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Narrative of an Expedition to Explore the River Zaire in South Africa, in 1816

In 1816, an expedition to Africa, commanded by Captain James Tuckey (1776–1816), set out on H.M.S. *Congo*, accompanied by the storeship *Dorothy*. The aim was to discover more about African geography – of which relatively little was then known – and in particular the connection between the River Congo, also known as the Zaire, and the Niger Basin. The mission failed when eighteen crew members, including Tuckey, died from virulent fevers and attacks by hostile natives. However, the Lords Commissioners of the Admiralty gave permission for publication of Tuckey's notes, and those of his Norwegian botanist Christen Smith (1785–1816), who also died during the voyage. First published in 1818, the work comprises their narratives of the doomed expedition. At the time it aroused Western interest in Africa, encouraging further research, and it remains of interest to geographers, botanists and scholars of African studies today.

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Narrative of an Expedition to Explore the River Zaire in South Africa in 1816

James Hingston Tuckey
Christen Smith

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Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paolo, Delhi, Mexico City

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org
Information on this title: www.cambridge.org/9781108050517

This edition first published 1818
This digitally printed version 2012

ISBN 978-1-108-05051-7 Paperback

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NARRATIVE OF AN EXPEDITION

TO EXPLORE

THE RIVER ZAIRE,

USUALLY CALLED THE CONGO,

IN SOUTH AFRICA,

IN 1816,

UNDER THE DIRECTION OF

CAPTAIN J. K. TUCKEY, R. N.

TO WHICH IS ADDED,

THE JOURNAL OF PROFESSOR SMITH;

SOME GENERAL OBSERVATIONS ON THE COUNTRY AND ITS INHABITANTS;

AND AN APPENDIX:

CONTAINING

THE NATURAL HISTORY OF THAT PART OF THE KINGDOM OF CONGO THROUGH WHICH THE ZAIRE FLOWS.

PUBLISHED BY PERMISSION OF

THE LORDS COMMISSIONERS OF THE ADMIRALTY.

LONDON:

JOHN MURRAY, ALBEMARLE-STREET.

1818.

London: Printed by W. Bulmer and Co.
Cleveland Row, St. James's.

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APPENDIX.

DIRECTIONS FOR PLACING THE PLATES.

ERRATA.

Page 31, for *Hirunda*, read *hirundo*.
32, for *Ettereus*, read *Ættereus*.
33, for *ommon*, read *common*.
40, for *La Marc*, read *La Marck*
for *serrata*, read *serratus*.
65, for *La Marc*, read *La Marck*.
for *sulcata*, read *patula*.
121, for *sephus*, read *cephus*,
289, for *Simio*, read *Simia*.
302, for *decompose*, read *decomposed*.

INTRODUCTION.

THE reign of George III. will be referred to by future historians as a period not less distinguished by the brilliant exploits of our countrymen in arms, than by the steady and progressive march of the sciences and the arts. Occupied, as a very considerable portion of that period has been, by a war, longer in its duration, more ferocious in its character, and more extensive in its ravages, than had ever before afflicted Europe, at least in modern times, the advancement of physical and geographical knowledge, though necessarily retarded in its progress, suffered but little interruption, if we except one memorable instance where a French General brutally seized the person and papers of a British naval officer, on his return from a voyage of discovery, and with unparalleled meanness, injustice, and inhumanity, detained the former nearly seven years in captivity, and purloined a part of the latter. With this exception, no war was waged against science; the impulse which had been given to geographical discovery still maintained its direction, and was never lost sight of, even by hostile fleets; witness, among other instances, the interesting and admirable survey of the coast of Asia Minor by Captain Beaufort, while commanding a frigate attached to the Mediterranean squadron, the account of which has recently been laid before the public. "Indeed," as Dr. Douglas has justly observed, "it would argue a most

culpable want of rational curiosity, if we did not use our best endeavours to arrive at a full acquaintance with the contents of our own planet." And if those endeavours, which, during war, were so successfully pursued, should be relaxed on the return of peace, we might then indeed have cause to think meanly of the times in which we live, or, to use the words of this eminent writer, "if we could suppose it possible that full justice will not be done to the noble plan of discovery, so steadily and so successfully carried on since the accession of His Majesty, which cannot fail to be considered, in every succeeding age, as a splendid period in the history of our country, and to add to our national glory, by distinguishing Great Britain as taking the lead in the most arduous undertakings for the common benefits of the human race."—Introd. to Cook's Third Voyage.

By following up, therefore, the same system, and being actuated by the same motives, of promoting the extension of human knowledge, the Prince Regent's government has evinced a correspondent feeling; it has moreover proved, by appropriating to the purposes of discovery and maritime geography as great a share as possible of that part of the British navy which constitutes the peace establishment, its laudable inclination to cultivate the useful arts of peace, not from any selfish views, but for the general benefit of mankind. To what purpose indeed could a portion of our naval force be, at any time, but more especially in a time of profound peace, more honourably or more usefully employed, than in completing those *minutiæ* and details of geographical and hydrographical science, of which the grand outlines have been boldly and

broadly sketched by Cook, Vancouver, Flinders, and others of our own countrymen; by La Perouse, Dentrecasteaux, Baudin, and other foreign navigators, French, Spanish, and Russian: in ascertaining with greater precision the position of particular points in various parts of the globe—on the shores of Asia Minor—of northern Africa, and of the numerous islands in the Mediterranean—the coasts, harbours, and rivers of Newfoundland, Labradore, Hudson's bay, and that reproach to the present state of European navigation, the existence or non-existence of Baffin's bay, and the north-west passage from the Atlantic to the Eastern ocean—in exploring those parts of the north-west coast of New Holland, which have not hitherto been visited since the time of Dampier—and in obtaining more distinct and accurate information of those great Archipelagos of islands, and those innumerable reefs and islets, which are scattered over the northern and southern Pacific oceans, and the Indian and Chinese seas, many hundreds of which were but the other day discovered, in one spot, by the Alceste, on her late voyage up the Yellow Sea, where not a single island had been even suspected to exist—and, to come nearer home, in filling up and correcting those imperfect and erroneous surveys of our own coasts, and of the seas that surround them—and lastly, in ascertaining with more precision, the extent, direction, and velocity, in different parts and at different seasons of the year, of that extraordinary current known by the name of the Gulf Stream, by which all the currents of the northern Atlantic are more or less influenced. These are objects of general concern in which all Europe and America are equally interested.

By the present improved state of nautical science, by means of His Majesty's ships of war employed on surveys, of the surveying marine of the East India Company, and of the accidental discoveries of commercial vessels, the hydrographical knowledge of every part of the globe is daily extending itself. The line of the coasts which form the boundaries of the continents and larger islands, are traced with more or less accuracy; the positions of most of the islands or groups of islands are generally ascertained; and the prevailing winds and currents of the ocean are so much better understood than formerly, that the usual time of an eight or nine months passage to or from China, is now reduced to four months, and rarely exceeds five. It may be said indeed, generally speaking, that, as far as regards maritime discovery, the edge of curiosity has been taken off. Enough however still remains to be done. The deficiency in the detail, and the want of that accuracy so essentially necessary for the advantage and security of navigation, still furnish ample scope for further investigation and research.

But the object of the voyage, of which the narrative is contained in the present volume, though fitted out in the naval department, is nearly, if not altogether, unconnected either with maritime discovery or nautical surveying. It was planned and undertaken with the view and in the hope of solving, or of being instrumental in solving, a great geographical problem, in which all Europe had, for some time past, manifested no common degree of interest; and, at any rate, in the almost certain means it would afford of adding something to our present very confined

knowledge of the great continent of Africa—that ill-fated country, whose unhappy natives, without laws to restrain or governments to protect them, have too long been the prey of a senseless domestic superstition, and the victims of a foreign infamous and rapacious commerce. That great division of the globe of which, while we know that one part of it affords the most ancient and more stupendous monuments of civilized society that exist on the face of the earth, another, and by far the greater portion, exhibits at this day, to the reproach of the state of geographical science in the nineteenth century, almost a blank on our charts; or what is still worse, large spaces filled up with random sketches of rivers, lakes, and mountains, which have no other existence than that which the fancy of the map-maker has given to them on his paper. So little indeed has our knowledge of this great continent kept pace with the increased knowledge of other parts of the world, that it may rather be said to have retrograded. If we have acquired a more detailed and precise acquaintance with the outline of its coast, (and in this we are very deficient, as the present expedition has proved,) and with the position of its headlands and harbours, than the Egyptians, the Greeks, or the Romans in their time possessed, it may be doubted whether the extent and accuracy of their information respecting the interior did not surpass ours; for it cannot be denied that, amidst the fabulous accounts, which fear or fancy is supposed to have created, of regions within and beyond the boundaries of the great desert, many important facts are enveloped, which modern discoveries have brought to light and proved to be correct.

For the greater part of what is still known of the

interior regions of northern Africa, we are indebted to the Arabian writers of the middle ages, and to the information of Arabian travellers of our own times. After them the Portuguese were the first Europeans to penetrate beyond the coast into the interior, where they no doubt collected much information; but, unfortunately for the world, it was their plan to conceal what they discovered, till it has been lost even to themselves. That this nation sent frequent embassies to Tombuctoo, we have the authority of De Barros, which can seldom be called in question, and never, we believe, when he states mere matters of fact, which is the case in the present instance; but though he mentions the names of the persons sent on these missions, he omits all the circumstances and occurrences of the journey, and fails even to describe this renowned city. There are however some circumstances which make it possible that the Tombuctoo of De Barros was no other than the Tambacunda of Park and others, as in all the maps of the sixteenth century, taken from Portuguese authority, Tombuctoo is placed not more than from three to four hundred miles from the coast, which is about one-third part only of its real distance. The Portuguese, however, followed the Arabian geographers in describing the stream of the Niger to flow from east to west, which Herodotus had learned, nearly twenty centuries before, to flow in a contrary direction; an opinion which Ptolemy afterwards seems to have adopted, perhaps on information gained from the same source; though it must be confessed, that Ptolemy is unusually obscure in his geographical delineation of the rise, direction, and termination of this celebrated river.

In the midst of these conflicting opinions respecting the

course of a great river, which was still left undecided in our times, the authority of an English traveller, from personal inspection, set this question for ever at rest, by determining the direction of the stream to be from west to east. That part, therefore, of the problem which relates to the origin and the direction of the early course of this celebrated river, has been completely solved; but another and no less interesting part still continues to be wrapt up in mystery—where is its termination? As ancient authorities had pointed out the true direction of the stream, it was but fair to allow them credit for a knowledge of its termination. In the examination of this part of the question, by the first geographer of the age, either in this or any other country, the authorities of the Arabian writers are weighed and compared with the geography of Ptolemy; and after a close and accurate investigation of the various statements of ancient and modern authorities, and a train of reasoning clear and argumentative, the result of the enquiry appears to be, that the Niger loses itself in the extensive lakes or swamps of Wangara; an hypothesis which was supposed to have the merit of falling in pretty nearly with the termination of that river, as assigned to it by Ptolemy in what he called the *Libya palus*, which lake, however, Ptolemy only says, is *formed* by the Niger. In addition to this coincidence, there were also negative proofs of the disappearance of the Niger in the interior regions of Africa. It could not, for instance, be a branch of the Egyptian Nile, as the Arabs generally contend, for the two reasons adduced by Major Rennell: first, because of the difference of level; the Nile, according to Bruce's measurement by the barometer, passing over a country

whose surface is very considerably higher than the *sink* of North Africa, through which the Niger is stated to flow. Secondly, because the Nile of Egypt, in this case, must necessarily be kept up at the highest pitch of its inundation for a long time after that of the Niger, which is well known to be contrary to the fact. Neither was it probable, that its waters were discharged into the sea on any part of the eastern coast, there being no river of magnitude on the whole extent of that coast from Cape Guadafui to Cape Corientes. The hypothesis therefore, of the dispersion and evaporation of the waters of the Niger, in lakes of an extended surface, was the most plausible, and perhaps the more readily adopted, as it fell in with ancient opinion.

The stream of this mysterious river being now traced with certainty from west to east as far as Tombuctoo, so little suspicion seems to have been entertained of the probality of its making a circuitous course to the sea on the western coast, near to which it has its source, that the examination of this side of Africa seems entirely to have been left out of the question. But when Park was preparing for his second expedition to explore the further course of this river, it was suggested, that the Congo or the Zaire, which flows into the southern Atlantic about the sixth degree of south latitude, might be the outlet of the Niger; and as this suggestion came from a person who, in the capacity of an African trader, had not only become well acquainted with the lower part of this river, but had actually made a survey of it, the idea was warmly espoused by Park, who, in a memoir addressed to Lord Camden, previous to his departure from England, assigns his reasons for becoming a convert to this hypothesis; and he adds,

that if this should turn out to be the fact, "considered in a commercial point of view, it is second only to the discovery of the Cape of Good Hope; and in a geographical point of view, it is certainly the greatest discovery that remains to be made in this world."

Park's opinion, it may be said, is entitled to no greater weight, on this point, than that of any other person who had given his attention to the subject; and so, it appears, Major Rennell thought, who gave him no encouragement to hope for the confirmation of this new hypothesis. But the impression which the facts stated by Mr. Maxwell, and his reasoning on those facts, had made on Park's mind previous to his leaving England, so far from being weakened, appear to have gathered strength on his second progress down the river; and it can hardly be doubted, that the unknown termination of the stream, and of his own journey, was the unceasing object of his anxious inquiries; the result of which was, as we are told by his able and accurate biographer, that "he adopted Mr. Maxwell's sentiments relative to the termination of the Niger in their utmost extent, and persevered in that opinion to the end of his life;"—perhaps he ought rather to have said, "to the day of his departure from Sansanding." That no alteration of opinion in this respect had taken place, is quite clear from several expressions in his letters from the Niger, addressed to Lord Camden, to Sir Joseph Banks, and to his wife, in all of which he talks confidently of his reaching England by the way of the West Indies; not by a painful journey back by land to the Senegal or the Gambia, but by arriving at some other and more distant part of the western coast. This is rendered still more

evident from the information he collected at Sansanding, which confirmed the hypothesis of the southern direction of the Niger. "I have hired a guide (he says) to go with me to Kashna; he is one of the greatest travellers in this part of Africa: he says that the Niger, after it passes Kashna, runs directly to the right hand, or to the south; he had never heard of any person who had seen its termination; he was sure it did not end near Kashna or Bornou, having resided for some time in both these kingdoms;" and to Lord Camden he says, "he was more and more inclined to think that it can end no where but in the sea."

No wonder then that Park, having thus ascertained from "one of the greatest travellers in that part of Africa," the southerly course of the Niger, should be sanguine of proving the validity of Mr. Maxwell's hypothesis, and of reaching the West Indies from the mouth of the Congo. It was not, however, his fate to establish the truth or falsity of this proposition; the problem still remains undetermined; and the termination of the Niger and the source of the Congo, are alike unknown. The probability of their identity, however, appeared to gain ground, not merely because one great river took a southerly direction, and had no known termination, and another came from the northward, nobody knew from whence; but the more the magnitude and character of the latter river was investigated, and its circumstances weighed and compared with those effects which might be expected to happen from natural causes, the greater colour was given to the supposition of their identity. It is only surprising that a river of that magnitude and description which belong to the Congo, should not, long before now, have claimed a more particular attention.

It is true, the first notice of this river is but vaguely given. Diego Cam, in proceeding down the coast, observed a strong current setting from the land, the waters of which were discoloured, and when tasted, found to be fresh. These circumstances led him to conclude, that he was not far from the mouth of some mighty river, which conclusion was soon confirmed by a nearer approach. He named it the Congo, as that was the name of the country through which it flowed, but he afterwards found that the natives called it the Zaire; two names which, since that time, have been used indiscriminately by Europeans. It now appears that Zaire is the general appellative for any great river, like the Nile in North Africa, and the Ganges in Hindostan, and that the native name of the individual river in question is *Moienzi enzaddi*, or the river which absorbs all other rivers.

All subsequent accounts agree in the magnitude and velocity of this river. In the "Chronica da Companhia de Jezus em Portugal," after noticing the Egyptian Nile, and the common but erroneous notion of its proceeding from the same lake with the Zaire, (namely Zembré, "the mother of waters,") the latter is described as "so violent and so powerful from the quantity of its water, and the rapidity of its current, that it enters the sea on the western side of Africa, forcing a broad and free passage (in spite of the ocean) with so much violence, that for the space of twenty leagues it preserves its fresh water unbroken by the briny billows which encompass it on every side; as if this noble river had determined to try its strength in pitched battle with the ocean itself, and alone deny it the tribute which all the other rivers in the world pay without

resistance." From the following description it is pretty evident that Purchas must have been in possession of this rare book from which the above account is taken; though he has not profited by the information it contains respecting the different sources of the Nile and the Zaire, "for the Portuguese," says this chronicle, "and the fathers of our society who traversed the whole empire of Upper Ethiopia, (which we call Prestê Joaõ) have clearly proved that the Nile does not take its rise in this lake Zembré, and that those authors are mistaken who give it that source." Purchas, however, seems to have no scruples about the truth of what amounts nearly to a physical impossibility,—the flowing of two rivers in opposite directions out of the same lake. "The Zaire," says this quaint writer, "is of such force that no ship can get in against the current but neer to the shore; yea, it prevails against the ocean's saltnesse threescore, and as some say, fourscore miles within the sea before his proud waves yeeld their full homage, and receive that salt temper in token of subjection. Such is the haughty spirit of that stream, overrunning the low countries as it passeth, and swollen with conceit of daily conquests and daily supplies, which, in armies of showers are, by the clouds, sent to his succour, runnes now in a furious rage, thinking even to swallow the ocean, which before he never saw, with his mouth wide gaping eight and twentee miles, as Lopez affirmeth, in the opening; but meeting with a more giant-like enemie which lies lurking under the cliffes to receive his assault, is presently swallowed in that wider wombe, yet so, as always being conquered, he never gives over, but in an eternall quarrel, with deepe and indented frownes in

his angry face, foaming with disdaine, and filling the aire with noise, (with fresh helpe) supplies those forces which the salt-sea hath consumed."

The strong current at the mouth of the river, and as far up as ships have been able to proceed—the floating islands carried down by the stream into the ocean—the perceptible effects of the current to a very considerable distance from the shore—have been corroborated by so many concurring testimonies as not to admit of the smallest doubt. Two English frigates, but two years previous to the present expedition, fully experienced these effects. The Honourable Captain Irby, who commanded the Amelia, with difficulty succeeded in getting his ship 48 or 50 miles up the river, the current running down in the middle of the stream at the rate of six and seven knots an hour; before entering the river the ship was anchored at twelve miles from the southern point of its mouth in 15 fathoms, where the current was running at the rate of four miles an hour, the water being much agitated, of the colour of rain-water, and perfectly fresh. In this situation they observed in the ocean large floating islands, covered with trees and bushes, which had been torn from the banks by the violence of the current. In the journal of the Thais, commanded by Captain Scobell, it is observed, "In crossing this stream I met several floating islands, or broken masses from the banks of that noble river, which, with the trees still erect and the whole wafting to the motion of the sea, rushed far into the ocean, and formed a novel prospect even to persons accustomed to the phenomena of the waters." In Maxwell's chart the current is laid down near the mouth as running at the rate of six miles and seven miles an hour, and the mid chan-

nel 100 fathoms deep; at twenty-four or twenty-five miles up the river, where the funnel or estuary is contracted to the natural bed of the river, which is about two and a half to three miles in width, the depth is still 100 fathoms. At fifty miles, the stream is broken into a number of branches, by islands and sand banks. Beyond ninety miles they are again united into one channel, about a mile and a half in width, and the depth, in some places fifty, in others thirty, fathoms, continuing about the same width and depth to the end of the survey, or about 130 miles from the mouth of the river; and it is stated, from information of the native slave dealers at Embomma, that it is navigable beyond the termination of this survey from fifty to sixty miles, where the navigation is interrupted by a great cataract, which they call Gamba Enzaddi. He says, however, in his letter to Mr. Keir, which was communicated to Park, that, according to the accounts he had received from travelling slave merchants, the river is as large at 600 miles up the country as at Embomma, and that it is there called Enzaddi.

All these accounts prove the Zaire to be a river of very considerable magnitude; and though not to be compared with the Amazons, the Oronooko, the Missisippi, St. Laurence, and other magnificent waters of the New World, it was unquestionably the largest river on the continent of Africa. If the calculation be true, that the Zaire at its lowest state discharges into the sea two million cubic feet of water in a second of time, the Nile, the Indus, and Ganges, are but rivulets compared with it, as the Ganges, which is the largest of the three, discharges only about one fifth of that quantity at its highest flood. In point of

magnitude, therefore, no objection could be urged to its identity with the Niger.

Many other objections, however, were started against this hypothesis, and in particular the three following, namely,

1. The obstruction of the Kong mountains, which, uniting with the Gibbel Komri, are supposed to extend in one unbroken chain across the continent. 2. The great length of its course, which would exceed 4000 miles; whereas the course of the Amazons, the greatest river in the world, is only about 3500 miles. 3. The absence of all traces of the Mahommedan doctrines or institutions, and of the Arabic language, on the coast where the Zaire empties itself into the sea.

The first objection is wholly gratuitous, as the existence of this chain of mountains has not been ascertained, nor is it easy to conjecture on what grounds it has been imagined. Park saw to the southward of his route, at no great distance from the sea coast, the peak of the cluster of mountains called the Kong, out of which the Niger, the Senegal, and the Gambia, take their rise. The Mountains of the Moon have been placed towards the central parts of Africa; but if Bruce visited that branch of the Nile, which is said to rise out of these mountains, (which is more than doubtful,) they are actually not further removed from the eastern, than those of the Kong are from the western coast. But by what authority they are united, and stretched completely across the continent, like a string of beads, it would be difficult we believe for our modern gegraphers to point out. There is evidence however to the contrary. All the Haoussa traders who have been ques-

tioned on the subject, and who come frequently to Lagos, and other places on the Coast of Guinea, with slaves, deny that they meet on their journey with any mountains, and that the only difficulties and obstructions arise from the frequent rivers, lakes, and swamps which they have to cross. But admitting that such a chain did exist, and that it was one solid, unbroken range of primitive granite, it would be, even in that singular case, the only instance, perhaps, of such an extended barrier resisting the passage of an accumulated mass of waters. Even the Himmalaya, the largest and probably the loftiest range in either the New or Old World, has not been able to oppose an effectual barrier to the southern streams of Tartary. The main branch of the Ganges, it is true, does not, as was once supposed, pervade it, but the Buramputra, the Sutlej and the Indus, have forced their way through this immense granite chain. The *rocky mountains* of America have opened a *gate* for the passage of the Missouri; and the Delaware, the Susquehanna and the Potomac have forced their way through the Alleghenny range. This objection, then, may fairly be said to fall to the ground.

The objection to the length of its course is somewhat more serious, but not so formidable as at first it may appear. The great difficulty, perhaps the only one that suggests itself, arises from the vast height which the source of a river must necessarily be above the level of the sea, in order to admit of its waters being carried over a space of 4000 miles; and from the certainty that Park, (who, it must be observed, however, measured nothing) passed no mountains of extraordinray height to get at the Niger. A critic, in a popular journal, whose arguments

ments in favour of the identity of the Niger and Zaire were probably instrumental in bringing about the present expedition, in answer to this objection, has assumed the moderate height of 3000 feet for the source of the Niger above the surface of the ocean. This height, he observes, would give to the declivity or slope of the bed of the river, an average descent of nine inches in each mile throughout the course of 4000 miles. Condamine," he adds, " has calculated the descent of the Amazons at six inches and three quarters per mile, in a straight line, which, allowing for its windings, would be reduced, according to Major Rennel's estimate, to about four inches a mile for the slope of its bed." And this descent is not very different from that of the bed of the Ganges; it having been ascertained from a section, taken by order of Mr. Hastings, of sixty miles in length, parallel to a branch of the Ganges, to have nine inches of descent in each mile in a straight line, which, by the windings of the river was reduced to four inches a mile, the same as the bed of the Amazons: and this small descent gave a rate of motion to that stream somewhat less than three miles an hour in the dry, and from five to six an hour in the wet season, but seven or eight under particular situations and under certain circumstances. If then, the Ganges and the Amazons flow at the rate of three miles in their lowest, and six miles in their highest state, with an average descent of no more than four inches a mile, while the Niger, according to the hypothesis, would have an average descent of nine inches a mile, the objection to the great length of its course in supposing its identity with the Zaire, would seem to vanish. It has been sufficiently proved,

however, that the velocity of rivers depends not on the declivity of their beds alone, but chiefly on the mass and velocity of the water thrown into their channels at the spring head, and the supplies they receive from tributary branches as they proceed in their course. In the Amazons, the Ganges, the Senegal, the Gambia, and in every river whose course, in its approach to the ocean, lies through a low country, it will be found, that the rise of a few feet in the tide is sufficient to force back, up an inclined plane, by its mass and velocity, the whole current of the river to the distance of several hundred miles, and the farther in proportion to the narrowness and depth of the channel beyond its funnel shaped mouth. In estimating the probability, therefore, of the identity of the Zaire and the Niger, as far as the length of their course may be supposed to offer an objection, we should inquire rather into the supply of water than the declivity of the country through which it would have to pass. In this respect, the Niger would be placed under very peculiar circumstances; its course, lying on both sides of the Equator, and through a considerable portion of both tropical regions, would necessarily be placed, in one part or other, under the parallels of perpetual rains, and consequently receive a perpetual supply of water. Now all the representations that have been given of the lower part of the Zaire, describe it as being nearly in a perpetual state of flood, the height in the dry season being within nine feet of the height in the season of heavy rains; whilst the difference in the height of the Nile and the Ganges, at the two periods, exceeds thirty feet. The flooding of the Zaire is therefore periodical, its highest state being in March, and lowest about the end of August;