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for this noble object; and as Consul Petherick is about to proceed immediately to his post at Khartum, and thence to carry out their behests, the Chairman was sure the Society would rejoice to wish him every success, whilst they were all quite certain that in the heart of Africa, and in overcoming all difficulties, Consul Petherick is truly "the right man in the right place." And as Mrs. Petherick is to accompany him, he felt confident that, with the same spirit of geographical research which animates the ladies who have honoured us with their presence, she would warmly second and support the resolve of her daring and distinguished husband.

Mr. CONSUL PETHERICK said the President had so well described the difficulties that lay in the way of Captain Speke's progress from Lake Nyanza to the Nile that it was unnecessary for him to add more. It was only reserved for him to assure the Geographical Society that he would do the utmost in his power to carry out their object of effecting a meeting with Captain Speke. Naturally, any Englishman situated as he would be in those regions, hearing of the coming of a countryman, would do his utmost to see him; therefore he took no merit to himself for promising to do that. The circulars of the Royal Geographical Society in connection with his expedition pointed out that there was a wish that he should proceed towards the sources of the Nile, provided Captain Speke did not succeed in discovering them. For carrying out such an expedition as that the sum of 2000*l.* would be required, as has been stated in the circular. However, little more than half of that sum had been subscribed, which would only suffice for carrying out the first part of the project of the Society, namely, that of meeting Captain Speke and supplying him with grain and other necessaries. In case he did not meet with the Captain at Gondokoro, he purposed proceeding into the interior in order to bring about the meeting.

SIR RODERICK MURCHISON then called upon M. Du Chaillu to read the remarkable communication which he was about to make to the meeting. He had had the pleasure of M. Du Chaillu's acquaintance since he arrived in this country, and he had been impressed with the deepest respect for his acquirements and his unbounded activity. As a traveller, M. Du Chaillu had realized for them a knowledge of a large portion of the equatorial Western region of Africa, of which they were previously entirely ignorant.

The Paper read was—

The Geographical Features and Natural History of a hitherto unexplored region of Western Africa.

By PAUL B. DU CHAILLU, of New York.

The singular region of Africa explored by M. Du Chaillu during the four years, 1856, 7, 8, and 9, lies within 2° on either side of the equator, and extends from the western coast to an estimated distance of 400 miles into the interior. It is characterised by mountains covered with forests of tropical richness, and traversed by many rivers. Instead of the thinly wooded and sparsely watered plains of many parts of Africa, or marshy plateaux such as are found elsewhere, the explorer is involved in a jungle of extreme density, through which he cannot penetrate except by following the tracks of wild beasts, or the miserable paths kept open by the natives from one village to another, or else by hewing his way. Wild animals are so scarce, though of numerous and novel species, that the traveller is unable to supply himself with sufficient game for sub-

sistence, but has to depend on the food he carries with him. The lion, rhinoceros, giraffe, zebra, and ostrich are all absent, but there are elephants and a few noble antelopes, and huge man-like apes, including the gorilla. The domestic animals of the comparatively few natives who inhabit this country, so desolate of life though rich in vegetation, are goats, sheep, fowls, and a small species of dog. The horse, ox, and ass are unknown; man, or rather woman, is the only animal of burden.

In the country under consideration, there are three rivers north of the Equator which can be entered and ascended by large vessels, viz. the Muni, the Moondah, and the Gaboon. The two first of these debouch into the beautiful bay of Corisco, which, were it not for its sandbanks, would be one of the finest roadsteads in the world, while the estuary at the mouth of the Gaboon is one of the best harbours in Western Africa. All these rivers, and other small ones, rise about 80 miles from the coast, in the so-called Sierra del Crystal: near their mouths they traverse vast mangrove-swamps, where their banks are little occupied; the Moondah is especially malarious. South of the equator M. du Chaillu found that three rivers, the Nazareth, Mexias, Fernando Vaz, all communicated with one another, and that, although the Fernando Vaz has a source of its own, it as well the others are the outlets of a great interior river, the Ogobai. They form a very complicated network of creeks and swamps, covered with dense forests, flooded in the rainy season, and uninhabited save by wild beasts, reptiles, and intolerable swarms of mosquitoes. These rivers throw an immense amount of water into the sea, and in this they differ much from the sluggish Muni, Moondah, and Gaboon. Though their mouths are hardly half a mile across, they severally launch out so much water during the rains that it keeps separate from the ocean for four or five miles. The entrance to all of these rivers is intricate, owing to shifting sandbanks; that of the Fernando Vaz is the least so. M. Du Chaillu looks upon the Ogobai as a very important river. He ascended its trunk stream for only a short distance, but he afterwards came upon the southern and the smaller of its two tributaries at a great distance from the coast, and found it a splendid river from 300 to 400 yards wide, running at 3 or 4 miles an hour, and 4 fathoms deep in different places where he sounded it. This was during the rainy season.

As far as M. Du Chaillu penetrated, and for a distance of 20 days further on which he obtained information, there lay a mountainous country running east and west, which he believes to be part of a vast chain extending to a much greater distance inland, and possibly crossing the entire continent. He thinks that from this range may arise affluents to the Niger on the one side and to the

Ogobai and the Congo on the other, and also that it may afford a natural limit to the advance of Mohammedan conquest.

M. Du Chaillu described the various nations among whom he travelled, including the cannibal tribes of the Fan and the Oshoba. He also gave accounts of his conflicts with the gorilla, illustrating his remarks by numerous stuffed specimens that were exhibited in the room. He described its habits and those of the arbour-building ape, the nshiego mbouvé, and dwelt at length on the fauna of the land, the study of which was the main object of M. Du Chaillu's journey.

SIR RODERICK MURCHISON remarked that geography, in the broad sense of the word, included all natural history, and especially ethnology; therefore neither of his friends—Professor Owen, and Mr. Cranford, the President of the Ethnological Society—would quarrel with the geographers for having that right given so much attention to these topics. The communication just read had not been confined simply to the courses of the rivers and the nature of the mountains, as illustrated in M. Du Chaillu's sketch-map. He therefore felt they were bound to return M. Du Chaillu their grateful thanks for the varied information contained in his papers, and to prove that they were proud of an occasion which had shown to the world that their Society could, from time to time, embrace all those collateral subjects of which geography was the foundation. M. Du Chaillu, who was the first European who had ever penetrated into the interior of Equatorial Africa from the west coast, had thus made us acquainted with the existence of a large range of lofty and densely-wooded mountains, to some extent inhabited by cannibal races, and also the chief abode of the gigantic ape gorilla. He has also told us that the Mahomedan conquerors, proceeding from the north, had never passed that chain, and that to the south of it no other religion than Fetichism was found to exist. The inhabitants had never seen a Mahomedan, and were entirely ignorant of that religion. It was now his duty to call upon any gentleman to speak upon the very remarkable memoir, the result of such perilous and adventurous journeys, which had been communicated to them.

MR. GALTON said this exploration of M. Du Chaillu, most interesting in itself, had a farther interest in regard to our notions of the physical geography of still more distant parts of Africa. If we looked in any of our ordinary maps, we saw that the drainage of the central part of Africa, where equatorial rains fell with extreme violence, was wholly unrepresented by any rivers except the Congo, and even that river was not usually represented as receiving tributaries from the north. In those latitudes where M. Du Chaillu travelled, rain fell for nine months in the year. There was also a spreading out of the coast, suggestive of the delta of some large river which had displaced the sea by its deposit, yet no large river had hitherto been ascertained, on European testimony, to exist in this place. Far more towards the interior, in these equatorial latitudes, reports are heard of rivers flowing to the west, which may be tributaries of the Congo, but which it is at least an equal matter of probability are the head-waters of the northern branch of Du Chaillu's rivers. There is, for instance, that account given in vol. xxiii. of the Society's 'Journal' of an itinerary which Dr. Barth obtained from a well-informed Fellatah, who accompanied a marauding expedition from Darfur southwards, across the mountains, and whose progress was ultimately stopped by a magnificent river running west, from which the terrified natives had removed their boats. Then again there is Mr. Petherick's river; and lastly, the river with an east and west course, either running in or running out of Lake Nyanza.

Mr. Galton stated that, so far as testimony went, it was now a matter of complete uncertainty whether this river fed or drained the lake. He wished to show that this was a zone characterized by great rivers, of whose existence we are beginning to be aware and of whose course we know nothing, but on which the discovery of one great outlet, like that described to-night, makes it difficult to refrain from speculating. He added that, so far as we yet know, there is no valid reason why Du Chaillu's river should not have its origin on the other side of the continent, nor why the waters of Lake Nyanza (as he wrote some months back to Captain Spéke) should not have their outlet by it or by the Congo instead of by the Nile. He merely mentioned this to show how many elementary problems in African geography are waiting to be solved, and he hoped that the further exploration of this river, of which M. Du Chaillu had brought us the first certain information, would become a recognized object of the Geographical Society.

PROFESSOR OWEN said natural history had rarely received a more remarkable or acceptable acquisition to its stores than had been imparted that evening by the adventurous traveller M. Du Chaillu. Hitherto it had only obtained a few material evidences—dead skins or dry bones—of this great gorilla; but now for the first time the naturalist had heard from one who had seen the gorilla in its native country some authentic account of its living powers and habits. Seven years ago he (Prof. Owen) had obtained the first reliable indication of the existence of such a creature from a missionary at the Gaboon, who sent him a pen-and-ink sketch of the skull of one of these great apes, which he had seen stuck upon a pole and worshipped as a fetish by some tribe in the interior. By degrees there came parts of the skeleton, then the badly-conserved skins of young or immature animals, finally the entire skeleton of the full-grown male, which had enabled him to make a thorough comparison of the bony framework of the huge quadrumanous beast with that of man. But now M. Du Chaillu had brought a plenitude of evidence, skins and skeletons of adult males, females and young of all ages, showing for the first time, indubitably, the characteristic colours, and affording the richest illustrations of this most strange and extraordinary animal of the brute creation. In natural history, as we went on comparing form with form, of course we soon became impressed with the idea of a connected scale, and the interest increased as we ascended; but when we came so near to ourselves as we did in the comparison of this tailless anthropoid ape the interest became truly exciting.

The learned Professor then called attention to a diagram showing the skeleton structure of the gorilla as compared with that of man; and he pointed out how much closer the approximations were in this creature to the human frame than in the chimpanzee and the orang. The most extraordinary feature in the structure of the gorilla, he added, was the prodigious strength of the trunk, which in its proportions exceeded that of the Irish giant, 8 feet 2 inches in height; and the only reason why it did not overtop man was that the lower limbs were dwarfed, in order that they should do the work of great grasping arms rather than of legs. There was a difference, however, in the number of lumbar vertebrae: in man there were five, and in the gorilla two. In man, again, there were twelve pairs of ribs, in the gorilla thirteen: an additional pair being given to support the muscles that were to act upon and from the trunk; but he explained the artificial nature of these vertebral differences. The brain-case was not so large as that of the human infant, while, as contradistinguished from man—in whom the great brain not only covered the little brain but went behind and beyond it—there was in the gorilla no trace of this posterior lobe beyond the cerebellum. Limited as the gorilla was to localities, with special conditions for abundance of tropical vegetable food, he supposed in progress of time it would become extinct.

Professor Owen next adverted to the progress made in the study of natural history during the last twenty or thirty years, and to the numerous accessions

which had been made in this particular branch; and concluded by expressing the hope that Government would provide a suitably-sized building for the classification and exhibition of objects in comparative zoology.

SIR RODERICK MURCHISON said there were several distinguished travellers from Africa in the room, but the hour had arrived at which they generally closed their discussions; and, after the admirable discourse of Professor Owen and the remarks of Mr. Galton, they could not be otherwise than gratified at the result. They were honoured on that occasion by the presence of his Royal Highness the Count De Paris, and also by that of one of the most distinguished men in her Majesty's Government. If Mr. Gladstone would address them in a few words, he (Sir Roderick) was sure they would willingly listen to him; for they were all proud to see a man of such eminence and distinction giving his marked attention to the subject before them.

THE RIGHT HON. W. E. GLADSTONE, M.P., said, that being called upon to address this assembly on such an occasion he felt like the lowest schoolboy in the school being called upon to lecture his instructor. He wished it were in his power more frequently to appear in these rooms in the character of a pupil. But really, although on previous occasions he had once or twice enjoyed the privilege of attending these meetings, yet he could not believe that even that Society would be able frequently to receive such a treat as they had had that night. For it could be no presumption even for him to say, that we had heard to night one of the most modest, one of the most talented, and one of the most enterprising of modern travellers. And that the rich and rare discoveries which he communicated, we had heard illustrated, developed, and applied to many of the highest and most important points of knowledge, by a man who is gifted with perhaps the most brilliant genius among those who in this or any other period have applied themselves to the study of natural history. He was sorry that his eminent friend Sir Roderick Murchison's old friendship induced him to call upon him (Mr. Gladstone) to address the meeting even in these few words, yet he at least felt that regret was qualified by satisfaction in having that opportunity of expressing his gratitude to both those gentlemen for the extraordinary boon they had respectively conferred.

The Meeting was then adjourned to March 11th.

Eighth Meeting, March 11th, 1861.

SIR RODERICK MURCHISON, VICE-PRESIDENT, in the Chair.

PRESENTATION.—*Sir Charles Bright.*

ELECTIONS.—*Commanders P. H. Dyke and H. E. Gunnell, R.N.; Major W. Ross King; Dr. W. Lauder Lindsay, M.D.; Rev. E. J. Moon; the Hon. Roden Noel; Sir Henry Stacey, M.P.; Major Alexander Strange; Rev. W. H. Walker; John Anderson; Robert Armstrong, late Chief Magistrate of Sierra Leone; Henry Baillie; William Brodie; Peter Morrison; Samuel Ingall; T. G. Knox; George Lorimer; W. Robert McConnell; Pliny Miles; and John Edward Woods, Esquires, were elected Fellows.*

ACCESSIONS.—Among the Accessions to the LIBRARY and MAP ROOMS since the former Meeting were *Der Stillo Ocean und die Spanischen Besitzungen im Ostindischen Archipel*, by Baron Ch.

Hügel; Vol. XI. of Reports of Explorations and Surveys for Railroad from the Mississippi River to the Pacific Ocean; Map of the Rio Colorado of the West; Beriah Botfield's Shropshire; Lawson's British and Native Cochinchina; Continuation of the Ordnance Map of Lanarkshire, &c. &c.

EXHIBITIONS.—Numerous Japanese Works, Maps, and Atlases, including Japanese Dictionary, Books of Buddhist Charm, Themes and Odes, Geography, Description of European Instruments and Machinery, Hobson's Natural Philosophy, Comparative Anatomy, Surgery, &c., were exhibited by Mr. A. Wylie, the Missionary; also several Coins by Mr. Hodgson.

ANNOUNCEMENTS.—The Chairman announced that, in order to illustrate the Memoir of M. Du Chaillu on Equatorial Africa, recently read before the Society, the large room in the house of the Society would be used, for a few weeks after Easter, to exhibit his specimens, with maps and drawings. The Fellows, on application, would have tickets placed at their disposal; and a certain number would also be sent to the councils of various scientific bodies in London. Also that the Council had granted to the Royal Institution the loan of maps and drawings illustrative of the region of M. Du Chaillu's explorations for his intended lecture on Monday, the 18th inst.

The Papers read were—

1. *Account of Four Excursions in the Japanese island of Yesso.* By PEMBERTON HODGSON, H.M.'s Consul at Hakodadi.

MR. HODGSON describes four journeys which he made from Hakodadi. They were of from four to six days' duration: two of them were into the interior, and two along the coast. He rode unarmed with a party of ladies, attended by thirty or forty servants, and did not experience the slightest obstruction. He found the island to be uninhabited and almost unknown to the Japanese in the interior, though supporting a large population of fishermen along its coast. The aborigines, who are unkempt and demi-savage, and are despised by the Japanese, number about 80,000. Large quantities of fish and edible seaweed are collected on the coast and exported to China. In one part Mr. Hodgson mentions villages every few hundred yards, where the natives mow the abundant seaweed off the rocks. They live on this, on fish, and on rice. Five miles from the line of coast there remains hardly any sign of habitation. The interior of the island is mountainous on a small scale, and beautifully wooded. Its vegetation is exceedingly various and ornate, including chestnut, oak, beech, pine, silver-birch, sycamore, magnolia, and catalpa among