

1934.

Kenya

No. 23265

SUBJECT C0533/450

*Scientific Expedition to Lake Rudolph Rift Valley
under the leadership of Mr. V. G. Planché*

Previous

3125/33.

Subsequent

See 46503/52/53 SA.
(Lake Rudolf Expedition)

C.S.
Expedition
Nominal

Gov. Deputy P. Hing 26 (11. mail) 27 Aug 33

States that it is now probable that Dr. Nyson & Co. parties were drowned in Lake Rudulff between 6th & 15th Aug. It furnishes details of search made for them & states that he is advised that when lake has been finally abandoned an inquest should be held

I assume - Lm (??) or 3121 33
that it is not expected that we should take any action re repairs, information
10/1/33



Sir Percy Cox telephoned from the RGS to ask what news we had. I promised him a copy of this

Copy all to Royal Geog. Soc. (under cover to Sir P. Cox) LF, as well as to J.O.

5/9/34

2 To Royal Geog Soc. (part 1) 18/12 5/9/34
F.O. (part 1) 18/12 5/9/34

The Ridge road to RGS

11 Royal Geographical Socy (191) 11 Sept 54

Enclose a brief summary on the Lakehurst accident which is deemed to merit in this journal & enquire whether information received from P.O. may be used for this purpose. Request reply by telephone.

The Vernon

I have read the Humber

attention to him details (p. 4) of the "Humber" Frontier Police also the "Humber" Police. I have also read the "Humber" Police and the "Humber" Police.

Very truly yours
D. Vernon

Royal Geographical Socy (191) 11 Sept 54

DESTROYED UNDER STATUTE

Business thanks for prompt attention to his requests

also for Mr. Selatinski's card

Extract from The Times 5 Sept 54

DESTROYED UNDER STATUTE

Manchester Guardian 8 Sept 54

DESTROYED UNDER STATUTE

13 Sept 54

DESTROYED UNDER STATUTE

Essex Post 15 Sept 54

DESTROYED UNDER STATUTE

The Times 14 Sept 54

DESTROYED UNDER STATUTE

The Times 15 Sept 54

DESTROYED UNDER STATUTE

Put by all

19/9

19/9
agree

12 American Bygone 20/9 20/9 54

Trans a copy of proceedings held by the District Comm. on Dr. Bygon & Mr. Martin & states that since this verdict other publicity identified as there has been picked up but it is probable that the boat sank & it is unlikely further traces will be discovered.

The finding of the Court casts reflections on the suitability of the boat used by the expedition - "A Hudson's Collapsible boat fitted with a Britannia outboard motor - & suggests seriously that the Ducks should have a certain amount of casualties and lack of fuel at night.

Copy to 70. Members of Ref. S. I don't think the R.G.S. expect anything from us.

C. F. Cross with 20/11/54

As regards the boat, see my remarks of 12/11/53 or 31/11/53

This should go to the R.G.S. - if ever they consider supporting another venture by the Ducks, they will no doubt know what weight to attach to the D.C.'s criticisms of them.

Copy with end to R.G.S. LFF letter each

20/11/54

See this in the R.G.S. Summary

13 To F.O. (with 12) 18/11 }
14 R.G.S. (with 12) 18/11 } 24/11/34

13 Extract from The Times of 23rd Nov 34

Raid for more Party

Dr. Vernon... case to 200 16-11

Dr. Vernon

27/11/34

14

14 Extract from The Times of 30 Dec 34

DESTROYED UNDER STATUTE

14

8.12.34

Put by

14

14 Extract from The Times of 30 Dec 34

DESTROYED UNDER STATUTE

Put by

7/11/34

14

15 Extract from The Times of 16 April 35

DESTROYED UNDER STATUTE

The first half of the article might be registered on the Barber Court

X

copy sent on 28005/2/35

pp. otherwise

Put by C.A. Foxworth 17.4.35

Library

No doubt the address will be next

more fully reported in the R.G.S. journal

They will have an extract for attachment

to these pp. pl?

Noted Colchester 24.18.1935

Put by Dr. Vernon 17/4

Put by Dr. Vernon 18/4/35

action again x.

10/1

? Paddy.
C. Brown, 2
17/6/36

You may care to see.

22/6/36
11 1/2

Yes, the photographs will be useful to show
to Mr. Harkin if he again wants to put articles of
the Philippines in the journal of the
the paper 2 columns in volume 12 of the journal

4/11/36

140

interior

17/6/36
11 1/2

Professor Ahlmann has shown takes place on the low altitude, "Sub-Polar," glaciers of Spitsbergen and North-East Land, I am able to bear him out if only from certain observations made during two sledging journeys (1921 and 1923) in Spitsbergen. Nothing is more striking than the vast amount of melting and the resulting rivers and lakes of melt-water which form, during the summer, even under prolonged conditions of saturated atmosphere and thick fogs. With regard to the general recession and shrinkage of glaciers and snow-fields, to which Professor Ahlmann makes reference, I can fully support him with quantitative field evidence from southern New Friesland and Garwoodless. In the latter region of eastern Spitsbergen certain higher peaks now project above the highland ice-covering some 1000 to 1500 feet. On many of them, owing either to similar adjacent formation, intensive frost-splitting, or other causes, there is no definite evidence from erratic perched blocks of an earlier and higher level occupied by the ice. But in one instance at least, on the great mountain-nunatak, at the head of the Nordenskiöld Glacier, Mount Ferris, there was unequivocal evidence of a minimum measure of the amount of the former much higher stand of ice in these parts. On the eastern ridge of that limestone mountain were found granite blocks at 1000 feet above the general level of the highland ice-sheet lying eastward of it, their composition, arguing their derivation from the Chydenius Mountains to the north-east, and their elevated position proves that the ice in this region was formerly far more inundated. Only future exploration and observations can determine what the maximum "glacier-tation" of Spitsbergen amounted to and whether it ever entirely enveloped all the highest peaks or not, apart from the question as to when it last occurred, and if its incidence has been cyclical and entirely due to the variable heat capacity of the North Atlantic Drift, as Professor Ahlmann supposes.

Although Professor Ahlmann puts forward his geophysical classification of glaciers purely as a preliminary one, I think it is definitely to be welcomed, since its basis emphasizes a side of glaciological study that has been singularly neglected. Morphological studies of glaciers which have been pursued for so many years, have really done little to advance our knowledge of the real constitution of glaciers, their mode of motion, and the question of their potency as erosive or merely abrading agents. The intensive physical examination of the kind that Professor Ahlmann and his collaborators are carrying out seems therefore to afford new hope for the immediate future of glaciology as a whole. What is clearly wanted now is a series of similar observations upon the glaciers of other regions, and particularly at the highest altitudes where a peculiar combination of arctic and tropical external conditions are to be found. If systematic and detailed observations of the kind that Professor Ahlmann has made with such admirable enterprise in high latitudes, could be extended by some of the projected expeditions in the near future to the high altitudes of the Himalaya, and especially perhaps the coming Mount Everest Expedition, we should be going some way in our support of the suggestion of cooperation made by him to the Society.

Professor Ahlmann: After reading Mr. Odell's contribution to the discussion I am very glad to acknowledge the importance of his observations in Spitsbergen. I should also like to call special attention to the advisability of similar glaciological investigations on glaciers at the highest altitudes. In my opinion these observations are now the most important contributions to glaciology. Special methods can be worked out and instruments constructed for climbing parties on the highest parts of the Himalayas or Karakoram. I should feel more than pleased if my lecture could bring this about.

THE LAKE RUDOLF RIFT VALLEY EXPEDITION, 1934:
A paper read at the Meeting of the Society on 22nd April 1935.

V. E. FUCHS

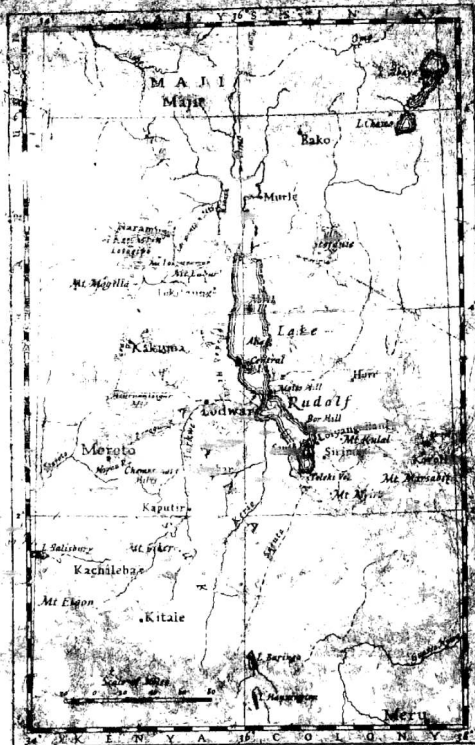
THE Lake Rudolf Rift Valley Expedition was projected with the main objects of geological and survey work in the northern part of the Rift Valley in East Africa. Since this area is still so little known it was decided to carry out a series of lines of investigation, as far as possible, in the country between the parallels of 2° and 3° N. Mr. R. C. Wakefield, of the Forestry Department and Mr. W. H. Mason, were surveyors. Mr. Martin undertook to collect birds at intervals during the expedition since he was a qualified forester. Dr. W. S. Dyson was to act as the expedition's medical officer and to be in charge of the zoological collections. Besides carrying out an archaeological work as was possible, Mr. J. Millard undertook the collection of archaeological material, while Mr. J. O. Maclean, who was already in Kenya studying the game deposits on Lake Victoria, joined the expedition as palaeontologist. Mr. J. G. Pritchard, zoologist and leader of the party. Mr. David Brown, of the Agricultural Laboratories, Kampala, accompanied the expedition, and those results reported in Furthans. He was particularly concerned with the locust problem but also contributed largely in the acquisition of entomological collections.

It was entirely due to the generosity of the Royal Society, the Royal Geographical Society, the Trustees of the British Association, and the Percy Sladen Trust that the expedition was able to attempt such an extensive programme of field work in all the fields of geographical science. All the scientific instruments used during the expedition.

The expedition would like to thank the officers of the Kenya Administration in Turkana Province, particularly Mr. A. M. Champion, Provincial Commissioner, and Mr. Moran, District Commissioner, who were extremely helpful at all times. Our thanks are also due to the officers of the King's African Rifles, who assisted in transport and other matters, and to the Administration of the Kenya Uganda Railways and Harbours who lent us the motor cars for the search operations which were unhappily needed.

The original plan for the expedition was that it should make a complete journey round the lake, starting from Lodwar, the administrative post, some 100 miles from the western shore. Owing to the refusal of the Ethiopian Government to grant permission for the expedition to enter Abyssinian territory, this plan had to be modified so as to omit the extreme north end of the lake, which lies just over the border. It was therefore decided to conduct the work in two sections, first on the west of the lake and then on the east.

Lake Rudolf lies in the northern end of the rift valley in Kenya and is approximately 1230 feet above sea-level. It is about 180 miles long and has a maximum width of 35 miles. The whole of the area with which the expedition had to deal lies between latitudes 3° and 5° N., and longitudes 35° and 37° E. The greater part of the country surrounding the lake is of desert character, the only permanent river flowing into the lake being the Omo, that rises in the Abyssinian highlands and reaches Rudolf at its northern end. There is



no outlet. The whole of the western shore of the lake lies in the Turkana Province and here the work of the expedition was begun.

In February 1934 the expedition arrived at Lodwar. At this time it was still thought that it might be possible to enter Abyssinia in direct contact was established with the local Ras, or Governor of the Maji Province. As he had not arrived at the frontier and it was uncertain when he would do so, we began work amongst the Loosolek Hills first between the lake and Lodwar Post. We had expected that the Miocene rocks of which these hills are formed would yield a fairly rich mammalian fauna, for in 1932 M. C. Arambourg had recorded a few fragmentary fossils and stated that the deposit was probably a lake-bank. In this we were disappointed, for in spite of finding the exact spots from which he had taken his specimens, we recovered a very small amount of material. It was found that the fauniferous band was comparatively thin and that the same was occurring in other beds of the series west so much alike that it is difficult to believe that they were of any paleontological value.

Our visit to the lake was interrupted by a rebellion of the tribes who covered the mountains "Camp de poussa" of the Achuleusa area. The first noticeable symptoms to be found in the Rudolf basin. At this time the tools scattered on the surface and it seemed that they were in use on that surface. It had been further evidence for evidence that the deposit since the earth pressure of the lake retreated from the area.

There are the most signs of compression of the part of the rift valley was seen for the Loosolek Hills themselves were found to be a series of over-tilted fault blocks. Since the rocks are of Lower Miocene age we now know that the main compressive forces were at work by the time of the Middle Miocene at the latest.

On the lake shore of Trigona Hill where the Cambridge Expedition had had its camp in 1930. My old friends, the two Turkana chiefs, welcomed us with apparent jubilation, and there and then ordered a dance which lasted for two or three hours in the heat of the midday sun. We inspected one of all this at our arrival was a home to our tobacco than for us for every Turkana is an inveterate tobacco chewer.

What astonished us most was the change in the shore-line of the lake. Since January 1931, that is almost exactly three years before, the level of the water had fallen approximately 4 feet, which meant that on this gently shelving shore the edge of the lake had retreated over a quarter of a mile. On the mud flats, exposed by this retreat, the Turkana were growing considerable areas of millet.

We were considering moving our camp to the lake shore at this point, when news came through that the Ras had arrived at the frontier. We accordingly made all speed to get there, and after one night at Lodwar made the journey by car and lorry to Lokitaung, the chief military post in Northern Turkana. Thence we travelled down to the lake, through the impressive Lokitaung gorge that is cut through a series of tilted grits overlain by a great thickness of basalts. The gorge opens suddenly on to the plain left by the retreat of Lake Rudolf, and 20 miles farther to the north we came to Todenyang, the British Port on the shore of the lake. Three miles away lies the Abyssinian Post of

M. C. Arambourg, *Comptes Rendus Acad. des Sciences*, 16v. 1934, p. 671.

Namoraputh. A few years ago both the areas would have been described as on the southern sand spit which divided Sandjoun Gulf from the main lake. At the present time there is no gulf, and the lake continues its steady retreat. Later on we found that approximately 2 miles from the shore the water is only about 8 feet deep. Should the lake level continue to fall at the average speed maintained during the last three years, it will be little more than ten years before the northern shore of the lake has retreated some 10 miles in the south of the now accepted boundary between Abyssinia and Kenya. In March 1934 a steel post was cemented into the rocks on the edge of the lake and a mark cut 2 ft. 9 ins. above the level of the lake. The shrinkage of the lake may almost be accounted a danger to the surrounding country, for the prevailing south-east wind dries the bare sand of the shore and blows inland in the form of dunes, which have their origin only 100 yards from the edge of the lake and are now sweeping forward at a rate of something like 50 yards a year.

At the time of our arrival at Todenyang, the Ethiopian and Kenya authorities had suggested that there should be a peace meeting between the native tribes on either side of the boundary, and we were fortunate to be present at this interesting affair. The two tribes concerned were the Merille (probably the Merle of von Höhnd and others) and the Turkana. The ratification of the peace necessitated killing a white sheep and a white bull, both supplied by the elders of the aggressor tribe. It was interesting to note that though the chief of the Turkana was present, he took no part in the actual ceremony as he was still a warrior and therefore led them in battle only. The elders of either tribe squatted in a row, all the Turkana being, in this case, on the left and the Merille on the right. The white sheep was then killed in front of the assembled elders. Straps of fat were taken from the entrails and draped round the necks of the Turkana by the elders of the Merille. The white bull was then slaughtered, a bone from a front leg broken with a stone, and the marrow sucked from a half by the chief elder of each of the two tribes. This completed the ceremony and all concerned sat down to feast on the carcasses of the two beasts.

On this occasion of the peace ceremony we asked permission from the Ras to enter his territory, and much to our surprise he assented readily enough, saying that he would send the necessary letter of safe-conduct into camp the next day. In the end we were disappointed, for the letter never appeared and the Ras himself returned to Maji the same day.

Even in British territory we were compelled to have a military escort with us, so that at our next camp we numbered thirty. This included the six Europeans of the expedition, a section of native troops, native police, camel and donkey boys, and our own cooks and servants. At this time our water supply had been reduced to 40 gallons per day for the whole party to include cooking, washing, and drinking. There had to be supervision of the natives, but we found that this amount of 1½ gallons per day per person was quite reasonable. Nevertheless it was our aim throughout the expedition to maintain a supply of 2 gallons per day per person, for this was found to be the minimum amount which prevented quarrelling amongst the native staff.

The shortage of water in this district was more serious for the native population, and several times Akal, chief elder of the northern Turkana, asked us to

bring them rain. He told us that the failure of the rains during the previous two years had caused numbers of their cattle to die, so that the poorer people were in an extremely bad way. He said that he knew we could bring rain if we wished, and asked that we should at least mention the matter to the Government. This we promised to do, hoping that he would cease demanding rain. The next day he was back again with the same preamble and the same request, but it became evident that nothing would convince him of our impotence in the matter. In desperation and on the strength of the gathering clouds over the Abyssinian highlands, we told him that rain would fall within a fortnight. Two days later we left Komogin, and afterwards we heard that he was not disappointed, as on the fourteenth day a heavy rain fell in four hours: a great piece of fortune for our good name.

From Komogin we had hoped to reach Mount Labur (Nyero Peak) as this formed one of the base points used by Gommel in his geodetical survey in 1919. Mr. Champion, who was formerly a commissioner of Turkana during our visit, had made a very excellent map of the area. In the course of his work he found that there were discrepancies between the surveys of Kenya, Uganda, the Sudan and other independent work, and to straighten this out, we wished to fix Labur and other points by astronomical observations, using wireless time signals for the time, as in this area. After several attempts to find a route for the donkeys up the precipitous eastern slopes of Labur, it was decided that it would be more suitable to approach the mountain from the west. Accordingly we returned to Lokogon, where the donkeys were kept, to wait for the treatments and supplies while the surveyors followed the next day to ascend three nights on the top of the mountain. Labur is not one of the surveyor's ideal mountains for its peculiar form is easily recognizable from a distance and the cone-like summit projects from the seemingly flat top as it built for the purpose. The observations that were taken while on the mountain have shown that its accepted position was some 20 seconds too far East in longitude, and there was an error of about 13 minutes in latitude.

After the work on Labur the expedition left Lokogon for Naramun, some 70 miles farther north. Naramun is in that part of the Sudan territory which is controlled by the Kenya military authorities. The place itself is no more than a water hole among the foothills on the western side of the wide level-headed valley between the Kaitherin-Lokwanamur range and the mountain mass called Lorientom. We found that this valley had once been occupied by a small lake, which most probably connected with the north end of Lake Rudolf via the Lokwanamur water. From the northern end of this valley there is a sheer drop to a plain below that stretches into the far north-west, and over this plain the outlet from Rudolf used to flow in the past, thereby forming a link with the Nile system.

From Naramun we climbed Kaitherin Peak, on the top of which the surveyors again spent four or five nights. Though they were able to make observations, they were greatly hindered by the rains which were now beginning, and visibility became so bad that it was impossible to take reliable rays and vertical angles to the mountains in the west. There thus remains this one link to be made before the height of Lake Rudolf can be referred to the

bring them rain. He told us that the failure of the rains during the previous two years had caused numbers of their cattle to die, so that the poorer people were in an extremely bad way. He said that he knew we could bring rain if we wished, and asked that we should at least mention the matter to the Government. This we promised to do, hoping that he would cease demanding rain. Next day he was back again with the same preamble and the same purpose, till it became evident that nothing would convince him of our impotence in the matter. In desperation and on the strength of the gathering clouds over the Abyssinian highlands, we told him that rain would fall within a few days. To our joy, we left Korngin and afterwards we heard that he was not disappointed, as on the following day 5 inches of rain fell on our camp: a great boon for our good name.

From Korngin we had hoped to climb Mount Labor (North Peak) as this formed one of the high peaks under the Garamel in his topographical survey in 1917. Mr. Chapman, who was Provincial Commissioner of Turkana during our visit, has made a very excellent map of the area. In the course of his work he found that the various discrepancies between the surveys of Keny's Uganda, the British East Africa Company's independent work and to straighten the line we wished to fix four or other peaks by our own observations, and to find a more favorable route for the first time in this area. After several attempts to find a more favorable route for the donkeys up the precipitous eastern slopes of Labor, it was decided that it would be more suitable to approach the mountain from the west. Accordingly we returned to Lokiraung where the donkeys were kept, and sent the porters and supplies while the surveyors followed the mountain to spend three nights on the top of the mountain. Labor being so well the surveyor's ideal mountain for its peculiar form is easily recognizable from a distance and the same like natural points from the surrounding plain as if built for the purpose. The observations that were made from the mountain have shown that its exact position was some 30 seconds too far east in longitude, and there was an error of about 35 minutes

After the work on Labor the expedition left Lokiraung for Naranyum, some 70 miles farther north. Naranyum is in that part of the Sudan territory which is controlled by the Kenya military authorities. The place itself is no more than a water hole among the foothills on the western side of the wide level-floored valley between the Kaitherin-Lokitanamur range and the mountains called Aorionatom. We found that this valley had once been occupied by a shallow lake, which most probably connected with the north end of Lake Rudolf via the Lotogipi swamps. From the northern end of this valley there is a sheer drop to a plain below that stretches into the far north-west, and over this plain the outlet from Rudolf used to flow in the past, thereby forming a link with the Nile system.

From Naranyum we climbed Kaitherin Peak, on the top of which the surveyors again spent four or five nights. Though they were able to make observations, they were greatly hindered by the rains which were now beginning, and visibility became so bad that it was impossible to take reliable rays and vertical angles to the mountains in the west. There thus remains this one link to be made before the height of Lake Rudolf can be referred to the

trigonometrical heights of the Sudan. When this can be done the lake will form a useful datum for a very wide area.

On our return from Naranom to Lokitang we first saw the effect of the recent rains. Nearly all the dry river-beds had been washed out to a greater or lesser extent, and we had to stop continually to rebuild the track across them. In the few days that had elapsed since the rain began large areas of previously barren country had assumed a green flush, and all the waiting seeds took their opportunity, and the apparently dead thorn-bushes began to clothe itself. We saw now for the first time huge numbers of Grant's gazelle that had come from more barren districts to feed upon the fresh growth.

From Lokitang we continued our journey to Lodwar. On the way the sandy and bouldery track was relieved by the new growth, of which the most striking were numbers of red and yellow lilies that had burst into flower. They seemed out of place indeed in this normally bare expanse.

At Lodwar the expedition was joined by Dyson, who had just arrived from England. Atmid and I then left on a rapid reconnaissance journey to Kaputit, about 30 miles farther south, while the rest of the party occupied themselves with their own particular work around the base camp. The country between Lodwar and Kaputit appears to be a peneplain surface, once probably continuous with the top of the Seko-Chemerong escarpment to the west, the present position being due to the Rift Valley fractures which have lowered this area relative to the rest of the country. From Kaputit we returned along the crest of the escarpment to the corner of the Moroto embayment, where we once more joined the main Lodwar track. During the whole journey we passed through barren, sandy, or rocky country, the rocks belonging apparently to the Basement Complex series. The only vegetation occurred sparsely along the dry river courses, in particular on the banks of the Turkwel river.

After the Kaputit journey the whole expedition moved down to the lake shore at Ferguson Gulf, where Wakefield and Martin set about re-mapping the gulf for comparison with Dr. Worthington's (1931) and earlier maps. At this time the difficulty of obtaining drinking water was overcome by the use of a wood burning still that weighed approximately 100 lb. in all. The output in the sun, when the shade temperature rose to 110°, was 1 gallon per hour. While at the lake our journeys were made to Central Island, a distance of about 9 miles by water from the Ferguson Gulf camp. The expedition's boat was a Hudson collapsible wooden boat fitted with an outboard motor. For its size this is an exceedingly stable craft, and has been approved by the Air Ministry for use in connection with flying boats. These boats were also used by the British Arctic Air Route Expedition. By the kindness of the Provincial Commissioner my wife was able to visit the expedition's camp on the lake for a few days, and she accompanied me on the first trip of the year to Central Island. We found everything much the same as it was in 1930 when Dr. Worthington made the first crossing to it, but the low-lying parts of the shore had changed their outline slightly owing to the fall in the lake-level. We returned the same evening, arriving in camp about 19 p.m. The second visit to the island was made by Dyson and Millard, who stayed there eight days in order to make complete botanical and zoological collections, with the object



Turkwell valley, Kenya



Lodwar Hill from the south. (Ultra red photograph)

of finding to what extent the lake acts as a natural barrier to the migration of the fauna and flora of the adjacent areas.

On our return to Lodwar from the lake we had planned that the surveyors should travel to Mogila mountain in the far north-west of the province, while two others should visit the Dome Rock area just south of Muransigir, which forms the northern edge of the Moroto embayment in the Uganda scarp. On April 29 the surveyors left Lodwar and succeeded in reaching Bakuma by car just before the rains began to earnest, from Kakuma it was necessary to continue with camel transport. All was ready for their departure the next day, like that evening it poured steadily and the normally dry Tarachi river came down in flood and swept over the plains to the north, turning them into a sea of mud impassable for camels. In fact it was only with a great deal of difficulty that they managed to bring the camels to their own side of the flooded river. After some days it became apparent that conditions would not improve sufficiently for the journey to Mogila to be accomplished in the available time. An attempt was therefore made to climb Potosh peak, but again the heavy rain frustrated the attempt.

Meanwhile Mr. J. H. S. MacInnes, the District Commissioner, had travelled some 7 miles when we were still on the lake. From here we had to cross a stream which was met by an enormous yellow cloud of dust swept to and fro by the wind, and a further 100 yards later the surrounding country was a vast plain of sand lit by the confluence of a lake from which stood out a few dead wood bushes. We attempted to return to the lake, but rapid outcrops of soft, white sand dunes had come down on to the plain, and at first morning had the water subsided enough for us to venture on to the lake. About this time we heard that the heavy rain had washed away part of the main track down the Suk escarpment and that the only way to reach the lake was by the Turkana road which at that time as a road should be rebuilt. Nevertheless we entered the long line of our stay at Mogila on the 10th of May, and commenced the collection of biological and mineral specimens. It is the coming of the rains that brought out large numbers of new specimens.

At first the lake level was very low, and some water trees beside the Turkana river. The river was about 10 feet deep and its level had been steady for some days, then suddenly one night it overflowed its banks and threatened the camp. Those present at the time hastened to move all the camp belongings to the top of a nearby hillock, but it was not till the help of some fifty natives had been obtained that it was possible to salvage the lorry which was already in water too deep for us to drive it out. The top of the hillock, only 12 feet above water, proved very cramped quarters for five tents, a lorry, two cars, the kitchen, and some ten natives. Lodwar, however, had also become an island, and Mr. Morgan, the District Commissioner, crowded over the intervening quarter of a mile of water to have tea with us one afternoon.

A week later the expedition left Lodwar on the return journey to Kiptale. After the camels ran the first stretch across the Turkana plains to the foot of the Nepau Pass was positively green compared to the red-yellow expanse of sand usually to be seen. In spite of this pleasing appearance any expectations of good grazing in future months for the Turkana herds were soon set aside,

for this green growth was of weeds and ephemeral plants of all kinds, with hardly a blade of grass. At the top of the Nepau Pass and as far as the foot of the Suk Escarpment a much greater change was seen. In eleven days since the last rain had fallen everything had had time to grow, and become green to an extent that would have been unbelievable three months earlier. The road, instead of a dusty red track stretching into the distance through a sea of lifeless thorn-bush, was now a grassy path strewn in on either side by an impenetrable wall of tall green grass beneath the acacias, and the heavy scent of many flowers was in the air.

At Naivasha, in the Kenya highlands, the expedition halted, and while this was going on arrangements were made with the military and administrative authorities for the second part of the programme to be carried out in the Northern Frontier District. For this part of the work the expedition was to number only four, as Wakefield had to return to his duties with the Sudan Survey Department, leaving Martin to continue the survey. It was also decided that the disappointing paleontological results obtained on the west side of the lake did not justify MacInnes in accompanying us during the second half of the expedition, so the rocks were almost certain to be of the same series. He therefore returned to his work on the Lake Victoria deposits. The four members of the expedition to work on the east side of the lake were therefore Dyson, Martin, Millard, and myself.

On the way to the Northern Frontier District from the south the last of the settled area is left behind at Meru, on the lower slopes of Mount Kenya. From Meru it is approximately 480 miles to Marsabit, the way leading first across the Guasso Nyiro river, and then over a great plain covered with the ubiquitous thorn-scrub. There live a large variety of game, including the ubiquitous retiliated giraffe, and that queer necked antelope the gerenuk.

Marsabit Boma lies at an altitude of 4500 feet on the northern slopes of Marsabit mountain, a volcanic peak that rises to over 4000 feet above the surrounding plain. The mountain is capped with forest and has a comparatively cool climate and a fair rainfall, although it is in the midst of a desert country. Like the two neighbouring mountains, Kulal and Nyiro, 700 miles distant, Marsabit affords to the botanist and the zoologist not only the possibility of seeing a rich fauna and flora preserved since the last wet period of the Pleistocene, but also of studying them under zoologically conditions that vary from complete desert to forest in a distance of only 20 miles.

Several days were spent collecting on the mountain while we awaited the arrival of Mr. V. G. Glenday, the Provincial Commissioner, with whom we were to discuss our plans. As he was delayed, Martin and Dyson went on ahead across the southern part of the Koroti desert to the foot of Kulal, where it had been arranged that camels should meet them. Kulal is approximately 7500 feet high, and is a landmark over the whole of the surrounding country. This was to be the first of a series of high points which we had arranged to fix on this side of the lake.

A day later Millard and myself left Marsabit on the same road but continued to Surina water-hole about 8 miles from Rudolf, and 100 miles from Marsabit. This was to become our main base for stores during the next month. Two days later we left Surina in an attempt to reach the lake with our baggage.

camels. In this we were ultimately successful, but with a great deal of trouble, owing to the rocky and broken nature of the country. Only the camel refused to go, and that not because of the rocks, but because it imagined it would sink into some rather soft-looking damp spot. As there was no way round this piece the camel had to be left behind, and we never saw it again. This route is not advisable for travellers owing to the two very steep scarps down which it would be impossible to take the camels on any day. Nevertheless on the way to the south end of the lake it is the most direct route and may save as much as 40 miles.

At the foot of the first scarp we were still 300 feet above the lake on a flat that had evidently been a lake beach at some time in the past. That our camel then noticed these signs for themselves was shown by their leaving that spot as an unsuitable one for a camp, so it was likely to rain and then the weakness of the lake and sweep it away. They had never seen a lake before, and thought that the great ribbon of water stretching out of sight in either direction was the sea from the sky.

The following day we carried the expedition's boat down to the shore 2 miles away from the pier it was in on the beach, having been carried by relays of half men for a few hundred yards in a line. Once on the lake, we pushed the boat to Loiyangula, where we had arranged to meet our porters. The rocky and boulder-strewn coast, with the steep scarp, was an arduous journey for the camels. It would be impossible to do this under the necessity of keeping in touch with a boat on the lake, and the inland track is really the only one.

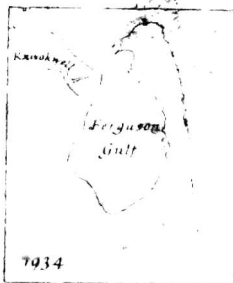
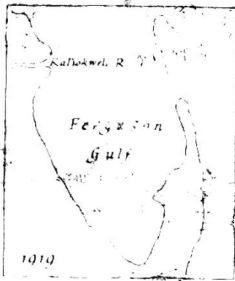
At the south end of the lake the water was, surprisingly enough, fresher than that of any of the north-west shore, or at Kodonyang near the mouth of the Omo River. Apparently this is due in some way to the greater depth of the water there, for we found that it was always better to obtain drinking water from as far out in the lake as possible, the nearer the shore the more brackish the water, and the more the taste.

We were two or three days late arriving at Loiyangula, and found Martin and Dyson starting out to sea. The porters had got there only the night before, as they had had a great trouble with the camels on the steep slopes of the mountain. At Loiyangula there is a spring of fresh water that gives rise to a marsh in which we found, much to our surprise, a large number of bulrushes growing.

While we were pitching camp some Elmoles appeared and sold us for a negligible sum of their morning's catch of fish. The Elmoles are a dwindling tribe who now number only eighty-four, though in von Hahn's time they were counted in their hundreds. They then appear to have been the poorer members of three tribes—Reshat, Saraburu, and Kondine—who had come to the lake to live on the fish they could catch. The name Elmoles means poor or destitute ones, and the poor of these three tribes were collectively grouped under this name. To-day the only surviving Elmoles seem to have been descended from the Saraburu, whose language they say is similar to their own. Nevertheless they call themselves Elmoles and will not admit that they are descended from any other tribe. When first discovered in 1887 the Elmoles used to live on a number of islands in the lake, but now all save one of these has become connected to the mainland by the retreat of the lake. At present

there are two villages, one on the remaining island, the other on a sand-spit, but close to a rocky islet on which they can take refuge from traders in case of need.

These people suffer from an almost universal deformity, a forward and sometimes outward bowing of the shins, bones which may reach such a degree that it makes walking a difficulty and gives the legs the appearance of having a second knee somewhere above the ankle. It seems almost certain that the



Sketch-map to show the changes in the shore-line of Ferguson Gulf during the last fifteen years.

deformity is due to a diet deficiency. They live entirely on fish, crocodiles, and turtles that are caught in the lake, and the only water they drink is that of the lake. It is known that there is little or no calcium in the lake water, as has been pointed out by the soda-rich waters. It therefore seems possible that not only the water but the animals living in it may suffer from a calcium deficiency, and in this case humans dependent upon the lake for their food and water would probably lack a sufficient supply of calcium.

¹L. C. Beadle, *Linn. Soc. Jour. Zool.*, vol. xxxviii (No. 258), 1932, p. 186.

While we were with the Elmolo, Dyson took anthropological measurements of every adult member of the tribe and general notes as to their condition of health, which in fact was bad, since there was a tendency to scurvy, pyorrhoea, decay of teeth, and arthritis. A peculiarity of the tribe seems to be that the little toe is set far back on the foot; this occurs in about 90 per cent. These people know only two methods of treatment, either blood-letting, or burning the painful spot by the application of a glow-wormer through a piece of goat-skin. That these cures were frequently applied was shown by the innumerable scars borne by nearly every individual. It is hoped to give a fuller account of these people and their customs elsewhere, at a later date.

While Dyson and I were visiting the Elmolo, Millard was called back to Marsabit, whence he had to leave immediately to take up a Government post in Basitland. Our numbers was thereby reduced to three. On our return to Loiyangalani we found that Martin had finished the work of connecting the lake-level with the known height of Isithi, so we were ready for our long-anticipated visit to South Island.

South Island has an area of approximately 40 square miles and lies about 4 miles from the eastern shore east of Isithi from the northern end of the lake. It has been variously called by the Kikuyu (after its discoverer), South Island, and Elmolo Island. The latter name is the appropriate one, but it has been applied in the confusion with the name of the Elmolos, which are little more than mud banks on the eastern shore of the lake. The Kikuyu themselves are emphatic in their statement that neither they nor their ancestors have ever visited the island and they have no doubt as to its being first found during the Taita expeditions as a result of the gradual subsidence of the lake. They gradually died away until none were left as the water rose, and it is said that this took place in very recent times. We thought that this legend probably grew from the fact that in 1897, Cavendish was told that at that time the island was connected with the mainland and some people who happened to live in the village of Isithi had been on it during a rise of the lake. Having no boats they were unable to leave the island, although it is known that there has been a rise of the level of the lake of about 20 feet since 1897, and such a sudden rise in the water-level could have taken place.

During the three weeks that we had been working beside the lake we had found that the weather conditions were extremely constant in their daily cycle. In the morning there was usually a strong wind with accompanying rough water on the lake until about 11 a.m., from which time it would begin to die down gradually. By one or two in the afternoon, a flat calm prevailed which lasted till about 4 p.m. The wind would then gradually rise again, but not so strongly, in the evening and during the night.

Before attempting to cross to the island we moved the camp to a point some 5 miles south of Loiyangalani, as a start from that point would allow a certain northward drift which was to be expected when making the crossing owing to the prevailing wind from the south-east. On July 25 Martin and I made the first crossing to the island, under rather rough conditions, in one and three-quarter hours. At first we found it difficult to decide on a suitable place to

see Fishel, 'Discovery by Count Tielek of Lakes Rudolf and Stefanie', vol. 1, p. 101.



A narrow channel and dunes at Tolei, 1934



A Turkana dune



Crossing the Tarash river after the storm

W. R. H. M.

make a landing, but finally ran into a sheltered cove between the main island and a smaller one that lies to the east of it. There we made our camp under the shelter of some sniping rocks. Behind the cove the island rose ruggedly upward, appearing almost unclimbable because of the overlapping flows of fresh lava that had run down to the water's edge.

During the afternoon of the first day we investigated the low-lying island that sheltered our bay to the east. It is probable that at the time of the discovery of the lake this island was under water, for during the last forty-five years the lake has sunk at least 30 to 40 feet.

The next day we set off on an exploratory walk over the island. The highest point was only a few hundred feet above the lake, and accordingly we started the arduous climb up the treacherous slopes. Light hundred feet above the lake volcanic ashes like the pig of the lavas and the gump becomes easier. After a while while we saw the tracks of some four-footed animal. A surprise indeed, for I had supposed the island to be uninhabited except by birds. Presently we came upon a pile of bones that appeared to have been those of a goat; but it was not all we reached the highest point, 1200 feet above the lake, that we saw what had run the tracks. There below us was a herd of thirteen domestic goats. They were as wild as the wildest antelope; it was evident that they had never seen a human being. Later we found thirteen goat skeletons in various parts of the island, and also a fragment of a broken pot and some human bone. This must represent at least one man, the traveler and lived upon the island. These things could seem to support one member of the stories already remarked upon; but to us it seems more likely that some unfortunate were driven from the shore by the wind, or by raiders, while conveying some of their flock upon the island, and had then drifted on to South Island.

The island has a central ridge running north and south which is composed of a series of ash cones. On a number of these we erected cairns for the survey that Martin was to begin the next day. On the east flank of the central ridge a series of lava flows have clothed the whole side of the island till it is almost impassable, but on the other hand the western slopes are of soft ashes over which it is comparatively easy to make one's way. In the northern part of the island the final phase of activity took the form of small streams of black lava that have flowed down over the ashes following the contour of the ground like black glaciers.

The third day was spent in measuring a base and beginning the plane-table survey on the small island to the east, as this was the only available level area. On July 28, the day fixed for my return to the mainland, we continued the survey in the morning, then about midday I left Martin to continue the work alone, while I coasted along the shore to a bay at the northern end of the island, before crossing to the mainland camp. Landing in this bay I found it possible to climb some exceedingly steep slopes of consolidated ash, and to build cairns for Martin's use at two points on the northern end of the island.

The return journey to the mainland took only one and a quarter hours owing to the dead calm prevailing at the time. The next day Dyson left for the island with a boat-load of supplies, and I for the south end of the lake to visit the Teleki Volcano district.

We now approach the time of the tragedy which put a premature end to the Lake Rudolf Rift Valley Expedition. In making our plans we had arranged that if Dyson and Martin were in need of any assistance they should light three fires, the reason for three being that at any time it might become necessary for the two to separate and to camp at different points. This might have meant either one or two fires being seen from the mainland without having any other significance than the cooking of the evening meal. We had also arranged to signal in Morse if a tragedy arose. There was no question of a signal being given on the island each evening, as the fact that the greater part of the work would have to be done on the far side of its high hills precluded any possibility of this. If the shore from which a message was to be brought to me by some of the men stationed at the lake camp.

We had arranged that the earliest day on which they could be expected to return would be August 4, but that they might be back on August 13. On the evening of August 4 I reached Sirima, our base camp, from the south end of the lake. On August 9 I went down to the lake shore camp to attempt to get into touch with Dyson and Martin. On that evening and also on those of the 10th and 11th of August I could get no reply from the island. It therefore became known that they were on the west side of the island and were unable to see the signals.

At this stage it became necessary to consider what measures should be taken and how they should be carried out. It was decided that they should not reach the shore camp on the 14th or the base camp on August 15. Therefore if I arrived at Marsabit on the 14th it would be the first day on which one could call for assistance inasmuch as their being absent from the lake shore camp was unknown. I left the shore camp on the 14th, arriving at Marsabit on the 15th, where I sent telegrams inquiring about the possibility of obtaining an aeroplane. Replies were received from Marsabit, the 16th of August, stating that on the 15th I returned from Marsabit accompanied by a police patrol, ready to search the shores of the lake. They had not returned, so I immediately started back to Marsabit, where a telegram was sent asking for a Wilson Airway's machine to pick me up at Marsabit and deliver it to the island, who were waiting. I had no doubt we should have returned owing to a delay in the telegram, the machine did not arrive in time for us to leave for the island that day. It was therefore on the morning of the 18th that Mr. Pearson, pilot, Mr. Clelland, superintendent of police, and I left Marsabit to search the island and the shores of the lake. We first flew over the base camp to make sure that the missing had not returned the previous day, they might across to the island, where, flying low it was possible to see the exact spot where the base camp had been; but there was nothing to be seen. We then visited the other suggested camping places with the same result. Later we examined the five small islands adjacent to South Island and the shores of the lake, from Bor on the east and from the Kerio on the west to the south end of the lake, but nothing was seen.

On our return to Marsabit we found that a wireless message had been received stating that a helmet had been found on the west shore of the lake in the Ferguson Gulf region, 70 miles to the north. A message was immediately despatched asking for an aeroplane to be sent to search that area including Central Island.

From August 19 to 22 MacInnes and Millard, who had arrived at Marsabit



W. R. H. M.
Looking south from the shore of the lake towards the hills west of



W. R. H. M.
Dome Rock, a plug of pure Orthoceras exposed by denudation of the lavas



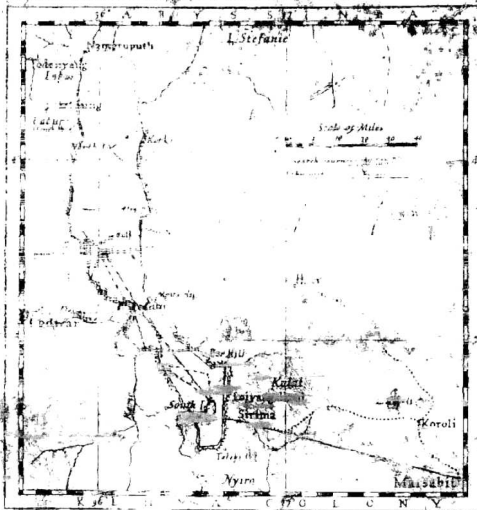
*Sirima Camp - a series of *Platanus* forests.*



Bad country for the camels (S.E. of Lake Rudolf)

J. F. M.

in the search aeroplane, helped to break the camps at Sirima and the lake shore, after which we returned to Marsabit. We intended to go to the west side of the lake, where it would be possible to launch a boat and so make a search of the shore and the island. Half an hour before our departure a wireless message was received from Lokitang saying that two signal fires had been seen on the opposite (east) side of the lake. Two hours later we left for the indicated point, 222 miles to the north, with a police patrol under Assistant Superintendent of Police, Mr. Holmes. A third aeroplane was ordered to



Sketch map to illustrate the various search journeys undertaken

search that afternoon. On August 27 we reached the spot indicated from Lokitang and found the remains of the fires in question. It was plain that they had been lit by natives, and we turned back certain that the last chance of finding our companions alive was gone.

As we felt that some traces of what had happened might be found on South Island we arranged to transport a boat lent by the Kenya and Uganda Railways and Harbours, from Lake Victoria to Lake Rudolf. In this MacInnes and myself sailed southwards for eight days. Owing to Government instructions

issued from Nairibi we were compelled to follow the weather shore instead of being able to travel south under the lee of the east coast, with the result that one night the boat dragged her anchor and sank on the bouldery shore. After she was mended we were still delayed many days by weather and the bad fever from which MacInnes was suffering. Finally we were compelled to make a one-day dash for the island; all went well till we had covered 15 miles of the 20-mile crossing, when a strong wind began to blow directly off the island. Half an hour before darkness fell the outboard engine was swamped for the third time and we were compelled to turn back when only 5 miles from the island. Five hours later we beached the boat successfully on the western shore.

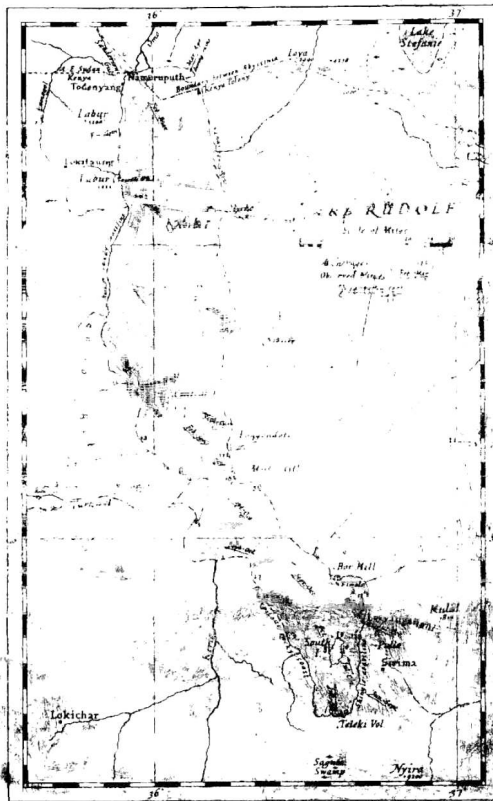
Lack of petrol and supplies forbade that we make another attempt, so ended our search for any signs of what had caused the accident to our two companions. During the search two tins, two oars, and Dyson's hat were found on the west shore of the lake, the latter being nearly 70 miles north of what must have been the scene of the accident. Not the least curious aspect of the whole affair was the disappearance of the boat and the two 4-gallon buoyancy drums that were carried there.

Dyson, as our medical officer, not only looked after the European and native personnel of the expedition, but he also spent a great deal of time attending to the sick of the tribes with whom we were in contact. His ethnological work, which he pursued with such determination, has resulted in a fine collection of specimens; while the anthropological measurements and notes which he made of the Garkana and the El Molo of the western shore of the lake were of particular importance in furthering the investigation of the tribe in which he specialized.

Marton, who as an American citizen, joined the expedition as a survivor. During the first month he was in conjunction with Washfield, but shortly he was compelled to carry on alone, which he did with enthusiasm and success under the most trying conditions. It was in the course of this work of surveying of South Island that he lost his life. His training as a geometer and his keenness for the study of the land made the collection of accurate specimens through the expedition. It is impossible for me to express myself adequately, but every member of the expedition will wish me to voice publicly the deep feeling of loss which we all have suffered with the passing of these two companions who had endeared themselves to us in the few short months we were together. I am glad to say that work has already begun on the valuable notes and collections made by these two men so that their last work will not have been in vain.

Finally I would like to record my appreciation and thanks to every member of the expedition for the loyal and unselfish manner in which they have worked to bring it to a successful conclusion. I am convinced that there has never been an expedition whose members have worked in greater harmony than did my companions in 1934. Though the last two months of the programme were uncompleted I think I may say that the results obtained, prior to the tragedy, have justified the undertaking.

¹ Author's Note.—All photographs without initials were taken by the author; those marked W. R. H. M. were taken by Mr. Martin; those marked J. F. M. by Mr. Millard.



APPENDIX I: SURVEY

R. L. WADSWORTH

A word or two is probably necessary to explain the present state of the work of the country west of Lake Rudolf. A large amount of sketching and rough plane-table work has been done by various people, but attempts to co-ordinate it with the bounded survey by various people, but attempts to co-ordinate it with the bounded survey have all failed. The reason has been that over all that area there has been no fixed point or framework of connected points whose accuracy could be relied upon. Mount Labur, with its most conspicuous contour, is the key point to positions in the west of the lake and a stationary value for it has been attributed to it that may not be out of place here.

In 1902-04 Captain Maud, R.F.C., worked south from Addis Ababa by latitude and azimuth with a rough triangulation, and found Labur to be longitude $35^{\circ} 47' 52''$. He accepted a longitude for Addis Ababa based on a rough connection to two points on the Sudan frontier which in turn were roughly connected with the longitude of Khartoum. This agreed roughly with an absolute value derived by Major Swayne at Addis Ababa in 1897.

In 1908 Major Gwynn made an observation for longitude at Dire Dawa based on the transport of chronometers from Jibuti, and accepting the chart value of the longitude of Jibuti. This resulted in Addis Ababa being changed by -23 sec. and resulted in the longitude of Labur being changed to $35^{\circ} 49' 30''$ (see Journal August 1911 and November 1911). Subsequently the chart value of Jibuti was found to be wrong and was corrected by -23 sec., thus making Labur $35^{\circ} 48' 57''$.

New Archer in 1909 made a rough connection by triangulation between the Kenya main triangulation and three points on the coast and Gwynn. He found Maud's original values an average of about 40 sec. west of his and Gwynn's corrected values an average of 23 sec. farther east. If Archer's longitude were accepted the longitude of Labur would be $35^{\circ} 48' 33''$.

Captain Kelly's work in the Sudan, based on the longitude of the Lado Enclave by Cunningham, joined on to Gwynn's at two points and was found to be 64 sec. farther west than Gwynn (corrected), thus agreeing with Maud's original values. Later the longitude of the Lado Enclave was altered by 10 sec. as a result of Mr. Wade re-observing the longitude of Khartoum.

In 1919 a mean value was adopted for Labur of $35^{\circ} 48' 15''$ based on weighted results as follows:

Maud 3, Gwynn (corrected) 3, Sudan frontier points 3.

After further correspondence between the War Office, the Survey General in Nairobi, and the Director of Surveys at Khartoum a final value for Labur was adopted in 1920 of $35^{\circ} 48' 25''$. It was then having been changed to Maud 3 (Gwynn (corrected) 2, Sudan (corrected) 1, Archer 4.

Subsequently a survey party that the accepted position for the longitude of Labur by the Kenya Survey Department has lately been $35^{\circ} 49' 30''$.

It was the result of this uncertainty in absolute position that made it essential to establish a framework of astro-radio positions for the area. Three main stations were occupied and three to four nights were spent in star observations at each point. Only a 3 $\frac{1}{2}$ -inch instrument was used, but the individual results of each observation agreed very satisfactorily. A small portable transit telescope was used at each station for the observation of time stars. The positions found were as follows:

	Latitude	Longitude
Labur summit	$04^{\circ} 24' 35.4''$	$35^{\circ} 48' 49.4''$
Kaithin summit	$04^{\circ} 47' 14.3''$	$35^{\circ} 45' 50.7''$
Looyan summit	$03^{\circ} 09' 36.6''$	$35^{\circ} 33' 40.0''$



Looking east from above Tellet's volcano: South Island in the distance



Looking east from the top of South Island: the Kulak mountains in the distance

It is interesting to note that the difference between the longitude of Labor as deduced through Kelly's work based on the Lado Enclave and the new value is 48 seconds, whereas in 1929 Mr. Sweeting occupied Kelly's Latuke when carrying out a triangulation based on the Uganda main chain and differed from Kelly by 58 seconds in a similar direction.

Only two values have been derived for the latitude. Maud's original one which was used by Gwynn of 04° 24' 30.2" and one derived through Archer's work linking up the main Kenya triangulation with that of Gwynn which was some 10 seconds greater.

Assuming the new position of Labor it would appear that the following corrections would have to be made to previous work:

Maud	+ 57
Gwynn (corrected)	- 8
Sudan (corrected)	+ 76.32
Archer	+ 42

Azimuths were observed from the summits of Labor and Katherin:
The Azimuth of Katherin from Labor is 124° 29' 11" S. by W.
Labor from Katherin is 104° 20' 11"

The Azimuth Labor to Conical Hill was also observed to compare with that which had been used in the computation of Gemmel's triangulation and taken from Gwynn's work. The new value is 133° 00' 06" S. by W. as opposed to Gemmel's 135° 42' 50".

Unfortunately conditions both on Labor and on Katherin were bad. A high wind blew almost continuously and visibility was extremely poor. Readings of horizontal angles were taken and a number of more important vertical angles, but it was unfortunately not possible to take any vertical angles to the hills to the west of Katherin. The observations at Lodwar were taken on the plain in perfect conditions and later transferred by a measured base, an observed azimuth and a single triangle, to the summit cairn.

While at the camp at Tidenyang on the north-west corner of the lake, a baseline 3 1/2 kilometres long was measured along the shore, with a steel band to enable an accurate determination to be made of the height of Labor above the lake-level. The mean observed height proved to be 3628 feet above water-level, and an iron post was cemented into the rock about 300 yards south-east of the fort to mark the water height on that date. The War Office map of 1903 shows the height of the lake to be 1250 feet the result of Major Austen's work. This was apparently a mean of many hypsometer readings taken along the shore. Mr. Champin shows 1230 feet in 1931 and, apparently accepting Austen's work and allowing for a drop in the lake level of 20 feet. Gwynn in 1911 shows 1560 feet as a result, I believe, of a triangulated height. Gwynn's difference in height between the lake and the top of Labor is 3400 feet as compared with our 3628 feet. For the moment 1230 feet may be assumed as a rough value for the height of the lake, thus making Labor some 4860 feet above sea-level.

Detailed results of certain observations have still to be compiled and the results which Mr. Martin left of observations to the south-east of the lake in the neighbourhood of Kulal have yet to be examined. A plane-table survey was made of Ferguson Gulf, to compare with previous sketches which had been made.

APPENDIX II: ARCHAEOLOGY
J. F. MILLARD AND V. E. FUCHS

The expedition originally intended to visit the known fossiliferous Pleistocene deposits of the Omo river with the object of finding remains of early human



Looking north from the north end of South Island



The N.E. bay of South Island

cultures which it was thought should occur in them. As permission to enter Abyssinian territory was not forthcoming, our attention was turned to similar deposits along the west side of the lake. Though the beds which we were able to investigate were not rich from the palaeontological point of view, our expectations of finding human cultures in the area were justified. Indeed the Lake Rudolf basin would appear to have been inhabited almost continuously from the earliest Chellean times to the present day.

In common with the rest of East and Central Africa the Lake Rudolf region has had alternating wet and dry periods with accompanying *very* long, in the extent of the lake. The greatest extension would appear to have occurred during the early Upper Pleistocene, after which there has been a steady fall, with minor fluctuations, to the present day.

It is in or on the old lake beaches that the majority of the tools representative of past human cultures are found. They are also found in the vicinity of shell-holes, many of which have been permanent from at least as early as Neolithic times to the present. The earliest cultures found in the area occurred to the east of the Lasodok Hills, which probably formed a chain of islands during Chellean ages. At that time the lake seems to have been falling and it continued to do so during the Acheulean, and on the whole the representatives of this culture were found nearer the present lake than the earlier ones. After the Acheulean the lake rose steadily to its maximum extent. Such would appear to have occurred during the Gamblian period. The cultures representative of the Gamblian, the Mousterian and Aurignacian, are well represented in the country west of Rudolf, but the Mousterian predominates. As the Aurignacians appear to have had a more advanced people it is likely that the absence of Aurignacian tools may be a sign of the post-ice age.

At the close of the ice age the lake had already been reduced, in fact to such an extent that the valley between the Southern range and Lorienium was already dry, the migrating site of the Magdalen people was found at Naranom, the chief probability of the water-hole.

It may be that while the series of cultures recovered from the Lake Rudolf basin in the present expedition, in the lake basin at least, a western influence will be seen to have affected the culture. In any case the collection from this area is of interest, for it extends northwards there appear certain of the types known to occur in Southern Europe and Northern Tanganyika, and thought by some to have evolved from the most primitive form in the western part of the Central African Province. The migration basin is the meeting point of the three roads which were the most likely to have been used by the migrating peoples of different cultures. Thus from the south via the chain of lakes on the floor of the main Rift Valley; from the north-east (Red Sea and Arabian direction) by a similar series of lakes in the Abyssinian Rift; thirdly from the west and south along the Nile from Egypt and so by its one-time affluent from Rudolf, into the lake area.

APPENDIX III: GEOLOGY

V. E. FOSBES

It would be premature to give here anything purposing to be the results of the geological work but it may be of use to mention briefly a few of the outstanding points about the geology of the area as a whole.

In the first place, Lake Rudolf undoubtedly lies in the northern extension of the eastern branch of the Great Rift Valley of East Africa. From Lake Baringo northward the course of the Rift may be followed clearly enough, but from Mount Nyiro at the south end of Lake Rudolf the east wall of the Rift is difficult

to follow and appears to die away altogether. On the other hand the western wall continues northwards, forming the west boundary of the lake at its southern end, then it too is discontinued in the direct line. Nevertheless it can be seen to be taken up by the more westerly fractures of the Sekerr-Chemeronig escarpment that continue as a prominent feature as far as Mogilla mountain to the far north-west.

From the work of the expedition it appears that the country to the east of this outer escarpment on the west of the Rift Valley is composed of the old peneplain surface that existed prior to the Rift fractures. In Central and Northern Tanganyika this surface has been flooded at intervals by basaltic lavas (in the north-west by dykes) from the early-Miocene onwards. Earth movements continued during the Miocene and Pleistocene, for the early Miocene lavas and tuffs are folded by pressure in an east-west direction. Thus, taking the lake as a central line, we found that the folds on either side were overfolded towards it. In the east and south of the area these movements appear to have been accompanied in the Pleistocene by the Aushu extrusion of lavas. The most recent activity has been recorded, by von Mohr and others, during the last fifty years in the Teloko volcano region at the south-west of the lake.

The evidence of the old lake beaches on Rudolf shows that not only did the surface of the lake once or at least 500 feet higher than at present, but that it also occurred at a lower level than this at which it now lies. Owing to subsequent obliteration of the evidence it is not possible to say to what extent the early Pleistocene lake spread over the country, but it is probable that the greatest area was attained during the lower part of the Upper Pleistocene. At present this view is founded upon the evidence of human cultures in the lake deposits.

Certain molluscan fossils found interbedded with the Pleistocene lavas on the east of the lake may on further examination be found to be of a different fauna from that at present inhabiting the lake. This would exclude the Rudolf region from the Nileotic Faunal Province during the early Pleistocene. In that case it would probably prove to have been part of the Central African Faunal Province, being related to the now extinct molluscan fauna found in the Kaiso deposits of the lakes of the Western or Uganda Rift Valley.

At the present time the siltling up of Lake Rudolf together with the steady fall of the water-level combines to cause a rapid reduction of the lake area every year. Also the time is in sight when the Turkwel valley of this will link with the sandpit running far out into the lake from the foot of Mote Hill on the east shore, thereby dividing Rudolf into two basins. When that has occurred it will be but a comparatively short time before the southern lake dries up in the same way as that which once occupied the Suguta valley south of Lake Rudolf. One further step will then have been taken towards the complete desiccation of the area.

APPENDIX IV: ORNITHOLOGY

D. G. MACINNIS

The aquatic or semi-aquatic birds of Lake Rudolf were amongst the most interesting observed, and some useful notes were made concerning migration, nesting, and other habits. Many European species occurred on the lake, and remained there throughout the year; these included the Common Curlew, Ringed Plover, Common Sandpiper, Marsh Sandpiper, Green Sandpiper, Curlew Sandpiper, Little Stint, and several small passerines.

The Shoveller (*Spatula dyspepla* Linn.) and the Garganey Teal (*Anas querquedula* Linn.) were the only European Ducks seen in the area, and these

left on migration during the first week in May, returning in the last week of September. During their absence their place was taken by the White-faced and Fulvous Whistling Tree Ducks (*Dendrocygna viduata*, Linn.), and (*D. fulva*, Gmel.), which were absent throughout the other part of the year. It might seem that there exists some mutual antipathy between the species, or else that some peculiarly happy agreement has been reached concerning the lake's food supplies.

In the spring months the Gull-billed Tern (*Gygis alba*, Gmel.) occurred in full numbers, though always singly, and was found to be in full breeding plumage. In condition hitherto observed in Kenya: In October they were more numerous, and frequently alighted in great numbers, and though many assumed breeding plumage in April, no signs of nesting were observed. At that time of year these Terns fed almost exclusively over the water, whereas at other periods the majority appeared to be feeding on grasshoppers partly inland. Lesser Bills (*Tringa hypoleucos*, Vieill.) were first seen in the end of April and began nesting operations immediately. They were found in very large numbers in October, and by then the young were all hatched. The most remarkable feature of their nesting was that the birds were found to be in the open. Their nests, which were usually made of mud, were placed on the ground, and were not covered with any material. The birds were found to be sitting on eggs, which were usually fresh, and were found to be sitting on eggs, which were usually fresh.

During the nesting season the birds were found to be sitting on eggs, which were usually fresh, and were found to be sitting on eggs, which were usually fresh. The birds were found to be sitting on eggs, which were usually fresh, and were found to be sitting on eggs, which were usually fresh. The birds were found to be sitting on eggs, which were usually fresh, and were found to be sitting on eggs, which were usually fresh.

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APPENDIX V: NOTES ON THE NAVIGATION OF LAKE RUDOLF

V. F. FUCHS

These notes are necessarily very incomplete, as only a small part of the expedition's time was spent on the lake; but it is hoped that they will be of use to any one proposing to use a boat on Lake Rudolf in the future.

The only low points of the lake which it is possible to launch a boat of any size greater than a dingy are carried by sand or gravel banks. The most suitable places are Ferguson Gull and Fodenweg, to both these points on the west shore can be reached with horses. On the east side of the lake probably the only suitable point for launching a boat is at Ala Bay, where it is also possible to reach the lake with horses, but in this case with much greater difficulty.

As with all inland waters, Lake Rudolf is subject at times to extremely violent storms accompanied by large white-capped waves with an unusually short distance between crest and crest. Though these storms arise very quickly, they

never, in our experience, did so in such short times as a quarter of an hour or twenty minutes, as is often stated. Like estimates of speed, unless times are actually noted the impression received often induces a very great error. As a result of watching the conditions for many weeks we became of the opinion that really bad conditions did not arise in less than two hours, starting from a flat calm. Nevertheless it must be remembered that if a fair wind is already blowing it certainly does take a comparatively short time for dangerous conditions to arise.

Prevailing winds

The most striking thing about conditions on Lake Rudolf is the constancy of the prevailing wind from the south-east. This is shown by the arrows on the map. Since the expedition was constantly on the move the wind directions are marked on the map for the months in which they were observed. It is to be noted that the prevailing winds are nearly constant all the year round, with perhaps the exception of the north or north-east wind from the Ala-bay hills, which seems to occur only during March and April and to bring with it a heavy rain. There is at nearly every month of the year a period of calm from the north which occurs after the afternoon rain and before the south-wind rises again. In September and October wind of this light wind sufficient to cause cross-waving with the remaining wind from the south making conditions unpleasant for a small boat.

It is at the south end of the lake that the most violent conditions are experienced. There a tremendous east wind may sweep down over the Simru scarp on to the lake. This, combined with the wind from the south of the lake, causes a heavy sea. The storm on October prevented our search party from reaching South Island. It is to be noted that attempts to reach the island were made, but that mile of sea would be in sheltered water. This proved to be wrong, for the current from the western slopes of the island whipped the lake surface into white horses only a few hundred yards from the shore.

As the trade wind bore the direction of the wind appears to swing gradually eastward, though on the west shore the most shore the wind is well maintained. The B. B. Washington reports that at the Moste Hill region the westerly gusts are very heavy, since they may swirl round the hill on either its north or its south side.

It almost appears that the general direction of the wind is governed by the shape of the lake, for the tendency is for the most constant winds to blow in a north-north-west direction.

Anchorage

The anchorages are marked on the map by numbers from one to seventeen. In most cases these have been used, but it only observed as suitable points, this fact is stated.

1. *Pergauin Gulf*—The best point is in the mouth of the Kalkofek river, where there is complete shelter and a mud bottom. On the inner edge of the sand-spit itself there are numerous small bays with deep water right up to the shore, but with the exception of the river the mainland shore is muddy and the water very shallow. There is often a local north or north-east breeze in the Gulf itself, which is not apparent in the open lake.

2. *Central Island*—On the west shore of the island a small sand-spit gives shelter from the prevailing wind, though underwater boulders necessitate a

Sometimes called El Mottat.

careful approach. There is no other suitable anchorage round the shores of the island. The wind is almost invariably off-shore.

10. Some 5 or 6 miles south of the base of Ferguson's massive cliffs may be seen what appears to be a mile or so north of these one or two small sand-spits are sheltered water of 2 or 3 feet depth. These spits should not be relied upon owing to fluctuation in the level of the lake.

11. *North Turkwel Mouth*.—A small bay formed by the extension of the Turkwel delta. The water is shallow with a sandy bottom but is very well protected from the slight wind. A Turkana village is situated in the bay.

12. *South Turkwel Mouth*.—Once over the sand bar, shelter is found in the extensive shallows beyond. There occur occasionally small banks and deep channels brack with sand in the form of trees, grass, and vegetation brought down by the flooded river. A boat of a foot draught has to be left half a mile from the shore.

13. *Kerio River Mouth*.—Approximately 1 mile apart the Kerio river mouth has a stretch of sandy coast well protected from the prevailing wind.

14. About 1/2 mile north of the coast extends a long narrow sand-spit there is a series of dune-like banks just washed (subject to fluctuations of the lake) by the sea. The water weed grows to a feet of water. There is complete protection from the sea here.

15. *Island of South Island*.—This is the only island which is seen from the island to afford shelter from the prevailing wind. It is an elongated island with a wide beach on the north side. There is a small settlement on the beach.

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anchorage. He found it well sheltered from the prevailing wind, and in a number of places the boat could be brought right up to the sandy shore.

17. Worthington also found several miles north-west of Moite a strong sheltered shore-line with numerous small sand-spits giving shelter to a small boat. One was used by him during his journey.

In 1934 we observed that Alla Bay has been much reduced in size owing to the fall of the lake-level. The shores from the south point of Alla Bay to Korkoi is shallow and muddy and it is probably the same as far as the north end of the lake. Korkoi is recognizable from a small group of rocks that appear like monstrous rounded boulders a few hundred yards from the shore.

DISCUSSION

Before the paper the President (Major-General Sir Hubert Gough) said: "We are to hear to-night of the Lake Rudolf Rift Valley Expedition of 1934. For many years past we have been hearing a great deal of the famous Rift Valley in Central Africa. It has attracted an enormous amount of work to be done in that region. The primary object of the expedition about which we are to hear this evening was to continue the geological survey of the Lake Rudolf basin in one great valley. The leader, Mr. Fuchs, who will read the paper, is a member of the staff of the Geological Survey, and the expedition was to include a number of geologists. I have of course been following Mr. Fuchs' work in the past in South Africa and two other places. Dr. Lyell and Mr. Mason are not with us by reason of the great tragedy in which they lost their lives. I think it is interesting to know that the expedition had in its object to do the geological work in the Rift Valley. I think it is interesting to ask Mr. Fuchs to read his paper."

Mr. Fuchs then read the paper printed above, and a discussion followed.

The President, Mr. Gough, said: "Mr. Fuchs, members of the expedition are both with us. I will ask Mr. Washfield to say a few words on the subject of the work of the expedition."

Mr. R. C. WASHFIELD: "I am afraid I can say very little after what our leader has told you, except as to the detailed part of the survey in which most of you will probably be little interested. As you must realize, when one goes into lands which have had little investigation, there is so much to be done, so many things one wants to do and so many which other people want one to do, that it is difficult to decide what should be attempted and which should be left for another day. I think, from a survey point of view, that was the hardest part of the work. I should like to thank Mr. Fuchs, who has done so much work in Turkana Province, for his advice as to what we should try to do and what would be most useful for compiling accurate maps of the area. The results are, instead of reading certain work which had been done by different individuals beforehand but not yet collated, we set out to try to check questionable points by providing new absolute positions on which all the work of Mr. Champion and the officers of the King's African Rifles and of the various District Commissioners could be compiled and put on one map. It was with that object that we decided to fix three or four main positions. Much time was spent in fixing these and we left out the detailed survey which could be so much better done by those who live in the country and who had better means of transport and more time than were available for us. The results, as far as they are known at present, agree within roughly half a mile at the key position of Mount Labor, the junction of several rough triangulations brought from Kenya, the Sudan, and Abyssinia."

There were two main objects of the survey, one to place positions on the maps and the other from the geological point of view to try to fix a basic height for the area. The obvious height to fix was the height of the lake, which was roughly but not accurately known, and our only means of fixing that was by a string of instrumental angles, from the lake shore for some hundreds of miles westwards to where known heights actually occurred. We did three-quarters of that programme; but owing to the rains and the floods we were unable to complete the last link in the west. We have however got a height for Mount Imburu and some of the surrounding hills with reference to Lake Rudolf. It is only now left for somebody to fix one height with reference to triangulation points in other areas.

Those were the two main things set out to do, and it was naturally important that our main survey points should be within reasonable distance of carrying grounds, which themselves had to be within reasonable distance of motorable tracks. The programme was more or less adhered to, but took considerably more time than was expected, and in addition, a new plane-table sketch was made of Ferguson Gulf for comparison with previous maps which it was.

Martin and I worked together all the time on the west of the lake, but when I had, unfortunately, to leave in the middle of the expedition, he continued and worked by himself on the south-east, as you have heard. I should like to say how invaluable his knowledge was, combined with that surveyor's gift of a logical mind, in the carrying out of the survey work on the west coast. I understand that he had had little practical experience in surveying and in particular in the type of surveying we were doing, but his energy and his adaptability came to the fore, and he got up the work very quickly and became adept in the use of instruments in the darkest of nights. If any value can be assigned to the survey results which we brought back, they were largely due, I think, to Mr. Martin's even temperament and unfailing humour in conditions which, as you probably have realized from the lecture, were not always of the most pleasant.

The President Mr. MacInnes is primarily a paleontologist but he is interested himself in the ornithology of the region. As you will have remembered the activities of the expedition were employed in various directions.

Mr. D. G. MACINNES: As you have already heard of the paleontological side of the expedition was not really a great success. We knew of a certain deposit of supposedly Miocene Age on the west side of the lake, where fossils had been obtained by the French expedition about two years before. Accordingly, we began our work there and after many days spent in searching for the site where the fossils had been obtained, we did actually find some of the diggings made by the French expedition, but either they had collected everything, or there had not been a great deal to collect. Practically nothing was to be found but a few fragments of primitive elephants and some few odd bones which have not been identified; also what appear to be a clutch of eggs of a turtle, several hundreds of thousands of years old, apparently, but fairly well preserved. These, I am afraid, are not of very great value from the scientific point of view.

It was only we were in this area amongst the hills on the west side of the lake that I was one day helping Mr. Fuchs by trying to do some geological work. He asked me while he was writing up some notes to take some compass bearings of certain fixed points round about. I am not a geographer, and do not know anything about surveying, but I always have understood that the compass is used to some extent, and when Mr. Fuchs asked me to take the readings I did at least know how to do it. I took a reading at a certain point and told him the place was due north. He seemed rather surprised and said that that point was known to be almost due south of us! I then said I would look at the compass again and I took a bearing on the same point. It proved then to be due east! It

seems that either I was seeing things or the compass was, so I asked Mr. Fuchs to try. He made it due west! This may seem trifling, but it may give you some idea of another of the difficulties which the surveyors came up against, and I think it wonderful that they were able to carry out such very accurate work, so undoubtedly they did. I do not mean to cast any aspersions upon their work, but merely to show another of the troubles with which they had to contend.

Owing to the lack of fossils I took it upon myself to collect the birds of the area as far as possible, and made a collection mainly of the somewhat inconspicuous birds which had most probably not been collected before from there, but nothing of very great interest was found. A few very useful notes were obtained with regard to nesting habits of certain species. They began peering when the birds took care and during that time quite a number of useful observations were made by various members of the expedition. The full and completed results of the ornithological work have recently been published in the *Journal of the East African and Uganda Natural History Society*.

I should like next to add my deepest sympathies with the relatives of our two companions who were lost. We all became very fond of them and, seeing so much of them, we have all learned from their attitude in extremely difficult conditions, lessons that we will never so easily forget.

The President Mr. Chamption, Provincial Commissioner for Turkana Province, who read us a paper three months ago on the geology of Tel-el-Yolokan, is here and has been most generous in loaning to Mr. Fuchs the expedition received such an enthusiastic amount of help and co-operation from him. I should be very glad if he would address the platform and address us.

Mr. Fuchs has just finished appreciating the hospitality of welcoming Mr. Fuchs back here in England, and the members of the Turkana expedition, and to congratulate Mr. Fuchs upon his very interesting lecture. As you can imagine, it is a particularly interesting one to me. I know that the work done by the expedition is not only an absolute naturalist, but a professional and an administrator, occasionally during the twenty-five years of his career in Africa have found time to indulge in my hobby.

It was a great pleasure to meet Mr. and Mrs. Fuchs and the members of the expedition and to have long chats with them. They told me many interesting things and I was glad to be able to offer them hospitality, advice and assistance. Any welcome to the other members of the expedition would be incomplete without mention of Mrs. Fuchs, who accompanied her husband to Kenya, and through her acquaintance with the expedition very long I had the honour of knowing her and my cousin, who was staying with me, in Turkana country. After Mrs. Fuchs embarked on some expeditions of her own and I assure you they were extremely enterprising ones. She went as far as the Mountains of the Moon, the Mburumbo volcano, and into the Belgian Congo; climbed one of the active volcanoes, Nyamulaga, and passed a night, if not quite at the summit, near the summit of this active volcano, with a few native carriers procured through the help of the District Commissioner in the Belgian Congo district of Ruchuru.

Mrs. Fuchs took with her a Ciné Kodak, and I look forward on some future occasion to having the opportunity of seeing some of the photographs she took.

As the President has said, I was Provincial Commissioner of Turkana Province, the area in which the expedition spent the majority of their time while in Africa. It is very pleasant for me and some of the other officers of the Province and friends of mine who are here to-night to meet Mr. Fuchs and the other members of the expedition on an occasion such as this.

very much farther back in the time scale than had been supposed previously. These new finds contribute materially to our knowledge of an ancient African fauna, part of which appears to have persisted to the present day in Lake Tanganyika.

Turning to the distribution of land fauna, the collections made from the Turkana desert in the 1930-31 expedition showed striking connections, not with the nearby desert regions of the Sudan, but with the much farther off Somali lands to the north-east. The new collections which were made, specially by Martin and Dyson, are more extensive and from a much wider area. When they have been studied by experts it will be very interesting to hear if they bear out the previous conclusion or introduce new ideas. In spite of the tragedy, Martin and Dyson's work in the biological as well as in other fields will continue to bear fruit.

Mr. V. E. FUCHS: I am afraid my Will has allowed me only a few seconds attention to one or two of my statements. I am very grateful for the description and information and myself very forgetful when giving my own.

As to the depth of Lake Rudolf, I am sure that Dr. Worthington's expedition of 1920-21 that Lake Rudolf is about 1000 feet deep in the region of Central Island, which lies about 10 miles from the north end. However, to the south we do not yet know. It certainly appears to be deeper at the south end from the nature of the topography, but I do not think it to be so, as it has not however taken a few soundings and we cannot state anything definite with regard to that. The water here is potable at the south end, and one wonders that it is due to the fact that it is not so far from the Nile as it is from the Mediterranean.

With regard to the fauna, I certainly should have mentioned that the lake was once connected with the Nile system. I should have said that the lake was once connected with the Nile system. The fish in the lake are very interesting and have been fully described by Dr. Worthington. The Rudolf certainly contains a variety of fish, including the Nile perch, also crocodiles, turtles, and hippopotamus.

The Paradox: It remains to pick up the evening. We have had a very interesting paper. Mr. Champion has paid handsome tribute to the great work these young scientists do: one year in Lake Rudolf, another year in Greenland. As a matter of fact, Mr. Fuchs has been on expeditions to both regions, and so have two of his companions. You realize, I am sure, what a great national asset these young men are. But when they undertake these enterprising tasks of exploration one need not say that they take their lives in their hands exactly, at the same time they must take risks; and when your work takes you into competition with the forces of Nature—well, you cannot legislate for safety on all occasions. On this occasion, as we all learnt with such deep regret, two of Mr. Fuchs' gallant companions lost their lives, evidently while on a trip which might have been done dozens or hundreds of times without mishap. But, as the proverb has it, the pitcher that goes to the well is broken at last, and we can only offer our very deep sympathy to the relatives who lost their gallant sons or brothers, and to the comrades who valued their companionship so much. Having done so on behalf of the audience and of the Royal Geographical Society I ask you to join me in thanking Mr. Fuchs for a very interesting and valuable paper.



KENYA.

No 5346

GOVERNMENT HOUSE,
NAIROBI,
KENYA

RECEIVED
17 NOV 1934
C. O. REGY

OCTOBER, 1934.

Sir,

No 1

With reference to Mr. Pilling's Air Mail despatch No. 426 of the 23rd August, 1934, on the subject of the Lake Rudolf Rift Valley Expedition 1934, I have the honour to enclose for your information a copy of the inquest proceedings held by the District Commissioner, Marsabit, on Dr. W. Dyson and Mr. W. H. Martin.

2. I would add that since this verdict, former search for traces of these gentlemen has been made, and another car, an empty tin and a gallon can, identifiable as their property have been picked up on the western shore of the Lake near the mouth of the Turkwell river. As the boat was collapsible and was fitted with an outboard motor, it is probable that it sank and it is therefore unlikely that any further traces will be discovered.

Copy to [unclear] [unclear] [unclear]

I have the honour to be,

Sir,

Your most obedient,
humble servant,

H. G. G. G.
BRIGADIER-GENERAL,
GOVERNOR.

THE RIGHT HONOURABLE
MAJOR SIR PHILIP CUNLIFFE-LISTER, P.C., G.B.E., M.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON, S.W.1.

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1st witness.

Vivian Ernest Fuchs duly affirmed states:

I am the leader of the Lake Rudolf Rift Valley Expedition, the object of which was a geological and topographical survey of the Lake Rudolf basin, and other scientific work.

Part of the Expedition's programme was to visit the South Island of Lake Rudolf with the object of making a survey and doing botanical and zoological work.

We proposed to cross the intervening stretch of water, a distance which I would put at 4 miles, by a Hudson's collapsible boat. This boat was fitted with a Britannia outboard motor.

The Europeans who formed the party which proposed to visit the island were Messrs. Martin, Dyson and myself.

The first crossing to the island by means of the collapsible boat was made on July 25th 1934. Martin and myself left the shore at about 11.30 a.m. and took about 2 hours to cross to the island. The water was choppy but was getting calmer as we went had been earlier. The outboard motor only was used and no use was made of the sail. We had rigged a cowling over the motor as far as the front seat, to prevent water coming aboard. There was a fairly heavy load on board consisting of 4 gallons of petrol about 5 other 50 lbs of stores, a plane table and surveying instruments and a .32 rifle. A certain amount of water came aboard and necessitated baling. I did the baling and found that there was no difficulty about keeping the water low at the bottom of the boat.

The length of the boat would be about 7 ft. 6" and it was about 2 ft. deep.

Having reached the island safely I stayed there the nights of 25th, 26th & 27th and returned on July 28th alone leaving Martin alone on the island. My return journey was made in a dead flat calm. As ballast I had to carry 150 lbs of sand in the bows to counteract the weight of the stem. That

journey...

That journey took 1 1/2 hours. I had arranged with Martin that Dyson should join him the next day subject to weather.

On July 29th I left in the morning for the South end of the Lake, on foot.

When I left, Dyson was packing his provisions and petrol etc. into the boat preparatory to leaving for the island.

I took 6 boys with me and left 5 in the camp on the lake shore with Dyson. It was Dyson's intention to proceed alone to the island.

As regards signals from the lake shore to the island and vice versa it was arranged that if they were in any kind of trouble they would light three fires. If possible they were to signal with Morse code by means of a torch. If the boys saw three fires they were immediately to come and fetch me. There were no signals arranged to intimate what day they were leaving. The Morse signals would not have been able to be used until I had been called back to the lake.

I am of the opinion which amounts to a certainty that Dyson arrived at the island. My opinion is based on the fact that the stores and camp etc were in a certain place when I left the island and subsequently a fire was seen at the North end of the island some 2 miles from that point at a point which could not easily be reached except by boat.

It was not definitely arranged how many days Martin and Dyson should remain on the island. The earliest they could have been expected back was 6 days after Dyson reached the island i.e. August 5th. The latest limit was 14 days after Dyson reached the island i.e. August 13th or 15th.

I returned to the camp on the lake shore on August 9th. It would not have been possible to see people on the island unless they stood on the skyline. The only possibility to know whether anybody was there was if a light was shown. I saw no light on the night of the 9th. The wind was very strong on the 9th and 10th and I thought the weather might have been bad for some

days...

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I took 6 boys with me and left 5 in the camp on the lake shore with Dyson. It was Dyson's intention to proceed alone to the island.

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I am of the opinion which amounts to a certainty that Dyson arrived at the island. My opinion is based on the fact that the stores and camp etc were in a certain place when I left the island and subsequently a fire was seen at the North end of the island some 2 miles from that point at a point which could not easily be reached except by boat.

It was not definitely arranged how many days Martin and Dyson should remain on the island. The earliest they could have been expected back was 6 days after Dyson reached the island i.e. August 5th. The latest limit was 14 days after Dyson reached the island i.e. August 12th or 13th.

I returned to the camp on the lake shore on August 9th. It would not have been possible to see people on the island unless they stood on the skyline. The only possibility to know whether anybody was there was if a light was shown. I saw no light on the night of the 5th. The wind was very strong on the 9th and 10th and I thought the weather might have been bad for some

days...

days past and they were waiting for an opportunity to cross. On the 11th there was a flat calm. That evening we lit a huge bonfire and fired shots to attract attention. There was also the possibility that they were on the other side of the island as there was a certain amount of work to be done there.

On August 18th I returned to Sirima leaving 3 men on the lake shore. On the 19th I arrived at Marsabit. There I decided that we could not ask for a plane to come up until I knew definitely that they had not returned on the 18th. I meanwhile wired Howard of the Shell Co. Nairobi to effect that "if necessary could he persuade Company to lend plane to search for Martin and Dymon ten days overdue from South island". On the 14th an answer arrived to the effect that the shell aeroplane was away. I returned to Sirima on 15th, Sirima being 20 miles or 8 hours walk from the camp on the lake shore. Martin and Dymon had not arrived at Sirima and so I returned to Marsabit and on the 18th telegraphed for a Wilson's aeroplane to search the South of the lake.

I went in the plane on the 18th. We first flew over the camp at Sirima to see if they had returned. Then we went straight to the island and flew over it exhaustively. We flew over the whole shore and examined the adjoining islands. We examined the camp I had used and the proposed camping places, and we could see nothing of their provisions and stores and no sign of the boat. As far as it could be seen from the air there was no human being on the island. The view from the air was a particularly clear one. It is true that when I was walking over the island I saw 13 goats and from the air I could only see 4. But if the boat was drawn up on the island it could not have escaped observation. The shore on the West side of the lake was also searched from the plane as far as the Kurie north then we proceeded due East across the lake to Kur. Then we followed the coast South examining both the Mt. Male villages. Then we visited our lake shore camp and crossing back to the West shore of the

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lake over the middle of S. island we finally followed the coast to the S. end of the lake and round as far as the S.E. corner. There was no sign of the missing men.

Later on 24.8.54 in view of further information received I accompanied the A.S.P. to Alia Bay and we followed the shore to Kakei. Nothing was found.

Allegation by court.

My object saying "10 days overdue" in the telegram to Howard was in order to impress on Howard the urgency, should I definitely wire for the plane.

On 19.8.54 I proceeded to Sirina to break camp and returned to Marsabit on 22nd. I also ordered another plane on the 19th to search further up the Turkana shore. I also ordered a third plane to search the N.E. shore of the lake in view of the information received from Lokitsung.

H.C.C.

~~30-8-54~~
I Class Magistrate, 20.8.54

Edaka Kaman Kinyax July July affirmed:

I am Mr. Fuchs' boy. I am the mechanic. I was at the camp on the lake shore when Mr. Fuchs and Mr. Martin left for the island. I was present when Mr. Fuchs returned, on the 28th of July. Dr. Dyson left in the boat on 29th July at 11 a.m. I helped him put his loads in the boat. His loads consisted of food which filled one petrol box, 1 4-gal. drum of petrol and 1 4-gal. drum of drinking water. When Dr. Dyson set off it was a flat calm. It was impossible to see if he arrived at the island owing to the distance. I did not see a fire on the day ~~and~~ evening of the 29th nor any subsequent day till the 5th August, when I saw a fire at 8 p.m. at the right end (N. end) of the island. I thought they were returning so I went to the shore with a lamp.

The next day I went down to the shore from the camp which was about 1/2 an hour walk at 11 a.m. and again at 8 p.m. I saw nothing of Mr. Martin and Dyson. On that day the 5th August

there...

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R.O.C.

I Class Magistrate, 30.8.54

Edaka Kamaa akheya duly duly affirmed:

I am Mr. Fuchs' boy. I am the mechanic. I was at the camp on the lake shore when Mr. Fuchs and Mr. Martin left for the island. I was present when Mr. Fuchs returned, on the 28th of July. Dr. Dyson left in the boat on 29th July at 11 a.m. I helped him put his loads in the boat. His loads consisted of food which filled one petrol box, 1 4-gal. drum of petrol and 1 4-gal. drum of drinking water. When Dr. Dyson set off it was a flat calm. It was impossible to see if he arrived at the island owing to the distance. I did not see a fire on the day till evening of the 29th nor any subsequent day till the 5th August, when I saw a fire at 8 p.m. at the right end (N. end) of the island. I thought they were returning so I went to the shore with a lamp. The next day I went down to the shore from the camp which was about 3 hours walk at 11 a.m. and again at 3 p.m. I saw nothing of Mr. Martin and Dyson. On that day the 5th August there...

there was a calm at 11 a.m. this was also the case on the 7th. In fact every day at 11 a.m. the wind used to drop and the lake became calm. I did not see any more fires or signals on the island.

R.O.C.

24/- M.V. Low.

I Class Magistrate. 20/8/54.

Kalungi Mwaniki Mamba duly affirmed states:

I am Mr. Fuchs boy. I was present at the camp on the lake shore when Mr. Fuchs and Mr. Martin left for the island and I was present when Mr. Fuchs returned. The day after Mr. Fuchs returned Dr. Byson left in the boat at 11 a.m. I carried his loads to the boat. They consisted of one 4-gal. drum of petrol and 1 1/2 gal. drum of water and 2 petrol boxes full of various rods. He also had a shot gun and cartridges. There was no ballast in the front of the boat. When Dr. Byson left it was calm. There was no lights or fire seen that night or the others until August 8th. I only know it was August 8th because I was told by other boys. The fire was at the right end (N.) of the island, and it was a large one. When we saw the fire we first thought it was on our shore but having reached the shore we found it was on the further side. The next morning from 8 to 1 p.m. we stayed by the lake shore, but saw nothing. It was hot rough. On the 7th I went to fetch Mr. Fuchs at Sirisa.

Everyday the wind would drop towards midday and the lake become calm;

Everyday we looked out for fires.

R.O.C.

24/- M.V. Low.

I Class Magistrate. 20/8/54.

20.8.54

Kenneth Tom Meredith Holmes duly affirmed states:

I am the Asst. Supt. of Police Maresbit. On the afternoon of the 18th of August, the D.C. being on safari, Mr. Fuchs returned ...

returned to Marsabit from Sirima. He told me that his two companions, Messrs. Martin & Dyson had proceeded to South Island by boat and were ten days overdue in returning. It appeared that Mr. Fuchs & Mr. Martin reached South on July 25th and Mr. Fuchs informed me that they had been baling the whole way. He also told me that at one period he asked Martin whether they should go back owing to the waves, when they were about a mile from the shore. Mr. Fuchs asked me to send two private telegrams, one to Mr. Howard of the Steel Co. Nairobi, asking him if they would lend their aeroplane if necessary to assist in a search for Martin and Dyson who were 10 days overdue. Mr. Fuchs did not seem unduly worried and informed me that the 2 men may have found something important on the W. side of the island from which no fires could be seen from the mainland.

Mr. Fuchs left for Sirima on the morning of the 15th, followed by a police patrol in a lorry. Before he left he informed me that he would return immediately and that he would consider Messrs. Martin and Dyson definitely missing if he got no news of them when he arrived at Sirima. On the morning of the 15th the Officer I/C., N.F.D., arrived at about 8.30 a.m. He had met Mr. Fuchs on his way to Sirima. He left certain instructions and returned to Isiolo. On the 16th Mr. Fuchs wired for an aeroplane. The D.C. Lodwar had already been requested to search the Turkana shore. The aeroplane arrived on the 17th with Mr. Pearson as Pilot. On the 18th Mr. Pearson pilot, with Mr. Fuchs and Mr. Cleland A.S.P. Isiolo, left to make a reconnaissance by air of S. Island. While the aeroplane was away a message arrived saying that a sun helmet had been found on the Turkana shore 11 miles S. of Ferguson gulf. The description of the helmet was khaki, Hunt's pattern, marked Simon Arts, Port Said, sand grouse feather in sagaree. This helmet was identified as probably Dyson's by Mr. Millard another member of the expedition. On the 19th Mr. Fuchs wired for another aeroplane to search the Turkana shore. This aeroplane arrived with Mr. Wheeler on the morning of the 20th, Messrs. Fuchs, Millard and Malance having proceeded to clear up their camp at Sirima.

I left in the aeroplane with Mr. Wheeler as pilot at 10.15 a.m. on the 20th. We went direct to the lake and made for the Turkana shore at the point where the previous aeroplane search had left off. The shore was followed to approximately 10 miles N. of Ferguson Gulf. No traces of boat, equipment or the two missing men were seen. Central island was searched without success. We then followed a course down the centre of the lake for S. island and again nothing was seen. In the meantime the search was continuing on the Marsabit shore by a foot patrol.

On the 21th we received wireless message from Karet Lekitong to the effect that what were believed to be signal fires had been seen at the old N.A.R. camp at Karet. I proceeded by lorry with an escort and Messrs. Potts, Millard and Holmes to Karet arriving there on the 27th. I found the spot indicated by Karet Lekitong and the remains of the two fires. The fires were made by natives probably Soboko. There were no signs or traces of the missing men. I reached Marsabit on the 29th. On the 29th an aeroplane had proceeded to Karet and searched the shores as far as the Abyssinian boundary without success.

N.G.C.

V. M. Law.

I Class Magistrate. 6.9.34

11/9/34

Witness Eliale Guly affirmed states: I am a Tribal Policeman of Marsabit. I accompanied Mr. Potts on his journey to the lake. I was at the camp on the lake shore when Mr. Potts crossed to South Island and when he returned, I then accompanied Mr. Potts to the N. End of the lake.

I was not present when Mr. Potts left for the island.

I have just returned from a patrol. We followed the shore round the South end of the lake but were not able to discover anything in connection with the missing Europeans.

When the day after tomorrow Mr. Potts at Sirin I returned

with,

with him to the lake. He stayed there 3 days and made fires at night. On the 4th day Mr. Fuchs left for Sirina.

Mr. Fuchs said while we were lighting fires that the Murren were overdone from the island. That time he had given them was up.

R.O.C.

24 - R.W.L.
I Class Magistrate, 11.9.34.

14.9.34.

Kamath Tom Maroth Holmes recalled, duly affirmed stated:

On 12.9.34 I received a wireless message from District Officer to the effect that the patrol had recovered an ear 2 miles N. of the Fookall South on the 5th Sept. Nothing had been found by the patrol searching the South end of the island.

R.O.C.

24 - R.W.L.
I Class Magistrate, 14.9.34.

Findings:

That an enquiry into the disappearance of Mr. W.H.E. Martin a subject of the United States and Dr. Lyson a British subject.

The facts are shortly as follows: The two missing men formed part of an expedition doing scientific work in the Lake Rudolf area. It was decided to visit South Island. On July 25th Messrs. Martin and Fuchs, the leader of the expedition crossed to South Island in a small collapsible boat. Mr. Fuchs returned on July 26th. Dr. Lyson left on July 26th for the island and neither Martin nor Lyson were ever seen again.

From the evidence there can be no reasonable doubt but that Lyson reached the island.

In fact the first place the camp was moved to the North end of the island and this apparently could only have been done

plished with the help of the boat. Secondly the distress signal was three times, and if Dyeon had failed to arrive Martin would have shown them. Thirdly an extensive systematic search of the island revealed no sign of any human being remaining on it, nor any sign of a camp, nor any sign of a boat.

It can be safely decided therefore that the two men left the island in their boat. All the shores of the lake have been carefully searched by foot patrols and from the air. It is not therefore possible that they could have drifted ashore at some remote spot. Further on the West side of the lake a topee identified as Dyeon's, and an oar have been picked up although the bodies themselves have not been recovered. There can be no reasonable doubt but that the boat was swamped and the men drowned.

It is necessary to state that the Court considers that the type of boat was unsuitable to the work required of it and to the conditions. It was only 7 1/2 ft. long and 2 ft deep, and it is to be noted that it was apt to ship a good deal of water. The members of the Expedition had experience of its deficiencies before and it was tempting Providence to continue using it. Further it occurred there was some uncertainty as to what the two men saw the boat from the island. When Mr. Fuchs arrived at Anvers on August 12th he was unimpressed as regards their fate although he tried to believe that they were 10 days overdue. Later he had stated they were not finally lost until the 25th. It is hard to be wise after the event but with regard to these two men there is a certain amount of culpability and lack of forethought now being laid down.

The finding of the court is that Mr. V. H. H. Martin and Mr. Fuchs did not apprehend and that they were probably

CC - H. V. Law
 British Antarctic
 Expedition

ROYAL GEOGRAPHICAL SOCIETY
KENSINGTON GORE
LONDON
S.W.7

14
38
Telephone:
KENSINGTON 2048.
Inland Telegrams:
DOTTERRAS, SOUTHKENS, LONDON.
Cablegrams:
DOTTERRAS, LONDON.

Secretary:
MR. ARTHUR R. HINKS
C.B. F.R.S.

September 11th, 1934.

Dear Mr. Vernon,

No. 2
A few days ago we received by the kindness of the Secretary of States copies of reports on the Lake Rudolf accident under No. 23265/34. We have to print some account of the matter in the Journal for October, and I have made the enclosed brief summary which is based partly on letters and telegrams from Fuchs and also considerably upon the papers which you kindly sent us. We should be very much obliged if you could let me know as soon as possible that there is no objection in our using this information, and especially grateful if you could telephone to me when you have a decision in order that I may get something into print. I have run a pencil line down the margin to show the part which has been taken from the Colonial Office papers.

Yours very sincerely,

Arthur R. Hinks

Secretary.

As briefly recorded in the daily papers, a serious accident has befallen Mr Fuchs' Expedition on Lake Rudolf. The party had been working at first to the North and West of the Lake but towards the end of July they were encamped on the Lake shore near Sirima opposite the South Island, to which Mr Fuchs, the leader, and Mr Martin, the geologist and surveyor, went on July 25. A letter from Mr Fuchs, dated August 13, relates that he stayed with Martin until the 28th when he returned alone to the mainland, and the following day, according to plan, Dr Dyson left for the Island with food supplies, while Fuchs started on a journey to the South end of the Lake.

On his return to the base at Sirima a man came in from the lake-shore camp to say that nothing had been seen of those on the Island since August 5, when there was a fire visible in the North bay. The camp had been moved from its first position on the Island to a point further North which shows that Dr Dyson had reached the Island, since it would ^{have been} be impossible to put the camp at that point without the use of the boat in which he had travelled.

A code of signals had been arranged in case help were needed. They were to light three fires or to signal by Morse with a flash lamp and they were due to return about August 5, since the whole party was to move North-East to

meet the District Commissioner near the Huri Hills and to go on with him to Jibbissa.

When they did not return Fuchs tried for two days to get into touch with them by firing shots, both by day and night, and at least on one occasion, when there was a dead calm, they should have heard these signals, but there was no reply. Had the boat drifted away leaving them stranded they would have been able to signal. Had the boat sunk soon after starting and they had swum back to the island they would have been able to signal. Had the engine broken down on the voyage they might have drifted Northwards with the prevailing wind. One or both might have been injured on the extremely treacherous fresh lavas of the island.

When they became definitely overdue Mr Fuchs arranged for one, and then for another, aeroplane to come from Nairobi to make a search, and we are indebted to the Secretary of State for the Colonies for ^{a copy of} the dispatch from the Deputy Governor of Kenya which describes this search by aeroplane. On August 18 a Wilson Airways aeroplane with Mr Pearson as pilot, and Mr Fuchs and Mr Cleland (of the Northern Frontier Police) as observers, made a reconnaissance flight over Lake Rudolf and a thorough search of the whole of the South Island. The camp sites were located and were completely bare. As it was known that the two had considerable stores which they intended to take back with them and these stores were not visible on the camp sites, it seemed clear that they

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had left the Island. The aeroplane crossed ^{to Turkana} the Kumana shore and travelled North nearly to the third degree of latitude, crossed again to the East shore and came South until opposite South Island. It then crossed the Lake over to the Island to the Western shore and travelled round the South end of the Lake north to Sirima. No sign of the missing men or their boat or belongings was seen at any time.

On August 20 a further search with the second aeroplane was undertaken. From South Island a North-westerly course was steered to the Kumana shore and the search begun at a point at which it had been relinquished by the other machine on August 18. Flying at a height of about 10 ft. the shore was followed to a point 10 miles North of Ferguson Gulf, but no traces of boat, equipment or the missing men could be seen. The machine then proceeded to Central Island without success and from Central Island a course was made to South Island down the centre of the Lake at a height of about 4,000 ft., but there was no sign of any wreckage, petrol tins, or equipment.

The search of the shore was continuing; but it is unfortunately clear from Mr Fuchs' telegram of September 4 that it was unsuccessful. Meanwhile, patrols by camel and on foot had searched both sides of the Lake without result and there is, therefore, little doubt that Dr. Dyson and Mr Martin were lost by the sinking of their boat at some time

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which would have been soon after August 5 when their fire was last seen on the Island.

We have, at present, no description of the boat except that it has been referred to as a collapsible boat and also as having an engine, presumably an outboard motor, and it was the only boat on the Lake, which is subject to heavy squalls.

Between August 6 and 13 there were two calm days on which the boat could have crossed from the Island to the mainland and the inference is that on other days the crossing would not have been safe.

The Expedition had sailed from England at the end of 1933 and had been about seven months in the field. A letter from Mr Fuchs dated April 4 gave the only account of its progress which had reached the Society until the recent bad news came. The surveyors had then been engaged in linking up the surveys of the Sudan, Kenya and Uganda to the North and West of the Lake, and by successful determinations of wireless longitudes had made important corrections to the hitherto accepted positions, which dated mostly from before the days of wireless. The geology was described as very interesting in regard to tectonics, but otherwise dull, since the deposits, of which they had great hopes, proved disappointingly barren of fossils. They had made large collections in geology and botany, but had been hampered

by long drought which was afterwards broken and they were hampered by floods.

After their work at the South end of the Lake they were intending to proceed North-East to study the branch of the Rift Valley which breaks away from the general line of the Lake into Abyssinia. We can scarcely hope that this part of the work will now be possible and the unhappy accident which has deprived the Expedition of two of its members will also have made serious inroads upon their resources and their time. Nothing seems to have been left undone, either by the leader of the Expedition or by the Government forces and the Aircraft Company, to make a thorough search as soon as the party were definitely overdue and it is remarkable to read in the despatches what powerful aid was available in this remote region. The wireless communication between the Government posts and the resources of the Wilson Airways Co. made a thorough and exhaustive search almost immediately possible, and leaves little doubt that the disaster was due to a sudden accident to the boat.

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AIR MAIL

BY AIR MAIL

KENYA

No. 476



GOVERNMENT HOUSE
NAIROBI
KENYA

RECEIVED

31 AUG 1934

C. C. REGY

23rd AUGUST, 1934.

Sir,

With reference to my telegram No. 191 relative to Dr. W. Dyson and Mr. W.R.H. Martin of the Lake Rudolf Rift Valley Expedition 1934, I have the honour to state that it is now probable that both these gentlemen were drowned in Lake Rudolf between the 6th and 13th of August while attempting to cross from South Island in Lake Rudolf to the Mainland.

2. The first intimation received in Nairobi that there was any cause for anxiety was on the 14th August when Mr. Fuchs, the Leader of the Expedition, sent a telegram to Mr. Howard of the Shell Company, a copy of which I enclose for your information.

Mr. Howard put the matter before Government and asked for advice. Instructions were immediately telegraphed to the Officers in Charge of the Turkana and Northern Frontier Districts asking them to render assistance in the search and Mr. Fuchs was informed on the same day that a Wilson Airways aeroplane was available.

Sir Pyers Mostyn in his own aeroplane flew that day to Nanyuki with the intention of flying from there to South Island, but on reconsideration he was not prepared to undertake this extremely difficult and dangerous flight unless he was assured that the situation was critical. Mr. Fuchs was informed of this decision by wireless telegraph on the 15th August.

Mr. Howard/

No. 22
3/25/33
copy to ...

46/

AIR MAIL

BY AIR MAIL

KENYA

No. 426



GOVERNMENT HOUSE

NAIROBI

KENYA

RECEIVED

31 AUG 1934

C. C. REGY

23/8

AUGUST, 1934.

46/

Sir,

No. 22
3125/33

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Mr. Howard/

WILLIAM CHILLIPER-LISTER, F.C., G.B.E., M.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
10, WHITEHALL, LONDON, E.C. 4.

Copy to Lord Curzon for info

Mr. Howard next received a telegram dated the 15th August from Mr. Fuchs to the effect that there should be no action for two days. Of this telegram I enclose a copy.

On the morning of August 17th a telegram was received by Mr. Howard from Mr. Fuchs asking for an aeroplane to be sent immediately and Flight Lieutenant Pearson of Wilson Airways with Messrs. Millard and Holmes, members of the Expedition then in Nairobi, left for Marsabit that day. A search was made the following morning by air to no effect. A further search was made on the 20th and 21st by Captain Wheeler of Wilson Airways also to no effect.

I enclose copies of reports dated the 20th and 21st August submitted by the Police Authorities at Marsabit.

Meanwhile investigations continue but it seems impossible that Dr. Dyson and Mr. Martin can now be alive.

3. I am advised that when hope has been definitely and finally abandoned, although there is no local legal provision, an inquest should be held as would be the case in England under Section 18 of the Coroners (Amendment) Act of 1926.

copy attached

I have the honour to be,

Sir,

Your most obedient, humble servant,

GOVERNOR'S DEPUTY.

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48
COPY.

TELEGRAM TO MR. HOWARD, SHELL, NAIROBI.

Despatched, received
11th August, 1944.

If necessary can you persuade Company to send
aeroplane to assist search for Dyson and Martin
ten days overdue. No boats available. Wire
reply urgent.

FUCHS.

TELEGRAM TO HOWARD, SHELL, NAIROBI.

Despatched, received
15th August, 1954.

Will wire you re Wilson when necessary. Shall
know in two days. Hold everything till then.

FUCHS, MARSABIT.

CONFIDENTIAL.Office of the Asst. Supt. of Police,
1/e Northern Frontier Police,
(at Harsabit).

20th. August, 1934.

The Commissioner of Police,
NAIROBI.LAKE RUDOLF EXPEDITION:

In the absence of the District Commissioner I forward herewith a diary of events leading up to, and subsequent to the failure of Messrs. Martin and Dyson to return to their camp on the eastern side of Lake Rudolf opposite to the northern end of South Island.

The party at the time consisted of Mr. Fuchs in charge and Messrs. Martin and Dyson. Mr. Hillard, who had also belonged to the party was in Haru at the time.

Date.

- July, 25th. Messrs Fuchs and Martin proceeded to South Island in the boat belonging to the expedition (Note: there are no other boats on the lake).
- " 29th Mr. Fuchs returned to the mainland leaving Mr. Martin working on the island awaiting Mr. Dyson, who was to join him.
- " 30th. Mr. Fuchs left the camp on the mainland and went to the south end of the lake on foot, leaving Mr. Dyson awaiting favourable weather to cross to the island. Boys employed in the mainland camp, state that Mr. Dyson left for the island that day. It was not known definitely that he succeeded in reaching the island, but boys in the camp state that they saw a hurricane lamp on the island that night. This was a pre-arranged signal to report a safe landing on the island. The two men had taken ample supplies intending to stay for six days.
- Aug. 5th. On either the 3rd, 4th or 5th (the boys are uncertain which day, but it seems probable that it was on the 5th) a fire was seen on the island, at a point which Mr. Fuchs considers could only have been reached by boat. This was the last sign seen, that the party was still on the island.
- " 6th. Mr. Fuchs returned to the camp on the mainland opposite the island.
Notes between 6.3.34 and 13.8.34 there were 2 calm days on which a boat could have crossed from the island to the mainland.

- Aug. 13th. Mr. Fuchs arrived at Marsabit and reported that that the return of Messrs. Martin and Dyson from the island was overdue. He considered it possible that they had found something of interest on the western side of the island, whence it would not be possible for them to signal to the mainland. Mr. Fuchs, however, sent two wireless messages to Mr. Howard of the Shell Coy. and Mr. Williams C/o. Gerynden Museum respectively, suggesting that the Shell aeroplanes be asked to make a search. He did not consider the situation sufficiently critical to justify asking the Administration to help in the search.
- Aug. 14th. A wireless message from the Secretariat to the Officer i/c N.F.S., instructing that all reasonable requests for assistance be met, was forwarded from the latter officer and arrived at 7.0 p.m.
- " 15th. Mr. Fuchs left for his camp on the lake to try and obtain further news. He was accompanied by a Police patrol which had been instructed to obtain camels at Sirina with all speed and patrol the eastern shore of the lake, to search for traces of the missing men.
- " 16th. Mr. Fuchs returned to Marsabit and wirelessed to Wilson Airways to obtain Government sanction to send an aeroplane to Marsabit to make a reconnaissance over the lake.
- " 17th. A Wilson Airways aeroplane with Mr. Pearson as pilot arrived at Marsabit in the afternoon, too late to make a flight over the Lake to-day. Mr. Millard and Mr. McInnes arrived in the aeroplane.
- " 18th. Mr. Pearson, with Mr. Fuchs and Mr. Cleland Asst. Superintendent i/c Northern Frontier Police as observers, made a reconnaissance flight over Lake Rudolf, first reaching the lake at a point due west of Sirina. A thorough search of the whole of South Island was made. The camp sites were also located and were completely bare. As the two men were known to have considerable stores including petrol tins and kerosene drums, which they intended to take back with them when they returned to the mainland, it appears obvious that they left the island. A lengthy search of the island revealed no trace of them or of any of their possessions at any point. The aeroplane then crossed to the northern shore and travelled North to a point about five miles south of the 3rd degree of latitude. It then recrossed to the eastern shore and travelled southwards until opposite South Island. It then recrossed over the island to the eastern shore and travelled round the South end of the lake to a point S.W. of Sirina whence it returned to Marsabit.

Confidential.

Ref.No.A. 1000 105
END

Office of the Asst.Supt.of Police,

Marsabit, 21st August, 1944.

The Commissioner of Police,

N a i r o b i .

Further to Assistant Superintendent of Police in charge Northern Frontier Police's No.A. 1000 of 18th August, 1944, on August 20th at 1.15 a.m. Mr. Wheeler pilot of Wilson Airways machine left Marsabit with Mr. Holmes, Assistant Superintendent of Police, Marsabit as observer and proceeded direct to South Island on Lake Rudolf. From South Island a North Westerly course was steered to the Turkana Shore and the search taken up at point at which it was relinquished by the previous machine on August 18th. The Turkana shore was carefully followed at an altitude of approximately ten feet to a point ten miles North of Ferguson Gulf. At frequent intervals natives were observed on the shore as far as Ferguson Gulf. No traces of boat, equipment or the two missing men were seen. On completing the search of the shore the machine proceeded to Central Island and again searched without success. Leaving Central Island a course was made for South Island down the centre of the lake at an altitude of approximately 4000 feet no signs of any wreckage, petrol tins, equipment or boat were seen. The machine then returned to Marsabit. A wireless message has been sent to District Commissioner Lodwar informing him of the result and inquiring if he considers it necessary for any further aeroplane searching on his shore. There can be little hope now that the two missing men have survived. The search of both shores is continuing by foot patrols as it may be possible to find some traces washed up from time to time.

R. H. MC HOLMES
ASSISTANT SUPDT. OF POLICE

Copy to: The Officer in Charge,
Northern Frontier District, Isiolo
The District Commissioner, Marsabit
The Asst. Superintendent of Police in charge, N.F.D. Isiolo