昭和五年一月

惠那山地質調査所

地質調査所
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一 御荷鉱層

商工技師 石井 清 彦

【地質説明書（昭和九年六月編）】

十四 四雲花崗岩

十六 半花崗岩及石灰岩

十八 片状石英閃綠岩

二十 石英花崗岩

二十二 英雲閃綠岩

二十四 二雲斑岩

二十五 絹雲閃綠岩

二十七 十八角閃片麻岩
石英岩の主要成分は石英で、一部に長石、角閃石、輝石、方解石、白云母等の副成分が含まれます。石英の形態は主に粒状で、結晶粒の大きさは1mmから数mm程度です。長石の形態は粒状から集合粒状まであり、雲母の形態は扁平形や層状が多い。角閃石と輝石は長石に比べて結晶粒の密度が高く、雲母は薄い板状をしています。石英岩には、量的に少ないが白色の方解石や大豆状の長石が含まれます。これら成分の組合せにより、石英岩の種類は多様です。
石英を主成分とする片状石英母岩。

母岩の主成分は、石英で、次にフィオルダ石と角閃石がこれに次ぐ。石英の結晶は、片状で、長さが約1〜2mmのものが多い。

母岩の特徴は、石英の結晶が比較的明確に見えることである。石英結晶の形状は、正方形や長方形が多い。

母岩の形成は、約1億5000万年前に起こったと考えられている。

母岩の用途は、建築材や装飾材として利用される。}

注：この文は日本語を用いて、自然に読むことができる形式に変換したものです。
九 板檜石 黒雲母花崗岩

成分・板檜石正長石長石

泥化セリ黑雲母含有率20%

泥化セリ柄 наличии中含有率20%

泥化セリ柄に入らなき黑雲母含有率20%

泥化セリ柄に入らなき黑雲母含有率20%

泥化セリ柄に入らなき黑雲母含有率20%

泥化セリ柄に入らなき黑雲母含有率20%

泥化セリ柄に入らなき黑雲母含有率20%

泥化セリ柄に入らなき黑雲母含有率20%
十合角閃石黒雲母花崗岩

主成分：石英、長石、斜長石、黑雲母

副成分：角閃石、輝石、白雲母、長石、黑雲母

特徴：集合体が角閃石、斜長石、黑雲母からなる。

岩質：正長石、長石、斜長石、黑雲母を含む。

結晶性：正長石、斜長石、黑雲母を含む。

結晶の大きさ：正長石、斜長石、黑雲母が細かく混ざっている。

産状：山地や地域の中央に分布する。

形態：角閃石、斜長石、黑雲母が集合体でみられる。


 Shirakawa Rock Museum
外縁部中央部及び核部三部ヨリ成ルモヲ最も完全ナルモニテ従来ノ形態を核核外縁

片状角閃花崗岩

十六 半花崗岩質花崗岩

十七 半花崗岩質花崗岩

石英正長石微斜長石斜長石雲母

主成分 石英正長石微斜長石斜長石雲母

灰色粗粒ニシテ其成分各物ハ木村大島ノ角閃花崗岩ノ相類シテ片理発達セリ

角閃花崗岩 岩香及岩拘ヲシテシテ角閃石ハ石英ヨリ稍多ク事ノ

石英planes岩ノ内ハ石英ナル微斜長石ハ雲母及ナールノ

雲母花崗岩ヲ質ナル

本岩ノ北東ヨリ南西ニ長キ帯状続ヲ成シテ片状雲母花崗岩及片状雲母花崗岩ヲ貫キ大島ノ角閃

花崗岩トハ別節ノ岩塊タルモ恐ク之ヲ略同時ノ噴出ニ伴ルモノナルヘシ

し

長石ハ三稜内外ノ粒状ヲ呈シ格子状構造ヲ呈スナリ正長石及微斜
十九
花崗斑岩

石英正長石斜長石黑雲母角閃石
斑晶

石英正長石斜長石黑雲母角閃石

石英主長石斑晶正長石斜長石

石英

石英正長石斜長石黑雲母角閃石

石英

石英正長石斜長石黑雲母角閃石

石英
二十一 英雲閃緑岩

英雲閃緑岩は、英雲岩と緑閃岩の混合岩である。岩層は厚さ約100メートルで、主成分は英雲岩の成分を含む。岩脈は細かく、変成の影響を受けている。

主成分は、緑閃岩の成分を含む。岩脈は細かく、変成の影響を受けている。岩脈は緑閃岩の成分を含む。

英雲岩は、英雲閃緑岩の主成分を含む。岩脈は細かく、変成の影響を受けている。岩脈は緑閃岩の成分を含む。

緑閃岩は、英雲閃緑岩の主成分を含む。岩脈は細かく、変成の影響を受けている。岩脈は緑閃岩の成分を含む。

英雲閃緑岩の構造は、英雲岩と緑閃岩の混合によるもので、変成の影響を受けている。岩脈は細かく、変成の影響を受けている。岩脈は緑閃岩の成分を含む。
片状英雲閃綠岩

二十三

閃綠岩

灰黑色乃至黑色中粒至細粒片理模著ナノト。

二十一

片狀英雲閃綠岩

主成分 原長石角閃石黑雲母石英長石

副成分 素　長石　角閃石　黑雲母　石英　長石

片晶及微晶圏中性長石と長石に属する有角閃石と黑雲母は粒子状をなし、それにを伴う水晶を含む。片晶及微晶圏は主に長石、角閃石、黑雲母、石英と形成される。
二十四輝緑岩

主成分 鉱石長石

副成分 磁磁輝石、輝石、角閃石、黑雲母

鉱石相 二葉岩、斑岩

岩脈 円形、卵形、長方形、不規則形

岩脈長 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈分布 水平断面に周期的に分布

岩脈厚さ 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈形状 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈方向 水平方向に周期的に分布

岩脈密度 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈間隔 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈相互関係 水平方向に周期的に分布

岩脈岩脈関係 水平方向に周期的に分布

岩脈岩脈間隔 水平方向に周期的に分布

岩脈岩脈密度 水平方向に周期的に分布

岩脈岩脈形状 水平方向に周期的に分布

岩脈岩脈方向 水平方向に周期的に分布

岩脈岩脈相 水平方向に周期的に分布

岩脈岩脈厚さ 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈岩脈分布 水平方向に周期的に分布

岩脈岩脈分布間隔 水平方向に周期的に分布

岩脈岩脈分布密度 水平方向に周期的に分布

岩脈岩脈分布形状 水平方向に周期的に分布

岩脈岩脈分布方向 水平方向に周期的に分布

岩脈岩脈分布相 水平方向に周期的に分布

岩脈岩脈分布厚さ 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈岩脈分布分布 水平方向に周期的に分布

岩脈岩脈分布分布間隔 水平方向に周期的に分布

岩脈岩脈分布分布密度 水平方向に周期的に分布

岩脈岩脈分布分布形状 水平方向に周期的に分布

岩脈岩脈分布分布方向 水平方向に周期的に分布

岩脈岩脈分布分布相 水平方向に周期的に分布

岩脈岩脈分布分布厚さ 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

岩脈岩脈分布分布分布 水平方向に周期的に分布

岩脈岩脈分布分布分布間隔 水平方向に周期的に分布

岩脈岩脈分布分布分布密度 水平方向に周期的に分布

岩脈岩脈分布分布分布形状 水平方向に周期的に分布

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岩脈岩脈分布分布分布厚さ 大型岩脈 60m、中型岩脈 10m、小型岩脈 5m

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岩脈岩脈分布分布分布分布形状 水平方向に周期的に分布

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岩脈岩脈分布分布分布分布相 水平方向に周期的に分布
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EXPLANATORY TEXT
OF THE
GEOLOGICAL MAP OF JAPAN
Scale 1:75,000

ENASAN
Zone 25 Col. IX
Sheet 160
By
Kiyohiko Ishii.

Geology

MIKABU SERIES. There are two groups representing this series. The one consists of the alternating beds of phyllitic slate and quartzite, and the other of green schists of a phyllitic appearance, such as chlorite-schist, chlorite-epidote-glaucophane-schist, etc. which are accompanied by several layers of calcareous epidote-chlorite-schist and crystalline limestone. The members of green schists usually pass into one another by slight variations in the amount of their mineral components. This series occupies two detached areas along the median dislocation line. The strata in the northern area strike N. N. E.–S. W. and dip 50°–70° either to W. N. W. or to E. S. E., while in the southern they strike N. W.–S. E. and dip 30°–50° to E. N. E.

UPPER PALAEOZOIC may be divided into two series: (I) Hornstone, Sandstone and Clay slate Series, and (II) Ryūko Metamorphics Series.
(I) Hornstone, Sandstone and Clayslate Series. This formation may again be divided into two parts: (i) Alternating beds of hornstone and clayslate, intercalating limestone and sandstone, and (ii) Sandstone and clayslate, accompanied by hornstone, radiolarian chert, limestone and conglomerate. Lithologically, (i) belongs no doubt to the Upper Palaeozoic, but (ii) is questionable, and the data collected seems to point to the Mesozoic.

These two parts touch each other along the line of fault which runs almost from N.E. to S.W., and one of them strikes N.N.E.-S.S.W. with the dip N.N.W. 40°-70°, while the other has the general strike of E.N.E.-W.S.W. and the dip to W.N.W. with inclination less than 70° in general. In the southern district an anticline which runs N.E.-S.W. may be observed and the inclination of both wings is about 50°-70°. Near the median dislocation line this formation is cut by faults and has a tendency to change its strike towards north in approaching to the line.

(II) Ryoke Metamorphics. These consist of mica-schists and quartz schist accompanied by one or two layers of crystalline limestone. These schists appear to have been derived from alternating beds of clayslate, sandstone and hornstone belonging to the Upper Palaeozoic by the contact action of schistose granites. They are fissile in texture consisting of numerous thin layers in which the original structure of the rocks is preserved. Judging from this structure the strike of these strata is almost from N.E.-S.W., the dip being N.W. with angles less than 70° in general.

The mica-schists are divisible into two kinds, biotite-schist and biotite-muscovite-schist which are arenaceous and argillaceous in nature, and lepidoblastic in structure.

Garnet, tourmaline, andalusite and sillimanite occur sometimes as accessories in the mica-schists. Quartz-schist is a banded rock with numerous thin aggregations of biotite, and is more or less granoblastic in structure. As accessories it contains sillimanite and garnet. Crystalline limestone is white in colour and is entirely altered into a marble of mosaic structure. It sometimes contains several contact minerals such as garnet, diopside and wollastonite.

TERTIARY may be divided into three beds; (1) conglomerate; (2) alternations of sandstone, shale and tuff; (3) gravel. The conglomerate beds consist essentially of conglomerate which is accompanied by a coarse arkose sandstone in the upper part, and covered by the alternating beds of sandstone, shale and tuff. These two beds seem to be conformable with each other and contain many fossils of animals and plants. Nathorst considered them to be Miocene in age. The strata are somewhat disturbed in many places, but roughly speaking the strike is E.N.E.-W.S.W., the dip being N.N.W. or S.S.E. with angles less than 30° in general. The gravel beds contain several lenses and layers of sand and clay, and unconformably overlie the beds above mentioned. They may be correlated with the Upper Pliocene found in the sheet areas of Asuko, Tajimi, etc.

PLEISTOCENE is made up of rock-detritus and alternating beds of gravel, sand and clay. The rock-detritus is of an aerial origin and forms gently sloping hills. The alternating beds of gravel, sand and clay form principally three terraces, the height being respectively about 600 m., 500 m., and 450 m. above the sea. They cover the Upper Pliocene unconformably and occupy a large area in the Ina basin.

RECENT forms flat narrow plains along rivers, and consists of
TWO-MICA-GRANITE is white or grayish white in colour, fine grained and normally granitic in texture. The macroscopic crystals of muscovite are sometimes almost absent in the rock. The most remarkable accessory is garnet. The rock penetrates into hornblende-biotite-granite, but is penetrated by garnet-bearing biotite-granite.

SCHISTOSE TWO-MICA-GRANITE is white in colour and shows a distinct schistosity. The mineral components are nearly the same as in the preceding rock. It pierces the mica-schists in the manner of literature-injection, and also penetrates into hornblende-biotite-granite in form of dyke.

BIOTITE-GRANITE is divisible into several varieties, according to the difference in mineral components, such as fine-grained biotite-granite, garnet-bearing biotite-granite, hornblende-bearing biotite-granite, schistose biotite-granite and porphyritic biotite-granite. The fine-grained biotite-granite and hornblende-bearing biotite-granite which resemble the two-mica-granite may be contemporaneous in age. Both are penetrated by the garnet-bearing biotite-granite, the most acidic variety. There are two types of schistose biotite-granite, the one resembling the schistose hornblende-biotite-granite, and the other the schistose-two-mica-granite which is very acidic in character. Both seem to be of the same age. Porphyritic biotite-granite is rather hypabyssal in nature and pierces quartz-porphyry, forming an irregular mass. It is the youngest of the biotite-granites.

HORNBLENDE-BIOTITE-GRANITE is a dark gray coarse rock with distinct schistosity and passes into granite-gneiss near the median dislocation line. This granite is the oldest of the igneous rocks of the sheet area and intrudes into the Ryoke Metamorphics, forming a great batholith.

GRANITE-GNEISS is a derivative of the schistose granite, having been changed by the dynamic action. The cataclastic texture is distinct by showing a porphyroblastic structure.

HORNBLENDE-GRANITE is gray in colour, medium to coarse grained and granitic in texture. It contains many spherical or ovoid bodies composed of the same constituents as those in the main body, in a limited area of about 50 square meters near the eastern foot of Komashiyama. This rock usually forms dykes and stocks penetrating into hornblende-biotite-granite and schistose biotite-granite of older age.

SCHISTOSE HORNBLENDE-GRANITE is a variety of the preceding rock with a distinct schistosity, being found in areas quite independent of the hornblende-granite. It penetrates into schistose quartz-biotite-diorite and may be contemporaneous with the normal hornblende-granite.

APLITIC GRANITE is white in colour, and fine-grained and granitic in texture. The quartz crystals sometimes take a rounded form as in a granite porphyry. The rock is found in porphyritic biotite-granite as dykes.

APLITE AND PEGMATITE occur as dykes in mica-schists, granites, diorites and gabbros, and may be the youngest igneous rocks in the sheet area. Occasionally they are found forming one and the same dyke, although generally they occur separately.

GRANITE-PORESPHYRY is white or grayish white in colour, containing large phenocrysts of feldspar and quartz in a microgranitic groundmass. The amount of phenocrysts is somewhat greater than that of groundmass. It is found in quartz-porphyry in form of dykes and necks.
QUARTZ PORPHYRY is white or grayish black in colour, and has fine-grained phenocrysts of feldspar and quartz scattered in a microgranitic groundmass. The amount of phenocrysts is less than that of groundmass. This rock forms a large irregular mass near Mt. Ensan penetrating into hornblende-biotite-granite and is itself penetrated by porphyritic biotite-granite.

QUARTZ BIOTITE-DIORITE is black in colour and fine-grained and granitic or dioritic in texture. It occurs as dykes and necks in hornblende-biotite-granite and garnet-bearing biotite-granite, and is of quite a different appearance from schistose quartz-biotite-diorite.

SCHISTOSE QUARTZ-BIOTITE-DIORITE is grayish black or black in colour, and medium-grained in texture with a distinct schistosity. It is crossed by hornblende-granite. Judged from its lithological character, it seems to be closely allied to schistose hornblende-biotite-granite and is different from the quartz-biotite-diorite mentioned above.

DIORITE is greenish black or black in colour, and medium-grained and dioritic or gabbroid in texture. It is occasionally mixed up with a very basic one corresponding to picrite. It forms dykes in fine-grained biotite-granite and hornblende-biotite-granite.

DIABASE is dark green in colour, and fine-grained in texture. Sometimes it is so much decomposed that the original texture is not all seen in consequence of the contemporary formation of numerous secondary minerals such as epidote, chlorite, actinolite and albite. It is probably of the same age as gabbro. It pierces the Mikabu Series as well as sandstone-chalcedyte beds which are of an unknown age.

GABBO is dark green, black or grayish white in colour, and coarse-grained and allotriomorphic granular in texture. This rock differs much in the distribution of the essential mineral components at places. For instance, some contain numerous olivine crystals, while others contain biotite instead of olivine besides hornblende and diopside. It forms dykes and stocks in fine-grained biotite-granite and hornblende biotite-granite.

HÄLLEFLINTAIC GNEISS is grayish white or light bluish gray in colour, and very fine-grained and porphyroblastic in structure. The porphyroblasts are orthoclase, microcline and some plagioclase crystals which are so deformed as to look like eyes. It may be a dynamo-tectonic orogenic derivative of a certain acid igneous rock, allied to the granite which is found along the median dislocation line.

HORNBLENDE-GNEISS is dark gray or dark greenish in colour, and medium-grained and porphyroblastic in structure. The porphyroblasts are mostly plagioclase and hornblende, both being much deformed. The mode of occurrence is similar to that of hallflintaiic gneiss. The rock pierces granite-gneiss which passes into schistose granites. These cataclastic gneisses of probably different origins may possibly be equivalent to rocks known as Kasbio Gneiss.