority of his exploration to his theoretical geography. Livingstone began his work with no training in the general principles of geography, but he showed such skill in surveying and such keen insight that it is difficult to realize how much the world has lost by Livingstone's lack of geographical education. The chief defects of his geographical writings are his neglect of his predecessors and his irritation at unfavourable criticism. Cooley, learned in African lore, was offended by neglect of this subject, and severely denounced what he described as Livingstone's strong dislike of preliminary information. Livingstone's books should, however, be judged as records of his own personal observations and opinions. After he left Britain for South Africa he spent less than two and a half years at home, and during his two visits he was so overpressed with engagements that he had no time to study the literature of African exploration.

It is more important in an appreciation of Livingstone to recognize his relations to his successors than to his predecessors; he was one of those independent pioneers who owe little to either forerunners or contemporaries; but the impression he made on his successors has profoundly influenced the politics of both Africa and Europe.

1873, the year of Livingstone's death, marked a great turning-point in African history. It closed the work of the dreamers. Men of that type still went to Africa; they go there still; but henceforward they were unimportant compared with those who went to help the administration and the commercial development of the country. Lord

Houghton referred, in some verses on Livingstone's funeral, to the promise of a new era in Africa :

> "Morning o'er that weird continent
> Is slowly breaking ;
> Europe her sullen self restraint
> Forsaking."

The dawn which Lord Houghton discerned broke on Africa with dazzling swiftness. Many influences helped its advance. Livingstone's death roused Europe to a sense of its responsibilities to Africa and the conviction that we are our black brothers' keepers. Gordon had just reached Khartoum to continue Baker's attempt to rescue the Soudan from the raid of the slave trader and the misrule of the Pashas. France was beginning to develop her west coast colonies so as to gain in Africa the supremacy she had lost in Europe. The greatest influence of all, however, was that which Livingstone exerted through his pupil Stanley, in whom were growing the interests which Livingstone had planted. Before the end of the year of Livingstone's funeral Stanley was back on the east coast, his life dedicated to the service in which his teacher had fallen.

Stanley's first journey across Africa solved the problems for which Livingstone died ; and it led to the foundation of the Congo Free State. That State was founded with high ideals. "I am charged," wrote Stanley, "to open and keep open, if possible, all such districts and countries as I may explore, for the benefit of the commercial world. The mission is supported by a philanthropic society, which numbers noble-minded men of several nations. It is not a religious society, but my instructions are entirely of that spirit. No violence must be used, and wherever

rejected, the mission must withdraw to seek another field." And the success of the undertaking which was begun with these motives led to the rapid growth of a keener European interest in Africa, and the sub-division of the continent among the States of Europe. The history of that change has been marred by many crimes and blunders, but there can be no doubt that the Africans are immeasurably safer and happier to-day than they were forty years ago.

Livingstone appears to have died under the impression that his life had been a failure. With the malicious irony of fate the only immediate commercial result of his journey from the Upper Zambesi to the west coast was the opening of the worst slave road and, by the help of his friend, Sekeletu, the most active slave market in Equatorial Africa. The three missions—Episcopalian, Congregational, and Presbyterian—sent to the Zambesi valley in answer to his appeal had all withdrawn ; and the work during the later years of his last journey had thrown doubt on the confident conclusions he had announced from its first discoveries. But, forty years onward, we can better realize how great was the work that he accomplished ; for the beneficent revolution that has taken place in Africa was due both to Livingstone's discovery of its vast possibilities and to Livingstone's influence on the men who established civilization where he entered as the heroic pioneer.

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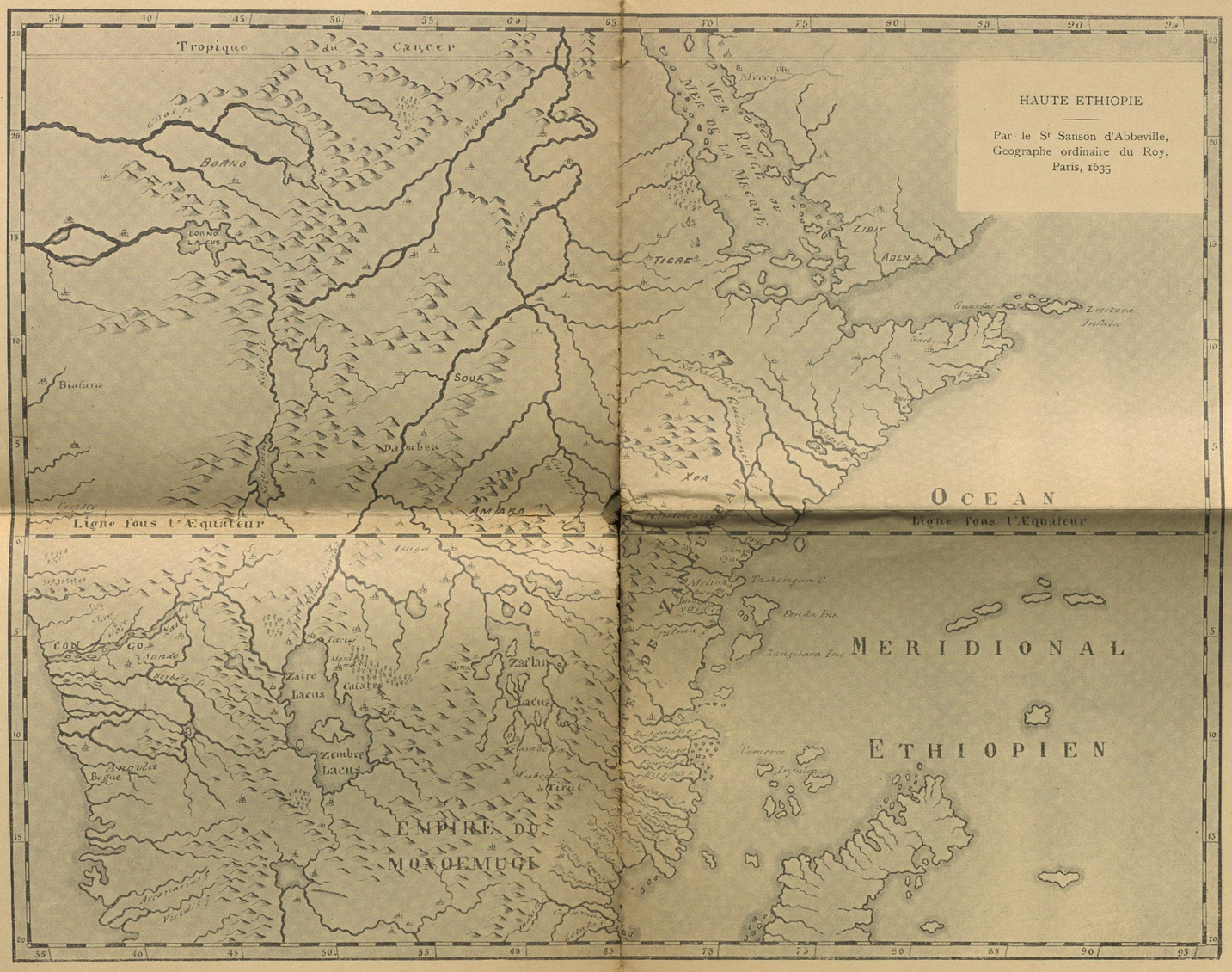
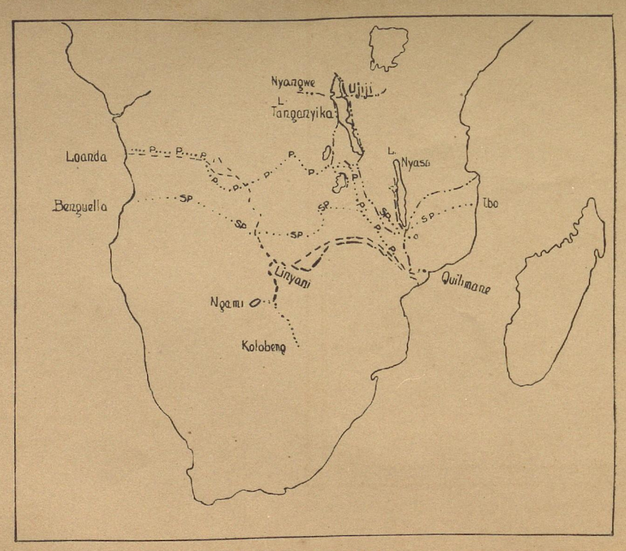


MAP I.—EQUATORIAL AFRICA AS KNOWN IN THE EARLY 17TH CENTURY, ACCORDING TO THE MAP OF SANSON D'ABBEVILLE, 1635
(Gregory, *The Foundation of British East Africa*, 1901. Block lent by Messrs. H. Marshall & Son)

MAP II.—THE MAP OF AFRICA IN 1828
(Hofland, *Africa Described*)



MAP IV.—SKETCH MAP OF LIVINGSTONE'S MAIN ROUTES OF EXPLORATION

..... Expedition to Ngami.	....P....P.... Approximate route of the Pombeiros, 1802–1811.
– – – – – Trans-African Expedition.	.....SP..... Reported route of Silva Porto, 1853–1854.
_._._. Zambesi Expedition.	
_.._.._ Last Expedition.	

MAP III.—THE MAP OF AFRICA IN 1843, BEFORE THE BEGINNING OF LIVINGSTONE'S EXPLORATIONS
(A. K. Johnston, National Atlas. Edinburgh, 1843)