大正十三年三月

設 樂 縱 行 九 橫 行 二 六
地 質 說 明 書

地 質 調 查 所
本岩は暗褐色乃至黒褐色の特異な石英雲母及び白雲母の混成組織を有し、不均一に分布する。石英と黒雲母及び白雲母が互いに混在することにより、性質に多様性がある。

また、本岩には長石及び白雲母が混在し、均一な組織を形成することが特徴である。長石は不均一に分布することにより、結晶状を形成する。

特に、長石は結晶状を形成することにより、組織が均一性を保ち、性質が安定する。

なお、長石は均一に分布することにより、組織が均一性を保ち、性質が安定する。

本岩は、不均一に分布する石英、長石、白雲母、黒雲母及びその他成分によって構成される。
本岩の白色乃至灰色の呈不規則ノ竃裂多く層理不明ナリノ周智郡奥山村に生目。

五十一米ニ達スルトソアリ

石灰岩

本岩ハ白色乃至灰色ヲ呈シ結晶質ノニシテ不規則ノ竃裂多く層理不明ナリノ周智郡奥山村に生目。

周智郡奥山村向々供観光寺山ノ断代及草木ノ東方ニハニ二百五十米乃至三百{}

圧碎角巻岩

本岩ハ砂岩及び粘板岩ノ混合ヲ呈シ結晶質ノニシテ不規則ノ竃裂多く層理不明ナリノ周智郡奥山村に生目。
第三紀（上部）岩及び砂岩

頁岩及び砂岩層は、下部の頁岩に比し、絶えず変質を示す。頁岩の層は、この変質のため、疎鉄の層が見られ、特に、砂岩層の下部には、非環状の層が見られる。

頁岩及び砂岩の岩脈は、時として、他の岩脈と交差し、複雑な構造を示す。特に、北東側の中には、岩脈が交差し、複雑な構造を示す。

頁岩及び砂岩の層が、時として、不整合に接し、他の岩脈と交差し、複雑な構造を示す。

頁岩及び砂岩の層が、時として、不整合に接し、他の岩脈と交差し、複雑な構造を示す。
十二 閃雲花崗岩

岩石は、灰色や灰色の中粒乃至粗粒で、主成分は正長石（三軸）、斜長石乃至中性長石乃至曹灰長石とされる。その中に角閃石、二長石、角閃石、及び黑雲母が散在する。

角閃石は、普通角閃石成分のもの及び二長石成分のものがある。特に、二長石成分のものが多く、二長石の角閃石は、普通角閃石成分を示す。

十四 角閃花崗岩

本岩は、霞色を地貫で、主成分は正長石（三軸）、斜長石乃至中性長石乃至曹灰長石とされる。その中に角閃石、二長石、及び黑雲母が散在する。

角閃石は、普通角閃石成分のもの及び二長石成分のものがある。特に、二長石成分のものが多く、二長石の角閃石は、普通角閃石成分を示す。
片状花崗岩

半花崗岩

正長石 長石 白雲母

解離面

紺雲母 花崗岩

片状花崗岩

岩石 白雲母 16.

半花崗岩及バゲマタイト

粒状構造

ソリドフォルム 花崗岩

岩石

正長石 石英 二長石

正長石・角閃石岩

片状花崗岩

岩石 流紋岩
岩類近ノ諸岩及び雲母片岩ノ進入シ其後閃雲片麻岩ド進入シ、最後ノ牛花崗岩及

十七、英雲閃緑岩

十八、蛇紋岩

十九、ネパダ岩

岩類－暗緑色或は暗灰色、中粒、主成分－長石、石英、方解石、長石、石英、方解石ガオウ錆輝緑泥石

質物－本岩ノ常ノ結晶片岩中ノ岩屑フ成シ周智那富山谷野 участ田佐久間村

広同淵川村川ノ共ノ地域小ナリ赤沢セス
二十一代  リソイサイト
岩石・灰白色深灰色縞斑
斑晶・石英（含・三長石）
石英・漂白質乃至玻璃質

本岩ハ一般ニ第三紀層ヲ貫ケテ噴出シ熔岩ノ流東トナリ THIRD紀層ヲ被覆スル其流東ノ
構造ノ明カナルモノアルノ亦花崗岩ノ岩脈ヲ成セールトアリ

三十一  リソイサイト
岩石・灰白色深灰色縞斑
斑晶・石英（含・三長石）
石英・漂白質乃至玻璃質

本岩ハ一般ニ第三紀層ヲ貫ケテ噴出シ熔岩ノ流東トナリ THIRD紀層ヲ被覆スル其流東ノ
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構造ノ明カナルモノアルノ亦花崗岩ノ岩脈ヲ成セールトアリ
二十一 粗面岩

岩石|岩脈|急斜長石|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状
|岩脈|急斜長石|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状

二十三 石英安山岩

岩石|急斜長石|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状

二十四 輝石安山岩

岩石|急斜長石|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状|長石|角長石|石英|斑晶|長石|角長石|石英|球状|四角|粒状
第三章 應用地質

第一節 銅礦

設計金山

第四章 應用地質

第三節 銅礦
四

山ノ

五

石炭

石炭

六
EXPLANATORY TEXT
OF THE
GEOLOGICAL MAP OF JAPAN

SHIDARA
Zone 20 Col. IX, Sheet 109
Scale 1: 75,000

By
Shigeo Nōzomi

Geology

Crystalline Schist. The crystalline schist is mostly composed of sericite graphite schist, amphibole schist, graphitic schist, chlorite schist, limestone and spotted chlorite schist, the boundaries of which are not so well defined as in the Sheet, since they grade into one another by slight variations in the amounts of their components. The general strike of the schistosity is N. E. with the dip N. W. 40° to 60°.

Mica Schist. The mica schist consists of mica schist proper, quartz schist, green schist and limestone, the former three exhibiting a gradual petrographical and stratigraphical transition into one another. The mica schist proper can be divided into the paragonite and the phlogopite varieties, and still further divided into mica schist, andalusite mica schist, garnet mica schist, sillimanite mica schist, tourmaline mica schist, etc. according to the varying amounts of their components.
The general strike is N.E. to E.N.E., dipping 40° to 50° N.W. to N.N.W.

Upper Paleozoic. The general strike is N.E. and the dip 40° to 60° northw est and south east, forming anticlines and synclines. The thickness as measured is more than 3,400 meters.

Tertiary (?). Shale and sandstone have long been known as the "Mikuma Series," but as they are of the geological age they are considered stratigraphically to be the Older Tertiary.

Tertiary. In the western part, the strike is N.N.E. to N.E. with the dip E.S.E. to S.E. 35°, while in the eastern part it is N.W. to W.N.W. with the dip 30° to 40° S.W. to S.S.W., thus forming a centrosid structure. Tuff is compact or agglomerate. The layers, especially of sandstone and shale, imbed numerous fossils of fauna and flora, which seem to indicate that the formation belongs to the Miocene. The thickness is estimated to be more than 700 meters.

The Diluvium and Alluvium are composed of gravel, sand and clay, developing along the rivers. The Diluvium forms terraces 5 to 15 meters in height along the tributaries of the Tanryu, but small terraces of the Tanryu rise to a height of 150 meters above the valley, thus attesting the river's rejuvenation.

Hornblende biotite gneiss, two-mica granite, biotite granite, muscovite granite, hornblende biotite granite, hornblende granite, schistose granite-diorite, pegmatite, aplite and quartz mica diorite are the differentiated products of an acidic magma. They intrude the mica schist as laccoliths, sheets or porphyry injections. Nodules, lithoids and pitchrocks are derived from the same acidic magma, covering the Tertiary as flows, or intruding the Tertiary as thrusts or dykes. Trachyte, dacite and pyroxene anodes occur in the Tertiary as dykes. Basalt mostly forms domes on the granite, mica schist and the Tertiary, or occurs as dykes in granite and diorite.

Economic Geology.

Gold Ore. The Shidana mine is located in Kanitsu, N.-Shidana County. One auriferous quartz vein in the Tertiary runs N.N.E., the dip being almost vertical. It extends about 300 meters in slope, 100 meters in pitch, with a thickness of 1 meter, but it has already been worked out.

Copper Ore. Kuro Mine. This mine is situated in Sakura, Iwata County. The deposits are composed of six ore bodies which are found between graphitic schist and epidote chlorite schist, or in graphite schist or in epidote, chlorite schist. The general strike of the deposits is N.E. and the pitch in the upper part is toward N.W. with the inclination 30° or more, while in the lower toward S.E. with the inclination about 70°, caused by many faults near the middle part of the deposits. Orahi, the largest ore body, extends 250 meters in slope, and more than 400 meters in pitch with a thickness of 20 meters or more. Mashi, the smallest ore body, extends 90 meters both in slope and pitch with a thickness of 3 meters. The ore is mostly composed of a complex mixture of pyrite, chalcopyrite and quartz, containing small amounts of pyrrhotite, magnesite and covellite. The average copper content is about 5 per cent.
The Ayudzuri and Ōi Mines. These two mines are situated to the southeast of the Kune mine, and are near each other. In the Ayudzuri mine, the deposits occur in graphite schist in bedded form, striking N.E. with the dip N.W. 50° to 40°. In the Ōi mine, the deposits occur in epidote chlorite schist, striking N.N.E. with the dip W.N.W. 50°. Their extent is almost the same, being about 200 meters in stope, less than 100 meters in pitch, and with a thickness of 5 meters. The ore is very similar to that of the Kune mine, its copper content being about 4 per cent.

The Tempaku and Nako Mines. These neighbouring mines are situated to the south of the Kune mine, and lie on the left bank of the Tenryū. The deposits occur in epidote chlorite schist in bedded form. In the Tempaku mine, the deposit extends 20 meters in stope, and less than 20 meters in pitch with a thickness of 5 meters. In the Nako mine, the deposit extends more than 200 meters in stope, and about 100 meters in pitch with a thickness of about 10 meters. The ore is highly silicious with a copper content of about 2 per cent.

Antimony Ore. Antimony ore was found in Asakura, Futō and Awayo, N.-Shidara County, but is now worked out. The ore was scattered in the Tertiary tuff in masses or in long crystals, considered to be impregnation deposits. It is mostly composed of stibnite, containing small amounts of pyrite, arsenopyrite and jamesonite.

Nickel Ore. Nickel ore occurs in the crystalline schist in bedded form and is found at Mihakubo in Suchi County, and at Suwagami and Kawahami in Iwata County. The deposits are less than 10 meters in stope, less than 1 meter in width, and less than 3 meters in pitch. The ore is composed of garnierite with quartz, the nickel content being 0.3 per cent.

Manganese Ore. Manganese ore was worked at Ōhima, Yatsushin and Daidō, N.-Shidara County. The deposits occur in micaschist in bedded form, being less than 30 meters in strike, and less than 10 meters in width and less than 2 meters in pitch. The ore is composed of palumene with rhodochrosite, but are very poor in manganese content.

Coal. Coal seams, intercalated in Tertiary sandstones, were prospected at Misuzu, Kamigawa, Shiozaka in N.-Shidara County and at Kaeru in S.-Shidara County. All of them are of brown coal, extending less than 20 meters in strike, and about 1 meter in thickness.

Porcelain Stone. Kawai, N.-Shidara, is the only porcelain stone locality on the island. The stone seems to be an alteration product of limestone near its contact with tuff. It has been nearly quarried out.

Potter's Clay. Potter's clay is found in the Diluvium in Naka-Shidara, N.-Shidara County. It has been nearly quarried out.

Wheatstone. The Tertiary tuff in Ōsaka, Kaido, Miwa and Kawai, N.-Shidara County is utilized as wheatstone. The annual output does not exceed 50 tons in each locality.

Building Stone. The Tertiary sandstone has been quarried in Korono, N.-Shidara County and in Higitata, S.-Shidara as building stone for local use.

Mineral Spring. Mineral springs are found at three
places in the mineral, at two places in the Paleozoic and at two places in the granite. They belong to the simple cold spring variety.