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PETROGRAPHY OF ACID IGNEOUS ROCKS FROM NORTHEAST QUEENSLAND

by

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PLATES

INTRODUCTION

Petrographic and locality data for 562 rock samples from the Georgetown Inlier and adjacent Hodgkinson Basin of northeast Queensland are listed. Most of the samples are intrusive or extrusive acid igneous rocks, but also included are some associated basic and intermediate igneous rocks and four siltstones. The samples were collected as part of a geochemical investigation of the mineralized granitic rocks of the area, the results of which are reported in Sheraton and Labonne (1975). Analytical data are given in Sheraton (1974).

Percentages of the main minerals were estimated visually for most samples: no systematic modal analyses were carried out. A section of at least 100 cm^2 would be necessary to give a reasonably accurate mode for the coarser-grained rocks, and most of the volcanics have groundmasses which are too fine-grained for modal analysis to be possible. Both registered sample numbers and field numbers are given where appropriate. In Plate 1, which shows the sample localities, only the last few digits of the registered number are used. Numbers in the range 1000 to 1290 are prefixed 7057, and those in the range 0001 to 0421 are prefixed 6859. Numbers in the range W1 to W155 are prefixed 6749, and those of the form MG68/20 or DB18B by 6849. Examples are given in Table 1.

Table 1. Comparison of registered sample numbers and field numbers

Registered No.	Field No.	Plate 1.
70571000	1000	1000
68590014	E54/11/1	0014
67490014R	W14R	W14R
68490001G	MG68/1	MG1
68490181A	DB181A	DB181A

REFERENCES

SHERATON, J.W., 1974 - Chemical analyses of acid igneous rocks from northeast Queensland. Bur. Miner. Resour. Aust. Rec. 1974/162 (unpubl.).

SHERATON, J.W., and LABONNE, B., 1975 - Petrology and geochemistry of acid igneous rocks of northeast Queensland. Bur. Miner. Resour. Aust. Bull. 169.

APPENDIX: PETROGRAPHIC AND LOCALITY DATA

68590014, E54/11/1. Esmeralda Granite.

Locality : 18°12'S, 142°15'E. Croydon.

: Coarse-grained biotite granite. Quartz (30–35%), perthite (40–45%), plagioclase (20%), biotite (2–3%). Accessory apatite and opaque minerals. Alkali feldspar is partly kaolinized, and plagioclase is extensively saussuritized and sericitized. Biotite is pseudomorphed by chlorite and epidote.

68590015, E54/11/1. Esmeralda Granite.

Locality : 18°26½'S, 142°28'E. 5 km northwest of Stanhills Battery.

Petrography : Coarse-grained biotite granite. Quartz (30–35%), microcline-perthite (50%), altered oligoclase (15%), chloritized biotite (2–3%). Minor muscovite, epidote, and opaque minerals. Microcline shows slight alteration.

70571051, Esmeralda Granite.

Locality : 18°52½'S, 142°37'E. 5 km southeast of Esmeralda homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), poikilitic microcline (25%), oligoclase (35–40%), biotite (6–7%). Accessory garnet, apatite, zircon, and epidote. Oligoclase partly sericitized.

70571052, Esmeralda Granite.

Locality : 18°49'S, 142°35'E. 4 km north of Esmeralda homestead.

Petrography : Coarse-grained biotite-muscovite granite. Quartz (30–35%), microcline (40–45%), saussuritized oligoclase (15–20%), biotite (3%), muscovite (2%). Accessory epidote and opaque minerals. Biotite is partly pseudomorphed by muscovite and epidote.

70571053, Esmeralda Granite.

Locality : As for 70571052.

Petrography : Coarse-grained biotite-muscovite granite. Quartz (30%), microcline (40–45%), strongly sericitized oligoclase (15–20%), biotite (5%), muscovite (2%). Accessory tourmaline, epidote, and opaque minerals.

70571054. Esmeralda Granite.

Locality : As for 70571052.

Petrography : Coarse-grained, porphyritic biotite adamellite. Quartz (30%), slightly perthitic microcline (30%), sericitized oligoclase (35%), biotite (6-7%). Minor muscovite, zircon, epidote, and pyrite.

70571055. Esmeralda Granite.

Locality : 18°47½'S, 142°35½'E. 8 km NNE of Esmeralda homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), microcline-perthite (35-40%), altered oligoclase (30%), biotite (5%). Minor muscovite, epidote, apatite, zircon, and opaque minerals.

70571057. Esmeralda Granite.

Locality : 18°37'S, 142°35' E. 1½ km south of Tabletop Creek, on Esmeralda-Croydon road.

Petrography : Medium-grained biotite adamellite. Quartz (30%), slightly perthitic microcline (35%), plagioclase (25-30%), biotite (7-8%). Minor muscovite, epidote, apatite, and opaque minerals. Micrographic and locally spherulitic textures are developed. Microcline is deeply corroded, and biotite is chloritized. The sample was collected near the contact with the Croydon Volcanics, and represents a chilled marginal variety.

70571058. Esmeralda Granite.

Locality : As for 70571057.

Petrography : Medium-grained biotite adamellite, very similar to 70571057.

70571059. Esmeralda Granite.

Locality : 18°36½'S, 142°35' E. Tabletop Creek, on Esmeralda-Croydon road.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), microcline (35%), plagioclase (30%), biotite (7%). Minor relict hornblende is largely pseudomorphed by chlorite and biotite. Plagioclase is strongly sericitized, and shows some replacement by fluorite and epidote. Micrographic intergrowths are common.

70571060. Esmeralda Granite.

Locality : 18°35'S, 142°33'E. 5½ km east of Dam on Nonda Creek.

Petrography : Medium-grained biotite adamellite. Quartz (35%), microcline-perthite (40%), oligoclase (25-30%), biotite (7-8%). Minor zircon, epidote, apatite, graphite, and opaque ore. Feldspars are strongly sericitized. Quartz and alkali feldspar form micrographic intergrowths.

70571062. Esmeralda Granite.

Locality : 18°35'S, 142°32'E. 3 km east of Nonda Creek Dam.

Petrography : Coarse-grained biotite granite. Quartz (35%), perthitic alkali feldspar (35-40%), zoned, sericitized oligoclase (15-20%), chloritized biotite (5%). Minor muscovite, graphite, epidote, zircon, and opaque minerals.

70571064. Esmeralda Granite.

Locality : 18°31½'S, 142°29'E. 7 km SSW of Stanhills Battery.

Petrography ; Medium-grained biotite granite. Quartz (35%), microcline-perthite (45-50%), strongly sericitized plagioclase (10%), chloritized biotite (5%). Minor muscovite, fluorite, apatite, and opaque minerals. Micrographic intergrowths of quartz and alkali feldspar.

70571065. Esmeralda Granite.

Locality : 18°30'S, 142°29'E. 5 km SSW of Stanhills Battery.

Petrography : Medium-grained biotite-muscovite granite. Quartz (30-35%), microcline-perthite (45-50%), sericitized plagioclase (15%), biotite (5%), muscovite (2%). Micrographic intergrowths of quartz and alkali feldspar. The rock shows extensive deuteric alteration of feldspars.

70571066. Esmeralda Granite.

Locality : As for 70571065.

Petrography : Coarse-grained biotite-muscovite granite. Quartz (30-35%), microcline-perthite (45-50%), sericitized oligoclase (10-15%) biotite (4%), muscovite (1-2%). Accessory zircon, apatite, and opaque minerals. Biotite is partly chloritized and pseudomorphed by muscovite. The rock shows deuteric alteration.

70571067. Esmeralda Granite.

Locality : 18°29'S, 142°28½'E. 3 km southwest of Stanhills Battery.

Petrography : Medium-grained biotite granite. Quartz (30-35%), microcline-perthite (45-50%), sericitized oligoclase (15%), biotite (3-4%). Minor muscovite, garnet, epidote, and opaque minerals. Biotite is slightly chloritized; micrographic intergrowths are common.

70571069. Esmeralda Granite.

Locality : 18°27½'S, 142°30½'E. Stanhills Battery.

Petrography : Coarse-grained biotite granite. Quartz (30-35%), microcline perthite (40-45%), altered plagioclase (15-20%), biotite (5%). Minor tourmaline, zoisite, apatite, prehnite, and opaque minerals. Plagioclase is extensively saussuritized and sericitized. Biotite is pseudomorphed by zoisite, prehnite, and muscovite. Micrographic intergrowths surround microcline grains.

70571073. Esmeralda Granite.

Locality : 18°23'S, 142°24'E. Lily Hut.

Petrography : Coarse-grained biotite-muscovite adamellite. Quartz (30%), microcline-perthite (40%), strongly altered plagioclase (25%), altered biotite (4%), muscovite (1%). Minor relict hornblende, epidote, zircon, and opaque minerals. Hornblende and biotite are mostly replaced by chlorite.

70571074. Esmeralda Granite.

Locality : 18°21'S, 142°25½'E. 6 km NNE of Lily Hut.

Petrography : Medium-grained biotite granite. Quartz (35%), slightly perthitic microcline (50%), sericitized oligoclase (10%), biotite (3-4%), secondary muscovite (1%). Minor epidote, apatite, and opaque minerals.

70571075. Esmeralda Granite.

Locality : 18°27'S, 142°27'E. Near Mount Cassiterite tin mines.

Petrography : Coarse-grained biotite granite. Quartz (25-30%), microcline perthite (50%), altered plagioclase (20%), biotite (3-4%), epidote (1%). Minor muscovite, apatite, and opaque minerals. Plagioclase is saussuritized and sericitized, and biotite is partly pseudomorphed by chlorite, muscovite, epidote, and iron oxide.

70571076. Esmeralda Granite.

Locality : 18°18'S, 142°23½'E. 4 km ENE of Alenvale homestead.

Petrography : Coarse-grained biotite-muscovite adamellite. Quartz (30-35%), poikilitic microcline (35-40%), altered plagioclase (20-25%), biotite (4-5%), muscovite (2-3%), epidote (1%). Accessory tourmaline, apatite, and opaque minerals. Plagioclase is strongly sericitized and saussuritized, and biotite is partly chloritized. The rock is slightly greisenized.

70571077. Esmeralda Granite.

Locality : 18°17'S, 142°21½'E. 2½ km north of Alenvale homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), slightly perthitic microcline (35-40%), sericitized oligoclase (25%), biotite (5%). Minor garnet, muscovite, epidote, and opaque minerals.

70571078. Esmeralda Granite.

Locality : 18°16½'S, 142°21'E. 4 km NNW of Alenvale homestead.

Petrography : Coarse-grained, porphyritic biotite granite. Quartz (30%), microcline perthite (45%), altered oligoclase (20%), biotite (4%). Minor muscovite, epidote, and opaque minerals. Oligoclase (An_{26-28}) is extensively altered to sericite and saussurite. Biotite is partly chloritized; microcline forms large anhedral crystals.

70571080. Esmeralda Granite.

Locality : 18°15'S, 142°22'E. 6½ km north of Alenvale homestead.

Petrography : Medium-grained, porphyritic biotite granite. Quartz (35%), microcline-perthite (40-45%), slightly sericitized oligoclase (20%), biotite (3-4%). Minor muscovite, epidote, apatite, and opaque minerals. Microcline occurs as large crystals with micrographic rims.

70571081. Esmeralda Granite.

Locality : As for 70571080.

Petrography : Coarse-grained biotite-muscovite granite. Quartz (30%), kaolinized microcline-perthite (45-50%), sericitized oligoclase (15-20%), biotite (5%), muscovite (2%). Minor chlorite, apatite, epidote, and opaque minerals. Quartz is strained. Micrographic intergrowths of quartz and alkalai feldspar are common.

70571083. Esmeralda Granite.

Locality : 18°15'S, 142°17½'E. 6½ km southeast of Croydon.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), microcline-perthite (40%), plagioclase (20-25%), biotite (5-6%). Accessory apatite, epidote, and opaque minerals. Plagioclase is sericitized and saussuritized, and is oligoclase with rims of albite. Biotite is partly pseudomorphed by chlorite, epidote, and iron oxides. Micrographic intergrowths are very common. Quartz grains show undulose extinction.

70571085. Esmeralda Granite.

Locality : 18°17'S, 142°59'E. 7 km southwest of Forest Home homestead.

Petrography : Medium-grained biotite adamellite. Quartz (25%), microcline-perthite (30%), zoned andesine (35%), biotite (10%), garnet (1%). Accessory epidote, apatite, and zircon.

70571086. Esmeralda Granite.

Locality : 18°29'S, 142°57'E. 5½ km southwest of Langlo homestead.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), perthite (35-40%), oligoclase (25%), biotite (5-10%). Minor garnet, fluorite, and muscovite.

70571087. Esmeralda Granite.

Locality : As for 70571086.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), microcline (30-35%), zoned sericitized oligoclase (35%), biotite (6%). Minor garnet, allanite, zircon, apatite, and opaque minerals. Microcline is slightly kaolinized.

70571088. Esmeralda Granite.

Locality : As for 70571086.

Petrography : Medium-grained biotite granite. Quartz (30%), kaolinized microcline (45-50%), sericitized plagioclase (15%), biotite (5%). Accessory apatite, epidote, and opaque minerals. Biotite is slightly chloritized.

68590024. E54/12/17. Croydon Volcanics.

Locality : 18°28'S, 142°30'E. 4 km northwest of Stanhills Battery.

Petrography : Porphyritic rhyodacite. Phenocrysts (20%) of embayed quartz and altered feldspar in an aphanitic groundmass. Biotite (6%) is largely pseudomorphed by chlorite and epidote. Minor graphite.

70571043. Croydon Volcanics.

Locality : 18°05'S, 142°17'E. 14½ km NNE of Croydon.

Petrography : Porphyritic rhyolite. Phenocrysts (15%) of embayed β-quartz and subordinate feldspar. The groundmass is strongly iron-stained and cryptocrystalline. Feldspar is kaolinized.

70571044. Croydon Volcanics.

Locality : As for 70571043.

Petrography : Porphyritic rhyolite. Phenocrysts (15%) consist of quartz and strongly altered feldspar. The groundmass is cryptocrystalline, and contains minor chloritized biotite and graphite.

70571045. Croydon Volcanics.

Locality : 18°06'S, 142°16½'E. 13 km NNE of Croydon.

Petrography : Porphyritic rhyolite. Phenocrysts (7%) of embayed quartz, and subordinate kaolinized sanidine and sericitized plagioclase. The groundmassis iron-stained and cryptocrystalline. Chlorite (3%), and minor muscovite, fluorite, epidote, and opaque minerals.

70571046. Croydon Volcanics.

Locality : As for 70571045.

Petrography : Porphyritic rhyolite. Phenocrysts (15%) of quartz, alkali feldspar and plagioclase in a cryptocrystalline groundmass Minor muscovite, apatite, epidote, fluorite, and calcite. Graphite xenoliths are present.

70571047. Croydon Volcanics.

Locality : As for 70571045.

Petrography : Porphyritic rhyolite. Phenocrysts (30%) of fractured, embayed quartz, perthitic alkali feldspar, and subordinate altered plagioclase and chloritized biotite in a cryptocrystalline groundmass consisting mainly of quartz and alkali feldspar. Accessory fluorite, zircon, epidote, and opaque minerals. Chlorite replaces biotite and also occurs as small flakes in the groundmass. Micrographic intergrowths are common.

70571048. Croydon Volcanics.

Locality : 18°07'S, 142°15'E. 9½ km north of Croydon.

Petrography : Porphyritic rhyolite welded tuff. Phenocrysts of embayed quartz, kaolinized alkali feldspar, and subordinate altered andesine in a fluidal, cryptocrystalline groundmass containing flattened devitrified pumice fragments and graphite xenoliths. Biotite (1%), chlorite (1%), epidote (1%), and accessory opaque minerals. The groundmass is partly spherulitic.

70571049. Croydon Volcanics.

Locality : 18°09'S, 142°15'E. 6½ km north of Croydon.

Petrography : Rhyodacite. A largely aphyric, cryptocrystalline rock with rare phenocrysts of quartz, kaolinized alkali feldspar, and altered plagioclase. Chlorite (8-10%) and minor calcite, epidote, and opaque minerals.

70571050. Croydon Volcanics.

Locality : As for 70571049.

Petrography : Porphyritic rhyodacite. Phenocrysts (20%) of quartz, sericitized plagioclase and minor turbid alkali feldspar in a cryptocrystalline groundmass. Chlorite pseudomorphs (4%) and minor muscovite, garnet, and epidote.

70571056. Croydon Volcanics.

Locality : 18°43'S, 142°36'E. 16 km north of Esmeralda homestead.

Petrography : Recrystallized porphyritic rhyodacite. Phenocrysts (10%) of embayed quartz, kaolinized alkali feldspar and corroded plagioclase in an inequigranular, partly micrographic and spherulitic groundmass. Chloritic pseudomorphs (10%), minor calcite, muscovite, and epidote. Graphitic xenoliths are also present.

70571061. Croydon Volcanics.

Locality : 18°35'S, 142°32'E. 3 km east of Nonda Creek Dam.

Petrography : Porphyritic rhyodacite (near rhyolite). Phenocrysts (25%) of quartz with subordinate slightly perthitic microcline and sericitized plagioclase. Biotite (3%) is partly pseudomorphed by chlorite, epidote, and opaque minerals. The aphantic groundmass is partly recrystallized, and is rich in quartz and alkali feldspar. Minor garnet muscovite, graphite, apatite, epidote, and opaque ore.

70571063. Croydon Volcanics.

Locality : 18°31½'S, 142°29'E. 7 km SSW of Stanhills Battery.

Petrography : Recrystallized porphyritic porphyritic rhyodacite (near rhyolite). Phenocrysts of embayed quartz, alkali feldspar, plagioclase, and partly chloritized biotite (3%) in a recrystallized, aphanitic groundmass. Minor muscovite, graphite, garnet, and epidote.

70571068. Croydon Volcanics.

Locality : 18°27½'S, 142°30½'E. Stanhills Battery.

Petrography : Porphyritic rhyodacite (near rhyolite). Phenocrysts (20%) of embayed quartz, microcline-perthite and sericitized oligoclase in an aphanitic groundmass. Partly chloritized biotite (3-5%) and minor muscovite, garnet, epidote, apatite, graphite, fluorite, tourmaline, zircon, and opaque ore. Garnet shows marginal replacement by chlorite and biotite.

70571070. Croydon Volcanics.

Locality : 18°27½'S, 142°31½'E. 1½ km east of Stanhills Battery.

Petrography : Porphyritic rhyolite. Phenocrysts (15%) of rounded, embayed quartz corroded microcline-perthite, and subordinate altered oligoclase in a recrystallized, aphanitic groundmass consisting mainly of quartz and alkali feldspar. Chloritized biotite (3%) and minor muscovite, zoisite, and opaque minerals.

70571071. Croydon Volcanics.

Locality : 14½ km south of Idalia homestead.

Petrography : Recrystallized, porphyritic rhyolite. Phenocrysts (25%) of embayed quartz, turbid perthite and subordinate sericitized plagioclase and chloritized biotite (3%) in a recrystallized, aphanitic groundmass consisting mainly of quartz and alkali feldspar. Minor muscovite, epidote, allanite, graphite and opaque ore.

70571072. Croydon Volcanics.

Locality : 18°21'S, 142°33'E. 13½ km NNE of Stanhills Battery.

Petrography : Recrystallized porphyritic rhyodacite (near rhyolite). Phenocrysts (25%) consist of embayed quartz, turbid perthite, and subordinate sericitized plagioclase. The groundmass is fine-grained and recrystallized and consists of quartz (40%), alkali feldspar

70571072. cont/...

(35%), plagioclase (20%), chlorite (3%), muscovite (1%), and minor epidote and opaque minerals. The rock contains graphitic xenoliths.

70571079. Croydon Volcanics.

Locality : 18°14'S, 142°24½'E. 9½ km northeast of Alenvale homestead.

Petrography : Porphyritic rhyodacite (near rhyolite). Phenocrysts (40%) of quartz, perthitic alkali feldspar and sericitized oligoclase in an aphanitic groundmass. Biotite (2%), chlorite (2%), and minor muscovite and graphite. Biotite is chloritized. Micrographic intergrowths are common.

70571082. Croydon Volcanics.

Locality : 18°16'S, 142°18½'E. 9½ km southeast of Croydon.

Petrography : Recrystallized porphyritic rhyodacite. Phenocrysts of quartz, kaolinized alkali feldspar, and saussuritized plagioclase in a recrystallized, largely micrographic groundmass.

70571084. Croydon Volcanics.

Locality : 18°14½'S, 142°36'E. 6½ km WSW of Inorunie homestead.

Petrography : Porphyritic rhyodacite. Phenocrysts (30%) consist of embayed quartz, turbid alkali feldspar, and altered plagioclase. Biotite (3%) and minor fluorite, calcite, muscovite, and opaque minerals. The groundmass is aphanitic.

70571089. Croydon Volcanics.

Locality : 18°28'S, 142°57½'E. 5 km southwest of Langlo homestead.

Petrography : Porphyritic rhyodacite. Quartz (30%), alkali feldspar (40%), plagioclase (20-25%), biotite (7%). Minor chlorite, garnet, calcite, epidote, and opaque minerals. Phenocrysts (10%) of embayed quartz, kaolinized perthite, and sericitized plagioclase in a recrystallized, aphanitic groundmass. Micrographic intergrowths are common around alkali feldspar phenocrysts.

70571090. Croydon Volcanics.

Locality : 18°28'S, 142°57½'E. 4 km southwest of Langlo homestead.

Petrography : Slightly porphyritic rhyodacite. A few phenocrysts of embayed quartz, alkali feldspar, and plagioclase in an unevenly recrystallized, partly cryptocrystalline groundmass. Biotite (10%) and minor opaque minerals. Biotite forms aggregates. Micrographic intergrowths surround grains of alkali feldspar.

70571098. Etheridge Formation: Stockyard Creek Siltstone.
Locality : 18°21½'S, 143°07½'E. 16 km southeast of Forest Home homestead.
Petrography : Carbonaceous siltstone. Fine-grained and slightly banded, consisting mainly of quartz, sericite and graphite. Minor chalcedony and epidote.

70571099. Etheridge Formation: Stockyard Creek Siltstone.
Locality : As for 70571098.
Petrography : Carbonaceous siltstone, similar to 70571098.

70571100. Etheridge Formation: Stockyard Creek Siltstone.
Locality : As for 70571098.
Petrography : Carbonaceous shale. Quartz, sericite, and graphite are the main constituents, with iron-stained patches of chalcedony, quartz, and sericite.

70571101. Etheridge Formation: Stockyard Creek Siltstone.
Locality : As for 70571098.
Petrography : Carbonaceous shale. Well laminated rock containing sericite, quartz, and very fine-grained graphite.

68590016, E54/12/3. Forsayth Granite (near Forest Home).
Locality : 18°16'S, 143°06'E. 6½ km east of Forest Home homestead.
Petrography : Coarse-grained biotite granodiorite. Quartz (25-30%), slightly perthitic microcline (15%), zoned oligoclase (50-55%), biotite (3%). Accessory zircon and opaque minerals. Biotite is partly chloritized.

68590017, E54/12/6. Forsayth Granite.
Locality : 18°19'S, 143°32'E. 1½ km southwest of Georgetown.
Petrography : Coarse-grained biotite adamellite. Quartz (35%), microcline-perthite (35-40%), calcic oligoclase (25%), biotite (3-5%). Minor muscovite, epidote, sphene, and opaque minerals. Alkali feldspar is slightly kaolinized and plagioclase is sericitized. Biotite is partly chloritized.

68590019, E54/12/10. Forsayth Granite.
Locality : 18°13'S, 143°51'E. 11 km west of Eveleigh homestead.
Petrography : Coarse-grained, slightly porphyritic biotite granodiorite. Quartz (25-30%), poikilitic microcline perthite (15-20%), zoned andesine (45-50%), biotite (5%). Minor muscovite, calcite, apatite,

68590019 cont/...

and opaque minerals. Plagioclase is sericitized and saussuritized and biotite is partly chloritized.

68590020, E54/12/13. Forsayth Granite.

Locality : 18°35'S, 143°39'E. 6½ km. east of Forsayth.

Petrography : Medium- to coarse-grained, slightly porphyritic biotite adamellite. Quartz (30%), poikilitic perthite (30%), zoned oligoclase-andesine (30%), biotite (8-10%). Minor muscovite, epidote, garnet, apatite, zircon, and opaque minerals. Quartz is recrystallized and plagioclase is saussuritized. Myrmekitic intergrowths are common.

68590021, E54/12/14. Forsayth Granite.

Locality : 18°13'S, 143°20'E. 5 km SSW of Mount Turner homestead.

Petrography : Coarse-grained, porphyritic biotite-muscovite granite. Quartz (30%), poikilitic microcline (45-50%), corroded oligoclase (15-20%) biotite (3-4%), muscovite (1-2%). Accessory apatite, zircon, epidote, and opaque minerals. Quartz shows undulose extinction. Microcline forms large phenocrysts.

68590417, E54/12/15. Forsayth Granite.

Locality : 18°17'S, 143°37'E. 8 km. east of Georgetown.

Petrography : Biotite granodiorite.

68590100, E55/9/1. Forsayth Granite.

Locality : 18°50'S, 144°10'E. 5 km north of Kidston.

Petrography : Medium-grained, slightly foliated hornblende-biotite tonalite. Quartz (15-20%), corroded andesine (An_{36-38}) (60-65%), biotite (10-12%), hornblende (3%), epidote (3%). Accessory allanite, apatite, sphene, calcite, and opaque minerals. Biotite is partly chloritized.

68590101, E55/9/2. Forsayth Granite.

Locality : 18°20'S, 144°03'E. 20 km NNW of Einasleigh.

Petrography : Coarse-grained biotite-muscovite granite. Quartz (30%), microcline perthite (65-70%), sericitized plagioclase (2-3%), biotite (1%), muscovite (1%). Accessory epidote and opaque minerals.

68590103, E55/9/4. Forsayth Granite.

Locality : 18°35'S, 144°22'E. 13 km NNE of Carpentaria Downs homestead.

Petrography : Coarse-grained biotite adamellite (near granite). Quartz (30-35%), perthite (40-45%), sericitized oligoclase-andesine (20-25%), biotite

68590103 cont/...

(1-2%). Minor muscovite, apatite and opaque minerals. Biotite is partly chloritized.

70571034. Forsayth Granite.

Locality : 17°12'S, 144°26'E. Big Jackson Fluorite mine.

Petrography : Coarse-grained, slightly foliated biotite-muscovite adamellite. Quartz (35%), poikilitic microcline (25-30%), sericitized, zoned calcic oligoclase (30-35%), biotite (4%), muscovite (3%). Accessory fluorite and epidote. Quartz is recrystallized and strained.

70571035. Forsayth Granite.

Locality : 17°13'S, 144°26½'E. 1½ km east of Dargalong.

Petrography : Medium-grained, foliated biotite-muscovite adamellite. Quartz (35%), poikilitic microcline (20%), plagioclase (35-40%), biotite (5%), muscovite (4%). Accessory epidote, zircon, and opaque minerals. Muscovite forms crystals up to 1 cm in diameter.

70571102. Forsayth Granite (near Forest Home).

Locality : 18°19'S, 143°05½'E. 9½ km southeast of Forest Home homestead.

Petrography : Medium-grained biotite granodiorite. Quartz (25%), microcline (15%), sericitized oligoclase-andesine (50-55%), biotite (5%). Minor muscovite, zircon, apatite, and opaque minerals. Biotite is partly chloritized.

70571110. Forsayth Granite.

Locality : 18°18'S, 143°20'E. 11 km east of Prestwood homestead.

Petrography : Medium-grained biotite-muscovite adamellite (near granodiorite). Quartz (25-30%), poikilitic microcline (25%), oligoclase (40-45%), biotite (3-4%), muscovite (2%). Accessory zircon, apatite, and opaque minerals. Biotite is partly chloritized.

70571111. Forsayth Granite.

Locality : 18°17½'S, 143°24'E. 14½ km west of Georgetown.

Petrography : Medium-grained, slightly foliated biotite-muscovite adamellite. Quartz (35%), poikilitic microcline (35%), sericitized oligoclase (20%), biotite (4-5%), muscovite (2-3%). Accessory epidote.

70571112. Forsayth Granite.

Locality : 18°17½'S, 143°27'E. 9½ km west of Georgetown.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), poikilitic microcline (40%), oligoclase (20-25%), biotite (8-10%). Minor muscovite, epidote, apatite, and opaque minerals. Quartz shows undulose extinction. Oligoclase is sericitized and saussuritized.

70571113. Forsayth Granite.

Locality : 18°17'S, 143°29'E. 6½ km west of Georgetown.

Petrography : Coarse-grained, slightly porphyritic biotite granodiorite. Quartz (20%), microcline (10-15%), andesine (An_{30-32}) (50-55%), biotite (15%). Minor muscovite, zircon, sphene, epidote, apatite, and allanite.

70571114. Forsayth Granite

Locality : 18°18½'S, 143°32'E. 1 km SSW of Georgetown.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%) microcline perthite (30-35%), zoned oligoclase-andesine (30-35%), biotite (6-7%), epidote (1%). Minor muscovite, apatite, and opaque minerals. Plagioclase is sericitized and saussuritized.

70571115. Forsayth Granite

Locality : As for 70571114.

Petrography : Medium-grained biotite-muscovite adamellite. Quartz (30%), microcline perthite (40-45%), sericitized oligoclase (20-25%), biotite (5%), muscovite (1%). Accessory epidote, sphene, allanite, and opaque minerals. Biotite is partly chloritized.

70571116. Forsayth Granite

Locality : 18°21'S, 143°31'E. 6½ km SSW of Georgetown.

Petrography : Porphyritic biotite-muscovite adamellite. Quartz (30%), microcline perthite (40-45%), zoned oligoclase (20-25%), biotite (5%), muscovite (1%). Accessory epidote, sphene, and apatite. Microcline forms large, poikilitic phenocrysts.

70571117. Forsayth Granite

Locality : 18°22½'S, 143°31'E. 8 km SSW of Georgetown.

Petrography : Medium-grained biotite-muscovite granite. Quartz (30-35%), slightly perthitic microcline (45-50%), zoned oligoclase (10-15%), biotite (5-6%), muscovite (2-3%). Minor chlorite, zircon, apatite, and opaque minerals.

70571118. Forsayth Granite

Locality : 18°30'S, 143°31'E. 13 km north-west of Forsayth.

Petrography : Medium-grained, foliated biotite-muscovite adamellite. Quartz (30-35%), slightly perthitic microcline (35-40%), sericitized oligoclase (20-25%), biotite (2-3%), muscovite (2%). Minor epidote, apatite, and opaque minerals. Quartz is fractured and shows undulose extinction, and micas are deformed.

70571119. Forsayth Granite

Locality : 18°33½'S, 143°33½'E. 5 km north-west of Forsayth.

Petrography : Coarse-grained, foliated biotite-muscovite adamellite. Quartz (30%), poikilitic microcline (40%), sericitized oligoclase (20-25%), biotite (5%), muscovite (2%). Minor calcite, apatite, zircon, and opaque minerals. Quartz is partly recrystallized and shows undulose extinction.

70571120. Forsayth Granite

Locality : 18°33½'S, 143°34'E. 3 km north-west of Forsayth.

Petrography : Coarse-grained, foliated, slightly porphyritic biotite-muscovite adamellite. Quartz (30%), microcline (25-30%), andesine (30-35%), biotite (7%), muscovite (2%). Accessory apatite, epidote, and opaque minerals.

70571121. Forsayth Granite

Locality : 18°37'S, 143°33'E. 6½ km south-west of Forsayth.

Petrography : Medium- to coarse-grained, foliated, slightly porphyritic biotite-muscovite adamellite. Quartz (30%), microcline (30-35%), plagioclase (30%), biotite (5%), muscovite (4%). Accessory epidote, apatite, and opaque minerals.

70571169. Forsayth Granite

Locality : 18°50'S, 144°11'E. 5½ km SSE of The Oaks homestead.

Petrography : Medium-grained, slightly foliated hornblende-biotite tonalite. Quartz (15-20%), corroded andesine (An_{36-38}) (60-65%), biotite (10%), hornblende (3%), epidote (3%), minor microcline. Accessory allanite, apatite, sphene, and opaque minerals. Quartz shows undulose extinction.

70571170. Forsayth Granite

Locality : 18°42'S, 144°09'E. 18½ km west of Carpentaria Downs homestead.

Petrography : Medium-grained, slightly foliated biotite-muscovite granodiorite. Quartz (25-30%), microcline (15-20%), andesine (40-45%), biotite (3-4%), muscovite (2-3%), epidote (2%). Accessory allanite, apatite, and opaque minerals. Quartz shows undulose extinction and mica crystals are deformed. Plagioclase is sericitized and saussuritized.

70571192. Forsayth Granite

Locality : 18°44'S, 144°17'E. 3 km WSW of Carpentaria Downs homestead.

Petrography : Sheared, coarse-grained biotite granodiorite. Quartz (25-30%), altered alkali feldspar (15-20%), oligoclase (50-55%), biotite (1%), muscovite (1%). Accessory epidote. The rock is strongly deformed, with large feldspar porphyroclasts in a matrix containing streaky mica-rich bands and finely granulated quartz and feldspar.

70571194. Forsayth Granite

Locality : 18°35'S, 143°40'E. 6½ km east of Forsayth.

Petrography : Coarse-grained, slightly porphyritic, foliated biotite adamellite. Quartz (25%), microcline perthite (30%), sericitized oligoclase (An_{25-27}) (35%), biotite (10%). Minor muscovite, zircon, sphene, apatite, and opaque minerals.

70571195. Forsayth Granite

Locality : As for 70571194

Petrography : Coarse-grained, slightly porphyritic biotite adamellite. Quartz (25%), microcline (30%), oligoclase (35%), biotite (10%). Minor muscovite, zircon, epidote, apatite, calcite, and opaque minerals.

70571196. Forsayth Granite

Locality : As for 70571194

Petrography : Medium-grained, foliated biotite granite. Quartz (25-30%), slightly perthitic microcline (45-50%), sericitized oligoclase (20%), biotite (5%). Minor muscovite, zircon, apatite, and epidote. Myrmekitic intergrowths are common.

70571197. Forsayth Granite

Locality : 18°35'S, 143°35½'E. 1 km north-west of Forsayth.

Petrography : Medium-grained, foliated muscovite granite. Quartz (35%), microcline (45-50%), sericitized oligoclase (15%), muscovite (2-3%). Minor calcite and opaque minerals.

70571198. Forsayth Granite

Locality : As for 70571197

Petrography : Medium-grained biotite-muscovite granite. Quartz (30%), microcline (50-55%), sericitized oligoclase (10-15%), biotite (2%), muscovite (2%). Minor epidote and opaque minerals. Biotite is slightly chloritized. Quartz shows undulose extinction.

70571199. Forsayth Granite

Locality : As for 70571197

Petrography : Medium- to coarse-grained, foliated biotite-muscovite granite. Similar to 70571198, but contains 4% of biotite.

70571217. Forsayth Granite

Locality : 18°18'S, 143°47'E. 25 km east of Georgetown.

Petrography : Medium-grained, slightly porphyritic biotite adamellite. Quartz (30%), microcline (20-25%), sericitized, zoned andesine (40-45%), biotite (3%), muscovite (1%), epidote (1%). Accessory apatite and opaque minerals. Microcline occurs as phenocrysts and interstitial grains.

70571218. Forsayth Granite

Locality : 18°18'S, 143°48'E. 26 km east of Georgetown.

Petrography : Medium-grained, slightly porphyritic biotite adamellite, Quartz (25%), poikilitic microcline (25%), altered calcic oligoclase (45%), biotite (6%). Minor calcite, fluorite, epidote, zircon, sphene, apatite, allanite, and opaque minerals. Microcline grains have corroded margins and micrographic textures are locally developed. Plagioclase is extensively altered to sericite, calcite, etc., and myrmekitic intergrowths occur between grains of plagioclase and alkali feldspar. Biotite is partly pseudomorphed by calcite, epidote, iron oxide, etc.

70571222. Forsayth Granite

Locality : 18°15'S, 143°51½'E. 9 km west of Evelleigh mine.

Petrography : Medium-grained biotite-muscovite granodiorite. Quartz (25%), poikilitic, slightly perthitic microcline (10-15%), andesine (55-60%), biotite (2%), muscovite (3%). Quartz is partly recrystallized. Plagioclase is sericitized.

70571223. Forsayth Granite

Locality : 18°15'S, 143°51'E. 10½ km west of Eveleigh mine.

Petrography : Medium-grained biotite granodiorite. Quartz (25%), microcline (20%), zoned, sericitized oligoclase-andesine (45%), biotite (8%), Minor calcite, muscovite, epidote, apatite, and opaque minerals.

70571224. Forsayth Granite

Locality : 18°15½'S, 143°50'E. 11 km west of Eveleigh mine.

Petrography : Medium-grained biotite granodiorite, very similar to 70571223.

70571225. Forsayth Granite

Locality : 18°16'S, 143°50'E. 12½ km west of Eveleigh mine.

Petrography : Medium-grained biotite-muscovite granodiorite. Quartz (25%), microcline (15%), zoned, sericitized oligoclase-andesine (50%), biotite (6%), muscovite (2%). Minor apatite, epidote, and opaque minerals.

70571226. Forsayth Granite

Locality : 18°16'S, 143°41½'E. 14½ km east of Georgetown.

Petrography : Medium-grained, slightly porphyritic biotite-muscovite granodiorite. Quartz (25-30%), microcline (15-20%), zoned oligoclase-andesine (45-50%), biotite (5%), muscovite (2%). Minor calcite, epidote, and apatite. Plagioclase is saussuritized and sericitized.

70571232. Forsayth Granite

Locality : 18°16½'S, 143°38'E. 10½ km east of Georgetown.

Petrography : Medium-grained biotite granodiorite. Quartz (25%), poikilitic orthoclase perthite (20%), zoned, calcic andesine (40-45%), biotite (8%), epidote (1%). Minor muscovite, sphene, calcite, zircon, and opaque minerals. Plagioclase is partly sericitized and saussuritized.

70571233. Forsayth Granite

Locality : 18°17'S, 143°34'E. 2½ km east of Georgetown.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), microcline perthite (35-40%), altered oligoclase-andesine (An_{28-34}) (30-35%), biotite (5%), muscovite (1%), Minor epidote, apatite, sphene, allanite, and opaque minerals.

68590416, E54/12/8. Robin Hood Granite

Locality : 18°49'S, 143°39'E. 5½ km north-west of Robin Hood Homestead.

Petrography : Medium- to coarse-grained biotite-muscovite adamellite. Quartz (30%), microcline (35%), sericitized sodic plagioclase (30-35%), biotite (1%), muscovite (1%). Accessory garnet, apatite, and zircon.

68590018A, E54/12/9A. Robin Hood Granite

Locality : 18°50'S, 143°42'E. 1½ km north-west of Robin Hood homestead.

Petrography : Coarse-grained biotite granite. Quartz (35%), microcline perthite (40-45%), saussuritized zoned oligoclase (20%), biotite (1%), Minor muscovite, zircon, and opaque minerals. Quartz shows undulose extinction. Biotite is partly chloritized.

68590018B, E54/12/9B. Robin Hood Granite

Locality : As for 68590018A.

Petrography : Fine- to medium-grained, slightly foliated biotite-muscovite granite. Quartz (35-40%), microcline perthite (45%), saussuritized plagioclase (10%), biotite (1-2%), muscovite + sericite (5%). Quartz shows undulose extinction.

70571122. Robin Hood Granite

Locality : 18°51½'S, 143°43'E. 2½ km SSE of Robin Hood homestead.

Petrography : Coarse-grained hornblende-biotite granodiorite. Quartz (25%), slightly perthitic microcline (15%), zoned, sericitized andesine (50%), biotite (5%), hornblende (2%), Minor muscovite, sphene, apatite, epidote, and opaque minerals. Hornblende is partly pseudomorphed by biotite, and biotite is slightly chloritized.

70571123. Robin Hood Granite

Locality : $18^{\circ}56\frac{1}{2}'S$, $143^{\circ}43\frac{1}{2}'E$. 12 km SSE of Robin Hood homestead.

Petrography : Coarse-grained hornblende-biotite granodiorite, very similar to 70571122.

70571124. Robin Hood Granite

Locality : $18^{\circ}58\frac{1}{2}'S$, $143^{\circ}47'E$. $17\frac{1}{2}$ km SSE of Robin Hood homestead.

Petrography : Medium-grained leucocratic adamellite. Quartz (35%), slightly perthitic microcline (40-45%), sericitized oligoclase (An_{26-28}) (20-25%). Minor muscovite, fluorite, epidote, and opaque minerals. Muscovite replaces primary biotite.

70571125. Robin Hood Granite

Locality : As for 70571124

Petrography : Medium-grained leucocratic muscovite granite. Quartz (30%), microcline (45-50%), plagioclase (15-20%), muscovite (2-3%). Accessory opaque minerals.

70571126. Robin Hood Granite

Locality : $19^{\circ}00'S$, $143^{\circ}46\frac{1}{2}'E$. $6\frac{1}{2}$ km north-west of Spring Valley homestead.

Petrography : Coarse-grained hornblende-biotite granodiorite. Quartz (25%), turbid microcline (20-25%), zoned andesine (45-50%), hornblende (2%), biotite (4%), magnetite (1%). Accessory fluorite, sphene, allanite, apatite, and epidote.

70571128. Robin Hood Granite

Locality : $19^{\circ}04'S$, $143^{\circ}46'E$. 5 km south-east of Spring Valley homestead.

Petrography : Medium-grained, slightly foliated leucocratic muscovite granite. Quartz (30-35%), microcline (50-55%), sericitized oligoclase (10-15%), muscovite (2%). Minor relict biotite. Quartz shows undulose extinction.

68590124, E55/13/6. Dumbano Granite

Locality : $19^{\circ}37'S$, $144^{\circ}52'E$. $6\frac{1}{2}$ km north of Wando Vale homestead.

Petrography : Medium- to coarse-grained biotite granodiorite. Quartz (30%), microcline (15-20%), oligoclase (45%), biotite (2-3%). Minor muscovite, chlorite, epidote, and opaque minerals. The rock is slightly sheared.

68590208, F55/1/17. Dumbano Granite

Locality : 20°01½'S, 144°38'E. 8 km south-west of Reedy Springs homestead.

Petrography : Coarse-grained, slightly foliated biotite granodiorite.

70571129. Dumbano Granite

Locality : 19°12'S, 143°59'E. 1½ km south-west of Bagstowe homestead.

Petrography : Medium-grained leucocratic granite. Quartz (25%), orthoclase perthite (60-65%), oligoclase (10%). Minor chloritized biotite, allanite, sphene, and opaque minerals. Micrographic intergrowths of quartz and alkali feldspar are fairly abundant.

70571131. Dumbano Granite

Locality : 19°20½'S, 143°52'E. 17½ km south-west of Glenmore homestead.

Petrography : Fine- to medium-grained leucocratic granite. Quartz (30%), kaolinized microcline (50-55%), sericitized sodic oligoclase (15%). Minor biotite, muscovite, and opaque minerals. Myrmekite occurs between grains of alkali feldspar and plagioclase.

70571132. Dumbano Granite

Locality : 19°19'S, 143°53'E. 13½ km south-west of Glenmore homestead.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), slightly perthitic microcline (30-35%), sericitized oligoclase (35%), biotite (2-3%), epidote (2%). Minor muscovite, sphene, and apatite.

70571138. Dumbano Granite

Locality : 19°18½'S, 143°54'E. 12 km south-west of Glenmore homestead.

Petrography : Medium-grained leucocratic adamellite. Quartz (25-30%), microcline (30%), zoned andesine (40%). Minor biotite, muscovite, epidote, garnet, and opaque minerals. Plagioclase is sericitized and saussuritized.

70571139. Dumbano Granite

Locality : As for 70571138.

Petrography : Medium-grained biotite-muscovite adamellite. Quartz (30%), slightly perthitic microcline (30%), zoned oligoclase-andesine (35-40%), biotite (1%), muscovite (1-2%). Accessory opaque minerals. Quartz shows undulose extinction. Feldspars are rather altered, with development of secondary muscovite.

70571157. Dumbano Granite

Locality : 19°11½'S, 143°59½'E. ½ km north-west of Bagstowe homestead.

Petrography : Medium-grained biotite adamellite. Quartz (30%), orthoclase perthite (45%), sericitized oligoclase (25%), biotite (2%). Accessory apatite and opaque minerals. Biotite is partly chloritized.

70571162. Dumbano Granite

Locality : 19°09½'S, 143°58½'E. 4km NNW of Bagstowe homestead.

Petrography : Coarse-grained, slightly foliated biotite-epidote-quartz diorite. Quartz (5-6%), microcline (5%), andesine (70%), biotite (8%), epidote (10%). Minor muscovite, sphene, calcite, allanite, and opaque minerals. Biotite is partly chloritized.

70571164. Dumbano Granite

Locality : 19°02½'S, 143°58'E. 3 km north-west of Ballynure homestead.

Petrography : Medium-grained, foliated biotite granite. Quartz (30%), microcline (50%), sericitized oligoclase (15%), biotite (3%), Accessory apatite, garnet, and opaque minerals. Quartz shows undulose extinction. Biotite flakes have a preferred orientation.

70571165. Dumbano Granite

Locality : As for 70571165.

Petrography : Medium-grained, foliated biotite granite. Similar to 70571164, but does not contain garnet.

70571166. Dumbano Granite

Locality : 19°02½'S, 144°03'E. 3 km south of Butlers Knob.

Petrography : Coarse-grained biotite trondhjemite. Quartz (30%), microcline (5%), andesine (An_{32-34}) (60%), biotite (5%), epidote (1%), Minor muscovite, apatite, sphene, and opaque minerals. Biotite is slightly chloritized.

70571167. Dumbano Granite.

Locality : 19°01½'S, 144°03½'E. 1½ km SSE of Butlers Knob.

Petrography : Medium-grained biotite trondhjemite. Quartz (25-30%), kaolinized alkali feldspar (5%), andesine (An_{36-38}) (60%), biotite (5%), epidote (3%). Minor muscovite allanite, apatite, and opaque minerals. Quartz shows undulose extinction. Plagioclase is sericitized and saussuritized and biotite is partly chloritized.

70571168. Dumbano Granite

Locality : As for 70571167

Petrography : Coarse-grained biotite trondhjemite. Quartz (30%), kaolinized alkali feldspar (3-4%), andesine (An_{32-34}) (60%), biotite (4%), epidote (2%). Minor muscovite, allanite, and opaque minerals. Andesine is sericitized and saussuritized and biotite is partly chloritized.

70571179. Dumbano Granite

Locality : 19°12½'S, 144°15'E. 11 km ENE of Oak Park homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), microcline (25-30%), slightly zoned calcic oligoclase (40-45%), biotite (1-2%). Minor muscovite and opaque minerals. Plagioclase is saussuritized and sericitized and biotite is partly chloritized.

70571180. Dumbano Granite

Locality : 19°12½'S, 144°15½'E. 13 km ENE of Oak Park homestead.

Petrography : Coarse-grained, porphyritic biotite adamellite (near granodiorite). Quartz (25-30%), microcline (25-30%), zoned, sericitized andesine (40-45%), biotite (3%). Minor muscovite, epidote, and opaque minerals. Quartz shows undulose extinction. Microcline forms occasional euhedral, poikilitic phenocrysts up to 5 cms in length.

70571181. Dumbano Granite

Locality : $19^{\circ}12\frac{1}{2}'S$, $144^{\circ}17'E$. 9km west of Lyndhurst homestead.

Petrography : Coarse-grained biotite adamellite. Similar to 70571180, with perthitic microcline.

70571182. Dumbano Granite

Locality : $19^{\circ}13'S$, $144^{\circ}19'E$. 5 km west of Lyndhurst homestead.

Petrography : Medium-grained biotite-muscovite granodiorite. Quartz (25-30%), slightly perthitic microcline (20-25%), oligoclase (An_{26-28}) (45%), biotite (3%), muscovite (2-3%), epidote (2%). Accessory apatite, sphene, calcite, and opaque minerals. Plagioclase is saussuritized and sericitized.

70571183. Dumbano Granite

Locality : $19^{\circ}14'S$, $144^{\circ}21'E$. 3 km south-west of Lyndhurst homestead.

Petrography : Medium-grained, slightly foliated biotite adamellite. Quartz (30-35%), kaolinized microcline perthite (40%), oligoclase (25%), biotite (1-2%). Minor muscovite, sphene, and opaque minerals.

68590127, E55/13/9. Dido Granodiorite

Locality : $19^{\circ}09'S$, $144^{\circ}27\frac{1}{2}'E$. 11km ENE of Lyndhurst homestead.

Petrography : Medium-grained hornblende-biotite tonalite. Quartz (20%), andesine (An_{42}) (65-70%), biotite (10%), hornblende (2%). Accessory allanite, sphene, apatite, sericite, and opaque minerals. Quartz shows undulose extinction, plagioclase is partly sericitized and biotite is partly chloritized.

70571173. Dido Granodiorite

Locality : $19^{\circ}10'S$, $144^{\circ}31'E$. 20 km north-west of Pandanus homestead.

Petrography : Medium- to coarse-grained olivine gabbro. Labradorite (70%), olivine + pyroxene (25%), magnetite (2-3%). Minor spinel, quartz, and epidote. Olivine is partly serpentinized and the pyroxenes (hypersthene and clinopyroxene) are largely replaced by amphibole and chlorite.

70571174. Dido Granodiorite

Locality : 19°09'S, 144°33½'E. 24 km north-west of Pandanus homestead.

Petrography : Medium-grained hornblende-biotite-quartz diorite. Quartz (6-8%), zoned andesine (65-70%), hornblende (15-20%), biotite (4%). Accessory apatite, zircon, epidote, sphene, and opaque minerals. Biotite is slightly chloritized.

70571175. Dido Granodiorite

Locality : 19°10'S, 144°28'E. 11 km ENE of Lyndhurst homestead.

Petrography : Medium- to coarse-grained, slightly foliated hornblende-biotite tonalite. Quartz (15-20%), alkali feldspar (1-2%), calcic andesine (65-70%), hornblende (6-7%), biotite (6%), epidote (2%). Accessory sphene, apatite, and opaque minerals. Hornblende is partly pseudomorphed by biotite and epidote.

70571176. Dido Granodiorite

Locality : As for 70571175

Petrography : Medium-grained, slightly foliated hornblende-biotite tonalite. Quartz (15-20%), andesine (65-70%), hornblende (5%), biotite (7%), epidote (2%). Accessory sphene, apatite, allanite, and opaque minerals.

70571177. Dido Granodiorite

Locality : 19°13'S, 144°31'E. 22 km WNW of Pandanus homestead.

Petrography : Medium-grained, foliated hornblende-biotite-quartz diorite. Quartz (10%), andesine (60-65%), hornblende (20%), biotite (5%). Minor alkali feldspar, epidote, apatite, and opaque minerals. Quartz shows undulose extinction.

70571178. Dido Granodiorite

Locality : 19°13½'S, 144°32'E. 21 km WNW of Pandanus homestead.

Petrography : Medium-grained hornblende-biotite-quartz diorite. Quartz (7%), microcline (5%), zoned calcic andesine (65%), hornblende (15%), biotite (5-10%). Accessory zircon, apatite, epidote, sphene, and opaque minerals. Andesine crystals have sericitized cores. A little relict clinopyroxene is present.

70571184. Dido Granodiorite

Locality : 19°09'S, 144°28'E. 11 km ENE of Lyndhurst homestead.

Petrography : Medium-grained, foliated hornblende-biotite tonalite. Quartz (20%), microcline (3%), slightly sericitized andesine (65%), hornblende (4%), biotite (6%), epidote (2%). Minor muscovite, apatite, allanite, sphene, and opaque minerals. Hornblende is partly pseudomorphed by epidote and biotite. Quartz shows undulose extinction.

70571185. Dido Granodiorite

Locality : As for 70571184

Petrography : Medium- to coarse-grained hornblende-biotite tonalite. Quartz (20%), andesine (65-70%), hornblende (4%), biotite (5%), epdiote (2%), opaque minerals (1%). Minor muscovite and apatite.

70571186A. Dido Granodiorite

Locality : 19°08'S, 144°27½'E. 12 km north-east of Lyndhurst homestead.

Petrography : Garnetiferous aplite, intruding 70571186B. Quartz (25%), slightly perthitic microcline (60%), oligoclase (10%), muscovite (1-2%), garnet (1%). Accessory zircon and opaque minerals. The rock is fine-grained and slightly micrographic.

70571186B. Dido Granodiorite

Locality : As for 70571186A

Petrography : Medium- to coarse-grained hornblende-biotite tonalite, very similar to 70571185.

70571187. Dido Granodiorite

Locality : 19°07'S, 144°27½'E. 13½ km north-east of Lyndhurst homestead.

Petrography : Medium-grained hornblende-biotite tonalite. Quartz (20%), microcline (2-3%), sericitized andesine (65-70%), hornblende (1%), biotite (6-7%), epidote (2%). Accessory sphene, allanite, apatite, and opaque minerals. Hornblende is largely pseudomorphed by epidote and biotite.

70571188. Dido Granodiorite

Locality : 19°06½'S, 144°27½'E. 14½ km north-east of Lyndhurst homestead.

Petrography : Medium-grained, slightly foliated biotite tonalite (near trondhjemite). Quartz (20%), microcline (5%), zoned oligoclase-andesine (65%), biotite (7%). Minor epidote, muscovite, sphene, allanite, apatite, and opaque minerals. Biotite is partly chloritize

70571189. Dido Granodiorite

Locality : 19°06'S, 144°27½'E. 15 km north-east of Lyndhurst homestead.

Petrography : Medium-grained biotite tonalite (near trondhjemite). Quartz (20%), potash feldspar (2%), zoned oligoclase-andesine (65%), biotite (7%), epidote (3%). Minor relict hornblende muscovite, allanite, sphene, apatite, calcite, and opaque minerals.

68590415, E54/12/4. Cumberland Range Cauldron Subsidence Area

Locality : 18°16½'S, 143°14'E. 1½ km north-east of Prestwood homestead.

Petrography : Porphyritic hornblende-biotite microgranodiorite.

68590025, E54/12/18. Cumberland Range Cauldron Subsidence Area

Locality : 18°18'S, 143°16'E. 5 km ESE of Prestwood homestead.

Petrography : Porphyritic biotite microadamellite. Phenocrysts (45%) consist of embayed quartz, saussuritized plagioclase, turbid alkali feldspar, and chloritized biotite in an aphanitic, quartzo-feldspathic groundmass. Minor epidote and zircon.

70571103. Cumberland Range Cauldron Subsidence Area

Locality : 18°16½'S, 143°14'E. 1½ km east of Prestwood homestead.

Petrography : Porphyritic hornblende-biotite microgranodiorite. Quartz (20%), perthitic alkali feldspar (15-20%), oligoclase-andesine (50-55%), biotite (5%), hornblende (2%). Accessory sphene. Phenocrysts of rounded, embayed quartz, zoned plagioclase, and minor alkali feldspar, biotite, and hornblende in an aphanitic groundmass. Hornblende is largely replaced by calcite and epidote.

70571104A. Cumberland Range Cauldron Subsidence Area

Locality : 18°16½'S, 143°15'E. 2½ km east of Prestwood homestead.

Petrography : Hornblende- and biotite-rich xenolith in 70571104B.

70571104B. Cumberland Range Cauldron Subsidence Area

Locality : As for 70571104A.

Petrography : Porphyritic hornblende-biotite microgranodiorite. Similar to 70571103, but coarser-grained and with a greater proportion of hornblende (4%).

70571105. Cumberland Range Cauldron Subsidence Area

Locality : 18°19'S, 143°16'E. 5½ km south-east of Prestwood homestead.

Petrography : Porphyritic biotite microadamellite. Phenocrysts (40%) of embayed quartz, saussuritized plagioclase, and turbid alkali feldspar in an aphanitic groundmass, containing chloritized biotite. Minor epidote and calcite.

70571106. Cumberland Range Cauldron Subsidence Area

Locality : 18°18'S, 143°16½'E. 6½ km ESE of Prestwood homestead.

Petrography : Porphyritic biotite microadamellite. Phenocrysts of quartz, kaolinized alkali feldspar, saussuritized oligoclase-andesine, and chloritized biotite in an aphanitic groundmass. Minor epidote, calcite, zircon, allanite, and opaque minerals.

70571091. Cumberland Range Cauldron Subsidence Area

Locality : 18°32'S, 143°19'E. 8 km SSE of Green Hills outstation.

Petrography : Porphyritic dacite. Phenocrysts (40%) consist of rounded, embayed quartz and saussuritized plagioclase, with minor alkali feldspar. The groundmass is cryptocrystalline and contains small flakes of biotite. Hornblende is pseudomorphed by epidote, calcite, and chlorite. Minor muscovite, zoisite, and sphene.

70571092. Cumberland Range Cauldron Subsidence Area

Locality : 18°30'S, 143°19'E. 5 km SSE of Green Hills outstation.

Petrography : Porphyritic dacite, similar to 70571091. Plagioclase is andesine (An_{34}).

70571093. Cumberland Range Cauldron Subsidence Area

Locality : 18°31½'S, 143°20'E. 8 km SSE of Green Hills outstation.

Petrography : Porphyritic dacite. Phenocrysts (30%) of subhedral quartz, corroded plagioclase, and minor alkali feldspar. Biotite (5%) and relict hornblende are the ferromagnesian constituents. The groundmass is cryptocrystalline and there is some alignment of biotite flakes. Minor epidote, calcite, chlorite, and iron oxide.

70571094. Cumberland Range Cauldron Subsidence Area

Locality : 18°28½'S, 143°18'E. 2½ km SSE of Green Hills outstation.

Petrography : Porphyritic dacite. Phenocrysts (60%) of calcic andesine, subhedral quartz, and minor turbid alkali feldspar. Biotite (5%) is altered and forms plates which

are oriented parallel to the flow banding. Hornblende is almost completely replaced by calcite and epidote. The groundmass is cryptocrystalline. Accessory apatite, sphene, and opaque minerals.

70571095. Cumberland Range Cauldron Subsidence Area

Locality : 18°28'S, 143°15'E. 5 km west of Green Hills outstation.

Petrography : Slightly porphyritic rhyodacite. A few phenocrysts of altered, zoned andesine and turbid, microperthitic alkali feldspar in an aphanitic quartzo-feldspathic groundmass. Chloritized ferromagnesian minerals (10%), minor calcite, and opaque minerals.

70571097. Cumberland Range Cauldron Subsidence Area

Locality : 18°23½'S, 143°11½'E. 24 km south-east of Forest Home homestead.

Petrography : Porphyritic rhyodacite. Phenocrysts (35%) of quartz, kaolinized alkali feldspar, ~~and~~ turbid oligoclase (An_{25-28}), ~~with~~ and chloritized biotite (5%). The groundmass is aphanitic and contains quartz, alkali feldspar, and minor plagioclase, calcite, and epidote.

70571107. Cumberland Range Cauldron Subsidence Area

Locality : 18°18'S, 143°16½'E. 5½ km ESE of Prestwood homestead.

Petrography : Porphyritic rhyodacite. Quartz (30%), alkali feldspar (35%), plagioclase (30%), biotite (4%). Phenocrysts of subhedral quartz, zoned oligoclase-andesine, and turbid alkali feldspar in an aphanitic groundmass. Biotite is partly chloritized.

70571108. Cumberland Range Cauldron Subsidence Area

Locality : 18°17'S, 143°18'E, 9 km east of Prestwood homestead.

Petrography : Porphyritic dacite dyke. Phenocrysts of saussuritized plagioclase, embayed quartz, chloritized biotite, and relict hornblende in an apanitic groundmass. There is much secondary calcite, chlorite, and sericite.

70571109. Cumberland Range Cauldron Subsidence Area

Locality : 18°17½'S, 143°19'E. 10½ km east of Prestwood homestead.

Petrography : Slightly porphyritic dacite dyke. A few phenocrysts of quartz and sericitized feldspar in a partly cryptocrystalline groundmass. The main ferromagnesian mineral is biotite, which shows extensive alteration to chlorite. Accessory apatite and opaque minerals.

70571130, Bagstowe Ring Dyke Complex.
Locality: 19°12'S, 143°59'E. 1½ km south-west of Bagstowe homestead.
Petrography: Porphyritic rhyodacite (near dacite). Phenocrysts (25%) of embayed quartz, turbid, calcic andesine, and kaolinized alkali feldspar in a recrystallized, aphanitic matrix. Aggregates of biotite and some hornblende, and minor apatite, epidote, and opaque minerals are also present.

70571133, Bagstow Ring Dyke Complex.
Locality: 19°19'S, 143°53'E. 13½ km south-west of Glenmore homestead.
Petrography: Spherulitic rhyolite. A few phenocrysts of rounded quartz, kaolinized alkali feldspar (probably microcline), and sericitized plagioclase in a partly spherulitic, partly micrographic groundmass. Minor muscovite, chlorite, fluorite, and pyrite.

70571134. Bagstowe Ring Dyke Complex.
Locality: 19°19'S, 143°53½'E. 13 km south-west of Glenmore homestead.
Petrography: Slightly porphyritic rhyodacite. Zoned andesine, sanidine, and minor chloritized biotite occur as phenocrysts in an aphanitic (iron stained) groundmass. Some altered hornblende is also present

70571136, Bagstowe Ring Dyke Complex.
Locality: As for 70571134
Petrography: Spherulitic rhyolite. A few feldspar phenocrysts in a largely spherulitic groundmass. Minor chloritized biotite, calcite, and sericite.

70571140, Bagstowe Ring Dyke Complex.
Locality: 19°18'S, 143°55'E. 19 km southwest of Glenmore homestead.
Petrography: Porphyritic augite-hornblende andesite. Phenocrysts are mostly zoned andesine-labradorite. Groundmass contains plagioclase, relict augite, hornblende, biotite, chlorite, and minor perthitic alkali feldspar (strongly kaolinized), quartz, calcite, secondary muscovite, and opaque minerals. Much of the amphibole and biotite are secondary.

70571141, Bagstowe Ring Dyke Complex.
Locality: 19°14'S, 143°57'E. 4 km west of Glenmore homestead.
Petrography: Porphyritic rhyolite. Phenocrysts (15-20%) of embayed β-quartz, anhedral, turbid orthoclase perthite, corroded, sericitized oligoclase, and partly chloritized biotite in an aphanitic groundmass.

70571142, Bagstowe Ring Dyke Complex.
Locality: As for 70571141
Petrography: Porphyritic hornblende-biotite microadamellite. Quartz, turbid alkali feldspar, and sericitized oligoclase occur as phenocrysts in an aphanitic groundmass. The feldspar phenocrysts are corroded and surrounded by zones of myrmekite. Hornblende (2%) and biotite (3%) with accessory sphene are the other constituents. Xenoliths of hornblende-biotite granodiorite and adamellite are abundant.

70571143, Bagstowe Ring Dyke Complex.
Locality: As for 70571141.
Petrography: Porphyritic augite-hornblende andesite. Andesine (An_{32-45}), brown hornblende, and augite phenocrysts in a largely cryptocrystalline groundmass. Minor epidote and chlorite.

70571144, Bagstowe Ring Dyke Complex.
Locality: 19°14'S, 144°58'E. 2½ km west of Glenmore homestead.
Petrography: Porphyritic rhyodacite. Quartz (25%), alkali feldspar (35%), plagioclase (40%), biotite (2-3%). Phenocrysts consist of embayed quartz, corroded, zoned oligoclase-andesine, microcline perthite, and partly chloritized biotite. Groundmass is partly spherulitic, partly recrystallized and slightly fluidal. Minor brown hornblende and opaque minerals are present.

70571145, Bagstowe Ring Dyke Complex.
Locality: 19°14'S, 143°58'E. 2 km west of Glenmore homestead.
Petrography: Porphyritic rhyodacite, very similar to 70571144, but contains numerous xenoliths of adamellite, rhyodacite, etc.

70571146. Bagstowe Ring Dyke Complex.
Locality: As for 70571145.
Petrography: Porphyritic rhyodacite. Quartz (30%), alkali feldspar (35%), plagioclase (25-30%), minor biotite, epidote, apatite, sericite, and opaque minerals. Phenocrysts of sericitized oligoclase and turbid alkali feldspar in an aphanitic cryptocrystalline groundmass.

70571147, Bagstowe Ring Dyke Complex.
Locality: 19°18'S, 144°03'E. 9½ km southeast of Glenmore homestead.
Petrography: Porphyritic dacite. Phenocrysts (20-25%) consist of corroded, saussuritized plagioclase and minor kaolinized alkali feldspar. Hornblende and probably augite are pseudomorphed by secondary chlorite, calcite, and epidote. The groundmass is trachytic and aphanitic.

70571148, Bagstowe Ring Dyke Complex.
Locality: 19°17'S, 144°01½'E. 6½ km southeast of Glenmore homestead.
Petrography: Rhyodacite. Rare phenocrysts of corroded and altered alkali feldspar and plagioclase. The groundmass is ironstained, aphanitic, locally spherulitic and recrystallized. Accessory pyrite.

70571149, Bagstowe Ring Dyke Complex.
Locality: 19°16½'S, 144°00½' E. 4 km southeast of Glenmore homestead.
Petrography: Spherulitic rhyodacite. Rare (2%) corroded and ser icitized phenocrysts of oligoclase and alkali feldspar in a mainly spherulitic, but partly glassy, groundmass. Minor chloritized biotite, sericite, allanite, and opaque minerals.

70571150, Bagstowe Ring Dyke Complex.
Locality: 19°15'S, 143°59'E. 1 km southeast of Glenmore homestead.
Petrography: Recrystallized, porphyritic rhyodacite. Quartz (35%), alkali feldspar (30%), oligoclase-andesine (30%), biotite (3%). Minor hornblende, sphene, epidote, and allanite. Phenocrysts of embayed quartz, subhedral plagioclase and minor corroded, slightly perthitic orthoclase in an aphanitic, but thoroughly recrystallized groundmass.

70571155, Bagstowe Ring Dyke Complex.
Locality: 19°12½'S, 143°59½'E. 1½ km south of Bagstowe homestead.
Petrography: Medium-grained hornblende-biotite-quartz diorite. Quartz (8%), orthoclase (7%), subhedral, sericitized andesine (60%), hornblende (17%), chloritized biotite (2%), pyrite (1%). Accessory sphene. Quartz and orthoclase are interstitial.

70571156, Bagstowe Ring Dyke Complex.
Locality: As for 70571155.
Petrography: Fine-grained hornblende-quartz diorite. Quartz (10%), oligoclase-andesine (60%), slightly perthitic alkali feldspar (10%), hornblende (15-17%), chloritized biotite (1%), pyrite (2%). Accessory epidote, sphene, and opaque minerals.

70571159, Bagstowe Ring Dyke Complex.
Locality: 19°10'S, 143°59'E. 3 km north of Bagstowe homestead.
Petrography: Porphyritic dacite. Phenocrysts (30%) consist ~~mainly~~ of plagioclase with minor embayed β-quartz and turbid perthite. Brownish hornblende (5%) and biotite (3%) are both rather altered. Minor calcite, secondary actinolite, and epidote. The groundmass is slightly fluidal and cryptocrystalline.

70571160. Bagstowe Ring Dyke Complex.
Locality: As for 70571159.
Petrography: Hornblende dacite welded tuff. A few fragmental phenocrysts of saussuritized zoned andesine. Hornblende (5%) is altered to epidote, chlorite, and opaque iron oxide. Xenoliths of granodiorite are present. The partly recrystallized groundmass is slightly fluidal and contains shards as well as quartz, alkali feldspar, and plagioclase.

70571161, Bagstowe Ring Dyke Complex.
Locality: As for 70571159.
Petrography: Porphyritic rhyodacite welded tuff. Quartz (35%), kaolinized alkali feldspar (35%), oligoclase (30%), chloritized biotite (3%). Phenocrysts (40%) of embayed quartz, kaolinized perthite, and altered oligoclase in a partly glassy, partly devitrified groundmass.

70571163, Bagstowe Ring Dyke Complex.
Locality: 19°05½'S, 143°58'E. 3 km southwest of Ballynure homestead.
Petrography: Porphyritic rhyolite. Quartz (30%), alkali feldspar (50%), oligoclase (15%), secondary muscovite (5%). Phenocrysts (50%) of β-quartz, perthite, and sericitized oligoclase in an ironstained cryptocrystalline groundmass.

70571151, Bagstowe Ring Dyke Complex.
Locality: 19°14'S, 143°59½'E. 1½ km northeast of Glenmore homestead.
Petrography: Medium-grained biotite adamellite. Quartz (25%), orthoclase perthite (35%), oligoclase (35%), biotite (2%). Accessory apatite, allanite, and opaque minerals. Micrographic intergrowths are developed around the alkali feldspar.

70571152, Bagstowe Ring Dyke Complex.
Locality: As for 70571151.
Petrography: Porphyritic biotite microadamellite. Quartz (35%), turbid orthoclase (35%), oligoclase (25%), biotite (4%). Minor relict hornblende, epidote, and opaque minerals. The groundmass is aphanitic.

70571153, Bagstowe Ring Dyke Complex.
Locality: 19°13½'S, 143°59½'E. 2½ km northeast of Glenmore homestead.
Petrography: Medium-grained biotite adamellite. Quartz (25%), orthoclase perthite (40%), turbid, zoned oligoclase (30%), biotite (5%). Accessory epidote and opaque minerals. Plagioclase is sericitized and biotite is partly resorbed and chloritized.

70571154, Bagstowe Ring Dyke Complex.
Locality: 19°13'S, 143°59½'E. 2½ km south of Bagstowe homestead.
Petrography: Medium-grained biotite adamellite. Quartz (30-35%), kaolinized orthoclase perthite (35%), sericitized oligoclase (25%), green biotite (3%). Accessory epidote, pyrite, and sphene. Alkali feldspar has rims of myrmekite.

70571158, Bagstowe Ring Dyke Complex.
Locality: 19°11'S, 143°59'E. 1½ km northwest of Bagstowe homestead.
Petrography: Medium-grained, porphyritic biotite adamellite. Quartz (30%), turbid perthite (35%), zoned oligoclase-andesine (25-30%), biotite (5%). Minor relict hornblende, chlorite, epidote, allanite, apatite, and opaque minerals.

68590026, E54/16/7. Bagstowe Ring Dyke Complex (MountRous Ring Dyke)
Locality: 19°19'S, 143°53½E. 13 km southwest of Glenmore homestead.
Petrography: Porphyritic hornblende-biotite microgranodiorite. Quartz (15%), zoned oligoclase-andesine (50-60%), alkali feldspar (15%), hornblende (5%), biotite (5%). Accessory apatite, zircon, epidote, sphene, and opaque minerals. The phenocrysts are mostly plagioclase, with subordinate quartz, alkali feldspar, hornblende, and biotite. Hornblende shows some replacement by chlorite and biotite. Micrographic intergrowths of quartz and alkali feldspar are well developed.

70571135, Bagstowe Ring Dyke Comples (Mount Rous Ring Dyke)
Locality: As for 68590026.
Petrography: Porphyritic hornblende-biotite granodiorite. Quartz (10-15%), alkali feldspar (15%), zoned sericitized andesine (60%), green hornblende (5%), biotite (5%). Accessory apatite, epidote, and pyrite. Hornblende is partly pseudomorphed by biotite. Micrographic intergrowths are well developed.

70571137, Bagstowe Ring Dyke Complex (Mount Rous Ring Dyke)
Locality: As for 68590026.
Petrography: Porphyritic hornblende-biotite granodiorite, very similar to 68590026.

68590106, E55/9/15. Butlers Volcanics.
Locality: 18°56½'S, 144°02½'E. 14 km West-southwest of Kidston.
Petrography: Porphyritic rhyodacite. Phenocrysts (40%) of quartz, potash feldspar, plagioclase, and minor chloritized biotite in a micrographic groundmass. The feldspars are extensively altered. Minor sericite, calcite, epidote, and allanite.

68590128, E55/13/11. Lochaber Granite.
Locality: 19°04½'S, 144°09½'E. Near Lochaber tungsten mine.
Petrography: Medium-grained leucocratic granite. Quartz (35-40%), altered alkali feldspar (40%), albite-oligoclase (15-20%). Minor muscovite, fluorite, and opaque minerals. Micrographic intergrowths of quartz and alkali feldspar are locally developed.

68590129, E55/13/12. Lochaber Granite.
Locality: 19°05'S, 144°10'E. 1½ km southeast of Lochaber mine.
Petrography: Porphyritic biotite microgranite. Quartz (40%), altered alkali feldspar (45%), albite-oligoclase (10%), chloritized biotite (1%). Minor muscovite and fluorite. Subhedral phenocrysts of quartz in a micrographic groundmass.

67490001, W1. Elizabeth Creek Granite.
Locality: 17°30½'S, 145°16'E. 10½ km southeast of Irvinebank.
Petrography: Fine- to medium-grained, greisenized granite. Quartz (25%), graphic intergrowths of quartz and alkali feldspar (30%), turbid microcline (40%), muscovite (1-2%). Minor relict biotite, fluorite, topaz, and opaque minerals.

67490028R, W28R. Elizabeth Creek Granite.
Locality: 17°28'S, 145°01½'E. 1½ km south of Emuford.
Petrography: Coarse-grained biotite granite. Quartz (35%), perthite (40-45%), sericitized plagioclase (15-20%), brownish-green biotite (2%). Accessory fluorite, zircon, and epidote. Quartz is extensively fractured.

67490028R1, W28R1. Elizabeth Creek Granite.
Locality: As for 67490028R.
Petrography: Aplitic granite. Quartz (30-35%), microcline perthite (50-55%), sericitized, sodic plagioclase (5-10%). Minor chloritized biotite and muscovite. The texture is micrographic.

67490029R, W29R. Elizabeth Creek Granite.
Locality: 17°27½'S, 145°02'E. 1 km south of Emuford.
Petrography: Coarse-grained leucocratic granite. Quartz (30-35%), turbid microcline perthite (50-55%), plagioclase (5-10%). Minor chloritized biotite, muscovite, zircon, and fluorite.

67490039R1, W39R1. Elizabeth Creek Granite.
Locality: 17°24'S, 145°13'E. 4 km northeast of Irvinebank.
Petrography: Aplite. Quartz (35%), orthoclase (40-50%), sodic oligoclase (15-20%). Minor muscovite and fluorite. The texture is micrographic.

67490045R, W45R. Elizabeth Creek Granite.
Locality: 17°14'S, 145°11'E. 12 km southeast of Dimbulah.
Petrography: Medium-grained biotite adamellite. Quartz (30%), sericitized orthoclase (35%), sericitized oligoclase (30%), biotite (2-3%). Minor muscovite, zircon, and fluorite. Biotite is partly chloritized.

67490046R, W46R. Elizabeth Creek Granite.
Locality: As for 67490045R.
Petrography: Aplite. Quartz (35%), microcline (35-40%), albite-oligoclase (25%), muscovite (2-3%). Accessory fluorite. The texture is micrographic.

67490052, W52. Elizabeth Creek Granite.
Locality: 17°15'S, 145°18'E. 1½ km northeast of Collins Weir.
Petrography: Medium-grained, leucocratic adamellite. Quartz (30-35%), turbid microcline perthite (40%), slightly zoned oligoclase (25%), chloritized biotite (<1%). Accessory opaque minerals.

67490054R, W54R. Elizabeth Creek Granite.
Locality: 17°22½'S, 145°23'E. 1½ km north of Herberton.
Petrography: Coarse-grained biotite adamellite. Quartz (30%), poikilitic, kaolinized microcline perthite (35-40%), sericitized plagioclase (30%), biotite (2%). Minor fluorite, muscovite, zircon, and opaque minerals. Biotite is partly chloritized. Micrographic textures are common.

67490070R, W70R. Elizabeth Creek Granite.
Locality: 17°29½'S, 145°00'E. 5 km south-southwest of Emuford.
Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), turbid microcline perthite (45%), oligoclase (25%), chloritized biotite (1%). Minor fluorite, muscovite, and epidote.

67490070R1, W70R1. Elizabeth Creek Granite.
Locality: As for 67490070R
Petrography: Aplite.

67490089R, W89R. Elizabeth Creek Granite.
Locality: 17°39'S, 145°00'E. 5 km west of Nymbool.
Petrography: Porphyritic biotite microadamellite. Quartz (30%), microcline perthite (40%), oligoclase (25-30%), chloritized biotite (3%). Phenocrysts consist of feldspar and biotite aggregates.

67490089R1, W89R1. Elizabeth Creek Granite.
Locality: As for 67490089R.
Petrography: Biotite microadamellite. Similar to 67490089R but there are no phenocrysts and the proportion of biotite is lower.

67490097, W97. Elizabeth Creek Granite.
Locality: 17°36'S, 145°02'E. 5 km north-northwest of Nymbool.
Petrography: Porphyritic biotite adamellite. Quartz (30-35%), microcline perthite (40%), sodic oligoclase (25%), biotite (2-3%). Accessory fluorite, zircon, and opaque minerals. Perthite occurs as large, euhedral crystals.

67490098R1, W98R1. Elizabeth Creek Granite.
Locality: As for 67490097
Petrography: Slightly porphyritic biotite microadamellite. Quartz (30-35%), microcline (40%), sodic oligoclase (25%), biotite (1%). Minor sericite. A few phenocrysts of quartz are present.

67490105, W105. Elizabeth Creek Granite.
Locality: 17°40'S, 145°02'E. 4 km south of Nymbool.
Petrography: Medium-grained biotite adamellite. Quartz (25-30%), kaolinized alkali feldspar (35-40%), sericitized plagioclase (35%), chloritized biotite (1%). Accessory fluorite and zircon. The feldspars show extensive alteration.

67490111, W111. Elizabeth Creek Granite.
Locality: 17°42'S, 145°10½'E. 7 km east of Mount Garnet.
Petrography: Leucocratic adamellite. Quartz (30-35%), turbid perthite (40-45%), plagioclase (20-25%). Accessory fluorite and allanite. Feldspars are extensively altered. Quartz is strained and fractured.

67490119R, W119R. Elizabeth Creek Granite.
Locality: 17°33'S, 145°07½'E. 3 km west-northwest of Brownville.
Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), turbid, poikilitic microcline perthite (40-45%), sericitized plagioclase (20-25%), biotite (3%). Accessory fluorite and opaque minerals.

67490120R, W120R. Elizabeth Creek Granite.
Locality: 17°32'S, 145°07'E. 5 km northwest of Brownville.
Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), perthite (40-45%), slightly zoned oligoclase (20-25%), biotite (3-4%), Minor fluorite, muscovite, and zircon.

67490121R, W121R. Elizabeth Creek Granite.
Locality: As for 67490120R.
Petrography: Greisen. Quartz (60-65%), and muscovite (35-40%), with minor feldspar. Accessory topaz and opaque minerals.

67490121R2, W121R2. Elizabeth Creek Granite.
Locality: As for 67490120R.
Petrography: Aplite. Quartz (30-35%), microcline (40%), sodic oligoclase (25-30%). Minor chloritized biotite and sericite.

67490128R, W128R. Elizabeth Creek Granite.
Locality: 17°31'S, 145°07'E. 8 km north-northwest of Brownville.
Petrography: Coarse grained biotite adamellite. Quartz (30-35%), perthite (40-45%), sericitized plagioclase (25%), biotite (3%), Accessory fluorite and zircon.

67490128R1, W128R1. Elizabeth Creek Granite.
Locality: As for 67490128R.
Petrography: Biotite microadamellite. Quartz (30-35%), microcline (30-35%), oligoclase (30-35%), biotite (3%). Accessory topaz.

67490132, W132. Elizabeth Creek Granite.
Locality: 17°30½'S, 145°09'E. 8 km north of Brownville.
Petrography: Medium-grained biotite granite. Quartz (30%), kaolinized perthite (55%), sericitized plagioclase (15%), biotite (2%). Accessory fluorite, zircon, and opaque minerals. Biotite is partly chloritized.

67490155, W155. Elizabeth Creek Granite.
Locality: 17°35½'S, 145°13'E. 8 km east-southeast of Brownville
Petrography: Medium-grained biotite granite. Quartz (30%), perthite (55%), oligoclase (15%), biotite (3%). Minor muscovite and fluorite. Feldspars are rather altered.

68490001G, MG68/1. Elizabeth Creek Granite.
Locality: 17°34½'S, 145°28'E. 2½ km southeast of Tumoulin.
Petrography: Medium-grained biotite adamellite. Quartz (25%), turbid orthoclase perthite (30-35%), zoned sericitized oligoclase-andesine (35%), chloritized biotite (1-2%). Minor relict hornblende, allanite, epidote, apatite, zircon, and opaque minerals.

68490002G, MG68/2. Elizabeth Creek Granite.
Locality: As for 68490001G.
Petrography: Medium-grained biotite adamellite, very similar to 68490001G.

68490003G, MG68/3. Elizabeth Creek Granite.
Locality: 17°33'S, 145°28½'E. 5 km east of Turulka.
Petrography: Medium-grained biotite adamellite. Quartz (30%), orthoclase perthite (35-40%), slightly zoned sericitized oligoclase (25%), biotite (5%). Accessory epidote, apatite, and zircon.

68490006G, MG68/6. Elizabeth Creek Granite.
Locality: 17°35'S, 145°29'E. 4 km southeast of Tumoulin.
Petrography: Medium-grained biotite adamellite. This sample is very similar to 68490001G, although the feldspars, particularly the plagioclase, are more extensively sericitized.

68490014G, MG68/14. Elizabeth Creek Granite.
Locality: 17°42'S, 145°02'E. 6½ km south of Nymbool.
Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), orthoclase perthite (35-40%), oligoclase (25%), greenish biotite (3%). Minor fluorite, sphene, epidote, chlorite, and opaque minerals. Plagioclase is partly sericitized.

68490022G, MG 68/22. Elizabeth Creek Granite.
Locality: 17°45'S, 145°oo'E. 5 km west-southwest of Seven Mile Hill.
Petrography: Coarse-grained biotite granite. Quartz (25-30%), perthite (50-60%), oligoclase (10%), biotite (2%). Minor fluorite, chlorite, and allanite. The feldspars are rather altered.

68490025G, MG68/25. Elizabeth Creek Granite.
Locality: 17°37'S, 145°14'E. 5½ km north of Innot.
Petrography: Medium-grained, slightly greisenized adamellite. Quartz (30-35%), microcline perthite (35-40%), slightly zoned oligoclase (25%), muscovite (3%), partly chloritized biotite (2%). Accessory fluorite, allanite, zircon, and opaque minerals.

68490026G, MG68/26. Elizabeth Creek Granite.
Locality: 17°38'S, 145°13½'E. 3 km west-northwest of Innot.
Petrography: Porphyritic biotite microadamellite. Quartz (30-35%), microcline (35-40%), oligoclase (25%), biotite (3%). Minor fluorite, chlorite, epidote, and opaque minerals. Quartz occurs as phenocrysts in a micrographic groundmass. Oligoclase crystals have sericitized cores.

68490027G, MG68/27. Elizabeth Creek Granite.
Locality: 17°32½'S, 145°08'E. 3 km north of Brownville.
Petrography: Medium-grained, slightly porphyritic biotite adamellite. Quartz (30%), poikilitic microcline perthite (40%), zoned oligoclase (25%), chloritized biotite (4%), sericite (1%). Accessory fluorite, allanite, calcite, and opaque minerals. Quartz shows undulose extinction.

68490028G, MG68/28. Elizabeth Creek Granite.
Locality: As for 68490027G.
Petrography: Medium-grained biotite adamellite. Quartz (25-30%), turbid microcline (40-45%), sericitized oligoclase (25%), biotite (7%). Minor fluorite, calcite, chlorite, apatite, zircon, epidote, and opaque minerals. Biotite is extensively chloritized and feldspars are rather altered. Quartz grains are fractured.

68590023, E54/12/16. Elizabeth Creek Granite.
Locality: 18°01'S, 143°49'E. 19 km northwest of Talaroo homestead.
Petrography: Medium-grained biotite granite. Quartz (35%), orthoclase microperthite (40-50%), saussuritized plagioclase (10-15%), partly chloritized biotite (1-2%). Accessory zircon and opaque minerals.

68590048, E55/5/1. Elizabeth Creek Granite.
Locality: 17°19'S, 144°55'E. Bamford Hill.
Petrography: Medium-grained biotite adamellite. Quartz (30%), poikilitic microcline perthite (40%), plagioclase(25-30%), biotite (2-3%). Minor muscovite, calcite, zircon,and opaque minerals. Plagioclase is zoned and saussuritized.

68590050, E55/5/3. Elizabeth Creek Granite.
Locality: 17°27'S, 144°54'E. 1½ km southeast of Boxwood homestead.
Petrography: Coarse-grained biotite granite. Quartz (30%), microcline perthite (50-55%), oligoclase (15.20%), biotite (1%). Accessory epidote and opaque minerals.

68590056, E55/5/11. Elizabeth Creek Granite.
Locality: 17°23½'E. 1½ km west of Bakerville.
Petrography: Greisenized adamellite. Quartz (35-40%), alkali feldspar (15%), saussuritized plagioclase (15%), muscovite (25-30%), altered biotite (1%), fluorite (1-2%). Accessory allanite, rutile, epidote, cassiterite, and opaque minerals. Muscovite replaces much of the feldspar and quartz is recrystallized.

68590059, E55/5/15. Elizabeth Creek Granite.
Locality: 17°33'S, 144°59'E. 2½ km south of Gurrumba battery.
Petrography: Coarse-grained biotite granite (near adamellite). Quartz (35-40%), microcline perthite (40%), albite-oligoclase (15-20%), partly chloritized biotite (1%). Accessory fluorite, zircon,and opaque minerals. Feldspars are sericitized.

68590060, E55/5/16. Elizabeth Creek Granite.
Locality: 17°45½'S, 145°20'E. 9 km east-southeast of Mandalee homestead.
Petrography: Medium-grained leucocratic adamellite. Quartz (30%), perthite (40%), zoned albite-oligoclase (30%). Minor biotite, sphene, hornblende,and opaque minerals. Plagioclase is saussuritized and alkali feldspar is kaolinized.

68590067, E55/5/24. Elizabeth Creek Granite.
Locality: 17°58'S, 144°52'E. 24 km south of Sundown turnoff on Hann Highway.
Petrography: Medium-grained biotite adamellite. Quartz (25-30%), perthite (30-35%), albite-oligoclase (35-40%), biotite (1%). Accessory fluorite, apatite, and opaque minerals.

68590069, E55/5/26. Elizabeth Creek Granite.
Locality: 17°42'S, 145°11'E. 7 km east of Mount Garnet.
Petrography: Medium-grained, leucocratic granite. Quartz (30%), microcline perthite (55-60%), plagioclase (10%). Minor biotite, fluorite, and opaque minerals. Feldspars are extensively altered.

68590071, E55/5/28. Elizabeth Creek Granite.
Locality: 17°25'S, 144°25'E. 5 km southwest of Crystal Brook homestead.
Petrography: Medium-grained biotite adamellite. Quartz (25-30%), microcline perthite (40-45%), albite-oligoclase (30%), biotite (2%). Minor fluorite, hornblende, muscovite, apatite, zircon, and opaque minerals. Feldspars are rather altered.

68590072, E55/5/29. Elizabeth Creek Granite.
Locality: 17°19'S, 144°53½'E. Dover Castle tin mine.
Petrography: Medium-grained biotite granite. Quartz (30-35%), orthoclase (55-60%), sodic plagioclase (5%), chloritized biotite (1-2%). Accessory fluorite, zircon, and opaque minerals.

68590075, E55/5/33, Elizabeth Creek Granite.
Locality: 17°36'S, 144°17'E. True Blue fluorite mine.
Petrography: Medium-grained biotite granite. Quartz (25-30%), perthite (50-55%), sericitized albite-oligoclase (15-20%), partly chloritized biotite (5%). Accessory fluorite, apatite, zircon, epidote, and opaque minerals.

68590077, E55/5/37. Elizabeth Creek Granite.
Locality: 17°56'S, 144°24'E. 13 km south of Burlington homestead.
Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), turbid perthite (35-40%), zoned albite-oligoclase (20-25%), biotite (5%). Accessory fluorite, apatite, epidote, and opaque minerals. Plagioclase is saussuritized and biotite is slightly chloritized.

68590080, E55/5/41. Elizabeth Creek Granite.
Locality: 17°23½'S, 145°24'E. 1½ km southeast of Herberton.
Petrography: Coarse-grained biotite granite. Quartz (25-30%), turbid perthite (55-60%), sericitized sodic plagioclase (10-15%), biotite (2-3%). Accessory fluorite, epidote, apatite, and opaque minerals.

68590081, E55/5/42. Elizabeth Creek Granite.
Locality: 17°24'S, 145°14½'E. 2½ km southwest of Bakerville.
Petrography: Medium-grained biotite granite. Quartz (25-30%), microcline perthite (60-65%), zoned sodic plagioclase (5-10%), biotite (2-3%). Minor fluorite, muscovite, allanite, and opaque minerals. Plagioclase is sericitized.

68590102, E55/9/3. Elizabeth Creek Granite.
Locality: 18°02'S, 144°02'E. 1 km east of Cumbana homestead.
Petrography: Biotite granite. Quartz (30-35%), orthoclase (55%), albite-oligoclase (10-15%), chloritized biotite (1%). Minor fluorite, muscovite and opaque minerals. Feldspars are extensively altered.

68590107, E55/9/17. Elizabeth Creek Granite.
Locality: 18°oo'S, 144°32'E. 8 km east-northeast of Whitechalk (Mount Surprise) homestead.
Petrography: Biotite granite. Quartz (35%), alkali feldspar (45-50%), sodic oligoclase (15-20%), biotite (1%). Accessory opaque minerals.

68590108, E55/9/19. Elizabeth Creek Granite.
Locality: 18°00'S, 144°32'E. 7 km east-northeast of Whitechalk homestead.
Petrography: Biotite-muscovite microgranite. Quartz (35%), orthoclase (50%), plagioclase (10%), biotite (4%), muscovite (3%). Accessory fluorite, zircon, and opaque minerals. The feldspars show considerable deuteric alteration, with development of secondary muscovite.

68590109, E55/9/20. Elizabeth Creek Granite.
Locality: 18°01½'S, 144°19'E. 14½ km north of Mount Surprise.
Petrography: Medium-grained leucocratic granite. Quartz (25-30%), orthoclase perthite (60%), sodic oligoclase (5-10%), secondary muscovite (1%). Minor biotite, fluorite, and opaque minerals. Alkali feldspar is extensively sericitized and forms micrographic intergrowths with quartz.

70571002. Elizabeth Creek Granite.

Locality : 17°05'S, 144°57½'E. Near Wolfram Camp.

Petrography : Medium-grained biotite adamellite (slightly greisenized). Quartz (25-30%), poikilitic, slightly perthitic orthoclase (35-40%), oligoclase (30-35%), altered biotite (1%). Minor fluorite, secondary muscovite, calcite, epidote, sphene, and opaque minerals. Plagioclase is extensively sericitized, alkali feldspar is kaolinized and biotite shows resorption.

70571003. Elizabeth Creek Granite.

Locality : 17°06'S, 144°57½'E. Near Wolfram Camp.

Petrography : Coarse-grained biotite granite. Quartz (30-35%), microcline perthite (45-50%), sericitized oligoclase (20%), biotite (2%). Minor fluorite and muscovite. Myrmekitic intergrowths are common.

70571004. Elizabeth Creek Granite.

Locality : 17°06'S, 144°57'E. Near Wolfram Camp.

Petrography : Coarse-grained biotite adamellite. Quartz (30-35%), orthoclase perthite (35-40%), slightly zoned oligoclase (25-30%), biotite (1%). Minor fluorite, muscovite, zircon, epidote, and opaque minerals. Myrmekitic intergrowths are developed between grains of alkali feldspar and plagioclase.

70571012. Elizabeth Creek Granite.

Locality : 17°15½'S, 144°56'E. Near Eight Mile Hill.

Petrography : Coarse-grained biotite adamellite. Quartz (25-30%), poikilitic slightly perthitic orthoclase (40%), oligoclase (30%), biotite (1%). Minor fluorite, muscovite, relict hornblende, zircon, epidote, cassiterite, and opaque minerals. Alkali feldspar has rims of albite. Biotite is shredded and chloritized.

70571017. Elizabeth Creek Granite.

Locality : 17°19'S, 144°55'E. Bamford Hill.

Petrography : Coarse-grained biotite granite. Quartz (35%), microcline (45%), albite-oligoclase (15-20%), partly chloritized biotite (3%). Accessory allanite, zircon, epidote, apatite, and opaque minerals. The feldspars show sericitic alteration.

70571235. Elizabeth Creek Granite.
Locality : 18°11'S, 144°29'E. 2½ km southeast of Damper Hill.
Petrography : Fine-grained biotite granite. Quartz (30-35%), kaolinized microcline perthite (45-50%), oligoclase (10-15%), chloritized biotite (2-3%). Minor muscovite and epidote.

70571236. Elizabeth Creek Granite.
Locality : As for 70571235.
Petrography : Coarse-grained biotite granite. Quartz (30-35%), poikilitic, kaolinized microcline perthite (40-45%), sericitized sodic oligoclase (15-20%), biotite (4%). Alkali feldspar is rimmed by albite. Minor secondary muscovite.

70571237. Elizabeth Creek Granite.
Locality : 18°13'S, 144°30'E. 1½ km west of Barkers Knob.
Petrography : Medium-grained biotite adamellite. Quartz (30-35%), poikilitic, turbid orthoclase (35-40%), oligoclase (25%), pale green biotite (3-4%), secondary muscovite (1%). Accessory fluorite and opaque minerals.

70571238. Elizabeth Creek Granite.
Locality : 18°14'S, 144°30'E. 1½ km southwest of Barkers Knob.
Petrography : Medium-grained biotite adamellite. Quartz (30%), microcline perthite (35-40%), sericitized oligoclase (25%), biotite (2-3%). Minor fluorite and muscovite.

70571239. Elizabeth Creek Granite.
Locality : 18°14½'S, 144°31'E. 1½ km south-southwest of Barkers Knob.
Petrography : Coarse-grained biotite adamellite. Quartz (30%), poikilitic orthoclase perthite (40%), zoned oligoclase (25%), partly chloritized biotite (2-3%). Minor chlorite, muscovite, apatite, and epidote.

70571240, Elizabeth Creek Granite.

Locality: 18°15'S, 144°31' E. 2½ km south of Barkers Knob.

Petrography: Medium-grained biotite adamellite. Quartz (30-35%), poikilitic, kaolinized microcline perthite (40%), oligoclase (25%), chloritized biotite (2%). Minor fluorite, muscovite, and zircon.

70571241, Elizabeth Creek Granite.

Locality: 18°08'S, 144°35'E. 3 km north of Mount Frith.

Petrography: Medium-grained biotite adamellite. Quartz (30-35%), kaolinized orthoclase perthite (35-40%), zoned oligoclase (20-25%), biotite (2%). Minor fluorite, muscovite, and opaque minerals. Plagioclase crystals have sericitized cores.

70571258, Elizabeth Creek Granite.

Locality: 17°44'S, 145°02'E. 1½ km west of Seven Mile Hill.

Petrography: Coarse-grained biotite adamellite. Quartz (30-35%), poikilitic, slightly perthitic microcline (30-35%), sericitized oligoclase (30%), biotite (2-3%). Accessory fluorite, zircon, and opaque minerals.

70571261, Elizabeth Creek Granite.

Locality: 17°48'S, 144°51'E. 8 km east of Sundown homestead.

Petrography: Coarse-grained biotite adamellite. Quartz (30%), poikilitic microcline perthite (40%), slightly zoned oligoclase (25-30%), partly chloritized biotite (3%). Minor fluorite, calcite, relict hornblende, allanite, epidote, and opaque minerals. Plagioclase is sericitized. This sample is rather similar to the typical Herbert River Granite.

70571262, Elizabeth Creek Granite.

Locality: As for 70571261.

Petrography: Medium-grained biotite adamellite. Quartz (30-35%), microcline perthite (40-45%), oligoclase (20-25%), biotite (2-3%). Accessory allanite, apatite, zircon, and epidote.

70571265, Elizabeth Creek Granite.

Locality : 17°48'S, 144°48'E. 3 km east of Sundown homestead.

Petrography : Medium-grained biotite adamellite. Quartz (30-35%), poikilitic, slightly perthitic microcline (30-35%), zoned oligoclase (30-35%), biotite (3-5%). Minor zircon, apatite, muscovite, and opaque minerals. Microcline is partly kaolinized and plagioclase shows sericitic alteration.

70571271, Elizabeth Creek Granite.

Locality : 17°47½'S, 144°29'E. 9 km south-southwest of Bullock Creek homestead.

Petrography : Coarse-grained, biotite adamellite. Quartz (30%), poikilitic, slightly perthitic microcline (40-45%), altered oligoclase (25%), biotite (5%). Accessory allanite and opaque minerals. Biotite is partly chloritized.

70571272, Elizabeth Creek Granite.

Locality : 17°47'S, 144°29'E. 8 km south-southwest of Bullock Creek homestead.

Petrography : Coarse-grained biotite granite. Quartz (30%), poikilitic microcline perthite (45-50%), sericitized oligoclase (15-20%), biotite (3%). Minor calcite and fluorite.

70571276, Elizabeth Creek Granite.

Locality : 17°28½'S, 144°37'E. 1 km south of Tate River Crossing on Almaden-Gingerella road.

Petrography : Fine- to medium-grained biotite granite. Quartz (30%), orthoclase perthite (50-55%), oligoclase (15%), chloritized biotite (1%). Minor calcite, muscovite, and opaque minerals.

70571277, Elizabeth Creek Granite.

Locality : 17°28'S, 144°37'E. Tate River Crossing on Almaden-Gingerella road.

Petrography : Fine- to medium-grained biotite granite. Quartz (30-35%), orthoclase perthite (45-50%), sodic oligoclase (20%), chloritized biotite (1-2%). Minor calcite and opaque minerals.

68590049, E55/5/2. Elizabeth Creek Granite (south of Petford)
Locality : 17°23'S, 144°52'E. 5 km southwest of Lappa Junction.
Petrography : Hornblende-biotite adamellite. Quartz (25-30%), sericitized plagioclase (20-25%), microcline perthite (45-50%), hornblende (1%), biotite (1%). Minor allanite, epidote, muscovite, calcite, sphene, apatite, and opaque minerals. Plagioclase is extensively altered, biotite is chloritized and hornblende largely replaced by calcite, epidote, etc.

68590052, E55/5/5. Elizabeth Creek Granite (south of Petford)
Locality : 17°22'S, 144°53'E. 1 km west of Lappa Junction.
Petrography : Granodioritic xenolith. Crystal fragments of quartz, alkali feldspar and plagioclase in a fine-grained quartzo-feldspathic groundmass containing chloritized biotite. Minor relict amphibole, calcite, epidote, muscovite, and opaque minerals. Feldspars are extensively altered and the rock is brecciated. Myrmekite is common.

70571022, Elizabeth Creek Granite (south of Petford)
Locality : 17°23'S, 144°57½'E. 5½ km southeast of Petford.
Petrography : Fine- to medium-grained, slightly porphyritic biotite adamellite. Quartz (30%), sericitized perthite (35-40%), sericitized plagioclase (25-30%), greenish biotite (5%). Minor chlorite, fluorite, allanite, epidote, and opaque minerals. Phenocrysts of quartz and feldspar in a partly micrographic groundmass. Biotite is partly chloritized.

70571286, Elizabeth Creek Granite (south of Petford)
Locality : 17°21'S, 144°54'E. 1 km east-northeast of Lappa Junction.
Petrography : Fine- to medium-grained, slightly porphyritic hornblende-biotite adamellite. Quartz (30%), kaolinized microcline perthite (35%), zoned, sericitized oligoclase-andesine (30%), biotite (5%), hornblende (2%). Accessory epidote, sphene, allanite, and opaque minerals.

70571287, Elizabeth Creek Granite (south of Petford)
Locality : 17°20½'S, 144°54½'E. 2 km northeast of Lappa Junction.
Petrography : Medium-grained, slightly porphyritic hornblende-biotite adamellite. Very similar to 70571286.

70571289, Elizabeth Creek Granite (south of Petford).

Locality : $17^{\circ}21\frac{1}{2}'S$, $144^{\circ}57\frac{1}{2}'E$. 3 km southeast of Petford.

Petrography : Fine- to medium-grained, slightly porphyritic biotite adamellite. Quartz (30%), poikilitic orthoclase perthite (35-40%), andesine (25-30%), biotite (3-4%). Accessory zircon, allanite, sphene, and opaque minerals. Biotite is shredded and partly chloritized.

67490012R, W12R Hales Siding Granite.

Locality : $17^{\circ}22'S$, $145^{\circ}13\frac{1}{2}'E$. $6\frac{1}{2}$ km south of Stannary Hills.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), microcline perthite (35%), plagioclase (25-30%), biotite (3%). Minor muscovite, calcite, allanite, and epidote. Plagioclase is mainly oligoclase, and there is some replacement of microcline by albite. Quartz is fractured and granulated. Biotite is partly chloritized.

67490012R1, W12R1. Hales Siding Granite.

Locality : As for 67490012R.

Petrography : Medium-grained biotite granite. Quartz (30-35%), perthite (45-50%), slightly zoned oligoclase (10%), biotite (2-3%). Minor sericite, zircon, and epidote. Biotite is shredded and chloritized.

67490012R2, W12R2. Hales Siding Granite.

Locality : As for 67490012R.

Petrography : Fine-grained aplite dyke. Quartz (40%), alkali feldspar (40-45%), sodic plagioclase (An_{10-12}) (10-15%). Minor chlorite and biotite. The rock is generally equigrannular, although there is local development of micrographic textures.

67490012R3, W12R3. Hales Siding Granite.

Locality : As for 67490012R.

Petrography : Coarse-grained biotite granite (near adamellite). Quartz (30-35%), microcline perthite (40%), plagioclase (15-20%), biotite (4%). Plagioclase and microcline are rather altered and have corroded margins and there is secondary development of albite and quartz. Accessory epidote, apatite, chlorite, and opaque minerals.

67490013R, W13R. Hales Siding Granite.

Locality : 17°21½'S, 145°13'E. 5 km south of Stannary Hills.

Petrography : Medium-grained biotite granite (near adamellite). Quartz (30-35%), microcline perthite (35-40%), oligoclase (15-20%), biotite (3%). Accessory allanite, apatite, zircon, epidote, and opaque minerals. Microcline has recrystallized margins, with associated myrmekitic quartz/albite intergrowths.

67490014R, W14R. Hales Siding Granite.

Locality : As for 67490014R.

Petrography : Medium-grained biotite granite. Similar to 67490014R, except for the slightly greater content of microcline (40-45%) and less plagioclase (10-15%). The rock is slightly more altered and there is considerable development of myrmekite.

68590066, E55/5/23. Hales Siding Granite.

Locality : 17°21½'S, 145°12½'E. 5 km south of Stannary Hills.

Petrography : Fluorite-bearing leucoadamellite. Quartz (25-30%), kaolinized, perthitic alkali feldspar (40-45%), sericitized plagioclase (25-30%), fluorite (1%). Minor chloritized biotite.

67490083R, W83R. Hammonds Creek Granodiorite.

Locality : 17°41½'S, 145°03'E. 5 km west of Strathvale homestead.

Petrography : Fine-grained hornblende-biotite granodiorite. Quartz (25%), alkali feldspar (10-15%), zoned andesine (50-55%), hornblende (1-2%), biotite (2-3%). Accessory opaque minerals. Plagioclase occurs as subhedral laths and alkali feldspar is interstitial. Hornblende is mostly altered to chlorite and epidote, and biotite is chloritized.

67490083R1, W83R1. Hammonds Creek Granodiorite.

Locality : As for 67490083R.

Petrography : Fine-grained hornblende-biotite granodiorite. The rock is very similar to 67490083R, but contains a little more biotite (5%) and only a trace of hornblende.

67490084, W84. Hammonds Creek Granodiorite.

Locality : As for 67490083R.

Petrography : Medium-grained hornblende-biotite granodiorite (near tonalite). Quartz (20%), alkali feldspar (5-10%), zoned calcic andesine (60-65%), biotite (10%), minor hornblende. Plagioclase occurs as large, subhedral, crystals and alkali feldspar is interstitial. Biotite is strongly chloritized and hornblende mostly replaced by epidote.

67490087, W87. Hammonds Creek Granodiorite.

Locality : 17°40'S, 145°03'E. 3 km SSE of Nymbool.

Petrography : Medium-grained quartz diorite. Quartz (15%), alkali feldspar (2%), zoned andesine-labradorite (60-65%), hornblende (10%), biotite (5%). Biotite and hornblende are partly chloritized.

68490015G, MG68/15. Hammonds Creek Granodiorite.

Locality : 17°41'S, 145°02½'E. 5½ km south of Nymbool.

Petrography : Fine-grained hornblende-biotite granodiorite. Quartz (25%), orthoclase (20%), plagioclase (50%), hornblende (2%), biotite (4%). Accessory sphene and opaque minerals. Biotite and hornblende show some replacement by epidote and chlorite.

68490016G, MG68/16. Hammonds Creek Granodiorite.

Locality : As for 68490015G.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), orthoclase (15%), zoned andesine (An_{45-50}) (50-55%), hornblende (7%), biotite (5%). Accessory sphene and opaque minerals. Biotite and hornblende show extensive alteration to calcite, epidote, and chlorite.

67490091R, W91R. Nymbool Granite.

Locality : 17°38'S, 145°01½'E. 1½ km west of Nymbool.

Petrography : Medium-grained biotite adamellite.

67490095R, W95R. Nymbool Granite.

Locality : 17°37½'S, 145°02'E. 2 km north-west of Nymbool.

Petrography : Coarse-grained biotite adamellite. Quartz (20-25%), microcline perthite (30-35%), zoned oligoclase-andesine (30-35%), biotite (5%). Accessory apatite and opaque minerals. Microcline occurs as turbid, poikilitic crystals and plagioclase is sericitized, with inclusions of calcite and epidote.

67490099R, W99R. Nymbool Granite.

Locality : 17°36½'S, 145°02½'E. 3 km north of Nymbool.

Petrography : Medium-grained biotite adamellite.

67490100R, W100R. Nymbool Granite.

Locality : 17°37'S, 145°02½'E. 2½ km north of Nymbool.

Petrography : Medium-grained biotite granite. Quartz (30%), alkali feldspar (50%), slightly zoned oligoclase (15%), biotite (5%). Minor secondary muscovite, apatite, zircon, and epidote.

67490101R, W101R. Nymbool Granite.

Locality : As for 67490100R.

Petrography : Medium-grained biotite adamellite. Quartz (25%), perthite (35%), zoned oligoclase-andesine (35%), biotite (5%). Both feldspars are rather altered.

68590064, E55/5/20. Nymbool Granite.

Locality : 17°37½'S, 145°02'E. 1½ km north-west of Nymbool.

Petrography : Altered adamellite cut by biotite veins. The host rock consists of quartz, strongly altered feldspars, muscovite, sericite, and biotite, and is cut by veins of partly chloritized green to brown biotite with minor quartz. Accessory zircon, tourmaline, apatite, and opaque minerals. The rock shows extensive deuteric alteration.

68590065, E55/5/21. Nymbool Granite.

Locality : As for 68590064.

Petrography : Porphyritic biotite microadamellite. Quartz (25%), perthitic alkali feldspar (30-35%), zoned oligoclase-andesine (35-40%), biotite (5%). Accessory tourmaline, apatite, and opaques.

67490007R, W7R. Bakerville Granodiorite.

Locality : 17°23'S, 145°16'E. ½ km east of Bakerville.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), alkali feldspar (10%), plagioclase (50-55%), biotite (5%), hornblende (5%). Minor chlorite, epidote, zircon, apatite, allanite, and opaque minerals. Plagioclase forms laths of sericitized, zoned andesine, rimmed by albite. Alkali feldspar is kaolinized. Hornblende contains inclusions of epidote and opaque minerals.

67490008R, W8R. Bakerville Granodiorite.

Locality : 17°23'S, 145°16'E. At Bakerville.

Petrography : Medium-grained hornblende-biotite granodiorite. Similar to 67490007R, but less altered.

67490009R, W9R. Bakerville Granodiorite.

Locality : As for 67490008R.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20-25%), perthitic alkali feldspar (10%), plagioclase (55%), biotite (7%), hornblende (5%). Accessory zircon, apatite, epidote, and opaque minerals. Plagioclase occurs as zoned crystals with andesine cores and albite rims, and is generally saussuritized and sericitized. Quartz and alkali feldspar are mainly interstitial.

67490010R, W10R. Bakerville Granodiorite.

Locality : 17°2½'S, 145°15½'E. 1½ km south-west of Bakerville.

Petrography : Medium-grained leucocratic granite (aplite). Quartz (20-25%), microcline (70%), sericitized oligoclase (5-10%), minor biotite. Accessory epidote, allanite, and opaque minerals.

67490011R, W11R. Bakerville Granodiorite.

Locality : As for 67490010R.

Petrography : Medium-grained, slightly porphyritic, hornblende-biotite granodiorite. Quartz (20-25%), zoned andesine (55-60%), orthoclase (5-10%), hornblende (3%), biotite (8%). Accessory epidote, zircon, apatite, and opaque minerals. Plagioclase forms euhedral phenocrysts, in a matrix of quartz and orthoclase.

67490025R, W25R. Kalunga Granodiorite.

Locality : 17°26'S, 145°19½'E. 7 km south-west of Herberton.

Petrography : Medium-grained hornblende-biotite adamellite. Quartz (25-30%), turbid, poikilitic orthoclase (25-30%), zoned, sericitized, oligoclase-andesine (25-30%), hornblende (7%), biotite (5%). Accessory allanite, zircon, epidote, and opaque minerals.

67490026R, W26R. Kalunga Granodiorite.

Locality : As for 67490025R.

Petrography : Medium-grained, hornblende-biotite adamellite. Quartz (25%), orthoclase (30%), zoned oligoclase-andesine (30-35%), hornblende (4%), biotite (5%). Biotite and hornblende occur in aggregates, surrounded by quartz. Biotite contains inclusions of zircon.

67490027R, W27R. Kalunga Granodiorite.

Locality : As for 67490025R.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), poikilitic orthoclase (20-25%), zoned oligoclase-andesine (45-50%), hornblende (3%), biotite (4%). Minor chlorite, zircon, and opaque minerals. Hornblende is commonly pseudomorphed by biotite.

67490061R, W61R. Kalunga Granodiorite.
Locality : 17°27'S, 145°22½'E. 7 km south of Herberton.
Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (15-20%), orthoclase perthite (20%), zoned oligoclase-andesine (50%), hornblende (5%), biotite (4%). Accessory apatite, zircon, and opaque minerals. Quartz shows undulose extinction. Alkali feldspar is interstitial.

67490062R, W62R. Kalunga Granodiorite.
Locality : 17°26'S, 145°19½'E. 9 km south-west of Herberton.
Petrography : Medium-grained biotite adamellite. Quartz (30%), slightly perthitic alkali feldspar (35-40%), sericitized oligoclase-andesine (20-25%), biotite (4-5%). Accessory zircon. Alkali feldspar occurs as euhedral crystals poikilitically including euhedral plagioclase.

67490063R, W63R. Kalunga Granodiorite.
Locality : As for 67490062R.
Petrography : Medium-grained hornblende-biotite adamellite. Quartz (20-25%), poikilitic, kaolinized orthoclase (40%), zoned, sericitized plagioclase (30%), biotite (1-2%), hornblende (5%).

67490064R, W64R. Kalunga Granodiorite.
Locality : 17°26'S, 145°20'E. 7 km south-west of Herberton.
Petrography : Fine-grained hornblende-biotite adamellite.

67490064R1, W64R1. Kalunga Granodiorite.
Locality : As for 67490064R.
Petrography : Fine-grained granitic aplite vein. Quartz (35-40%), perthitic alkali feldspar (60%), minor chloritized biotite. Quartz is strained and partly recrystallized, and feldspar is commonly kaolinized. Micrographic textures are common.

68590058, E55/5/13. Kalunga Granodiorite.

Locality : 17°25'S, 145°23'E. 3 km south of Herberton.

Petrography : Medium-grained biotite adamellite. Quartz (30%), perthite (40-45%), zoned albite-oligoclase (25-30%), biotite (1%). Minor muscovite, fluorite, epidote, zircon, and opaque minerals. Plagioclase crystals have saussuritized cores and biotite is partly altered to chlorite.

67490002, W2. Watsonville Granite.

Locality : 17°23'S, 145°17'E. 3 km west of Watsonville.

Petrography : Coarse-grained biotite adamellite. Quartz (25%), orthoclase perthite (35-40%), zoned oligoclase-andesine (35%), biotite (5%). Minor chlorite, muscovite, zircon, apatite, epidote, and opaque minerals. The rock shows some evidence of deformation, strained and fractured quartz and deformed feldspars.

67490003R, W3R. Watsonville Granite.

Locality : 17°23'S, 145°18'E. 1½ km west of Watsonville.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), orthoclase perthite (40-45%), plagioclase (25-30%), biotite (3-4%). Accessory fluorite and allanite.

67490004R, W4R. Watsonville Granite.

Locality : 17°23'S, 145°19'E. At Watsonville.

Petrography : Coarse-grained biotite granite. Quartz (30%), orthoclase perthite (45%), plagioclase (20%), biotite (3%). Accessory epidote, allanite, and zircon. Quartz shows undulose extinction and fracturing. Feldspars are corroded and altered.

67490005R, W5R. Watsonville Granite.

Locality : 17°21½'S, 145°19'E. On Walsh River, 3 km NNE of Watsonville.

Petrography : Medium-grained biotite adamellite. Quartz (25%), alkali feldspar (35-40%), zoned oligoclase-andesine (35%), biotite (3-5%). Accessory zircon, epidote, and opaque minerals. Quartz is extensively recrystallized and feldspars are strongly altered.

67490005R2, W5R2. Watsonville Granite.

Locality : As for 67490005R.

Petrography : Aplite vein.

67490006R, W6R. Watsonville Granite.

Locality : As for 67490005R.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), altered orthoclase perthite (40%), oligoclase (20-25%), biotite (5%), sericite (1%). Accessory epidote, apatite, zircon, and hematite.

67490081, W81. Watsonville Granite.

Locality : 17°22'S, 145°18½'E. 2 km north of Watsonville.

Petrography : Coarse-grained, slightly porphyritic biotite adamellite. Quartz (30%), sericitized orthoclase perthite (40%), zoned albite-oligoclase (25%), chloritized biotite (6%). Accessory apatite, zircon, epidote, and opaque minerals.

68590057, E55/5/12. Watsonville Granite.

Locality : 17°23'S, 145°17'E. 2 km west of Watsonville.

Petrography : Medium-grained, porphyritic biotite adamellite. Quartz (25-30%), alkali feldspar (35-40%), zoned, sodic plagioclase (30-35%), biotite (2%). Minor muscovite, fluorite, apatite, zircon, and opaque minerals. Feldspars are rather altered.

67490047R, W47R. Atlanta Granite.

Locality : 17°16'S, 145°17'E. 1½ km south-west of Collins Weir.

Petrography : Coarse-grained biotite granite. Quartz (30%), microcline perthite (40-45%), oligoclase (15-20%), biotite (3%).

68490181A, DB181A.

Locality : 17°27'S, 145°16½'E. 7 km ESE of Irvinebank.

Petrography : Propylitized, porphyritic microgranodiorite. Phenocrysts are mostly plagioclase, with some quartz and alkali feldspar, and the groundmass is quartzo-feldspathic. Biotite and hornblende (8-9%) are mainly altered to chlorite and the feldspars are extensively altered to sericite, carbonate, etc. Secondary albite has developed from plagioclase. Accessory ilmenite is present.

68490181B, DB181B.

Locality : As for 68490181A.

Petrography : Propylitized, porphyritic microadamellite. Quartz (30%), alkali feldspar (30%), plagioclase (30%), chloritized biotite (4%). Both feldspars are extensively altered to epidote, sericite, calcite, etc. The groundmass is partly spherulitic.

68490181C, DB181C.

Locality : As for 68490181A.

Petrography : Propylitized, porphyritic microgranodiorite. Phenocrysts consist of altered plagioclase, quartz and chloritic pseudomorphs. Abundant small xenoliths, consisting of altered plagioclase, quartz and chloritized hornblende and biotite, are present. Accessory epidote.

68490182, DB182.

Locality : As for 68490181A.

Petrography : Propylitized, porphyritic microgranodiorite. This sample is very similar to 68490181A and C, and contains numerous "microdiorite" xenoliths.

67490053, W53.

Locality : 17°15'S, 145°16'E. 4 km WNW of Collins Weir.

Petrography : Fine-grained quartz diorite. Quartz (15%), andesine (65-70%), hornblende (5%), biotite (7%). Accessory epidote and pyrite. Euhedral laths of andesine (An_{34-40}) have saussuritized cores. Plagioclase and aggregates of biotite and hornblende are set in a quartz matrix.

68590053, E55/5/7. Herbert River Granite

Locality : 17°22' S, 144°42'E. 6½ km southeast of Almaden.

Petrography : Porphyritic hornblende-biotite adamellite. Quartz (25-30%), alkali feldspar (35-40%), zoned oligoclase (30-35%), biotite (3%). Minor hornblende, allanite, and sphene. Phenocrysts of quartz and feldspar. Feldspars are sericitized and biotite is slightly chloritized.

68590054, E55/5/8. Herbert River Granite

Locality : 17°16'S, 144°22'E. 21 km southwest of Chillagoe on track to Bolwarra homestead.

Petrography : Porphyritic hornblende-biotite granodiorite. Quartz (20-25%), oligoclase-andesine (45-50%), perthitic alkali feldspar (20-25%), biotite (3-5%), hornblende (1%). Accessory sphene, apatite, zircon, and opaque minerals. Plagioclase occurs as laths of zoned oligoclase-andesine with saussurtized cores. Alkali feldspar is partly sericitized.

68590068, E55/5/25. Herbert River Granite

Locality : 17°47'S, 144°56½'E. 19 km east of Sundown homestead.

Petrography : Coarse-grained porphyritic biotite adamellite. Quartz (30%), kaolinized perthite (40%), zoned oligoclase (25-30%), biotite (1-2%). Minor fluorite, muscovite, epidote, allanite, apatite, zircon, and opaque minerals. Classed a hybrid of the Herbert River and Elizabeth Creek Granites by Branch (1966).

68590074, E55/5/31. Herbert River Granite

Locality : 17°36'S, 144°18'E. 3 km east of True Blue fluorite mine.

Petrography : Medium-grained biotite granite. Quartz (25-30%), perthite (60%), sericitized plagioclase (10%), biotite (1-2%). Minor fluorite, muscovite, apatite, zircon, and opaque minerals. Alkali feldspar is kaolinized, plagioclase is sericitized and biotite is strongly chloritized.

68590078, E55/5/39. Herbert River Granite

Locality : 17°09'S, 145°02'E. 8 km west of Dimbulah on road to Wolfram Camp.

Petrography : Coarse-grained porphyritic biotite adamellite. Quartz (30-35%), perthite (40-45%), zoned sericitized oligoclase (25%), biotite (1-2%). Accessory fluorite, apatite, allanite, and opaque minerals. Micrographic intergrowths of quartz and alkali feldspar are common.

68590104, E55/9/9. Herbert River Granite

Locality : 18°50'S, 145°17'E. 19 km west of Camel Creek Station.

Petrography : Biotite granodiorite. Quartz (25%), orthoclase (20%), zoned oligoclase-andesine (45-50%), biotite (7-8%). Accessory apatite, zircon, sphene, and opaque minerals. Plagioclase is rather altered and biotite is slightly chloritized.

68590105, E55/9/12. Herbert River Granite

Locality : 18°13'S, 145°10'E. 5½ km northeast of Glen Harding homestead.

Petrography : Hornblende-biotite adamellite. Quartz (25-30%), poikilitic orthoclase (30%), zoned oligoclase-andesine (40%), biotite (4%), hornblende (1%). Minor epidote, chlorite, sphene, and allanite. Feldspars are rather altered.

70571008. Herbert River Granite

Locality : 17°08½'S, 145°02'E. 9½ km west of Dimbulah.

Petrography : Medium-grained, porphyritic biotite adamellite. Quartz (25-30%), kaolinized microcline perthite (35-40%), slightly zoned, sericitized oligoclase (30%), biotite (3-5%). Accessory apatite and opaque minerals. Minor muscovite and chlorite.

70571242. Herbert River Granite

Locality : 18°11'S, 145°04'E. 6½ km west of Minnamoolka homestead.

Petrography : Biotite adamellite. Quartz (30%), poikilitic microcline (45%), sericitized oligoclase (25%), green biotite (1-2%). Quartz is fractured and partly recrystallized. Biotite is strongly chloritized.

70571243. Herbert River Granite

Locality : 18°12'S, 145°04'E. 5½ km west of Minnamoolka homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), turbid microcline perthite (40-45%), zoned oligoclase (25%), greenish-brown biotite (4-5%). Minor chlorite, epidote, zircon, and opaque minerals. Grains of microcline have corroded margins, with local development of myrmekite adjacent to grains of plagioclase.

70571244. Herbert River Granite

Locality : 18°11½'S, 145°08'E. 2½ km east of Minnamoolka homestead.

Petrography : Medium-grained biotite adamellite. Quartz (30%), microcline perthite (45%), zoned oligoclase (25%), biotite (2%). Biotite is chloritized. Micrographic intergrowths are commonly developed around microcline.

70571245. Herbert River Granite

Locality : 18°12½'S, 145°07½'E. 3 km southeast of Minnamoolka homestead.

Petrography : Coarse-grained hornblende-biotite adamellite. Quartz (30%), poikilitic microcline perthite (20-25%), subhedral, sercitized, zoned oligoclase-andesine (40-45%), biotite (5%). Minor hornblende, allanite, epidote, sphene, and opaque minerals.

70571246. Herbert River Granite

Locality : 18°13½'S, 145°09'E. 4 km northeast of Glen Harding homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (25-30%), turbid microcline feldspar (25-30%), zoned oligoclase-andesine (35-40%), biotite (6-7%). Minor muscovite, epidote, sphene, apatite, allanite, and opaque minerals. Plagioclase is subhedral and corroded.

70571247. Herbert River Granite

Locality : 18°13'S, 145°10½E. 6½ km northeast of Glen Harding homestead.

Petrography : Coarse-grained hornblende-biotite granodiorite (near adamellite). Quartz (20-25%), zoned oligoclase-andesine (50%), microcline perthite (20-25%), chloritized biotite (5%), hornblende (1%). Accessory zircon, allanite, apatite, sphene, and epidote. Plagioclase forms subhedral, zoned laths with sericitized cores. Hornblende is largely altered to chlorite and epidote.

70571248. Herbert River Granite

Locality : As for 70571247.

Petrography : Coarse-grained biotite granodiorite (near adamellite). Quartz (25%), microcline perthite (20%), zoned oligoclase-andesine (45-50%), biotite (5-6%). Accessory allanite and epidote. Quartz grains are fractured and have corroded margins. Biotite is slightly chloritized.

70571249. Herbert River Granite

Locality : 18°04½'S, 145°25'E. 9½ km west of Glen Ruth homestead.

Petrography : Porphyritic biotite microadamellite. Quartz (30%), slightly perthitic microcline (40%), slightly zoned oligoclase (25%), biotite (5%). Accessory zircon and allanite. Phenocrysts of quartz, microcline, and plagioclase in an aphantic groundmass. Biotite is partly chloritized.

70571250. Herbert River Granite

Locality : 18°04'S, 145°19½'E. 11 km west of Glen Ruth homestead.

Petrography : Coarse-grained, porphyritic biotite adamellite. Quartz (25%), microcline perthite (40%), zoned albite-oligoclase (25-30%), biotite (5-6%). Minor chlorite, allanite, zircon, and apatite.

70571251. Herbert River Granite

Locality : As for 70571250

Petrography : Porphyritic biotite microgranite. Quartz (30%), alkali feldspar (45%), plagioclase (15-20%), biotite (3%). Phenocrysts of quartz, alkali feldspar, and minor plagioclase and biotite in an aphanitic groundmass.

70571252. Herbert River Granite

Locality : 18°10½'S, 145°15'E. 5 km west of Walleroo Hill.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), poikilitic microcline perthite (40%), zoned, sericitized oligoclase (25%), biotite (5-6%). Minor chlorite, zircon, epidote, and opaque minerals.

70571253. Herbert River Granite

Locality : 18°08½'S, 145°13'E. 14½ km west of Cashmere homestead.

Petrography : Coarse-grained biotite granodiorite. Quartz (25%), microcline perthite (20-25%), oligoclase-andesine (45%), biotite (8%). Minor relict hornblende, chlorite, epidote, allanite, and opaque minerals. Plagioclase is zoned and the cores are sericitized.

70571254. Herbert River Granite

Locality : 18°06'S, 145°12'E. Quartz Hill.

Petrography : Porphyritic biotite microadamellite. Quartz (25%), orthoclase perthite (30%), zoned oligoclase (30-35%), biotite (10%), opaque minerals (2%). Phenocrysts consist mainly of rounded quartz; subhedral, sericitized oligoclase and subordinate poikilitic orthoclase in an aphanitic groundmass composed predominantly of quartz and alkali feldspar. Accessory zircon and apatite. Orthoclase phenocrysts have rims of albite.

70571255. Herbert River Granite

Locality : As for 70571254

Petrography : Coarse-grained biotite adamellite. Quartz (35-40%), poikilitic orthoclase (30-35%), sericitized oligoclase (20-25%, biotite (7%), Accessory zircon and pyrite.

70571256. Herbert River Granite

Locality : 18°01'S, 145°12½'E. 1½ km southeast of Gunnawarra Bump.

Petrography : Biotite adamellite. Quartz (30%), poikilitic microcline perthite (40-45%), oligoclase (25%), biotite (6%). Accessory fluorite, allanite, epidote, and pyrite. Plagioclase is sericitized and biotite is slightly chloritized.

70571257. Herbert River Granite

Locality : 17°59'S, 145°10'E. 4 km south of Gunnawarra homestead.

Petrography : Coarse-grained biotite granite. Quartz (30%), microcline perthite (45%), zoned, sericitized albite-oligoclase (20%), biotite (5%). Minor chlorite, muscovite, epidote, and zircon.

70571259. Herbert River Granite

Locality : 17°47'S, 144°56½'E. 19 km east of Sundown homestead.

Petrography : Coarse-grained, porphyritic biotite adamellite. Quartz (35-40%), kaolinized microcline perthite (30-35%), zoned, sericitized oligoclase-andesine (25-30%), chloritized biotite (2%). Minor muscovite, calcite, and opaque minerals. Sample is similar to 68590068.

70571260, Herbert River Granite

Locality : 17°47'S, 144°53½'E. 13½ km east of Sundown homestead.

Petrography : Coarse-grained, porphyritic hornblende-biotite adamellite. Quartz (30%), microcline perthite (35-40%), zoned oligoclase-andesine (30%), biotite (3%). Minor hornblende, muscovite, sphene, apatite, allanite, zircon, and opaque minerals. Plagioclase crystals have sericitized cores. Hornblende is partly pseudomorphed by biotite.

70571263. Herbert River Granite

Locality : 17°48'S, 144°49'E. 5½ km east of Sundown homestead.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), microcline perthite (40-45%), zoned oligoclase-andesine (25-30%), biotite (3%). Feldspars are sericitized and biotite is partly chloritized.

70571264. Herbert River Granite

Locality : 17°48'S, 144°48'E. 3 km east of Sundown homestead.

Petrography : Coarse-grained biotite-muscovite adamellite. Quartz (30%), poikilitic microcline perthite (40%), zoned, sericitized oligoclase-andesine (25%), biotite (3-4%), secondary muscovite (2%). Minor fluorite, epidote, zircon, and opaque minerals.

70571266. Herbert River Granite

Locality : 17°48½'S, 144°44½'E. 2½ km west of Sundown homestead.

Petrography : Coarse-grained, porphyritic biotite adamellite. Quartz (25%), microcline perthite (40%), zoned, corroded oligoclase-andesine (30%), biotite (5%). Accessory zircon, apatite, allanite, and opaque minerals. Myrmekitic intergrowths are common.

70571267. Herbert River Granite

Locality : 17°47'S, 144°43'E. 5 km WNW of Sundown homestead.

Petrography : Coarse-grained biotite adamellite. Quartz (20-25%), alkali feldspar (35-40%), zoned, saussuritized and sericitized oligoclase (35%), biotite (7%). Minor epidote, calcite, chlorite, apatite, and allanite. Alkali feldspar includes both orthoclase and microcline. It is kaolinized and has corroded margins.

70571268. Herbert River Granite

Locality : As for 70571267

Petrography : Coarse-grained biotite adamellite. Quartz (25-30%), slightly kaolinized microcline perthite (40-45%), zoned oligoclase-andesine with albite rims (25%), biotite (4-5%). Accessory apatite, zircon, and opaque minerals.

70571273. Herbert River Granite.

Locality : 17°37½'S, 144°40'E. 9½ km north of Gingerella homestead.

Petrography : Fine-to medium-grained, porphyritic biotite granite. Quartz (25-30%), poikilitic, slightly perthitic orthoclase (55%), zoned sericitized oligoclase (15%), biotite (2%). Minor chlorite, zircon, apatite, allanite, epidote, and opaque minerals.

70571274. Herbert River Granite

Locality : As for 70571273.

Petrography : Fine-to medium-grained biotite granite. Quartz (30%), poikilitic, kaolinized perthite (45-50%), oligoclase (15-20%), biotite (1-2%). Accessory epidote and opaque minerals. Micrographic intergrowths are common.

70571275. Herbert River Granite

Locality : 17°31'S, 144°38½'E. 1½ km WSW of Graves Pinnacle.

Petrography : Coarse-grained biotite adamellite (near granite). Quartz (30%), kaolinized orthoclase perthite (40-45%), zoned, sericitized oligoclase (25%), biotite (1-2%). Accessory epidote, apatite, and opaque minerals. Plagioclase is surrounded by myrmekitic intergrowths of albite and quartz.

70571278. Herbert River Granite

Locality : 17°27½'S, 144°37'E. 3 km south-west of Ootann.

Petrography : Medium-grained biotite adamellite. Quartz (25-30%), turbid orthoclase (40%), saussuritized oligoclase (25-30%), biotite (5-6%). Minor chlorite, muscovite, apatite, epidote, and opaque minerals. Quartz grains are fractured and granulated.

70571279. Herbert River Granite

Locality : 17°27'S, 144°37½'E. 2½ km southwest of Ootann.

Petrography : Medium-grained biotite adamellite. Quartz (30%), kaolinized orthoclase perthite (40%), zoned oligoclase (25-30%), biotite (1-2%). Minor relict hornblende and allanite.

70571280. Herbert River Granite

Locality : 17°26'S, 144°37½'E. 1½ km west of Ootann.

Petrography : Coarse-grained biotite adamellite. Quartz (25%), kaolinized slightly perthitic microcline (25%), sericitized oligoclase-andesine (45%), slightly chloritized biotite (5-6%). Minor fluorite, calcite, muscovite, allanite, epidote, and opaque minerals.

70571281. Herbert River Granite

Locality : 17°24'S, 144°38½'E. 3 km north of Ootann.

Petrography : Medium-grained biotite adamellite. Quartz (30%), orthoclase perthite (40%), sericitized oligoclase (25%), biotite (5%). Minor chlorite, muscovite, epidote, allanite, and apatite.

70571282. Herbert River Granite

Locality : 17°23'S, 144°39½'E. 5½ km SSW ofAlmaden.

Petrography : Medium-grained hornblende-biotite adamellite. Quartz (25%), orthoclase perthite (30%), sericitized oligoclase-andesine (35%), biotite (6-7%), hornblende (3%). Minor chlorite, epidote, sphene, zircon, and opaque minerals. Hornblende is partly pseudomorphed by biotite and epidote.

70571284. Herbert River Granite

Locality : 17°20'S, 144°41'E. 1km northeast of Almaden.

Petrography : Medium-grained biotite adamellite. Quartz (30%), perthite (45%), zoned sericitized oligoclase (20-25%), biotite (5%). Minor relict hornblende, zircon, epidote, and opaque minerals (including pyrite). Biotite is partly chloritized. Alkali feldspar has rims of albite.

68590076, E55/5/34. Ixe Microgranodiorite.

Locality : 17°46'S, 144°27'E. 8 km southwest of Bullock Creek siding.

Petrography : Porphyritic hornblende-biotite microadamellite. Quartz (20-25%), poikilitic microcline perthite (30-35%), zoned oligoclase-andesine (35%), biotite (8-10%). Minor hornblende, apatite, zircon, epidote, and opaque minerals. Phenocrysts of quartz, alkali feldspar and plagioclase. Hornblende is mostly pseudomorphed by epidote and chlorite, and biotite is slightly chloritized.

70571269. Ixe Microgranodiorite.

Locality : 17°46'S, 144°27½'E. 1½ km southeast of Ixe Mountain.

Petrography : Medium-grained, porphyritic biotite adamellite. Quartz (20-25%), poikilitic orthoclase perthite (30%), sericitized, zoned oligoclase-andesine (40-45%), biotite (7%). Minor chlorite, muscovite, zircon, and opaque minerals. Embayed quartz, poikilitic orthoclase and euhedral plagioclase occur as phenocrysts. The texture is monzonitic.

70571270. Ixe Microgranodiorite.

Locality : 17°46½'S, 144°27½'E. 2½ km southeast of Ixe Mountain.

Petrography : Medium-grained, porphyritic biotite adamellite. Quartz (20-25%), poikilitic orthoclase perthite (30%), zoned oligoclase-andesine (40%), chloritized biotite (5-8%). Minor muscovite, epidote, prehnite, apatite, zircon, and opaque minerals.

68590030, E55/1/3. Almaden Granite

Locality : 16°51'S, 144°32'E. Nightflower Mine.

Petrography : Porphyritic hornblende-biotite granodiorite. Quartz (20-25%), alkali feldspar (15-20%), zoned oligoclase-andesine (45-50%), hornblende (3-5%), biotite(2-3%). Accessory sphene, tourmaline, epidote, and opaque minerals. Plagioclase forms subhedral phenocrysts and is saussuritized. Biotite is partly chloritized.

68590031, E55/1/4. Almaden Granite

Locality : 16°56'S, 144°18½'E. 16 km southwest of Nychum homestead.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), perthitic alkali feldspar (15-20%), zoned, saussuritized oligoclase (45-50%), biotite (5-10%), hornblende (2-3%). Minor clinozoisite, tourmaline, and opaque minerals. Biotite is extensively chloritized and hornblende is partly replaced by epidote, etc.

68590043, E55/1/16. Almaden Granite

Locality : 16°50'S, 144°10½'E. 25 km west of Nychum homestead.

Petrography : Porphyritic hornblende-biotite granodiorite. Quartz (20%), alkali feldspar (10%), zoned oligoclase-andesine (50-55%), biotite (5%), hornblende (10%), opaque minerals (1%). Accessory sphene, apatite, epidote and zircon. Plagioclase, hornblende and biotite occur as phenocrysts in a groundmass consisting largely of quartz and alkali feldspar.

68590120, E55/10/11. Almaden Granite

Locality : 18°51½'S, 146°05½'E. Flagstone Creek, 22 km from Bruce Highway on track from Ingham to Hidden Valley.

Petrography : Medium-grained hornblende-biotite adamellite (near granodiorite). Quartz (25-30%), poikilitic orthoclase (25-30%), sericitized oligoclase (40%), biotite (2%), hornblende (1%). Accessory sphene, epidote, apatite, and opaque minerals. Biotite is partly chloritized and hornblende shows some alteration. Graphic intergrowths of quartz and alkali feldspar are present.

70571023. Almaden Granite

Locality : 16°51'S, 144°20'E. 16 km southwest of Nychum homestead.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20-25%), orthoclase perthite (10%), zoned oligoclase-andesine (55%), hornblende (5-8%), biotite (5%). Accessory allanite, epidote, sphene, apatite, and opaque minerals. Plagioclase has

rims of albite.

70571031. Almaden Granite

Locality : 17°04'S, 144°34'E. Walsh River, 5 km WSW of Fishermans Waterhole.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (25%), turbid orthoclase (15%), zoned andesine (45-50%), hornblende (10%), biotite (5%). Minor epidote, muscovite, apatite, and opaque minerals.

70571032. Almaden Granite

Locality : 17°06'S, 144°32½'E. 6½ km NNE of Chillagoe.

Petrography : Fine-grained biotite adamellite. Quartz (25-30%), kaolinized orthoclase perthite (30%), zoned andesine (35%), biotite (3-4%), epidote (2%), secondary muscovite (1%). Minor chlorite, sphene, and opaque minerals. Biotite is extensively chloritized. Feldspars are sericitized and saussuritized.

70571033. Almaden Granite

Locality : 17°10½'S, 144°33'E. 4 km southeast of Chillagoe.

Petrography : Medium-grained hornblende-biotite granodiorite, very similar to 70571031.

70571036. Almaden Granite

Locality : 17°20'S, 144°41½'E. Almaden.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), alkali feldspar (15%), sericitized, zoned andesine (50-55%), hornblende (7%), biotite (2%), opaque minerals (1%). Accessory epidote and apatite. Hornblende is partly pseudomorphed by biotite and calcite.

70571037A. Almaden Granite

Locality : As for 70571036.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20-25%), alkali feldspar (10-15%), plagioclase (50-55%), hornblende (5%), biotite (5%). Accessory epidote, allanite, and apatite.

70571037B. Almaden Granite.

Locality : As for 70571036

Petrography : Xenolith. Quartz (10-15%), alkali feldspar (5%), plagioclase (40%), hornblende (20%), biotite (20%).

70571283A. Almaden Granite

Locality : 17°21½'S, 144°40'E. 2½ km southwest of Almaden.

Petrography : Medium-grained hornblende-biotite granodiorite. Quartz (20%), poikilitic orthoclase (5-10%), zoned, sericitized andesine (55%), hornblende (8-10%), biotite (5%). Accessory sphene, epidote, allanite, and opaque minerals.

70571283B. Almaden Granite

Locality : As for 70571283A.

Petrography : Xenolith, very similar to 70571037B, but contains about 10% of alkali feldspar.

70571285. Almaden Granite

Locality : 17°20'S, 144°41'E. 1 km northeast of Almaden.

Petrography : Fine-grained hornblende-biotite-quartz diorite. Quartz (8-10%), orthoclase (6-8%), zoned andesine (60%), hornblende (15%), biotite (5%), epidote (2%). Accessory sphene, apatite, and opaque minerals. Quartz and orthoclase are interstitial. Biotite is partly chloritized.

70571018. Almaden Granite (north of Petford)

Locality : 1½ kms north of Petford. 17°19'S, 144°56½'E.

Petrography : Medium-grained hornblende-biotite-quartz diorite. Quartz (10%), orthoclase (5-10%), calcic andesine (55-60%), hornblende (15%), biotite (5%), opaque minerals (1%). Minor chlorite, muscovite, and apatite. Hornblende is partly pseudomorphed by biotite.

70571288. Almaden Granite (north of Petford)

Locality : 17°20½'S, 144°55½'E. 1 km west of Petford.

Petrography : Medium-grained hypersthene-hornblende-biotite-quartz diorite. Quartz (8%), alkali feldspar (2-3%), zoned andesine-labradorite (60-65%), hypersthene + secondary amphibole (10%), biotite (12%). Accessory sphene, epidote, and opaque minerals.

70571290. Almaden Granite (north of Petford)

Locality : 17°19'S, 144°58'E. 2½ km north-east of Petford.

Petrography : Medium-grained hypersthene-hornblende-biotite-quartz diorite. Quartz (7-8%), kaolinized orthoclase (3-4%), sericitized calcic andesine (60-65%), uralitized hypersthene (8%), hornblende (6%), biotite (6%), opaque minerals (1%). Accessory sphene and epidote.

68590420, E55/9/11. Cgb.

Locality : 18°08'S, 145°32'E. 10 km west of Kirrama.

Petrography : Biotite adamellite. This sample is from the continuation of the mass mapped as Herbert River granite in the Einasleigh 1:250 000 sheet area.

68590110, E55/10/1. Cgb.

Locality : 18°49½'S, 145°54'E. 2½ km south of Mount Fox sawmill.

Petrography : Medium-grained biotite adamellite (Herbert River Granite type). Quartz (30%), microcline (40%), zoned oligoclase-andesine (25%), biotite (5%). Minor secondary muscovite, and accessory zircon and allanite.

68590112, E55/10/3. Cgb.

Locality : 18°50'S, 145°46'E. 5 km west of Mount Fox.

Petrography : Medium-to coarse-grained biotite granite (Elizabeth Creek Granite type). Quartz (30%), microcline perthite (55%), calcic oligoclase (10%), biotite (2 - 3%). Accessory zircon and opaque minerals. Biotite is somewhat chloritized.

68590113, E55/10/4. Cgb.

Locality : 18°40½'S, 145°45'E. On the Ingham-Oak Hills road, 9 km past the Wallama Falls road junction.

Petrography : Medium-grained, leucocratic biotite granite (Elizabeth Creek Granite type). Quartz (30%), orthoclase perthite (50%), sodic oligoclase (15 - 20%), biotite (1 - 2%). Accessory allanite and opaque minerals. Biotite is largely altered to chlorite.

68590114, E55/10/5. Cgb.

Locality : 18°34'S, 145°41'E. 9½ km ESE of Oak Hills.

Petrography : Medium-grained biotite adamellite (Elizabeth Creek Granite type). Quartz (30%), altered alkali feldspar (40%), sodic oligoclase (30%), biotite (2%). Minor chlorite, sericite, fluorite, apatite, sphene, and opaque minerals.

68590115, E55/10/6. Cgb

Locality : 18°45½' S, 145°47½' E. 9½ km north of Mount Fox.

Petrography : Medium-grained biotite adamellite (Elizabeth Creek Granite type). Quartz (25%), alkali feldspar (40%), sodic oligoclase (30%), biotite (3%). Minor chlorite and muscovite; accessory fluorite, zircon, and clinozoisite.

68590116, E55/10/7. Cgb

Locality : 18°12' S, 145°51' E. On Kennedy - Kirrama road, 5½ km in from the foot of the range.

Petrography : Medium-grained hornblende-biotite adamellite (near granodiorite) (Almaden Granite type). Quartz (20%), microcline perthite (30%), andesine (40%), biotite (4%), hornblende (4%). Accessory sphene, apatite, epidote, and opaque minerals. Some of the hornblende contains relict grains of pyroxene. Biotite is partly chloritized and quartz shows undulose extinction.

68590117, E55/10/8. Cgb

Locality : 18°10' S, 145°41' E. 9½ km ESE of Kirrama homestead.

Petrography : Medium-grained hornblende biotite adamellite (Almaden Granite type). Quartz (25%), altered alkali feldspar (35%), andesine (35%), biotite (4 - 5%), hornblende (1 - 2%). Accessory sphene, apatite, allanite, epidote, and opaque minerals. Biotite is partly chloritized.

68590118, E55/10/9. Cgb

Locality : 18°06' S, 145°35' E. 5 km northwest of Kirrama homestead.

Petrography : Medium-grained, leucocratic muscovite adamellite (Elizabeth Creek Granite type). Quartz (25 - 30%), microcline (40 - 45%), sodic plagioclase (30%), muscovite (2%). A little relict biotite is present. Accessory opaque minerals.

68590119, E55/10/10. Cgb

Locality : 18°05' S, 145°34½' E. 7 km NNW of Kirrama homestead.

Petrography : Coarse-grained biotite adamellite (Herbert River Granite type). Quartz (25%), microcline perthite (40 - 45%), zoned oligoclase-andesine (30%), biotite (3%). Minor allanite, chlorite, and opaque minerals. Both the feldspars are rather altered.

68590121, E55/10/12. Cgb

Locality : 18°24' S, 146°14½' E. Hinchinbrook Island; the southernmost inlet on the west coast.

Petrography : Medium-grained arfvedsonite granite. Quartz (35%), alkali feldspar (65%), biotite (0.5%), arfredsonite (0.5%). Accessory fluorite and ? limonite. The feldspar is extensively altered and has irregular rims of albite.

68590084, E55/6/3. Cgb (Pzg on Innisfail 1:250 000 sheet)

Locality : 17°51' S, 145°34½' E. 5 km WSW of Koombooloomba Dam.

Petrography : Aplitic granite. Quartz (30 - 40%), alkali feldspar (40%), zoned albite-oligoclase (10 - 20%). Minor biotite, rutile, and opaque minerals. Both the feldspars are altered.

68590130, E55/13/13.

Locality : 19°32' S, 144°03' E. 16 km west of Black Braes homestead.

Petrography : Coarse-grained, porphyritic biotite granite. Quartz (30%), perthite (45 - 50%), oligoclase (15 - 17%), biotite (3%). Accessory fluorite, sphene, chlorite, and opaque minerals. The feldspar shows some sericitization. This sample is from an isolated mass possibly related to the Bagstowe Ring Dyke Complex (White, 1965).

68590088, E55/6/7. Tully Granite Complex.

Locality : $17^{o}45'$ S, $145^{o}39'$ E. On private (Cairns Regional Electricity Board) track from Cardstone to the Atherton Tableland, 7 km from Tully River bridge.

Petrography : Coarse-grained hornblende biotite adamellite. Quartz (20 - 25%), partly altered perthite (30 - 35%), oligoclase (35 - 40%), biotite (5 - 7%), hornblende (2 - 3%). Accessory sphene, apatite, allanite, and clinozoisite. The biotite and hornblende occur together in aggregates.

68590091, E55/6/10. Tully Granite Complex.

Locality : as for 68590088

Petrography : Coarse-grained hornblende-biotite adamellite. Quartz (25 - 30%), perthite (30 - 35%), oligoclase (30 - 35%), biotite (5%), hornblende (1 - 2%). Accessory apatite, zircon, allanite, leucoxene, and opaque minerals. The hornblende and biotite occur in association.

68590092, E55/6/11. Tully Granite Complex.

Locality : $17^{o}44'$ S, $145^{o}39'$ E. On C.R.E.B. track, 10 km from Tully River bridge.

Petrography : Foliated, porphyritic hornblende-biotite adamellite. Quartz (25 - 30%), perthite (25 - 30%), oligoclase (30%), biotite (5%), hornblende (5%). Accessory apatite, zircon, allanite, sphene, clinozoisite, and opaque minerals. The biotite is slightly chloritized and occurs in association with hornblende. Plagioclase is zoned, with saussuritized cores. Quartz is partly recrystallised.

68590093, E55/6/12. Tully Granite Complex.

Locality : $17^{o}43'$ S, $145^{o}38\frac{1}{2}'$ E. On C.R.E.B. track, 13½ km from Tully River bridge.

Petrography : Medium-grained quartz-feldspar-biotite gneiss. Quartz (50%), orthoclase (20 - 25%), oligoclase (20%), dark greenish-brown biotite (10%). Accessory epidote, sphene, opaque minerals and a brown metamict mineral (possibly allanite).

The texture is granoblastic. This sample appears to be a strongly deformed and recrystallized acid igneous rock (probably a biotite adamellite).

68590094, E55/6/14. Tully Granite Complex.

Locality : 17°33' S, 145°31½' E. 3 km south of Millaa Millaa.

Petrography : Coarse-grained hornblende-biotite granodiorite. Quartz (25%), orthoclase (20%), zoned oligoclase-andesine (40%), biotite (10%), hornblende (2 - 3%). Accessory zoisite, epidote, sphene, allanite, apatite, calcite, and opaque minerals. The orthoclase shows some alteration to microcline and the biotite is slightly chloritized.

68590095, E55/6/15. Tully Granite Complex.

Locality : 17°25' S, 145°36' E. 3 km north of Tarzali on the Millaa Millaa - Malanda road.

Petography : Medium-grained quartz diorite. Quartz (10%), plagioclase (40 - 45%), brownish-green hornblende (30%), reddish-brown biotite (3%). Accessory apatite, epidote, rutile, zircon, calcite, sericite, and opaque minerals. The biotite is partly chloritized; plagioclase is zoned andesine-labradorite, with sericitized cores.

68590028, E55/1/1. Mareeba Granite.

Locality : 16°34' S, 145°07' E. 1½ km south of Mount Alto.

Petrography : Medium-grained muscovite adamellite. Quartz (25%), altered alkali feldspar (35 - 40%), sodic plagioclase (35%), muscovite (3 - 5%). Accessory tourmaline and garnet.

68590032, E55/1/5. Mareeba Granite.

Locality : 16°50' S, 145°13' E. 1 km south of Southedge homestead.

Petrography : Coarse-grained biotite granite. Quartz (25 - 30%), microcline perthite (45 - 50%), zoned oligoclase (15 - 20%), biotite (1 - 2%). Minor secondary muscovite, apatite, and zircon. Biotite is partly chloritized.

68590033, E55/1/6. Mareeba Granite.

Locality : 16°35'S, 145°18'E. 5 km west of Rumula.

Petrography : Coarse-grained biotite adamellite. Quartz (25%), perthite (30-35%), zoned plagioclase (30-35%), biotite (3-5%). Minor secondary muscovite, zircon, apatite, and opaque minerals. The feldspars show some alteration and biotite is locally chloritized.

68590034, E55/1/7. Mareeba Granite.

Locality : 16°40'S, 145°14'E. Lighthouse Mountain, 11 km west of Molloy.

Petrography : Slightly porphyritic, coarse-grained, biotite adamellite. Quartz (30-35%), perthite (30-35%), zoned oligoclase (20-25%), biotite (2-3%), tourmaline (1%). Minor secondary muscovite, zircon, and apatite. The feldspars and biotite show some alteration.

68590036, E55/1/9. Mareeba Granite.

Locality : 16°26'S, 145°08'E. 26 km from Mulligan Highway, on track to Mount Spurgeon.

Petrography : Coarse grained biotite adamellite. Quartz (25-30%), microcline (30%), zoned plagioclase (35%), biotite (7%). Accessory apatite and opaque minerals. The feldspars are rather altered, and biotite is slightly chloritized.

68590037, E55/1/10. Mareeba Granite.

Locality : 16°29'S, 144°55'E. 1 km north of the Mulligan Highway and 9½ km west of McLeod River crossing.

Petrography : Biotite adamellite. Quartz (25%), microcline perthite (25%), oligoclase (35%), biotite (10%). Minor muscovite, apatite, zircon, and opaque minerals. The biotite is slightly chloritized and occurs as coarse aggregates or "micro-xenoliths". The feldspars are saussuritized.

68590039, E55/1/2. Mareeba Granite.

Locality : 16°24'S, 144°47'E. 1½ km east of Spring Hill homestead.

Petrography : Biotite-muscovite adamellite. Quartz (25%), alkali feldspar (25%), sodic plagioclase (40%), biotite (3%), muscovite (5%), garnet (1%). Accessory zircon, apatite, and opaque minerals. Biotite is partly chloritized.

68590041, E55/1/4. Mareeba Granite.

Locality : 16°15½' S, 144°45' E. 5 km southeast of Maitland Downs homestead.

Petrography : Coarse-grained, leucocratic muscovite adamellite. Quartz (20 - 25%), perthite (45%), oligoclase (30 - 35%), muscovite (2%), garnet (1%). Minor chloritized biotite and opaque minerals.

68590042, E55/1/15. Mareeba Granite (China Camp)

Locality : 16°02' S, 145°18' E. 1½ km northeast of China Camp.

Petrography : Coarse-grained, porphyritic biotite adamellite. Quartz (25 - 30%), microcline perthite (35 - 40%), plagioclase (25%), biotite (3%). Minor secondary muscovite, zircon, apatite, and opaque minerals. Biotite is slightly chloritized and microcline is partly sericitized.

68590044, E55/2/1. Mareeba Granite.

Locality : 16°38½' S, 145°34' E. Rex lookout, White Cliffs, on Cook Highway.

Petrography : Medium-grained biotite-muscovite adamellite. Quartz (25 - 30%), microcline (25 - 30%), albite-oligoclase (40 - 45%), biotite (3 - 5%), tourmaline (1%), apatite (1%), secondary muscovite (1%). Accessory fluorite and zircon.

68590045, E55/2/2. Mareeba Granite.

Locality : As for 68590044.

Petrography : Medium-grained biotite adamellite. Quartz (25%), microcline (25%), zoned plagioclase (45 - 50%), biotite (1%), tourmaline (1%), secondary muscovite. Accessory apatite and opaque minerals. The feldspars are extensively altered, and the biotite is bleached.

68590046, E55/2/3. Mareeba Granite.

Locality : 16°43' S, 145°38' E. Simpson Point on Cook Highway, 11 km north of Kuranda.

Petrography : Medium-grained, slightly foliated biotite adamellite. Quartz (30 - 35%), perthitic alkali feldspar (20 - 25%), plagioclase (35 - 40%), biotite (5 - 10%). Accessory sphene, apatite, calcite, and opaque minerals. The plagioclase is almost completely replaced by sericite and calcite. The quartz forms fine-grained, granular aggregates.

68590047, E55/24. Mareeba Granite.

Locality : 16°57' S, 145°48½' E. On track from Gordonvale to Murray Prior Range, 18 km from Gordonvale.

Petrography : Medium-grained, slightly foliated, porphyritic biotite adamellite. Quartz (25 - 30%), perthite (40 - 45 %), zoned plagioclase (25 - 30%), biotite (2 - 3%). Accessory tourmaline, apatite, epidote, and opaque minerals. Phenocrysts of perthite, plagioclase, and quartz. The plagioclase is extensively saussuritized, and the alkali perthite is sericitized. Biotite is partly chloritized.

68590418, E55/5/36. Mareeba Granite.

Locality : 17°02' S, 145°20½' E. 9 km west of Mareeba; Gorge Creek crossing on the Mareeba-Dimbulah road.

Petrography : Biotite adamellite.

68590419, E55/6/1. Mareeba Granite

Locality : 17°10½' S, 145°32' E. 1½ km southwest of Tinaroo Dam.

Petrography : Biotite microgranodiorite.

68590083, E55/6/2. Mareeba Granite.

Locality : 17°13' S, 145°42' E. Gillies Highway, 11½ km west of bridge over Little Mulgrave Creek.

Petrography : Coarse-grained, porphyritic biotite granite. Quartz (30 - 35%), perthite (50 - 55%), plagioclase (10 - 15%), biotite (1 - 2%). Minor secondary muscovite, fluorite, clinozoisite, allanite, zircon, and opaque minerals. Plagioclase is strongly zoned, with saussuritized cores and albite rims. Perthite forms phenocrysts. Biotite shows some alteration to chlorite.

68590085, E55/6/4. Mareeba Granite.

Locality : 17°09' S, 145°33½ ' E. 2 km NNE of Tinaroo Dam.

Petrography : Coarse-grained biotite adamellite. Quartz (25 - 30%), perthite (40 - 45%), zoned oligoclase (25 - 30%), biotite (1 - 2%). Minor secondary muscovite, fluorite, apatite, and zircon. Both feldspars are sericitized and biotite varies from fresh to chloritized.

68590086, E55/6/5. Mareeba Granite.

Locality : 17°11' S, 145°32' E. 1½ km southwest of Tinaroo Dam.

Petrography : Foliated biotite microadamellite (near granodiorite). Quartz (25 - 30%), alkali feldspar (20 - 25%), zoned oligoclase-andesine (40 - 45%), biotite (5%). Minor garnet, muscovite, apatite, and zircon. Biotite is partly chloritized.

68590087, E55/6/6. Mareeba Granite (pegmatite)

Locality : As for 68590086.

Petrography : Garnet-muscovite-quartz-feldspar gneiss. Quartz (35%), orthoclase (20%), oligoclase-andesine (20%), muscovite (25%), garnet (2%). The sample used for age determination (Australian National University number GA5171) is described as a muscovite-rich pegmatite from the Mareeba Granite (Richards et al., 1966). The amount of muscovite in the analysed sample suggests a deformed pegmatite.

68590096, E55/6/6. Mareeba Granite.

Locality : 17°11' S, 145° 49½' E. On track to Clamshell Falls, west of Gordonvale.

Petrography : Medium-grained, foliated biotite granite. Quartz (35%), alkali feldspar (50%), oligoclase (10%), biotite (5%). Minor sphene, epidote, apatite, sericite, and opaque minerals. Quartz, biotite, and feldspars show the effects of deformation and are partly recrystallised. Biotite is partly chloritized. The alkali feldspar is mostly orthoclase, but shows some alteration to microcline.

68590097, E55/6/17. Mareeba Granite

Locality : 17°11½' S, 145° 53' E. 5½ km east of Clamshell Falls.

Petrography : Foliated biotite adamellite. Quartz (30%), orthoclase (30%), oligoclase (30%), biotite (8%). Minor muscovite; accessory zircon, sphene, apatite, and opaque minerals. The rock consists of coarse-grained porphyroclasts of feldspar and quartz in a matrix of finely granular, recrystallized material.

68590098, E55/6/18. Mareeba Granite.

Locality : 17°20½' S, 45°52' E. The Boulders, 6½ km west of Babinda.

Petrography : Coarse-grained biotite adamellite. Quartz (30%), perthite (30%), oligoclase (30%), biotite (10%). Minor muscovite, zircon, epidote, and opaque minerals. Biotite is slightly chloritized. The rock is slightly deformed, with some recrystallization of quartz and feldspar.

68590038, E55/1/11. Mareeba Granite (near Curraghmore).

Locality : 16°32' S, 144°51' E. 14½ km WSW of Curraghmore homestead.

Petrography : Medium-grained biotite adamellite. Quartz (25%), alkali feldspar (30%), zoned oligoclase-andesine (40%), biotite (5%), opaque minerals (1%). Minor sericite and apatite. The feldspars are somewhat altered and the biotite is partly chloritized.
The sample is from one of the two intrusions, consisting largely of diorite, which were thought to be related to the Mareeba Granite by Amos and de Keyser (1964) and which were included with this granite by de Keyser and Lucas (1968).

68590040, E55/1/13. Cannibal Creek Granite.

Locality : 16°12½' S, 144°33½' S. 16 km west of Maitland Downs homestead.

Petrography : Biotite-muscovite granite. Quartz (25 - 30%), microcline perthite (40 - 45%), zoned oligoclase (20 - 25%), biotite (1 - 2%), muscovite (1%). Accessory apatite and opaque minerals. The cores of the plagioclase crystals are strongly sericitized and the biotite is slightly chloritized.

68590004, D55/13/1. Trevethan Granite.

Locality : 15°40' S, 145°13' E. ½ km north of the Helenvale junction on Mulligan Highway.

Petrography : Medium-grained actinolite-biotite granodiorite. Quartz (20%), microcline (10%), zoned oligoclase-andesine (40 - 50%), biotite (10%), actinolite (5 - 10%). Accessory apatite, sphene, zircon, and opaque minerals. The amphibole is partly pseudomorphed by biotite, and is associated with relict clinopyroxene.

68590005, D55/13/2. Acid dyke in Trevethan Granite.

Locality : 15°39' S, 145°13' E. Black Gap, on Mulligan Highway.

Petrography : Porphyritic rhyodacite (granophyre porphyry). Phenocrysts of quartz, oligoclase, and microcline in a micrographic groundmass. 2 - 5% of strongly chloritized biotite, associated with epidote and prehnite, is present, together with accessory sphene.

68590006, D55/13/3. Trevethan Granite.

Locality : 15°38' S, 145°13½' E. Mulligan Highway, 1½ km north of Black Gap.

Petrography : Medium-grained actinolite-biotite tonalite. Quartz (20%), microcline (5%), zoned oligoclase-andesine (50 - 60%), biotite (8%), actinolite (7%). Accessory zircon, apatite, and opaque minerals. Actinolite is partly pseudomorphed by biotite. Biotite is partly chloritized and plagioclase is rather altered. Quartz shows some recrystallization.

68590009, D55/13/7. Tuckley Granite.

Locality : 15°24' S, 144°51' E. 1½ km southeast of Battle Camp siding.

Petrography : Biotite adamellite. Quartz (30 - 40%), orthoclase microperthite (25-35%), zoned albite-oligoclase(25%-35%), biotite (5 - 10%). Accessory zircon, apatite, and opaque minerals.

68590414, D55/13/4. Finlayson Granite.

Locality : 15°29' S, 145°15' E. Southern outskirts of Cooktown.

Petrography : Porphyritic biotite adamellite.

68590007, D55/13/5. Finlayson Granite.

Locality : 15°44' S, 145°15' E. 5 km west of Rossville, in Wallaby Creek.

Petrography : Tourmalinized, porphyritic biotite microadamellite. Quartz (30%), microcline microperthite (40%), zoned, altered oligoclase (25%), biotite (1 - 3%), blue-green tourmaline (0 - 10%). Minor fluorite, apatite, muscovite, and chlorite. The biotite is partly chloritized.

68590008, D55/13/6. Dyke in Finlayson Granite.

Locality : 15°48½' S, 145°19' E. 8 km southeast of Rossville on track to Bloomfield.

Petrography : Sheared, tourmalinized, porphyritic microgranite. Quartz (45%), microcline (30 - 35%), albite (15 - 20%), biotite (1 - 3%), tourmaline (0 - 5%). Minor zircon, apatite, chlorite, and opaque minerals. Biotite is partly chloritized and the feldspars are rather altered. Rounded quartz and corroded microcline phenocrysts in a micrographic groundmass.

68590010, D55/13/8. Finlayson Granite.

Locality : 15°51' S, 145°12½' E. 3 km southwest of Jubilee on Mount Poverty track.

Petrography : Coarse-grained biotite granite. Quartz (30%), perthite (60 - 65%), oligoclase (5%), biotite (1 - 2%), tourmaline (1%). Minor zircon, chlorite, sericite, and opaque minerals. Plagioclase is often saussuritized and biotite is partly chloritized. Quartz is strained and partly recrystallized.

68590011, D55/13/9. Finlayson Granite.

Locality : 15°52' S, 145°11½' E. Near Mount Poverty, 8 km southwest of Jubilee.

Petrography : Foliated, porphyritic biotite adamellite. Quartz (30 - 35%), microcline perthite (30 - 35%), saussuritized plagioclase (30 - 35%), biotite (2 - 3%). Minor tourmaline, muscovite, zircon, apatite, and opaque minerals. Biotite is partly chloritized. Quartz and feldspars are often fractured and quartz shows undulose extinction.

68590012, D55/13/10. Finlayson Granite.

Locality : 15°51' S, 145°15' E. 3 km southeast of Jubilee.

Petrography : Sheared, porphyritic biotite granite. Quartz (30 - 35%), microcline perthite (40 - 50%), plagioclase (20%), biotite (1 - 2%). Minor tourmaline, muscovite, apatite, zircon, and opaque minerals. Quartz and plagioclase porphyroclasts in a recrystallized groundmass.

68590001, D55/9/1. Altanmoui Granite

Locality : 14°29½' S, 144°38' S. 9½ km ENE of Wakooko Station.

Petrography : Coarse-grained biotite granite (near adamellite). Quartz (30 - 35%), microcline perthite (40%), zoned albite-oligoclase (20%), biotite (3 - 4%). Accessory apatite, zircon, epidote and opaque minerals. Plagioclase is extensively sericitized and saussuritized. Biotite is partly chloritized.

68590002, D55/9/2. Altanmoui Granite

Locality : 14°19½' S, 144°30' E. 1½ km southeast of Abbey Peak.

Petrography : Coarse-grained hornblende-biotite adamellite. Quartz (25%), microcline perthite (30 - 35%), zoned oligoclase-andesine (30%), biotite (5-10%), hornblende (1 - 2%). Accessory allanite and opaque minerals. The cores of the plagioclase crystals are extensively altered. Much of the hornblende is replaced by biotite or chlorite.

68590003, D55/9/3. Altanmoui Granite

Locality : 14°31½' S, 144°32½' E. 2 km north of Wakooko Station.

Petrography : Coarse-grained, slightly porphyritic biotite granite (near adamellite). Quartz (30%), microcline microperthite (40 - 50%), zoned albite-oligoclase (20 - 25%), biotite (5%). Minor muscovite and zircon. Phenocrysts of microcline and quartz. The cores of the plagioclase crystals are seriticized.

67490073R, W73R. Gurrumba Ring Complex.

Locality : 17°32'S, 144°59'E. 1 km SSW of Gurrumba Battery.

Petrography : Olivine gabbro. Labradorite-bytownite (70%), serpentinized olivine (10%), altered pyroxenes (10-20%). The pyroxenes are mostly replaced by biotite, epidote, chlorite, and secondary amphibole (tremolite/actinolite).

67490076, W76. Gurrumba Ring Complex.

Locality : 17°31½'S, 144°59½'E. ½ km WSW of Gurrumba Battery.

Petrography : Olivine gabbro. Bytownite (75-80%), serpentinized olivine (7-8%), relict hypersthene (2%), altered pyroxenes (6-7%), opaque minerals (3%). Pyroxenes are mostly replaced by actinolite, chlorite, and a little biotite. Olivine is altered to serpentine and talc.

67490078, W78. Gurrumba Ring Complex.

Locality : As for 67490076.

Petrography : Olivine gabbro. Bytownite (70%), altered olivine (10%), altered pyroxenes (15-20%), opaque minerals (3%). Olivine is largely replaced by serpentine and talc with rims of actinolite. Augite and hypersthene are mostly altered to biotite, chlorite, and secondary amphibole.

67490075, W75. Gurrumba Ring Complex.

Locality : 17°32'S, 144°59'E. 1½ km SSW of Gurrumba Battery.

Petrography : Porphyritic andesite. Phenocrysts (15%) of andesine and chloritic pseudomorphs in a trachytic groundmass containing plagioclase, alkali feldspar, quartz, and accessory sphene and opaque minerals. The rock is extensively altered.

67490079R, W79R. Gurrumba Ring Complex.

Locality : 17°31½'S, 144°59½'E. 400 metres south of Gurrumba Battery.

Petrography : Slightly porphyritic biotite microadamellite. Quartz (30%), alkali feldspar (40%), sericitized plagioclase (30%). Minor biotite, muscovite, hematite and opaque minerals. Plagioclase occurs as phenocrysts as well as in the groundmass. Quartz occurs as rounded ?xenocrysts.

67490080R, W80R. Gurrumba Ring Complex.

Locality : 17°31½'S, 145°00'E. 1 km ENE of Gurrumba Battery.

Petrography : Porphyritic rhyodacite (granophyre). Quartz (25%), alkali feldspar (30-35%), oligoclase-andesine (30-35%), secondary chlorite and epidote (4%). Phenocrysts (15-20%) of subhedral plagioclase, corroded alkali feldspar and chloritic pseudomorphs in a micrographic groundmass.

68590013, E54/8/1. Newcastle Range Volcanics

Locality : 17°55½'S, 143°46'E. 32 km north-west of Talaroo homestead.

Petrography : Porphyritic augite andesite. Andesine-labradorite (60%), augite (20%), mesostasis (10%), leucoxene (3%), opaque minerals (1%). Phenocrysts comprise plagioclase and augite and the partly glassy groundmass contains calcite, chlorite, and quartz. Augite is partly pseudomorphed by chlorite.

68590421, E 55/9/16. Newcastle Range Volcanics

Locality : 18°26'S, 144°02'E. 11 km north of Einasleigh.

Petrography : Porphyritic rhyodacite. Phenocrysts of quartz, alkali feldspar, and plagioclase in an aphanitic groundmass. Biotite is completely altered to chlorite.

70571171. Newcastle Range Volcanics

Locality : 18°32'S, 143°52½'E. 15 km northeast of Wirra Wirra.

Petrography : Porphyritic rhyolite welded tuff. Phenocrysts (30%) of embayed β -quartz, kaolinized perthite, and sericitized oligoclase. The alkali feldspar-rich groundmass is cryptocrystalline, flow-banded and contains flattened and recrystallized pumice fragments. Accessory opaque minerals.

70571172. Newcastle Range Volcanics

Locality : 18°32'S, 143°53'E. 16 km northeast of Wirra Wirra.

Petrography : Porphyritic dacite. Phenocrysts consist of andesine and chloritic pseudomorphs after hornblende. The groundmass is trachytic and contains quartz, plagioclase, turbid alkali feldspar, epidote, and sericite.

70571193. Newcastle Range Volcanics

Locality : 18°37'S, 143°45'E. 1½ km west of Wirra Wirra.

Petrography : Banded rhyolite. A few phenocrysts of altered feldspar and embayed quartz in an iron-stained, partly spherulitic, cryptocrystalline groundmass consisting mainly of quartz and alkali feldspar. Minor epidote, rutile, and opaque minerals.

70571200. Newcastle Range Volcanics

Locality : 18°16½'S, 143°40½'E. 13½ km east of Georgetown.

Petrography : Porphyritic rhyolite dyke. Phenocrysts of β-quartz, corroded alkali feldspar, and minor oligoclase in a turbid devitrified, partly spherulitic groundmass. Minor altered biotite, muscovite, sphene, zircon, rutile, chalcedony, and hematite. The rock is extensively altered.

70571201. Newcastle Range Volcanics

Locality : 18°16½' S, 143°41½'E. 15 km east of Georgetown.

Petrography : Dacite welded tuff. A few quartz and andesine phenocrysts in a devitrified, altered groundmass containing quartz, alkali feldspar, plagioclase, calcite, chloritic pseudomorphs, and accessory rutile and apatite. Plagioclase is extensively altered to sericite, calcite, etc. Relict eutaxitic textures are preserved.

70571202. Newcastle Range Volcanics

Locality : As for 70571201

Petrography : Porphyritic dacite welded tuff. Phenocrysts of andesine and chlorite/calcite pseudomorphs in an iron-stained, trachytic matrix containing plagioclase, quartz, alkali feldspar, epidote, calcite, magnetite, and muscovite. Accessory apatite and pyrite. The rock is extensively altered and contains pumice fragments.

70571203. Newcastle Range Volcanics

Locality : 18°16½'S, 143°42'E. 17 km east of Georgetown.

Petrography : Rhyodacite welded tuff. A few phenocrysts of plagioclase and subordinate quartz and alkali feldspar. The groundmass is iron-stained, cryptocrystalline and rich in alkali feldspar. Minor altered biotite and calcite. Feldspars are extensively altered to sericite, calcite, clay minerals, etc.

70571204. Newcastle Range Volcanics

Locality : As for 70571204

Petrography : Rhyodacite welded tuff. Phenocrysts consist of plagioclase, subordinate quartz and alkali feldspar. Calcite replaces both plagioclase and mafic minerals. The groundmass shows eutaxitic textures and contains trachytic xenoliths, pumice fragments, and shards. Minor chlorite and chalcedony.

70571205. Newcastle Range Volcanics

Locality : 18°17'S, 143°42½'E. 17½ km east of Georgetown.

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts (10%) of quartz, altered alkali feldspar, and plagioclase in a partly glassy, partly spherulitic groundmass containing abundant devitrified pumice fragments. Minor chlorite, calcite, and chalcedony.

70571206. Newcastle Range Volcanics

Locality : 18°17½'S, 143°43'E. 18 km east of Georgetown.

Petrography : Porphyritic rhyodacite welded tuff, very similar to 70571205.

70571207. Newcastle Range Volcanics

Locality : 18°17½'S, 143°44'E. 20 km east of Georgetown.

Petrography : Rhyodacite welded tuff. A few quartz and feldspar phenocrysts in an iron-stained, cryptocrystalline groundmass. Feldspars are extensively kaolinized.

70571208. Newcastle Range Volcanics

Locality : As for 1207.

Petrography : Porphyritic rhyolite. Phenocrysts of quartz, altered alkali feldspar, and sericitized plagioclase in a cryptocrystalline groundmass containing mainly alkali feldspar and quartz. Biotite (2%) is extensively altered. Minor chlorite, epidote, muscovite, apatite, and opaque minerals.

70571209. Newcastle Range Volcanics

Locality : 18°18'S, 143°45½'E. 22 km east of Georgetown.

Petrography : Porphyritic dacite. Phenocrysts of quartz and altered plagioclase in an iron-stained, cryptocrystalline groundmass. Accessory zircon, apatite, and opaque minerals. Mafic minerals (7%) are replaced by epidote and chlorite.

70571210. Newcastle Range Volcanics

Locality : As for 70571209

Petrography : Porphyritic dacite. Phenocrysts (30%) of quartz and saussuritized plagioclase in a cryptocrystalline groundmass containing quartz, plagioclase, and alkali feldspar. Accessory apatite and opaque minerals. Mafic minerals are replaced by epidote and chlorite. The rock is extensively hydrothermally altered.

70571211. Newcastle Range Volcanics

Locality : 18°18'S, 143°46'E. 23 km east of Georgetown.

Petrography : Porphyritic dacite. Phenocrysts consist of quartz, saussuritized andesine, and chloritic pseudomorphs. The groundmass is cryptocrystalline and contains quartz, plagioclase, turbid alkali feldspar, and chlorite. Minor fluorite, apatite, epidote, and opaque minerals.

70571212. Newcastle Range Volcanics

Locality : As for 70571211

Petrography : Dacite welded tuff. A few phenocrysts of turbid andesine and rare quartz in an extensively altered, cryptocrystalline groundmass containing quartz, altered feldspar, calcite, chlorite, epidote, and minor apatite and opaque minerals. Abundant trachytic xenoliths are present.

70571213. Newcastle Range Volcanics

Locality : 18°18½'S, 143°46'E. 24 km east of Georgetown.

Petrography : Porphyritic dacite. Phenocrysts of sericitized, corroded plagioclase, embayed quartz, and chloritic pseudomorphs in a cryptocrystalline, groundmass containing quartz, alkali feldspar, and plagioclase. Minor calcite, epidote, apatite, and opaque minerals.

70571214. Newcastle Range Volcanics

Locality : 18°18½'S, 143°47'E. 25 km east of Georgetown.

Petrography : Banded rhyolite. Rare sericitized oligoclase phenocrysts in a banded, cryptocrystalline and partly spherulitic groundmass, rich in alkali feldspar. Minor iron oxide.

70571215. Newcastle Range Volcanics

Locality : As for 70571214

Petrography : Porphyritic rhyodacite. Large phenocrysts (40%) of euhedral quartz, sericitized andesine (An 32-35), and corroded alkali feldspar in an iron-stained, cryptocrystalline groundmass. Minor altered biotite.

70571220. Newcastle Range Volcanics

Locality : 18°16'S, 143°56'E. 6½ km southwest of Eveleigh homestead.

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts of quartz, kaolinized alkali feldspar, and sericitized oligoclase, with biotite and epidote, in a glassy, slightly fluidal and partly spherulitic groundmass. Minor fluorite and chalcedony. Xenoliths of quartz-feldspar-biotite gneiss.

70571221. Newcastle Range Volcanics

Locality : As for 70571220

Petrography : Slightly porphyritic rhyodacite welded tuff. A few fragmental phenocrysts of quartz, alkali feldspar, and oligoclase. Biotite (5%) is partly replaced by chlorite and epidote. The groundmass is cryptocrystalline to aphanitic and spherulitic.

70571227. Newcastle Range Volcanics

Locality : 18°19'S, 143°40½'E. Near Kitchens Reef gold mine.

Petrography : Porphyritic dacite. Andesine phenocrysts in a cryptocrystalline groundmass. Pyroxene is pseudomorphed by chlorite and epidote. Accessory apatite and opaque minerals. Granitic xenoliths are present.

70571228. Newcastle Range Volcanics

Locality : 18°18½'S, 143°40'E. Near Mount Fisher gold mine.

Petrography : Rhyodacite. A few phenocrysts of feldspar in an aphanitic to cryptocrystalline groundmass containing quartz, alkali feldspar, and plagioclase. Mafic minerals (possibly pyroxene) are pseudomorphed by chlorite. Accessory sphene, epidote, and opaque minerals.

70571229. Newcastle Range Volcanics

Locality : As for 70571228

Petrography : Rhyolite welded tuff. Phenocrysts (20%) of quartz, anorthoclase, and oligoclase in a cryptocrystalline groundmass consisting mainly of quartz and alkali feldspar. Mafic minerals (biotite and a little hornblende) are replaced by chlorite, iron oxide, etc. Flattened pumice fragments (30%) are devitrified to spherulitic quartz/feldspar intergrowths. Minor calcite, chlorite, and allanite.

70571230. Newcastle Range Volcanics

Locality : As for 70571228

Petrography : Rhyolite welded tuff, very similar to 70571229.

70571231. Newcastle Range Volcanics

Locality : As for 70571228

Petrography : Rhyolite welded tuff. Phenocrysts consist of quartz with subordinate alkali feldspar and plagioclase. The essentially quartzo-feldspathic groundmass is iron-stained and cryptocrystalline, and contains devitrified pumice fragments and shards. Minor chlorite, epidote, and opaque minerals.

67490030R, W30R. Featherbed Volcanics

Locality : 17°25'S, 145°01'E. 6½ km. NNW of Emuford.

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts (55%) of quartz, oligoclase-andesine, and altered alkali feldspar, with minor biotite (2%), hornblende (1%), relict augite. Accessory opaque minerals. The groundmass is aphanitic to cryptocrystalline.

67490031R, W31R. Featherbed Volcanics

Locality : As for 67490030R

Petrography : Porphyritic rhyodacite welded tuff. Very similar to 67490030R, although the feldspars are more extensively altered and augite is absent.

67490032R, W32R. Featherbed Volcanics

Locality : As for 67490030R

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts consist of quartz, plagioclase, alkali feldspar, subordinate biotite, and relict pyroxene. Accessory opaque minerals. The groundmass is slightly fluidal and cryptocrystalline.

67490033R, W33R. Featherbed Volcanics

Locality : As for 67490030R

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts of embayed quartz, kaolinized alkali feldspar, biotite, and minor hornblende in a cryptocrystalline groundmass. Biotite is partly altered to chlorite.

67490034R, W34R. Featherbed Volcanics

Locality : 17°25'S, 145°02'E. 5 km north of Emuford.

Petrography : Porphyritic rhyodacite. Phenocrysts of embayed quartz, sericitized plagioclase, and chloritic pseudomorphs in a recrystallized, aphanitic matrix consisting of quartz, alkali feldspar, and subordinate plagioclase. Minor epidote and pyrite.

67490035R, W35R. Featherbed Volcanics

Locality : As for 67490034R

Petrography : Slightly porphyritic rhyodacite. Small phenocrysts of plagioclase (andesine) and subordinate quartz in a cryptocrystalline groundmass. The main ferromagnesian minerals are augite (1%), orthopyroxene, and biotite which all show marginal alteration to chlorite and iron oxide.

67490041R, W41R. Featherbed Volcanics

Locality : 17°25'S, 145°05'E. 8 km northeast of Emuford.

Petrography : Porphyritic rhyodacite welded tuff. Small phenocrysts (20%) of subhedral quartz, sericitized plagioclase, turbid alkali feldspar, and chloritic pseudomorphs in a cryptocrystalline, fluidal, and locally glassy groundmass.

67490042R, W42R. Featherbed Volcanics

Locality : As for 67490041R

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts of quartz and altered, corroded feldspar in a cryptocrystalline, fluidal, and partly glassy groundmass. The ferromagnesian minerals are pseudormorphed by secondary chlorite, calcite, and iron oxide.

68490018B, DB18B Featherbed Volcanics

Locality : 17°22½'S, 145°03'E. 1½ km north of Halpin Peak.

Petrography : Rhyodacite

68490018C, DB18C. Featherbed Volcanics

Locality : As for 68490018B

Petrography : Porphyritic rhyodacite.

68490019, DB19. Featherbed Volcanics

Locality : 17°17½'S, 145°06'E. 11 km northwest of Orient Camp.

Petrography : Porphyritic rhyodacite. Quartz (30%), alkali feldspar (35-40%), plagioclase (25%), chloritized biotite (3%). Large phenocrysts (40%) consist of roughly equal proportions of quartz, poikilitic alkali feldspar, and plagioclase. The feldspars are extensively altered with the development of secondary calcite, epidote, clay minerals, etc. The groundmass is aphanitic.

68490173, DB173. Featherbed Volcanics

Locality : 17°18½'S, 145°12½'E. 1½ km WNW of Stannary Hills.

Petrography : Porphyritic rhyodacite welded tuff. Fragmental phenocrysts (30%) of embayed or angular quartz, turbid, kaolinized alkali feldspar, and subhedral, sericitized plagioclase in a banded cryptocrystalline groundmass. Biotite is deformed and oriented parallel to the banding. Relict hornblende is also present.

68490175A, DB175A. Featherbed Volcanics

Locality : 17°18'S, 145°12'E. 2½ km WNW of Stannary Hills.

Petrography : Porphyritic rhyodacite welded tuff. Fragmental phenocrysts (50%) of quartz (15%), sericitized plagioclase (40-45%), turbid alkali feldspar (35-40%), dark greenish-brown biotite (2%), and altered hornblende (2%), in a cryptocrystalline, fluidal groundmass. Hornblende is altered to chlorite and epidote. Minor calcite, sphene, apatite, and opaque minerals.

68490175B, DB175B. Featherbed Volcanics

Locality : As for 68490175A

Petrography : Porphyritic rhyodacite welded tuff, very similar to 68490175A, although the eutaxitic texture is more strongly developed.

68490175C, DB175C. Featherbed Volcanics

Locality : As for 68490175A

Petrography : Rhyodacite welded tuff. Quartz (20%), alkali feldspar (35%), plagioclase (35%), epidote (5%), biotite (1%). The rock is almost aphyric, with a very few small phenocrysts. Feldspars are corroded and the biotite crystals are aligned parallel to the banding and show some resorption.

68490175D, DB175D. Featherbed Volcanics

Locality : As for 68490175A

Petrography : Slightly porphyritic rhyodacite. Small phenocrysts of quartz and altered feldspar. Biotite and hornblende are mostly altered to chlorite. The groundmass is cryptocrystalline.

68490175E, DB175E. Featherbed Volcanics

Locality : As for 68490175A

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts (30%) are fragmental and consist of embayed quartz (30%), turbid alkali feldspar (40%), and oligoclase-andesine (25%). Biotite (3%) is largely chloritized and a trace of hornblende is mostly replaced by epidote.

68590070, E55/5/27. Featherbed Volcanics

Locality : 17°22'S, 145°11'E. Orient Camp.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30%), alkali feldspar (40%), plagioclase (20-25%), altered biotite (8%). Phenocrysts (50%) are fragmental and consist mainly of embayed quartz, altered alkali feldspar, sericitized oligoclase, and altered biotite. The groundmass is recrystallized, largely obliterating the original eutaxitic texture. Biotite is altered to epidote, calcite, and opaque minerals.

68590073, E55/5/30. Featherbed Volcanics

Locality : 17°19½'S, 144°53½'E. Dover Castle tin mine.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30-35%), alkali feldspar (35-40%), oligoclase-andesine (20-25%), biotite 5%. Accessory epidote and allanite. Fragmental phenocrysts of quartz, alkali feldspar, plagioclase, biotite, and opaque minerals in an aphanitic, fluidal groundmass. Biotite is partly chloritized.

68590082, E55/5/47. Featherbed Volcanics

Locality : $17^{\circ}22\frac{1}{2}'S$, $144^{\circ}58\frac{1}{2}'E$. $6\frac{1}{2}$ km southeast of Petford.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30%), kaolinized perthite (35-40%), oligoclase-andesine (25-30%), partly chloritized biotite (2-3%), hornblende (1%). Accessory fluorite, zircon, and opaque minerals. Fragmental and sometimes corroded phenocrysts of quartz and feldspar in an aphanitic to cryptocrystalline groundmass.

70571000. Featherbed Volcanics

Locality : $17^{\circ}05'S$, $144^{\circ}58'E$, Wolfram Camp.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30%), alkali feldspar (25-30%), oligoclase (An_{13-15})(35%), biotite (5%), trace of hornblende. Phenocrysts of embayed quartz, altered oligoclase and turbid, kaolinized, perthitic alkali feldspar in a largely recrystallized groundmass.

70571001. Featherbed Volcanics

Locality : As for 70571000.

Petrography : Porphyritic rhyodacite welded tuff, very similar to 70571000. The original eutaxitic texture has been almost obliterated by recrystallization.

70571005. Featherbed Volcanics

Locality : $17^{\circ}09'S$, $144^{\circ}57'E$. Near Flat Rock Waterhole on Walsh River.

Petrography : Porphyritic rhyolite. Quartz (35%), orthoclase (40-45%), oligoclase (20%), biotite (3%). Accessory fluorite, calcite, apatite, epidote, and leucoxene. Phenocrysts of embayed quartz, turbid, perthitic orthoclase, subhedral, sericitized oligoclase, and partly chloritized biotite in an aphanitic groundmass.

70571006. Featherbed Volcanics

Locality : $17^{\circ}09\frac{1}{2}'S$, $144^{\circ}56'E$. Flat Rock Waterhole on Walsh River.

Petrography : Porphyritic rhyodacite. Quartz (30%), orthoclase (35-40%), oligoclase (25%), biotite (1%), with minor relict orthopyroxene, surrounded by biotite, chlorite, and iron ore alteration products. Accessory fluorite. Phenocrysts of embayed quartz, turbid, kaolinized orthoclase, and oligoclase in an aphanitic groundmass.

70571007. Featherbed Volcanics

Locality : As for 70571006.

Petrography : Porphyritic rhyolite. Quartz (40%), alkali feldspar (40-45%), plagioclase (10-15%), chloritized biotite (1%). Phenocrysts of embayed quartz, alkali feldspar, and minor strongly sericitized plagioclase in a fine-grained recrystallized groundmass. Minor calcite, fluorite, epidote, and opaque minerals.

70571009. Featherbed Volcanics

Locality : 17°15'S, 144°56'E. Eight Mile Hill.

Petrography : Recrystallized, porphyritic rhyodacite. Quartz (40%), alkali feldspar (20-25%), plagioclase (30%), biotite (3%), epidote (2%). Minor calcite and allanite. Phenocrysts (20%) of β-quartz, turbid, kaolinized orthoclase perthite, subhedral, sericitized oligoclase, and chloritized biotite in a strongly recrystallized groundmass. The recrystallization appears to be due to the intrusion of a small stock of Elizabeth Creek Granite.

70571010. Featherbed Volcanics

Locality : As for 70571009.

Petrography : Porphyritic rhyolite. Quartz (40-45%), alkali feldspar (40-45%), plagioclase (5-10%), biotite (1%). Rounded quartz, turbid alkali feldspar, sericitized oligoclase, and chloritized biotite phenocrysts in an aphanitic groundmass.

70571011. Featherbed Volcanics

Locality : 17°15½'S, 144°56'E. Near Eight Mile Hill.

Petrography : Porphyritic hornblende-biotite dacite. Quartz (20%), plagioclase (45%), alkali feldspar (15%), chloritized biotite (10%), hornblende (10%), opaque sulphides (2%). Phenocrysts of saussuritized plagioclase and mafic minerals in an aphanitic groundmass.

70571013. Featherbed Volcanics

Locality : 17°16'S, 144°57'E. 1½ km southeast of tungsten mine at Eight Mile Hill.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30%), alkali feldspar (35%), plagioclase (30%), chloritized biotite (2%), secondary muscovite (1%). Minor chlorite and epidote. Phenocrysts of β-quartz, kaolinized alkali feldspar, sericitized sodic oligoclase, and chloritized biotite in a fine-grained, recrystallized groundmass.

70571014. Featherbed Volcanics

Locality : As for 70571013

Petrography : Porphyritic dacite welded tuff. Quartz (30%), alkali feldspar (20%), zoned oligoclase-andesine (40%), amphibole and biotite (5-10%). Accessory pyrite, epidote, and calcite. Phenocrysts of embayed quartz and plagioclase. The groundmass is generally recrystallized but traces of the original eutaxitic structure survive. A small amount of relict arfvedsonite is associated with the greenish biotite.

70571015. Featherbed Volcanics

Locality : As for 70571013

Petrography : Porphyritic rhyodacite welded tuff. Quartz (35%), alkali feldspar (25-30%), zoned andesine (30%), biotite (4%). Phenocrysts (15%) of embayed quartz, turbid alkali feldspar, and andesine, with aggregates of relict hornblende and chloritized biotite, in an aphanitic groundmass. Minor calcite, epidote, and sericite.

70571019. Featherbed Volcanics

Locality : 17°21'S, 145°11'E. Orient Camp.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (40%), alkali feldspar (30-35%), plagioclase (20-25%), altered biotite (1%). Phenocrysts of fractured quartz, kaolinized alkali feldspar, and altered plagioclase in a fine-grained, recrystallized and slightly vesicular groundmass.

70571020. Featherbed Volcanics

Locality : As for 70571019

Petrography : Porphyritic rhyodacite. Quartz (30%), alkali feldspar (35%), oligoclase (25-30%), biotite (3%). Accessory epidote and opaque minerals. Large phenocrysts (up to 1 cm) of embayed β-quartz, turbid, sericitized, perthitic alkali feldspar, and sericitized oligoclase in a fine-grained recrystallized groundmass. Biotite is chloritized and partly resorbed. The feldspars are extensively altered with development of calcite, sericite, etc., and there is some secondary albite.

70571021. Featherbed Volcanics

Locality : As for 70571019

Petrography : Porphyritic rhyodacite welded tuff. Quartz (40%), alkali feldspar (30%), plagioclase (25-30%), biotite (1%). Phenocrysts of fractured quartz, turbid, kaolinized alkali feldspar, altered plagioclase, and partly resorbed biotite in an aphanitic, fluidal groundmass. There is considerable development of secondary calcite, epidote, sericite, and chlorite.

70571024. Featherbed Volcanics

Locality : 16°57½'S, 144°19'E. 18 km southwest of Nychum homestead.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (40-50%), alkali feldspar (30-35%), altered plagioclase (20%). Minor biotite, allanite, epidote, calcite, and muscovite. Quartz, corroded orthoclase and subordinate altered plagioclase with rims of albite occur as phenocrysts, in a fine-grained, recrystallized, fluidal groundmass. The rock is cut by thin quartz veins.

70571025. Featherbed Volcanics

Locality : 16°59½'S, 144°19'E. Walsh River, 1½ km east of crossing on Chillagoe-Wrotham Park road.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (30-35%), alkali feldspar (35%), plagioclase (25%). Accessory fluorite, chlorite, biotite, epidote, and opaque minerals. Phenocrysts (40%) consist of embayed quartz, altered alkali feldspar, and sericitized plagioclase with albite rims. The groundmass is cryptocrystalline.

70571026. Featherbed Volcanics.

Locality : 17°03½'S, 144°36'E. Fishermans Waterhole on Walsh River.

Petrography : Porphyritic rhyolite welded tuff. Quartz (40%), alkali feldspar (45-50%), plagioclase (10%). Phenocrysts of embayed, fragmental quartz, sericitized perthitic alkali feldspar, and minor strongly corroded plagioclase with albite rims. The groundmass is rich in quartz and recrystallized around the phenocrysts. It has a well-developed eutaxitic texture and is slightly vesicular.

70571027. Featherbed Volcanics

Locality : As for 70571026

Petrography : Porphyritic rhyolite. Phenocrysts (30%) consist of quartz, alkali feldspar, and minor oligoclase. The feldspars are extensively altered with development of calcite, sericite, epidote, etc. The groundmass is aphanitic and rich in quartz.

70571028. Featherbed Volcanics.

Locality : As for 70571026

Petrography : Porphyritic rhyolite. Quartz (40%), alkali feldspar (35-40%), plagioclase (15%). Minor calcite, epidote, fluorite, and opaque minerals. Phenocrysts of embayed quartz, perthitic orthoclase, and minor plagioclase in a fine-grained, recrystallized groundmass.

70571029. Featherbed Volcanics

Locality : As for 70571026

Petrography : Porphyritic rhyodacite. Quartz (30%), alkali feldspar (35%) oligoclase (25-30%), biotite and chlorite (2%). Accessory apatite. Phenocrysts consist of embayed quartz, sericitized alkali feldspar, and sericitized oligoclase. Aggregates of epidote, biotite, and chlorite appear to pseudomorph a pyroxene. The groundmass is fine-grained and recrystallized.

70571030. Featherbed Volcanics

Locality : As for 70571026

Petrography : Porphyritic rhyodacite. The sample is very similar to 70571029 except that relict orthopyroxene is only partly altered to biotite and chlorite.

70571038. Featherbed Volcanics

Locality : 17°22'S, 144°50'E. 3 km east of Koorboora.

Petrography : Porphyritic rhyodacite welded tuff. Quartz (25%), alkali feldspar (30-35%), plagioclase (30-35%), glass and vesicles (5%). Phenocrysts of quartz, corroded feldspars, and chloritized biotite in an iron-stained cryptocrystalline groundmass with a eutaxitic structure. Vesicles are filled with quartz, chlorite, and calcite.

70571039. Featherbed Volcanics

Locality : 17°23'S, 145°51'E. 6½ km southwest of Lappa Junction.

Petrography : Porphyritic rhyolite welded tuff. Phenocrysts consist of fragmental quartz, turbid alkali feldspar, and sodic plagioclase (An_{8-10}). The groundmass is iron-stained and aphanitic and the eutaxitic structure is well preserved. Vesicles contain quartz and sericite, and rhyodacitic xenoliths are present.

70571040. Featherbed Volcanics

Locality : As for 70571039

Petrography : Altered, slightly porphyritic, banded rhyolite. Rare quartz and alkali feldspar phenocrysts in an iron-stained fluidal, cryptocrystalline groundmass. A trace of partly resorbed biotite is present and well as occasional quartz-filled vesicles. The rock is extensively altered.

67490055R, W55R. Slaughter Yard Creek Volcanics

Locality : 17°23'S, 145°20½'E. 5 km west of Herberton.

Petrography : Porphyritic rhyolite. Phenocrysts total about 10% and comprise altered perthitic alkali feldspar, with minor plagioclase and chloritic pseudomorphs. The groundmass is micrographic and locally spherulitic.

67490056R, W56R. Slaughter Yard Creek Volcanics

Locality : As for 67490055R

Petrography : Rhyolite. Quartz (30%), alkali feldspar (50-60%), plagioclase (about 10%). Mostly aphanitic, but slightly spherulitic and with a few phenocrysts.

67490057R, W57R. Slaughter Yard Creek Volcanics

Locality : As for 67490055R

Petrography : Porphyritic rhyodacite. Quartz (25%), alkali feldspar (35%), plagioclase (25%), chlorite (5-10%), calcite (5%). Phenocrysts (40%) consist of alkali feldspar, quartz, and plagioclase in an aphanitic groundmass. The feldspars are extensively altered.

67490058R, W58R. Slaughter Yard Creek Volcanics

Locality : As for 67490055R

Petrography : Porphyritic rhyodacite, very similar to 67490057R.

67490059R, W59R. Slaughter Yard Creek Volcanics

Locality : As for 67490055R

Petrography : Porphyritic rhyodacite, very similar to 67490057R.

67490060R, W60R. Slaughter Yard Creek Volcanics

Locality : As for 67490055R

Petrography : Spherulitic rhyolite. Quartz (30%), corroded alkali feldspar (55%), plagioclase (10%), chlorite (2%). The rock is spherulitic and cut by quartz/fluorite veins.

67490065R, W65R. Slaughter Yard Creek Volcanics

Locality : 17°25'S, 145°20½'E. 6½ km southwest of Herberton.

Petrography : Porphyritic rhyolite welded tuff. Quartz (30%), alkali feldspar (45%), oligoclase (15%). Phenocrysts (30%) are set in a fine-grained banded matrix which contains relict shards.

67490066R, W66R. Slaughter Yard Creek Volcanics

Locality : As for 67490065R

Petrography : Altered rhyodacite. Quartz (15-20%), alkali feldspar (30%), plagioclase (40%), epidote (5%), chlorite (5-10%). Partly microlitic, partly recrystallized groundmass with local development of micro graphic textures.

67490093R, W93R. Nanyeta Volcanics

Locality : 17°38'S, 145°04½'S. 4 km east of Nymbool.

Petrography : Porphyritic rhyodacite (near dacite). Phenocrysts (20%) of sanidine and oligoclase-andesine, in an aphanitic to cryptocrystalline groundmass containing quartz, alkali feldspar, and plagioclase. Feldspars are extensively altered and biotite is chloritized. Minor epidote, calcite, and opaque minerals.

67490106, W106. Nanyeta Volcanics

Locality : 17°38½'S, 145°07'E. 4 km north of Mount Garnet.

Petrography : Rhyodacite welded tuff. Quartz, alkali feldspar, and plagioclase with minor relict biotite and hornblende, and accessory opaque minerals. The rock is aphyric and cryptocrystalline. Biotite and hornblende are pseudomorphed by chlorite, calcite, and iron oxide.

67490108, W108. Nanyeta Volcanics

Locality : As for 67490106

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts (15%) of kaolinized alkali feldspar and sericitized plagioclase in a quartzo-feldspathic, cryptocrystalline groundmass. Biotite (1%) is replaced by calcite, chlorite, and iron oxide. Minor calcite and opaque minerals.

67490109, W109. Nanyeta Volcanics

Locality : As for 67490106

Petrography : Rhyodacite welded tuff. Amygdaloidal, cryptocrystalline rock consisting mainly of quartz, oligoclase, and alkali feldspar. Plagioclase is largely replaced by calcite and sericite. Amygdales contain calcite, and glass shards are present.

67490110R, W110R. Nanyeta Volcanics

Locality : As for 67490106

Petrography : Banded rhyolite. An aphyric rock consisting of quartz, alkali feldspar, and minor oligoclase, calcite, sericite, and opaque minerals. Aphanitic and partly spherulitic.

67490116R, W116R. Nanyeta Volcanics

Locality : 17°34'S, 145°04'E. 1½ km south of Geebung Hill.

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts of quartz, plagioclase (albite-oligoclase), and minor alkali feldspar in an iron-stained, generally aphanitic groundmass containing quartz, alkali feldspar, and plagioclase. The groundmass is partly glassy and has a relict perlitic texture. Minor calcite and opaque minerals.

67490117R, W117R. Nanyeta Volcanics

Locality : 17°34'S, 145°04'E. 1½ km SSW of Geebung Hill.

Petrography : Slightly porphyritic hornblende-augite andesite. Andesine (An 42-44)(80%), altered pyroxene (5%), altered hornblende (5%), opaque minerals (2%), cross-cutting sericite veins (2%). The texture is trachytic. Mafic minerals are pseudomorphed by chlorite, epidote, etc. The pyroxene is probably augite.

67490118R, W118R. Nanyeta Volcanics

Locality : 17°34½'S, 145°05½'E. 3 km southeast of Geebung Hill.

Petrography : Altered porphyritic rhyodacite. Small phenocrysts (20%) of plagioclase with subordinate sanidine and chloritic pseudomorphs in an iron-stained, cryptocrystalline groundmass. Feldspars show extensive alteration to calcite, sericite, etc.

68490023G, MG68/23. Nanyeta Volcanics

Locality : 17°40'S, 145°07'E. 1½ km NNE of Mount Garnet.

Petrography : Slightly porphyritic rhyodacite.

68490024G, MG68/24. Nanyeta Volcanics

Locality : As for 68490023G

Petrography : Slightly porphyritic rhyodacite.

68590062, E55/5/18. Nanyeta Volcanics

Locality : 17°38'S, 145°08'E. 5 km. NNE of Mount Garnet.

Petrography : Lithic-vitric tuff. Lithic fragments (25%) and phenocrysts of quartz and alkali feldspar (total 15%) in an iron-stained, partly devitrified glassy groundmass containing relict shards. The lithic fragments are mostly of sedimentary origin. The rock is cut by quartz veins.

68590063, E55/5/19. Nanyeta Volcanics

Locality : 17°38½'S, 145°06½'E. 4 km north of Mount Garnet.

Petrography : Recrystallized rhyolite welded tuff. A few alkali feldspar phenocrysts in a partly medium-grained, partly microcrystalline groundmass consisting mostly of quartz and alkali feldspar with minor plagioclase, calcite, and sericite. The groundmass is partly spherulitic and contains relict pumice fragments.

67490048R1, W48R1. Walsh Bluff Volcanics

Locality : 17°16'S, 145°19'E. 16 km west of Atherton.

Petrography : Porphyritic rhyodacite. Euhedral sericitized plagioclase (15%) and chloritic pseudomorphs (2%) in a largely spherulitic groundmass containing quartz and feldspar. Minor epidote.

67490048R2, W48R2. Walsh Bluff Volcanics

Locality : As for 67490048R1

Petrography : Porphyritic rhyodacite. Phenocrysts of quartz, alkali feldspar, and plagioclase in an aphanitic to cryptocrystalline groundmass. Chloritized biotite (2%) and accessory epidote and opaque minerals. The groundmass is partly spherulitic.

67490049R, W49R. Walsh Bluff Volcanics

Locality : As for 67490048R1

Petrography : Porphyritic rhyodacite welded tuff. Phenocrysts (20%) of quartz, alkali feldspar, and plagioclase in a fluidal, partly glassy groundmass. Flattened pumice fragments are devitrified. Chloritic pseudomorphs (2%) and minor epidote. An aplitic xenolith is present.

67490050R, W50R, Walsh Bluff Volcanics

Locality : As for 67490048R1

Petrography : Rhyodacite. A mainly aphanitic, but locally glassy rock containing quartz (30%), alkali feldspar (40%), plagioclase (25%), biotite (3%), and minor epidote and iron oxides. The rock has a slightly fluidal texture and is iron-stained.

67490051R, W51R. Walsh Bluff Volcanics

Locality : As for 67490048R1

Petrography : Rhyodacite. Quartz (30%), alkali feldspar (40%), oligoclase (20-25%), sericite (4%), chloritized biotite (1%). Minor calcite, epidote, and opaque minerals. The rock is aphanitic and partly spherulitic.

67490015R, W15R. Glen Gordon Volcanics

Locality : 17°29½'S, 145°17'E. 10½ km, southeast of Irvinebank.

Petrography : Porphyritic dacite. Phenocrysts consist mainly of altered, corroded plagioclase with pseudomorphs after ferromagnesian minerals in a cryptocrystalline groundmass. Plagioclase is strongly sericitized and ferromagnesian minerals have been replaced by epidote, calcite, and opaque minerals.

67490016R, W16R. Glen Gordon Volcanics

Locality : As for 67490015R

Petrography : Rhyodacite incipiently welded tuff. A few sericitized oligoclase-andesine phenocrysts in a largely quartzo-feldspathic, cryptocrystalline groundmass. About 10% of lithic fragments of volcanic origin are present, as well as devitrified pumice fragments. Minor opaque minerals, calcite, and sericite.

67490017R, W17R. Glen Gordon Volcanics

Locality : As for 67490015R

Petrography : Rhyodacite tuff. Volcanic fragments (15%) in a non-welded aphanitic to cryptocrystalline groundmass. Feldspars are kaolinized and partly replaced by calcite. Ferromagnesian minerals (5%) are replaced by various alteration products (chlorite, iron oxide, etc).

67490018R, W18R. Glen Gordon Volcanics

Locality : As for 67490015R

Petrography : Dacite (near andesite). A few small plagioclase (zoned labradorite) phenocrysts and altered ferromagnesian minerals in a cryptocrystalline groundmass. The ferromagnesians are pseudomorphed by chlorite, epidote, and calcite.

67490018R1, W18R1. Glen Gordon Volcanics

Locality : As for 67490015R

Petrography : Rhyodacite. A few plagioclase phenocrysts (oligoclase-andesine) in a cryptocrystalline groundmass containing quartz, altered feldspars, chlorite, and minor calcite, apatite, sphene, and opaque minerals. Chlorite pseudomorphs hornblende as well as forming small flakes in the groundmass.

67490019, W19. Glen Gordon Volcanics

Locality : As for 67490015R

Petrography : Rhyodacite.

67490024R, W24R. Glen Gordon Volcanics

Locality : 17°26'S, 145°18½'E. 6½ km south of Watsonville.

Petrography : Rhyolite welded tuff. A largely cryptocrystalline rock which appears to have been extensively silicified. Quartz replaces much of the feldspar. Iron oxide replaces the rare ferromagnesian minerals and also stains much of the rock.

68490004G, MG68/4. Glen Gordon Volcanics

Locality : 17°34'S, 145°29½'E. 5 km east of Tumoulin.

Petrography : Slightly porphyritic rhyodacite. A few quartz and feldspar phenocrysts.

6849007G, MG68/7. Glen Gordon Volcanics

Locality : 17°44½'S, 145°28'E. 3 km ESE of Wooroora homestead.

Petrography : Slightly porphyritic rhyodacite welded tuff. Phenocrysts (5-10%) of sericitized oligoclase and turbid alkali feldspar in an iron-stained glassy to cryptocrystalline groundmass which shows relict eutaxitic textures. Ferromagnesian minerals are replaced by chlorite, epidote, etc. The groundmass contains some lithic fragments and is very altered.

68490008G, MG68/8. Glen Gordon Volcanics

Locality : 17°45'S, 145°27'E. 1½ km southeast of Wooroora homestead.

Petrography : Volcanic breccia. Large, angular fragments (up to 10 cms across) of tuff and vitric fragments together with phenocrysts of alkali feldspar and plagioclase, in a cryptocrystalline, slightly fluidal groundmass. Cross-cutting veins contain quartz, chlorite, and calcite. Minor apatite and opaque minerals.

68490009G. MG68/9. Glen Gordon Volcanics

Locality : 17°41'S, 145°27'E. 2½ km southeast of Mount Ronald.

Petrography : Augite andesite. Rare andesine phenocrysts in an aphanitic to cryptocrystalline groundmass consisting of sericitized andesine, augite, and chlorite. Minor quartz, calcite, sericite, and opaque minerals. Augite is partly altered to epidote and chlorite.

68490010G, MG68/10. Glen Gordon Volcanics

Locality : 17°41'S, 145°27'E. 1½ km southeast of Mount Ronald.

Petrography : Porphyritic rhyolite. Phenocrysts (15%) of quartz, corroded alkali feldspar, and minor oligoclase in a devitrified groundmass. Minor sericite, calcite, and opaque minerals.

68490011G, MG68/11. Glen Gordon Volcanics

Locality : 17°38'S, 145°29½'E. 2½ km SSE of Ravenshoe.

Petrography : Rhyodacite welded tuff. A few phenocrysts of quartz and feldspar in a partly spherulitic groundmass. Flattened, devitrified pumice fragments are also present. Both alkali feldspar and plagioclase (albite-oligoclase) are altered. Minor chlorite, fluorite, calcite, and opaque minerals.

68490012G, MG68/12. Glen Gordon Volcanics

Locality : As for 68490011G

Petrography : Rhyolite welded tuff. A few phenocrysts of quartz, microperthitic alkali feldspar, and plagioclase in a cryptocrystalline, partly spherulitic groundmass consisting of quartz, alkali feldspar, plagioclase, and minor chlorite, fluorite, pyrite, epidote, and magnetite. Flattened, devitrified pumice fragments are abundant.

68490013G, MG68/13. Glen Gordon Volcanics

Locality : 17°38'S, 145°29'E. 3 km south of Ravenshoe.

Petrography : Slightly porphyritic rhyodacite.

68490018G, MG68/18. Glen Gordon Volcanics

Locality : 17°46'S, 145°20'E. 1 km north of Glen Gordon homestead.

Petrography : Porphyritic rhyolite welded tuff. Phenocrysts (5-10%) of quartz, kaolinized alkali feldspar, and minor oligoclase in a partly glassy, eutaxitic groundmass. Flattened, devitrified pumice fragments are present. Minor chlorite and chalcedony.

68490019G, MG68/19. Glen Gordon Volcanics

Locality : As for 68490018G

Petrography : Porphyritic rhyolite welded tuff, very similar to 68490018G. The groundmass is partly spherulitic.

68490020G, G2 and G3 (MG68/20, 20B and 20C, respectively). Glen Gordon Volcanics

Locality : 17°45'S, 145°20'E. 2½ km north of Glen Gordon homestead.

Petrography : Porphyritic rhyolite welded tuffs, similar to 68490018G.

68590061, E55/5/17. Glen Gordon Volcanics

Locality : 17°46'S, 145°20'E. 8 km ESE of Mandalee homestead.

Petrography : Porphyritic rhyolite welded tuff. Fragmental phenocrysts (20%) of quartz and alkali feldspar in a recrystallized groundmass containing relict pumice fragments. Minor chlorite, calcite, and opaque minerals. The groundmass consists mainly of quartz and alkali feldspar (including albite).

68590027, E54/16/9. Agate Creek Volcanics

Locality : 19°02'S, 143°35'E. 22 km west of Percy Vale homestead.

Petrography : Amygdaloidal andesite. An intensely altered rock containing altered plagioclase laths and amygdales filled with carbonate, clay minerals and iron oxide. The groundmass is strongly iron-stained.

68590051, E55/5/4. Boxwood Volcanics

Locality : 17°26'S, 144°51'E. 3 km west of Boxwood homestead.

Petrography : Porphyritic rhyodacite. Phenocrysts (40%) of embayed quartz, zoned andesine, and subordinate kaolinized alkali feldspar in an aphanitic groundmass. Hornblende (1%), chloritized biotite (2%), and minor allanite and opaque minerals.

70571016. Dyke

Locality : 17°19'S, 144°55'E. Bamford Hill.

Petrography : Augite-hornblende andesite dyke. A few euhedral calcic andesine laths, with relict augite and hornblende, in a largely glassy groundmass. Augite and hornblende are mostly replaced by chlorite and calcite.

70571041. Dyke

Locality : 17°21½'S, 144°53½'E. 1 km northeast of Lappa Junction.

Petrography : Augite-quartz andesite dyke. Calcic andesine (60-65%), augite (5-10%), chlorite (15%), opaque minerals (5%). Minor quartz, alkali feldspar, and pyrite. A few phenocrysts of andesine and augite in a trachytic groundmass.

70571042. Dyke

Locality : As for 70571041

Petrography : Rhyodacite (near dacite) dyke. Quartz (15-20%), turbid alkali feldspar (25%), oligoclase (An 26-28)(45%), chlorite (10%), sphene (1%), opaque minerals (1%). Minor muscovite, calcite, and apatite. A few oligoclase phenocrysts in an aphanitic, partly spherulitic groundmass. Plagioclase is sericitized.

70571219. Dyke

Locality : 18°19'S, 143°53½'E. 13 km southwest of Eveleigh homestead.

Petrography : Slightly porphyritic rhyodacite dyke. A few phenocrysts of quartz, alkali feldspar, and plagioclase in an iron-stained cryptocrystalline, partly spherulitic groundmass. Plagioclase is rather altered. This dyke is probably related to the Newcastle Range Volcanics.

70571234. Dyke

Locality : 18°08'S, 144°26'E. 12 km east of Mount Surprise.

Petrography : Porphyritic rhyolite dyke. Quartz (35-40%), turbid alkali feldspar (45-50%), sericitized plagioclase (10%), biotite (2-3%). Accessory opaque minerals. Phenocrysts (40%) of quartz, alkali feldspar, and subordinate plagioclase in an aphanitic groundmass.

68590035, E55/1/8. Dyke

Locality : 16°30'S, 145°01½'E. 5 km. east of Curraghmore homestead.

Petrography : Porphyritic rhyodacite dyke. Quartz (30%), perthitic alkali feldspar (20%), andesine (40%), biotite (8%), relict hypersthene (2%). Minor chlorite, muscovite, garnet, calcite, epidote, and opaque minerals. Phenocrysts (40%) of quartz, plagioclase, and minor alkali feldspar in an aphanitic groundmass. Feldspars are rather altered and hypersthene is uralitized.

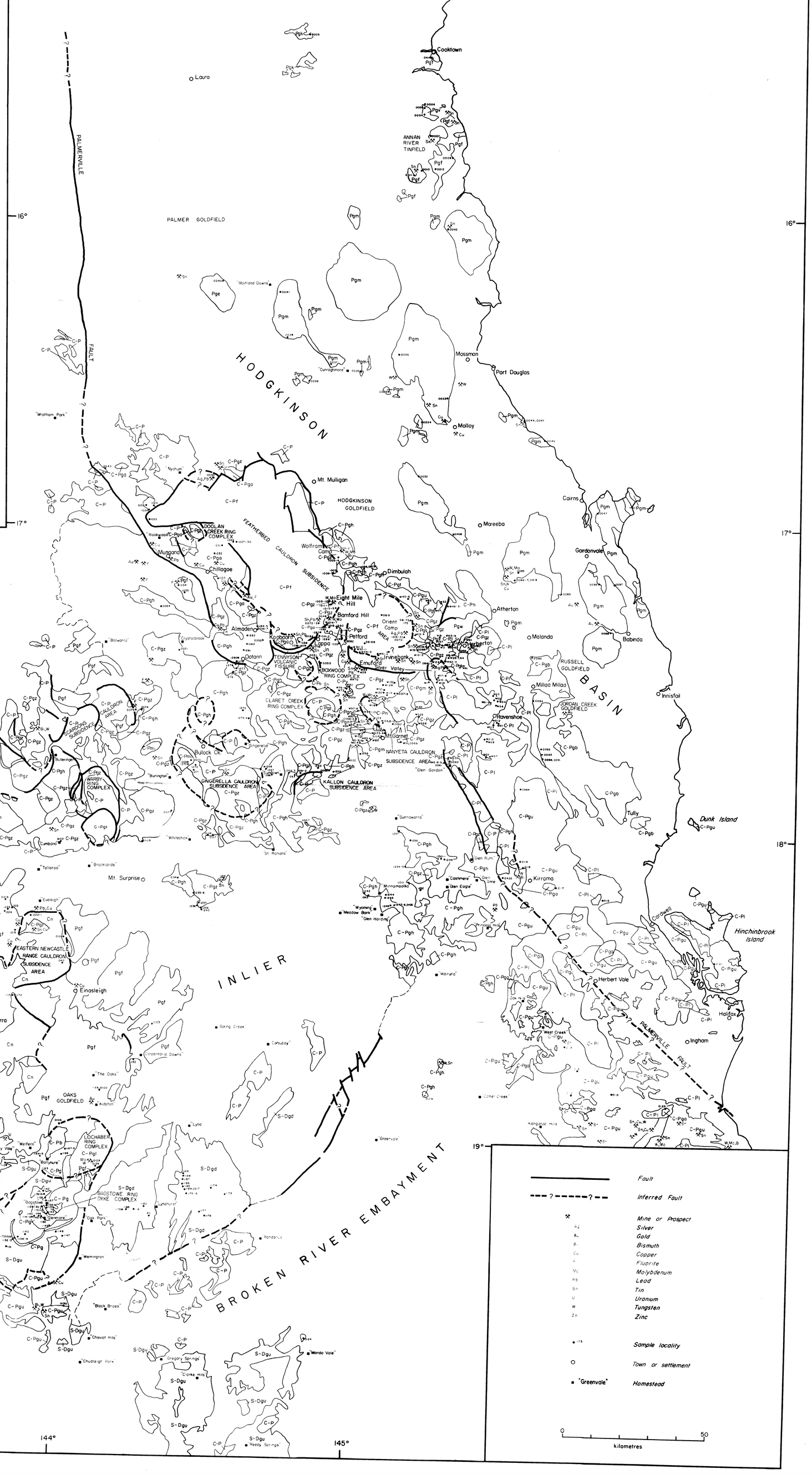
ACID IGNEOUS ROCKS OF NORTHEAST QUEENSLAND

PALAEOZOIC

PERMIAN	Pgi	*Attanmoui Granite*
	Pgf	*Finlayson Granite*
	Pgk	*Puckley Granite*
	Pgv	*Trevethon Granite*
	Pgc	*Cannibal Creek Granite*
	Pgm	*Mareeba Granite*
	Pgw	*Watsonville Granite*
CARBONIFEROUS TO PERMIAN	C-Pgz	*Elizabeth Creek Granite*
	C-Pgs	*Hales Siding Granite*
	C-Pgm	*Hammonds Creek Granodiorite*
	C-Pgn	*Nymbool Granite*
	C-Pgv	*Bakerville Granodiorite*
	C-Pgk	*Kalunga Granodiorite*
	C-Pgt	*Atlanta Granite*
	C-Pgh	*Herbert River Granite*
	C-Pmi	*Ixe Microgranodiorite*
	C-Pga	*Almaden Granite*
	C-Pgb	*Tully Granite Complex*
	C-Pgl	*Lochaber Granite*
	C-Pgu	*Undifferentiated granitic rocks*
	C-Pf	*Featherbed Volcanics*
	C-Ph	*Walsh Bluff Volcanics*
	C-Pl	*Glen Gordon Volcanics*
	C-Pn	*Nanyeta Volcanics*
	C-Pw	*Slaughter Yard Creek Volcanics*
	C-Po	*Blakwood Volcanics*
	C-Pa	*Agate Creek Volcanics*
	C-Pb	*Butlers Volcanics*
	C-Py	*Gurrumba Ring Complex*
	C-Pg	*Bagstowe Ring Dyke Complex*
	C-Pu	*Volcanic and intrusive rocks of Cumberland Range Cauldron Subsidence Area*
	C-P	*Undifferentiated volcanics and minor intrusive rocks*
CARBONIFEROUS	Cn	*Newcastle Range Volcanics*
SILURIAN TO DEVONIAN	S-Dgu	*Dumbano Granite*
	S-Dgd	*Dido Granodiorite*

PRECAMBRIAN

PRECAMBRIAN TO ? DEVONIAN	Pgr	*Robin Hood Granite*
	Pgf	*Forsayth Granite*
PRECAMBRIAN	Pge	*Esmeralda Granite*
	Pc	*Croydon Volcanics*



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