

EAST AFR. PROT.
GERMAN E. AFRICA

No. 28894

28894

REC'D
6 JUL 06

as Individual

(Subject.)

General
Literature

1906

Report on Rock. Specimens

25 July

previous Paper.

no
13481

collected by Anglo-German Boundary Commission
to -

(Minutes.)

Sent copy of the two ones to the
Comm^{rs} for comm^{rs} to Capt. Smith &
Mr. Huff -- & say that it is hoped that
this report & the report enclosed in our despatch
No. 212 of the 23rd of April will be of
assistance to Mr. Huff in his geological
survey of the E. A. P. near as much
at once.

H. J. R.

7/8

subsequent Paper.

U.S. GROUNDWELL ROAD,
28894 S.W.Belrain, 06
Rox.
N.B.

Aug. 3. 1906.

Dear Read,

I am sending you Professor
Cunstan's Report on the rock
specimens brought home by the
Boundary Commission.

2 copies all 307

IMPERIAL INSTITUTE,
28894

LONDON, S.W.

AUG 06

25 July, 1906.

Dear Colonel Smith,

I send herewith the report on the identification of the rock specimens which Mr. Leveson Gower collected in East Africa. None of the specimens are of economic value but their identification is of interest in connection with the general geology of East Africa.

I am,

Yours very truly,

Wendell A. Dunder

to.-Colonel G. E. Smith, *DE. d.*
Room 66,
Colonial Office, S.W.

THE RED HOUSE
BEXLEY HEATH

Oct 24th 1906,

Dear Mr. Bottomley,

My copy of the
East African geological report
has arrived, so I return the
one you lent me herewith
With many thanks

Yours ever

H. Bantwain

309
28894REC'D
AUG 06

IMPERIAL INSTITUTE,

(SOUTH KENSINGTON, LONDON, S.W.)

Report on a series of Rock Specimens collected by the
Anglo-German Boundary Commission in East Africa,

by PROFESSOR WYNDHAM R. DUNSTAN, M.A., F.R.S., Director.

The rock specimens which are the subject of the present report were collected by Lieutenant Leveson-Gower at the instance of Lieutenant-Colonel G.E. Smith during the journey of the Anglo-German Boundary Commission in East Africa, and were afterwards referred to the Imperial Institute for examination.

The Boundary Commission proceeded from west to east along the boundary between British and German East Africa, and traversed the country from Victoria Nyanza to Oldsnyio Brook.

For convenience of reference the specimens have been numbered at the Imperial Institute in the order of the dates of collection, and the particulars of origin given in each case are quoted from the labels attached to the specimens.

1. "Stone from Mohuru point, 7.5.04."
A specimen of biotite granite.
2. "Surface soil from the downs near Gori's village, 9.5.04."

A black loamy soil. The sample is too small for complete examination.

- 3 to 5. "Rocks from the beds in the gully on the path leading down to the bush plain S.W. of Gori's village."

Three small specimens of decomposed volcanic rocks. The rounded pebble, which is stated to have been taken from a conglomerate, is a specimen of altered nephelinite, consisting of numerous phenocrysts of nepheline and augite set in a hemicrystalline ground rich in magnetite. It is somewhat similar to the nephelinite of No. 8 (see below).

6. "Rock from near top of Gwasi hills, 11-5-04."

This is a porphyritic augite basalt. The ground is hemicrystalline, and rich in small augites and magnetite grains. The rock is devoid of feldspar, nepheline, or olivine. It is probably ultrabasic, and may be fairly described as a typical augitite.

7. "Rock with white spots in it from the ridge of Gwasi on the Karunga road, 13-5-04."

An augitite similar to No. 6 except that it is non-porphyritic and more amygdaloidal.

8. "Rock on the road from Gwasi to Karungu, on the top of the ridge overlooking Karungu, 13-5-04."

A black rock with a hemicrystalline structure. It contains porphyritic crystals of clear nepheline and brown twinned augites. The ground is rich in augite and magnetite. No feldspars, olivines, or soda varieties of ferromagnesian minerals are present. There are occasional

occasional cavities infilled with calcite. The rock has a specific gravity of 2.92 and may be described as a typical nephelinite.

9. (a) "No. 1. Rocks on the road between Mundawat and the Kuga river, three hours from the former, 18.5.04."

These comprised one pebble of fine-grained sandstone, one of vein quartz and broken fragments of much decomposed porphyrite. The latter consisted of a compact ground with porphyritic crystals of plagioclase and a little altered pyroxene; they had a specific gravity of 2.82.

- (b) "No. 2. Picked up within a few hundred yards of (a), large beds of it on the road. 18.5.04."

This consists of broken fragments of earthy limonite.

10. "No. 3. Rock from the bank of the Kuga river, 18.5.04."

Specimen of porphyrite similar to those of No. 9 (a).

- 11, 12 and 13. "From the bed of the M'Gori river on the road between the Masai kraals and Gurribe hill. Nos. 1, 2 and 3. 19.5.04."

"No. 1." A crushed quartzite.

"No. 2" Quartzite in contact with slate.

"No. 3, from the bed of a stream one hour beyond

beyond No. 1." A hornblende granite.

14. "From the summit of Kwere hill. 20.5.04."

Fragments of quartz rock.

15. "Rock chipped from one of the great rounded boulders lying on the plain near the mouth of the Kuga and the German post. No. 1. 22.5.04."

A fine grained biotite granite, almost aplitic, with occasional small crystals of tourmaline.

- 16, 17, 18. "Three successive strata from the banks of the 'Angoiche' brook, a tributary of the M'Gori on the left bank. No. 2. 22.5.04."

Three specimens of dry indurated clay of sedimentary origin. One is black and tenacious (the top bed), the other two being lighter in colour and more sandy.

19. "Earth from one foot below the surface at No. 3 Beacon. No. 1. 12.6.04."

A reddish brown, ferruginous and sandy clay.

20. "Quartz from one mile N.W. of No. 3 Beacon. Granite from No. 3 Beacon. No. 2. 12.6.04."

The former is a specimen of quartz rock. The granite is a biotite variety, almost aplitic, and shows a pegmatitic structure.

21. "Stone from near top of Gurribe hill, 13.6.04."

A reddish

A reddish biotite granite.

22. "Surface soil from the road between Gurribe and Kwere hills, 14.6.04."

A chocolate coloured sandy soil, somewhat fine grained and uniform in texture.

23. "Stone from the M'Gori river, two miles above the other specimen from same, 15.6.04."

A specimen of grey, crushed quartzite, almost identical with No. 2 of 11, 12 and 13.

24. "From four miles S.W. of Garragu Boma, 2.7.04."

A biotite granite.

25. "From Garragu Camp, 3.7.04."

Quartz porphyry, consisting of phenocrysts of feldspar, hornblende, and corroded quartz in a microcrystalline ground.

26. "Rock from half way between Garragu and Shirari. 21.8.04."

A scoriaceous olivine basalt, containing well-developed phenocrysts of clear plagioclase, pyroxene and olivine in a hemicrystalline, scoriaceous ground.

27. "Rock from the road four hours from Garragu towards Shirari, 21.8.04."

An altered reddish-brown aplitic granite with pegmatitic structure.

28. "Earth from the shambas of the Batende on the road from Garragu to Shirari, 21-8-04."

A light brown sandy soil, somewhat fine-grained and of fairly uniform texture.

29 and 30. "From 1 1/2 hours N.E. of Shirari on the E. side of the Shirari downs, halfway down the side. 25-8-04."

Specimens of decomposed granite.

31. "From the edge of the basalt escarpment E. of Sirunga. 2-9-04."

A specimen of phenolite with phenocrysts of sanidine.

32. "Two hours N.E. of Sirunga. 4-9-04."

33. "From inside the house, Sirunga. 5-9-04."

These two rocks are similar to each other, and consist of dark grey phenolite with phenocrysts of sanidine. The principal ferromagnesian constituent is a brownish amphibole which is probably katophorite. Grains of aegirine and patches of senigmatite are also conspicuous in the ground.

34. "From the mud in the bed of the stream below Sirunga. 9-9-04."

A specimen of quartz rock.

35. "On the great plain two hours N.E. from the road down the escarpment. 16-9-04."

Specimen of phonolite somewhat similar to Nos. 32 and 33.

36. "Mogone hill. 19.9.04."

Phenolite similar to Nos. 32 and 33.

37. "Dark stone one hour E. of Mogone. 20.9.04."

A phonolite similar to Nos. 32 and 33.

Also two quartz pebbles, one from near the banks of the Mara, the other half an hour E. of Mogone.

38. "Rocks from the dry bed of a brook two miles E. of the boma on the Mara. 22.9.04."

Two specimens of quartz schist, and a pebble of quartz.

39. "Stream bed half an hour S. of Kebololet. 27.9.04."

Quartz schist with interstitial mica.

40. "Eldoynio Kebololet. 27.9.04."

Specimen of quartz rock.

41. "2 1/2 hours N. of Kuka; projecting ledges on the flat. 7.10.04."

Limestone, probably of 'freshwater' origin, and apparently devoid of fossil remains.

42. "From some projecting ledges of rock on a gentle

gentle slope $\frac{1}{2}$ of an hour N. of Kuka. 7-10-04."

A medium grained biotite gneiss rich in microcline; muscovite is also present.

43. "From a mineral spring $\frac{1}{2}$ of an hour N. of Kuka. 7-10-04."

Travertine (calcium carbonate).

44. "No. 1. The top. 8-10-04."

45. "The top of Oldoynio, Cole Liganisho, 10-10-04."

Specimens of coarsely granular quartz rock, probably quartzites of metamorphic origin. No. 45 is very ferruginous and friable.

46. "From one hour S. of Oldoynio Cole Liganisho. 11-10-04."

Limestone somewhat similar to No. 41.

47. "From the middle of the plain between Loitigoshi and Siens. 17-10-04."

Coarsely granular quartz rock with muscovite, probably a quartzite.

48. "Ololbwa hill, from the top. 19-10-04."

Biotite gneiss rich in microcline, similar to No.

49. " $\frac{1}{2}$ mile N.E. of Kebaiabala. 20-10-04."

Specimen of clear massive quartz.

50. "From the hill side $\frac{1}{2}$ mile N.E. of Kebalabais
Boma, same place as 49. 20-10-04."

Friable mica schist.

51. "Kebalabais Boma, 20-10-04."

Specimen of indurated loam.

52. "Angata Lalabal, 21-10-04."

One specimen of porous grit and a number of
fragments of granular quartz containing biotite and
tourmaline.

53. "Angata Lalabal, 21-10-04."

Friable mica schist very similar to No. 50.

54. "On the lower slopes of Oldoynio Ololjerodis,
21-10-04. No. 1."

Friable, gritty sandstone.

55. "Oldoynio Ololjerodis. 21-10-04."

Ferruginous conglomerate.

56. "At the foot of Oldoynio lo Mundorosi,
22-10-04."

Porous and somewhat friable limonite grit.

57. "The slopes of Mundorosi. 29-10-04."

Coarse-grained quartzite.

58. "The centre of the plain below Mundorosi,

29-10-04."

29-10-04."

One broken fragment of limonite grit and one of coarse-grained quartzite.

59. "From torrent bed 1 1/2 hours W. of Beacon hill, 29-10-04."

Specimen of massive quartz.

60. "From the great plain between Mundorosi and the Beacon to the East, 29-10-04."

Two specimens of hornblende schist, and one of friable aplitic granite.

61. "From Mara river 1/2 mile from the east bank. 29-10-04"

Small fragments of mica schist.

62. "The slopes of Ndasagara. 2-11-04."

Coarse-grained quartzite.

63. "The bottom of the Ndasagara, E. side. 2-11-04."

A specimen of quartz schist.

64. "From the W. slope of the hills leading up to the forest on the escarpment edge. 2-11-04."

A brownish red soil, consisting of a ferruginous and somewhat clayey loam.

65. "Near the Ngajau Ndugai, 2-11-04."

Schistose mica with granules of magnetite.

66. "Escarpment Beacon. 4.11.04."

Coarse-grained quartzite.

67. "From the bed of the stream coming out of the escarpment. 8.11.04."

One specimen of quartzite. Also a specimen of augitite (compare No. 6), a black rock with numerous large phenocrysts of augite in a hemicrystalline ground containing small augites and magnetite grains; its specific gravity is 3.0.

68. "On the way down the escarpment. 8.11.04."

Two specimens of quartz schist.

69. "Near camp in the ravine on the side of the escarpment. 8.11.04."

Impure, gritty limonite.

70. "On the lower escarpment, half way between Ngare Kiti and Ngare Niro. 10.11.04."

Two specimens. One is a pebble of green quartzschist; the other is an augitite, somewhat similar to Nos. 6, 7 and 67.

71. "The slopes of Shombole. 13.11.04."

A pebble of decomposed rock of uncertain character, but probably of igneous origin.

72. "Side of the escarpment near Oldoynio Sambo, on the way to Sonio. 18.11.04."

Two specimens of quartzite.

73. "Near Ndasegera. 27.11.04."

One pebble of decomposed gneiss, and one of ferruginous grit. The grit consists of fairly large and angular quartz grains, cemented by iron oxide; the quartz grains have evidently been derived from the breaking up of a quartzite.

74. "Deep gorge between Ndasegera and Sambo. 28.11.04."

Pebble of coarse-grained quartzite.

75. "Oldoynio Sambo. 3.12.04."

Friable mica schist.

76. "Orngaju Mpagazi, from a cliff near where it comes out on the floor of the Rift valley. 4.12.04."

Coarse-grained quartzites.

77. "1/2 hour W. of No. 12 Beacon hill on the side of the last small escarpment descending into the Rift valley. 9.12.04."

A dark greenish-grey and somewhat porous phanacrite.

78. "From the E. shore at the south end of Magadi Lake. 9.12.04."

Specimen of white chert.

79. "From the E. shore at the south end of Magadi Lake. 9-12-04."

Compact limestone probably of 'freshwater' origin.

80. "From the E. shores of Magadi Lake. 9-12-04."

Large specimen of white chert, similar in character to No. 78, and partially coated with carbonate of lime.

81. "From the hill beyond the Magadi, on which No. 12 Beacon stands. 9-12-04."

A specimen of phonolite somewhat decomposed and stained brown with iron oxide. Apart from its colour and slight decomposition, this rock is almost identical with No. 77.

82. "The country between the Shomholes and the hills. 17-1-05."

A specimen of phonolite.

83. "River bed in the hills below Eljoro District, 17-1-05."

Coarse-grained quartzite with interstitial muscovite.

84. "Hills between Killibe and Meld. 26-1-05."

A medium

A medium-grained biotite granite, almost aplitic.

85. "Top of Killibé. 26.1.05."

Coarse-grained quartzite.

86. "Top of the Meld. 27.1.05."

Specimen of earthy grit.

87. "Half way between Meld and Oldoynio Erok.
31.1.05."

Brown gritty limestone.

88. "From river bed, Mosquito Camp. -1.05."

Earthy semi-opal with patches of calcite.

89. "Near the first part of the two rivers coming
out of the south side of Oldoynio Erok. 1.2.05."

Biotite gneiss.

90. "Near the spring on the summit of Oldoynio Erok.
2.2.05."

Specimen of weathered gneiss.

91. "Low hills two hours N.E. from Oldoynio Erok,
on the way to Lemelobarasha. 6.2.05."

Compact limestone.

92. "2½ hours N.E. of Oldoynio Erok on the way to
Lemelobarasha. 6.2.05."

Coarse-grained quartzite.

93. "1 hour E. of the north end of Oldoino Ekok.
6.2.05."

Coarse grained quartzite.

94. "1½ hours S. of Lemebobarasha; clump of low
hills. 6.2.05.

Coarse-grained quartzite.

95. "The top of Lemebobarasha. - 9.2.05.

Coarse-grained quartzite.

W. H. D. D. D.

July 1906.

Trip to East
25594 German EA

324

DRAFT.

13 August 1906

EAH: 490

Comm

MINUTE.

- Mr. Lobb
- Mr. Peabody
- Mr. Andrews
- Mr. Cox
- Mr. Lucas
- Mr. Graham
- Mr. M. Osburn
- Mr. Churchill
- The Earl of Elgin

Conclude

When the honor
 is referred to 212 Oct 13 1906
 to be transmitted to you for
 your wife & J. communicated
 to Capt. G. E. Smith
 & Mr. H. B. Huff, the
 accompanying report
 a report with
 rec^d for the Dir
 trip to the
 rock specimens
 collected by
 German Boreas
 in EA

2. It is hoped that
 report, and that
 enclosed in my report
 also mentioned, will be
 of service to Mr. Huff
 in his geological survey
 of the East

21 Aug 1906
 (25594)