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LETTER FROM MR. HENRY M. STANLEY TO THE ROYAL
GEOGRAPHICAL SOCIETY OF LONDON, AND TO THE
ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.

CAMP AT KIZINGA, UZINYA,
August 17th, 1889.

I REMEMBER, while standing on the edge of the plateau which overlooks the southern end of Lake Albert, in December 1887, that looking across the lake to the Unyoro plateau, and running my eye along its unbroken outline from north to south, I was much struck by the gradual but steady uplift of the land to a point near the lake's end, where a wide cleft separated the plateau from the disjointed mass and higher elevations culminating around Mount Ajif. Southward beyond Ajif we could see nothing but dark impenetrable clouds, ominous of a storm, yet underneath these night-black clouds lurked a most interesting mystery—that of the long-lost and wandering "Mountains of the Moon." Little did we imagine it, but the results of our journey from the Albert Nyanza to Unyampaka, where I turned away from the newly discovered lake in 1876, establish beyond a doubt that the snowy mountain which bears the native name of Ruwenzori or Ruwenjura is identical with what the ancients called "Mountains of the Moon."

Note what Scheabeddin, an Arab geographer of the fifteenth century, writes: "From the Mountains of the Moon the Egyptian Nile takes its rise. It cuts horizontally the Equator in its course north. Many rivers come from this mountain and unite in a great lake. From this lake comes the Nile, the most beautiful and greatest of the rivers of all the earth."

If, adopting the quaint style and brevity of the Arab writer, we would write of this matter now, we would say: "From Ruwenzori, the Snow Mountain, the western branch of the Upper Nile takes its rise. Many rivers come from this mountain, and uniting in the Semliki River, empty into a great lake, named by its discoverer the Albert Nyanza. From this lake, which also receives the eastern branch of the Upper Nile, issues the true Nile, one of the most famous of the rivers of all the earth."

But this is a matter of slight moment compared to the positive knowledge that in the least suspected part of Africa there has shot up into view and fact a lofty range of mountains, the central portion of which is covered with perpetual snow, which supplies a lake to the south of the Equator, and pours besides scores of sweet-water streams to the large tributary feeding the Albert Nyanza from the south.

You will remember that Samuel Baker in 1864 reported the Albert Nyanza to stretch "illimitably" in a south-westerly direction from Vacovia, and that Gessi Pasha, who first circumnavigated that lake, and Mason Bey, who in 1877 made a more careful investigation of it, never even hinted at the existence of a snowy mountain in that neighbourhood, nor did the last two travellers pay any attention to the Semliki River. I might even add that Emin Pasha, for years resident on or near

Lake Albert, or Captain Casati, who for some months resided in Unyoro, never heard of any such remarkable object as a snowy mountain being in that region; therefore we may well call it an unsuspected part of Africa. Surely it was none of our purpose to discover it. It simply thrust itself direct in our homeward route, and as it insisted on our following its base-line, we viewed it from all sides but the north-east. Only then could we depart from its neighbourhood.

Surrounded as I am by the hourly wants of an expedition like this, I cannot command the time to write such a letter on this subject as I would wish. I must even content myself with allowing a few facts to fall into line for your leisurely consideration.

If you will draw a straight line from the debouchure of the Nile from Lake Albert, 230 geographical miles in a direction nearly south-west magnetic, you will have measured the length of a broad line of subsidence, which is from 20 to 50 miles wide, that exists between 3° N. lat. and 1° S. lat. in the centre of the African continent. On the left of this great trough, looking northward of course, there is a continuous line of upland, rising from 1000 to 3000 feet above it. Its eastern face drops abruptly into the trough; the western side slopes gently to the Ituri and Lomva basins. To the right there is another line of upland. The most northerly section, 90 miles, rising from 1000 to 3000 along the trough, is the Unyoro plateau, whose western face almost precipitously falls into the trough, and whose eastern face slopes almost imperceptibly towards the Kafur. The central section, also 90 miles long, consists of the Ruwenzori range, from 4000 to 15,000 feet above the average level of the trough. The remaining section of upland, and the most southerly, is from 2000 to 3500 feet higher than the trough, and consists of the plateaus of Uhaiyana, Unyampaka, and Ankori.

The most northerly section of the line of subsidence, 90 miles in length, is occupied by the Albert Nyanza; the central section, also 90 miles, by the Semliki River valley; the southernmost portion, 50 miles long, by the plains and the new Nyanza, which we have all agreed to name the Albert Edward Nyanza, in honour of the first British Prince who has shown a decided interest in African geography.

You will observe, then, that the Semliki valley extends along the base of Ruwenzori range; that the northern and southern extremities or flanks of Ruwenzori have each a lake abreast of it; that the Semliki river runs from the upper to the lower lake in a zigzag course.

If you were to make a plan *in relief* of what has been described above, the first thing that would strike you would be, that what had been taken out of that abyss or trough had been heaped up in the enormous range, and if along its slope you were to channel out sixty-two streams emptying into this trough, and let the sides of the trough slope here and there sharply towards the centre, you would be impressed with the fact that Ruwenzori was slowly being washed into the place whence it came. However, all these are matters for geologists.

For months all Europeans on this expedition, before setting out on their journey towards Zanzibar from the Albert Lake, were exercised in their minds how Sir Samuel Baker, standing on a hill near Vacovia,

five or six miles from the extremity of the Nyanza, could attach "illimitability" to such a short reach of water; but after rounding the Balegga Mountains, which form a group to the south of Kavalli, we suddenly came in view of the beginning of the Semliki valley, a sight which caused officers to ask one another, "Have you seen the Nyanza?" and the female portion of the Egyptian following to break out into rapturous "Lu-lu-lus." Yet we were only four miles away from the valley, which was nearly white with its ripe grass, and which indeed resembled strongly the disturbed waters of a shallow lake.

This part of the Semliki valley, which extends from the lake south-westerly, is very level; for 30 miles it only attains to an altitude of 50 feet above the lake. All this part can only recently have been formed, say the last few hundred years. In one of its crooked bends nearer the south-eastern range we stumbled suddenly upon the Semliki River, with an impetuous volume, from 80 to 100 yards wide, and an average depth of 9 feet. Its continually crumbling banks of sandy loam rose about 6 feet above it. One glance at it revealed it to be a river weighted with fine sediment. When we experimented, we found a drinking-glass full of water contained nearly a teaspoonful of sediment. We need not wonder then that for miles the south end of Lake Albert is so shallow that it will scarcely float a row-boat.

Beyond the grassy portion of the valley, a few acacias begin to stud it, which, as we proceed south-westerly, become detached groves, then a continuous thin forest, until it reaches the dense and rank tropical forest, with tall trees joined together by giant creepers, and nourishing in its shade thick undergrowths. Everything now begins to be sloppy wet, leaves and branches glisten with dew, weeping mosses cover stem, branch, and twig. The ground is soaked with moisture; a constant mist rises from the fermenting bosom of the forest. In the morning it covers the valley from end to end, and during the early hours, stratum after stratum rises, and, attracted by the greater drought along the slant of the Ruwenzori slopes, drifts upwards until the summits of the highest mountains are reached, when it is gradually intensified until the white mist has become a storm-cloud, and discharges its burden of moisture, amid bursts of thunder and copious showers.

The valley sensibly rises faster in the forest region than in the grassy part. Knolls and little rounded hills crop out, and the ground is much more uneven. Violent streams have ploughed deep ravines round about them, and have left long narrow ridges, scarcely a stride across at the summit between two ravines a couple of hundred feet deep. At about 75 miles from the Albert Nyanza the valley has attained about 900 feet of altitude above it, and at this junction the forest region abruptly ends. The south-west angle of Ruwenzori is about east of this, and with the change of scene a change of climate occurs. We have left eternal verdure and the ceaseless distillation of mist and humid vapours into rain behind, and we now look upon grass ripe for the annual fire and general droughtiness. From this place the valley becomes like a level grassy plain until the Albert Edward Nyanza is reached.

The southernmost stretch of the Ruwenzori range projects like a

promontory between two broad extents of the ancient bed of the Albert Edward. To avoid the long detour we cross this hilly promontory in a south-easterly direction from the Semliki valley, and enter eastern Usongora, and are in a land as different from that at the north-western base of Ruwenzori as early summer is from mid-winter. As we continue easterly, we leave Ruwenzori on our left now, and the strangely configured Albert Edward Nyanza on our right. The broad plains which extend between were once covered by this lake. Indeed, for miles along its border there are breadths of far-reaching tongues of swamp penetrating inland. Streams of considerable volume pour through these plains toward the Nyanza from Ruwenzori, without benefiting the land in the least. Except for its covering of grass—at this season withered and dried—it might well be called a desert; yet in former times, not very remote, the plains were thickly peopled—the zeribas of milk-weed, and dark circles of Euphorbia, wherein the shepherds herded their cattle by night, prove that, as well as the hundreds of cattle-dung mounds we come across. The raids of the Waganda and the Warasura have depopulated the land of the Wasongora, the former occupants, and have left only a miserable remnant, who subsist by doing work for the Warasura, their present masters.

From Usongora we enter Toro, the Albert Edward Nyanza being still on our right, and our course being now north-easterly, as though our purpose was to march to Lake Albert again. After about 20 miles march we turn east, leave the plains of the Albert Edward, and ascend to the uplands of Uhaiyana, which having gained, our course is south until we have passed Unyampaka, which I first saw in 1876.

South of Unyampaka stretches Ankori, a large country and thickly peopled. The plains have an altitude of over 5000 feet above the sea, but the mountains rise to as high as 6400 feet. As Ankori extends to the Alexandra Nile, we have the well-known land of Karagwé south of this river.

Since leaving the Albert Nyanza, between Kavalli and the Semliki River, we traversed the lands of the Wavira and Babegga. On crossing the Semliki we entered the territory of the Awamba. When we gained the grassy terrace at the base of the Ruwenzori range, we travelled on the border line between the Wakonju, who inhabit the lower slopes of Ruwenzori, and the Awamba, who inhabit the forest region of the Semliki valley. The Wakonju are the only people who dwell upon the mountains. They build their villages as high as 8000 feet above the sea. In time of war—for the Warasura have invaded their country also—they retreat up to the neighbourhood of the snows. They say that once fifty men took refuge right in the snow region, but it was so bitterly cold that only thirty returned to their homes. Since that time they have a dread of the upper regions of their mountains.

As far as the south-west angle of Ruwenzori, the slopes of the front line of hills are extensively cultivated—the fields of sweet potatoes, millet, eleusine, and plantations of bananas describe all kinds of squares, and attract the attention; while between each separate settlement the wild banana thrives luxuriantly, growing at as high an

altitude as the summits of the highest spurs, whereon the Wakonju have constructed their villages.

Though we were mutually hostile at first, and had several little skirmishes, we became at last acquainted with the Wakonju, and very firm, close friends. The common enemy were the Warasura, and the flight of the Warasura upon hearing of our advance, revealed to the Wakonju that they ought to be friends with all those who were supposed to be hostile to their oppressors. Hence we received goats, bananas, and native beer in abundance; our loads were carried, guides furnished us, and every intelligence of the movements of the Wanyoro brought us. In their ardour to engage the foe, a band of them accompanied us across Usongora and Toro to the frontier of Uhaiyana.

South-west of Awamba, beyond the forest region of the Semliki valley, begins Usongora. This country occupies the plains bordering the north-west and north of Lake Albert Edward. The people are a fine race, but in no way differing from the finer types of men seen in Karagvé and Ankori, and the Wahuma shepherds of Uganda. Their food consists of milk and meat, the latter eaten raw or slightly warmed.

The Toro natives are a mixture of the higher class of Negroes, somewhat like the Waganda. They have become so amalgamated with the lower Wanyoro that we can find nothing distinctive. The same may be said of the Wahaiyana. What the royal families of these tribes may be we can only imagine from having seen the rightful prince of Usongora in Ankori, who was as perfect a specimen of a pure Galla as could be found in Shoa. But you need not conclude from this that only the royal families possess fine features. These Ethiopic types are thickly spread among the Wahuma of these Central African uplands. Wherever we find a land that enjoys periods of peace, we find the Wahuma at home, with their herds, and, in looking at them, one might fancy oneself transported from the midst of Abyssinia.

Ankori is a land which, because of its numbers and readiness to resistance, enjoys long terms of uninterrupted peace, and here the Wahuma are more numerous than elsewhere. The royal family are Wahuma, the chiefs and all the wealthier and more important people are pure Wahuma. Their only occupation, besides warring when necessary, is breeding and tending cattle. The agricultural class consists of slaves, at least such is the term by which they are designated. The majority of the Wahuma can boast of features quite as regular, fine, and delicate as Europeans.

The countries to the south of the Albert Edward are still unexplored, and we have not heard much respecting them, but what we have heard differs much from that which you find illustrated by that irregular sheet of water called Muta Nzige, in the *Dark Continent* map.

Ruanda bears the name of Unyavingi, to the people of Ukonju, Usongora, and Ankori, and is a large compact country lying between the Alexandra Nile and the Congo watershed to the west, and reaching to within one day's long march of the Albert Edward. It also overlaps a portion of the south-west side of that lake. The people are described as being very warlike, and that no country, not even Uganda, could equal it

in numbers or strength. The late queen has been succeeded by her son, Kigeri, who now governs.

Since the commencement of our march homewards from our camp at Kavalli, we have undergone remarkable vicissitudes of climate. From the temperate and enjoyable climate of the region west of Lake Albert we descended to the hothouse atmosphere of the Semliki valley—at nearly 3000 feet lower level. Night and day were equally oppressively warm and close, and one or two of us suffered greatly in consequence. The movement from the Semliki valley to the plains north of Lake Albert, brought us to a dry but a hot land; the ground was baked hard, the grass was scorched, the sun, but for the everlasting thick haze, would have been intolerable; in addition to which the water—except that from the Ruwenzori streams—was atrocious, and charged with nitre and organic corruption. The ascent to the eastern plateau was marked by an increase of cold and many an evil consequence, fevers, colds, catarrhs, dysenteries, and paralysis. Several times we ascended to over 6000 feet above the sea, to be punished with agues, which prostrated black and white by scores. In the early mornings, at this altitude, hoar-frost was common; blackberries were common along the path in North-West Ankori, 5200 feet above the sea-level.

On entering Uzinya, south-west corner of Lake Victoria, the health of all began to improve, and fevers became less common.

I have jotted these few remarks down very hastily. Whether it is from lack of wholesome food or not, but I confess to feeling it an immense labour to sit down and write upon any subject. I do not agree with Shakespeare when he says—

“Fat paunches have lean pates : and dainty bits
Make rich the ribs, but bankrupt quite the wits.”

In our case, and I speak for all our officers as well as myself, “dainty bits” just now would brighten up our wits, for we suspect that our wits have strongly sympathised with the bodies’ pains.

That you may know what the upper regions of Ruwenzori are like, I send you Lieut. Stairs’s account of his ascent to a height of nearly 11,000 feet.

HENRY M. STANLEY.

REPORT OF LIEUTENANT STAIRS.

EXPEDITION CAMP, *June 8th*, 1889.

SIR,—I have the honour to present you with the following account of an attempt made by me to reach the snow-capped peaks of Ruwenzori:—

Early on the morning of the 6th June, accompanied by some forty Zanzibaris, we made a start from the Expedition’s camp at the foot hills of the range, crossed the stream close to camp, and commenced the ascent of the mountain.

With me I had two aneroids, which together we had previously noted and compared with a standard aneroid remaining in camp under your immediate observation; also a Fahrenheit thermometer.

For the first 900 feet above camp the climbing was fairly good, and

our progress was greatly aided by a native track which led up to some huts on the hills. These huts we found to be of the ordinary circular type so common on the plains, but with the difference that bamboo was largely used in their interior construction. Here we found the food of the natives to be maize, bananas, and colocasia roots. On moving away from these huts we soon left behind us the long rank grass, and entered a patch of low scrubby bush, intermixed with bracken and thorns, making the journey more difficult.

At 8.30 a.m. we came upon some more huts of the same type, and found that the natives had decamped from them some days previously. Here the barometer read 23.58 and 22.85; the thermometer 75° F. On all sides of us we could see *Dracænas*, and here and there an occasional tree fern and *Mwab* palm; and, tangled in all shapes, on either side of the track, were masses of long bracken. The natives now appeared at different hill-tops and points near by, and did their best to frighten us back down the mountain by shouting and blowing horns. We, however, kept on our way up the slope, and in a short time they disappeared and gave us very little further trouble.

Of the forest plains, stretching far away below us, we could see nothing, owing to the thick haze that then obscured everything. We were thus prevented from seeing the hills to the west and north-west.

At 10.30 a.m. after some sharp climbing, we reached the last settlement of the natives, where the crops consisted of beans and colocasias, but no bananas. Here the barometer read 22.36; thermometer 84° F. Beyond this settlement was a rough track leading up the spur to the forest; this we followed, but in many places to get along at all we had to crawl on our hands and knees, so steep were the slopes.

At 11 a.m. we reached this forest and found it to be one of bamboos at first open, and then getting denser as we ascended. We now noticed a complete and sudden change in the air from that we had just passed through. It became much cooler and more pure and refreshing, and all went along at a faster rate and with lighter hearts. Now that the *Zanzibaris* had come so far, they all appeared anxious to ascend as high as possible, and began to chaff each other as to who should bring down the biggest load of the "white stuff" on the top of the mountain.

At 12.40 p.m. we emerged from the bamboos and sat down on a grassy spot to eat our lunch. Barometers 21.10 and 27.⁹⁵/₁₂₀. Thermometer 70° F. Ahead of us, and rising in one even slope, stood a peak, in altitude 1200 feet higher than we were. This we now started to climb, and after going up it a short distance came upon the tree-heaths. Some of these bushes must have been 20 feet high, and as we had to cut our way foot by foot through them, our progress was necessarily slow, and very fatiguing to those ahead.

At 3.15 we halted among the heaths for a few moments to regain our breath. Here and there were patches of inferior bamboos, almost every stem having holes in it, made by some boring insect, and quite destroying its usefulness. Under foot was a thick spongy carpet of wet moss, and the heaths on all sides of us we noticed were covered with "Old Man's

Beard." We found great numbers of blue violets and lichens, and from this spot I brought away some specimens of plants for the Pacha to classify. A general feeling of cold dampness prevailed; in spite of our exertions in climbing, we all felt the cold mist very much. It is this continual mist clinging to the hill-tops that no doubt causes all the vegetation to be so heavily charged with moisture and makes the ground under foot so wet and sloppy.

Shortly after 4 p.m., we halted among some high heaths for camp. Breaking down the largest bushes, we made rough shelters for ourselves, collected what firewood we could pick up, and in other ways made ready for the night. Firewood, however, was scarce, owing to the wood being so wet that it would not burn. In consequence of this the lightly-clad Zanzibaris felt the cold very much, though the altitude was only about 8500 feet. On turning in, the thermometer registered 60° F. From camp I got a view of the peaks ahead, and it was now that I began to fear we should not be able to reach the snow. Ahead of us, lying directly in our path, were three enormous ravines; at the bottoms of at least two of these there was dense bush. Over these we should have to travel and cut our way through the bush. It then would resolve itself into a question of time as to whether we could reach the summit or not. I determined to go on in the morning, and see exactly what difficulties lay before us, and, if these could be surmounted in a reasonable time, to go on as far as we possibly could.

On the morning of the 7th, selecting some of the best men, and sending the others down the mountain, we started off again upwards, the climbing being similar to that we experienced the previous afternoon. The night had been bitterly cold, and some of the men complained of fever, but all were in good spirits, and quite ready to go on. About 10 a.m. we were stopped by the first of the ravines mentioned above. On looking at this I saw that it would take a long time to cross, and there were ahead of it still two others. We now got our first glimpse of a snow peak, distant about two-and-a-half miles, and I judged it would take us still a day and a half to reach this, the nearest, snow. To attempt it, therefore, would only end disastrously, unprovided as we were with food, and some better clothing for at least two of the men. I therefore decided to return, trusting all the time that at some future camp a better opportunity for making an ascent would present itself, and the summit be reached. Across this ravine was a bare, rocky peak, very clearly defined, and known to us as the south-west of the "Twin Cones." The upper part of this was devoid of vegetation, the steep beds of rock only allowing a few grasses and heaths in one or two spots to exist.

The greatest altitude reached by us, after being worked out and all corrections applied, was 10,677 feet above the sea. The altitude of the snow peak above this would probably be about 6000 feet, making the mountain, say, 16,600 feet high. This, though, is not the highest peak in the Ruanzori cluster. With the aid of a field-glass I could make out the form of the mountain top perfectly. The extreme top of the peak is crowned with an irregular mass of jagged and precipitous rock, and has a distinct crater-like form. I could see, through a

gap in the near side, a corresponding rim or edge on the farther, of the same formation and altitude. From this crown of rock, the big peak slopes to the eastward at a slope of about 25° , until shut out from view by an intervening peak; but to the west the slope is much steeper. Of the snow, the greater mass lay on that slope directly nearest us, covering the slope wherever its inclination was not too great. (The largest bed of snow would cover a space measuring about 600 by 300 feet, and of such depth that in only two spots did the black rock crop out above its surface. Smaller patches of snow extended well down into the ravine.) The height from the lowest snow to the summit of the peak would be about 1200 feet or 1000 feet. To the ENE. our horizon was bounded by the spur, which, starting directly behind our main camp, and mounting abruptly, takes a curve in a horizontal plane and centres on to the snow peak. Again, that spur which lay south of us also radiated from the two highest peaks. This would seem to be the general form of the mountain, namely, that the large spurs radiate from the snow peaks as a centre, and spread out to the plains below. This formation on the west side of the mountain would cause the streams to start from a centre, and flow on, gradually separating from each other, until they reach the plains below. There they turn to the WNW. or trace their courses along the bottom spurs of the range and run into the Semliki river, and on to the Albert Nyanza. Of the second snow-peak which we had seen on former occasions I could see nothing, owing to the "Twin Cones" intervening. This peak is merely the termination, I should think, of the snowy range we saw when at Kavalli's, and has a greater elevation, if so, than the peak we endeavoured to ascend. Many things go to show that the existence of these peaks is due to volcanic causes. The greatest proof that this is so lies in the numbers of conical peaks clustering round the central mass and on the western side. These minor cones have been formed by the central volcano getting blocked in its crater, owing to the pressure of its gases not being sufficient to throw out the rock and lava from its interior; and consequently the gases, seeking for weak spots, have burst through the earth's crust and thus been the means of forming these minor cones that now exist. Of animal life on the mountain we saw almost nothing. That game of some sort exists is plain from the numbers of pitfalls we saw on the road-sides, and from the fact of our finding small nooses in the natives' huts such as those used for taking ground game. We heard the cries of an ape in a ravine, and saw several dull greyish-brown birds like stonechats, but beyond these, nothing.

We found blueberries and blackberries at an altitude of 10,000 feet and over, and I have been able to hand over to the Pacha some specimens for his collections, the generic names of which he has kindly given me, and which are attached below. That I could not manage to reach the snow and bring back some as evidence of our work I regret very much, but to have proceeded onwards to the mountain under the conditions in which we were situated I felt would be worse than useless; and, though all of us were keen and ready to go on, I gave the order to return. I then read off the large aneroid, and found the hand stood at 19'900. I set the index pin directly opposite to the hand, and we started down

hill. At 3 p.m. on the 7th I reached you, it having taken $4\frac{1}{2}$ hours of marching from the "Twin Cones."

I have the honour to be,

Sir,

Your obedient Servant,

W. E. STAIRS,
Lieut. R.E.

H. M. STANLEY, Esq.,

Commanding Emin Pacha Relief Expedition.

P.S.—The following are the generic names of the plants collected by me. Emin Pacha has kindly furnished them:—

1. Clematis.	14. Vaccinium.	27. Pteris aquilina.
2. Viola.	15. Erica arborea.	28. Asplenium.
3. Hibiscus.	16. Landolphia.	29. Aspidium.
4. Impatiens.	17. Heliotropium.	30. Polypodium.
5. Tephrosia.	18. Lantana.	31. Lycopodium.
6. Elycina. (?)	19. Moschosma.	32. Selaginella.
7. Rubus.	20. Lissochilus.	33. Marchantia.
8. Begonia.	21. Dracæna.	34. Parmelia.
9. Peucedanum.	22. Luzula.	35. Usnea.
10. Gnaphalium.	23. Carex.	36. Tree fern.
11. Helichrysum.	24. Anthistiria.	37. One fern.
12. Senecio.	25. Adiantum.	38. One Polypodium.
13. Sonchus.	26. Pellæa.	} Unknown.

THE KARA SEA AND THE ROUTE TO THE NORTH POLE.

(*Read at Meeting of Society, Edinburgh, May 1889.*)

BY CAPTAIN A. HOVGGAARD, *Danish Navy,*

Hon. Corresponding Member, Royal Scottish Geographical Society.

It is with great pleasure that I avail myself of the opportunity of reading a paper before this Society, of which I have been a Corresponding Member for some years.

It has been impossible of late years to organise an Arctic expedition in my country, so that I have no new information to give on the subject; but I believe that some remarks on the Kara Sea will have a special interest for a British audience, as some enterprising English merchants have taken up the idea of opening up communication with Siberia by this route.

Mr. Sewell recently read a paper on the last cruise undertaken by the indefatigable and energetic Captain Wiggins in the *Labrador*, which demonstrated that the Kara Sea is navigable. In 1882-83 I was in command of the only expedition which has wintered in that sea, and was thus able to study the movements of the ice for a year—my ship being beset by, and drifting with, the ice. I believe no one else has hitherto observed these movements; at least I have never seen them described, but only heard of immense hummocks formed on the coast of