

4.1.2 SARK AXES: PETROLOGY OBSERVED IN HAND SPECIMEN

By John Renouf

A study of the stone axes from Sark was carried out, using a x10 magnifying glass, to provide a level of characterization of the stone from which they were made.

Axes from two collections were studied, the collection originally housed at the Seigneurie and now stored by the Société Serquaise and the collection housed in Guernsey Museum.

Four of the Seigneurie axes were thin sectioned by Rob Ixer whose detailed descriptions will be found in section 3.2 B. Eight of the Guernsey Museum axes were identified by Mark Patton as being Type P dolerite from the axe factory at Le Pinnacle, Jersey. Of these three were thin sectioned.

The Seigneurie Collection

The axes were registered as part of the Archaeological Survey of Sark and were given a unique small finds number by which they are identified throughout this volume.

200 flint

grey polished flint axe with specks of silicified fossil material. Possibly a French source.

201 flint

flint axe with strong almost mottled pattern deriving from probable silicified fossil fragments. Note this is a possible form for French identification to source.

202 porphyritic medium grained dolerite

a sparse scatter of dark red sub-idiomorphic feldspars from 1 to 2 mm in size; matrix very dark reflecting the blackish Fe/Mg mineral distribution with the small feldspar crystals not showing up much.

203 porphyritic medium grained dolerite

felt of amphibole/plagioclase at sub mm level with dense scatter of 1-4 mm plagioclases; some of the plagioclases contain amphibole [?texture name]; feldspar crystals rather stubby than lath like.

204 porphyritic medium grained dolerite

felt of amphibole/plagioclase at sub mm level with dense scatter of 1-4 mm plagioclases; some of the plagioclases contain amphibole [?texture name]; feldspar crystals rather stubby than lath like.

205 non-porphyritic medium grained dolerite

grain size at about the 1 mm and less; strong black and white aspect due to the pale feldspar laths giving the appearance of being embedded in a Fe/Mg matrix. Cf 254.

206 porphyritic fine grained dolerite
fine grained pale grey matrix with scattered, 1-4 mm crystals of yellow/pink felspar. Fine grained ?acid igneous or, conceivably, fine grained quartzite.

207 non-porphyritic medium to fine grained dolerite
almost FGM with felt composed of Fe/Mg blackish mineral and white plagioclase; aspect very even grained; doleritic rather than dioritic;
BC fine grained igneous

208 non-porphyritic medium grained, probably meta-dolerite
very slightly porphyritic feldspars; matrix of granular black mineral with fine needles of felspar; even textured. Slightly greenish tinge suggesting perhaps an altered dolerite (greenstone).

Same hand specimen description as 215.

209 porphyritic medium grained dolerite
scattered smallish porphyritic crystals of whitish plagioclase crystals 1-3 mm with the occasional larger more pink felspar ; matrix a granular mix of blackish Fe/Mg mineral with abundant small laths of felspar. Texture even grained and thus likely to be doleritic rather than dioritic.

210 porphyritic medium grained dolerite
pale coloured rock with fairly dense scatter of variable feldspar cross sections in a matrix with the appearance of small FE/Mg minerals embedded in whitish felspar.

211 porphyritic medium grained dolerite
pale coloured rock with matrix of black Fe/Mg minerals and whitish felspar with dense scatter of stubby rounded feldspars; some feldspars up to 4 mm across.

212 non-porphyritic medium to fine grained dolerite
regular, almost fine grained matrix of Fe/Mg and felspar to give an almost classic dolerite.

213 non-porphyritic medium grained dolerite
network of lath form Fe/Mg black mineral at the sub-mm to mm+ size in an interlocking felt of whitish feldspar; texture is even grained overall.
Note that 213 and 214 may be two ends of the same implement.

214 non-porphyritic medium grained dolerite
network of lath form Fe/Mg black mineral at the sub-mm to mm+ size in an interlocking felt of whitish feldspar; texture is even grained overall.
Note that 213 and 214 may be two ends of the same implement.

215 non-porphyritic medium grained metadolerite

very slightly porphyritic feldspars; matrix of granular black mineral with fine needles of feldspar; even textured. Slightly greenish tinge suggesting perhaps an altered dolerite (greenstone).

Same hand specimen description as 208.

Thin sectioned.

216 porphyritic medium grained dolerite

abundantly porphyritic yellowish to white 1 to 5 mm+ feldspars seeming to be clots of feldspar rather than idiomorphic crystals sections giving the rock a distinctly mottled appearance; the matrix is a felt of Fe/Mg minerals, some lathlike, and whitish feldspar in which the blackish Fe/Mg mineral imparts its colour to the overall dark grey cast of the rock.

217 non-porphyritic medium grained meta-dolerite

dense interlocking groundmass of blackish Fe/Mg minerals and yellowish feldspars; a number of the feldspars and Fe/Mg grains are distinct laths and other cross sections; there are many mineral grains that are at or just above the 1 mm size. The abundant feldspar gives the rock an overall yellowish cast.

Thin sectioned.

218 porphyritic medium grained dolerite

scattered idiomorphic yellow feldspars up to 5 mm or more in different cross sections; matrix an interlocking felt of dark grey to black seemingly massive Fe/Mg mineral and less evident feldspars with laths up to several mm long. The feldspars weather to a yellowish white and stand out in the dark background of the Fe/Mg grains/patches. At the edge of the mm/sub-mm grain size with many groundmass grains up to several mm long.

219 porphyritic medium grained dolerite

dispersed, almost 'regular', scatter of 1 to 5 mm long predominantly thin laths of whitish feldspar often clustered to some extent; matrix almost fine grained and an interlocking more or less regular felt of blackish Fe/Mg and feldspar grains.

220 non-porphyritic medium grained meta-dolerite

dense regular interlocking felt of similarly sized whitish yellow feldspar and blackish Fe/Mg grains; there are many lath shaped Fe/Mg grains. Contrast with 221 where the laths in the matrix are feldspar. Comparable with 220.

Thin sectioned.

221 porphyritic medium grained meta-dolerite

only a very few widely scattered pale yellowish white 1 to 3 mm feldspars; dense regular interlocking felt of similarly sized whitish yellow feldspar and blackish Fe/Mg grains; there are many lath shaped feldspar grains. Contrast with 220 where the laths in the matrix are Fe/Mg. Possible slight overall pale greenish blue cast.

Very similar to 222. The same as 240, 242.

Note that this is an illustrative specimen for comparison of textures visible on a fresh and a weathered surface: The individual crystals, particularly of the feldspars, are much more

distinct on the weathered surface than on the fresher surface. The fresher surfaces have a less resolvable matrix suggestive of larger grain size than is really the case.

Thin sectioned

222 non-porphyritic medium grained dolerite
dense regular interlocking felt of similarly sized whitish yellow feldspar and blackish Fe/Mg grains; there are many lath shaped feldspar grains. Contrast with 221 where the laths in the matrix are Fe/Mg. Possible slight overall pale greenish blue cast. Very similar to 221 but without the blue cast and the scattered porphyritic feldspars.

223 [no information]

The Guernsey Museum Collection

All specimens are identified by their museum registration number prefaced by GMAG.

2451 non-porphyritic medium grained dolerite
equigranular felt of whitish feldspar and blackish Fe/Mg grains; matrix grain size below 0.5 mm ranging from about 0.1-0.3 mm. Cf SEN 244, 245, 247. Felt is strongly equigranular. The Fe/Mg grains are mostly laths of varied orientation probably sitting in fields of plagioclase.

2452 non-porphyritic medium grained dolerite
felt of whitish feldspar and blackish Fe/Mg grains; the Fe/Mg grains of 0.1 to 0.2 mm, not lath shaped, are embedded in whitish feldspar and are densely packed; there is a scatter of larger, 1 mm+, porphyritic grains of same looking whitish feldspar. The appearance is much lighter coloured as a result of the amount of whitish feldspar that is free of Fe/Mg grains. Whilst not equigranular the texture appears very regular, without porphyritic grains of different sizes apart from the odd clot of Fe/Mg.

2453 non-porphyritic medium grained dolerite
very strong felt of blackish Fe/Mg grains densely packed so that the probably altered feldspar background crystals are difficult to resolve apart from isolated mm sized porphyritic feldspar crystals; the Fe/Mg grains of 0.1 to 0.2 mm, not lath shaped, form the dominant aspect of the rock. There is an overall greenish hue to the rock and this would suggest that the source is a meta-dolerite with the feldspar much altered to ?sericitic minerals and the original pyroxenes probably more or less altered to amphiboles. The specimen is intruded by an angular wedge of granitic composition, some 4 to 5 cm long and ranging from 1 cm wide to nothing.

Overall aspect is of a uniformly coloured medium to dark grey rock with a greenish cast.

2454 non-porphyritic medium grained dolerite

felt of whitish feldspar with variable but sparse scattering of blackish Fe/Mg grains and a further scatter of dark coloured grains of similar size but perhaps representing metallic minerals; the Fe/Mg grains of 0.1 to 0.2 mm, not lath shaped, are embedded in whitish feldspar with the latter crystals merging to give the dominant light colour to the rock. There is a light scatter of reddish feldspar clots of some 2 mm size.

2455 non-porphyritic medium grained likely meta-dolerite
dense felt of whitish feldspar laths and blackish Fe/Mg grains; the laths of white feldspar are less than 0.5 mm and form a random felt with the Fe/Mg grains of similar size and also tending to be overall lath shaped. Rare white feldspar crystal laths range to 5 mm+. Overall aspect is medium to light grey equigranular rock in which a trace of greenish hue may indicate a meta-dolerite.

2456 porphyritic medium grained dolerite
dense felt of blackish Fe/Mg grains embedded in a base of whitish feldspar; the Fe/Mg grains are of similar size and overall below 0.5 mm in size; the feldspar base is dominated by the Fe/Mg mineral and is difficult to resolve. The clipped corner shows the original fresh dark colour of the rock which weathers to a light coloured surface where not broken and taking on an almost smooth patina (?from an imperfect polish).

2457 porphyritic medium grained dolerite
dense felt of blackish Fe/Mg grains seemingly merging with each other and where the plagioclase base is difficult to resolve though there are a number of sub mm grains to be made out here and there in the small area of broken surface; the original whitish base feldspar weathers to a reddish colour at the surface and forms a distinctive, sub mm, honeycomb texture. There are some localized roundish patches of whitish feldspar 3-4 mm across which may be single crystals but which are more likely to be feldspar aggregates.

2458 non-porphyritic medium grained likely meta-dolerite
irresolvable blackish base in which are embedded a moderately dense scattering of variably sized feldspar crystals between 0.5 and 1 mm. Overall aspect is of a uniformly coloured medium to dark grey rock; though there is no very evident greenish cast the sense is that it could be a meta-dolerite.

2459 porphyritic medium grained dolerite
dense matrix felt of blackish Fe/Mg grains of 0.1 to 0.2 embedded in an unresolvable feldspar base; the matrix is dominated by a very dense spread of randomly orientated whitish feldspar phenocrysts ranging from about 0.5 mm to 3 mm in size; these phenocrysts are lightly peppered with blackish Fe/Mg grains of similar size to those in the matrix. Overall aspect is of a light colour imparted by the dominant phenocrystic scatter but embedded in a medium to dark grey background.
Identified by M. Patton as Type P dolerite from Jersey in hand specimen.

2460 non-porphyritic medium grained likely meta-dolerite

dense matrix felt of blackish Fe/Mg grains of 0.1 to 0.2, many rather stubby laths, and feldspar grains of similar size, themselves generally lath shaped. Overall aspect darkish grey owing much to the weathering out of the feldspars at the surface leaving the Fe/Mg grains proud and creating a sort of fine honeycomb surface texture. There is a hint of a greenish hue which might indicate a meta-dolerite.

2461 non-porphyritic medium grained dolerite

dense matrix felt of blackish Fe/Mg grains of 0.1 to 0.2 and feldspar grains of similar size. However, the matrix is overwhelmed by a dense 'mush' of whitish feldspar phenocrysts ranging from sub 0.5 mm to 3 mm in size with a very few as thin laths up to 8 mm in length. Overall aspect is that of a whitish crystal mush.

2462 non-porphyritic medium grained likely meta-dolerite

dense felt of blackish Fe/Mg grains of 0.1-0.2 mm size and similar sized whitish, often narrow lath shaped, feldspars. The surface weathers the feldspar away to produce a micro relief of Fe/Mg grains. Overall aspect medium grey in colour with a definite greenish cast suggesting a meta-dolerite.

2463 non-porphyritic medium grained likely meta-dolerite

dense felt of blackish Fe/Mg grains of 0.1-0.2 mm size and similar sized whitish feldspars. The surface weathers the feldspar away to produce a micro relief of Fe/Mg grains. Faint greenish veining of less than a mm width in places. Overall aspect medium grey in colour with a definite greenish cast suggesting a meta-dolerite.

2464 porphyritic medium grained dolerite

dense felt of probable plagioclase feldspar crystals of sub 0.5 mm size forming a light grey coloured matrix in which are embedded a variably dense scattering of blackish, bladed Fe/Mg phenocrystic grains up to 3/4 mm long, probably hornblende. These Fe/Mg blackish Fe/Mg crystals have a tendency to be aligned (seen particularly well on the broken cross section). Overall aspect medium to light grey in colour and a texture made distinctive by the shiny black Fe/Mg mineral which stand out even at very small sizes. This rock is distinctive.

2465 non-porphyritic medium grained dolerite

dense interlocking felt of plagioclase feldspar crystals of sub 0.5 mm size forming a light grey coloured matrix in which are embedded a dense scatter of blackish Fe/Mg grains of similar size. Overall aspect medium to light grey in colour but appearing black and white because of the visibility of both Fe/Mg and feldspar.

2466 porphyritic medium grained dolerite

equigranular felt of whitish feldspar and blackish Fe/Mg grains; matrix grain size below 0.5 mm ranging from about 0.1-0.3 mm. Felt is strongly equigranular. The Fe/Mg grains are not lath-like. One or two possibly phenocrystic plagioclases. Overall aspect medium to dark grey equigranular. Compare/contrast with Sen 245, GMAG 2451, etc.

2467 non-porphyritic medium grained dolerite
 equigranular felt of whitish to pinkish feldspar grains and blackish Fe/Mg grains; grain size about 0.5 mm but the first impression is misleading since the feldspars appear to enclose Fe/Mg crystals in a ?poikilitic fashion and these themselves may have a number of apparently separate grains in crystal continuity. There is also the development of larger diffuse margined patches of the feldspar. There is a possible banding present. Overall aspect medium to dark grey patchily equigranular and with appearance of a certain irregularity of grain size.

2468 non-porphyritic medium grained dolerite
 equigranular felt of whitish feldspar grains often stubby but mostly lath shaped and blackish Fe/Mg grain mostly stubby; grain size about 0.5 mm and a little more. Some Fe/Mg grains are enclosed in feldspars. Overall aspect medium to dark grey in colour with a visual appearance of interlocking laths.

2469 non-porphyritic medium grained dolerite
 equigranular felt of interlocking grains of whitish feldspar and blackish Fe/Mg with the grains just sub 0.5 mm in size. There is tendency to be lath-like in places but overall the texture appears equigranular with little variation. The colour aspect is medium to dark grey.

2470 non-porphyritic medium grained dolerite
 equigranular felt of interlocking grains of whitish feldspar and blackish Fe/Mg. The grains are near 0.1 mm than higher giving a fine grain size appearance to the rock. Over the little patch of more recently broken rock, the appearance is of blackness and the texture is not resolvable; where weathered the texture breaks down into whitish feldspar and blackish Fe/Mg. The overall aspect is medium grey on the weathered surfaces and darker on the fresher, broken area.

2471 non-porphyritic medium grained dolerite
 variably dense scatter of equigranular and bladed blackish Fe/Mg grains in a non-resolvable whitish, to pink weathering, feldspathic base. Fe/Mg grains at about 0.1 to 0.2 mm in size with the bladed grains somewhat longer. The overall aspect is a regularly reddish weathering rock which would probably be more black and white on any original fresh surface.

2472 non-porphyritic medium grained dolerite
 interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspar grains. The grain size is generally between 0.5 and 1 mm so is quite coarse. The detail of the feldspars is not readily resolvable though there are many laths which may be phenocrystic though not much larger than the other grains. In places Fe/Mg grains seem grouped within possible larger feldspars (?poikilitic)The overall aspect is a light grey rock with a strong black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains. Compare with GMAG 2473 where the grain sizes are smaller but otherwise in both cases similar.

2473 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspar grains. The grain size is generally about 0.5 or less. The Fe/Mg grains often seem embedded in feldspar grains though this may be illusory. The overall aspect is a light grey rock with a strong black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains. Compare with GMAG 2472 where the grain size is larger and with GMAG 2474 where the grain size is smaller but otherwise in both cases similar.

2474 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspar grains. The grain size is generally about 0.1 to 0.2 mm. Some Fe/Mg grains seem embedded in feldspar grains but the majority appear as distinct grains along with the feldspars. The overall aspect is a light to medium grey rock with a subdued black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains. Compare and contrast with GMAG 2472 and 2473 where the smaller grain size is the only striking difference.

2475 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains in a whitish feldspar base of non-resolvable grains. The grain size is generally about 0.1 to 0.2 mm. The overall aspect is a light to medium grey rock with a subdued regular black and white aspect imparted by the patterned arrangement of the feldspar and Fe/Mg grains. Not dissimilar to GMAG 2474.

2476 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspars some of which are lath-shaped. The grain size is generally well sub 0.5mm. The overall aspect is a light to medium grey rock with a subdued regular black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains.

2477 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspars both often tending to be lath-shaped. It is difficult to resolve the relationships between the feldspars and the Fe/Mg grains. The grain size is generally about 0.5 mm and over. The overall aspect is a medium to darkish grey rock with a subdued regular black and white equigranular aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains.

2478 porphyritic coarse grained basic rock
interlocking dense felt of more or less blackish Fe/Mg grains probably in a whitish feldspar base but this latter is not resolvable and so the true grain size is uncertain. There is a dense distribution of thin laths of white feldspar up to a mm + and these are probably a different generation of feldspars and are phenocrystic. some of which are lath-shaped. The grain size in the groundmass is generally 0.5 mm and less. The overall aspect is a

light to medium grey rock with a subdued regular black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains.

2479 porphyritic medium grained dolerite

pale whitish matrix is possibly composed of feldspar and has scattered small (sub 0.5 mm) blackish rounded grains of possibly Fe/Mg mineral but overall this matrix is not resolvable; there is a dense scatter of white, randomly orientated phenocrysts of feldspar ranging in size from 1 to 10 mm though with the majority about 2 to 3 mm. The rock gives the appearance of being deeply weathered and the feldspars may be sericitic. Overall aspect a pale whitish grey made distinctive by the abundant white feldspars standing proud of the matrix on the most weathered surfaces.

Identified by M. Patton as Type P dolerite from Jersey in hand specimen.

2480 porphyritic medium grained dolerite

interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish to pink weathering feldspars. The grain size is generally well sub 1 mm. There a few scatted stubby phenocrysts of white feldspar at the 2 to 3 mm size range and patches of smaller more densely packed feldspars. The overall aspect is a light to medium grey rock with a subdued regular black and white aspect imparted by the patterned arrangement of the feldspars and Fe/Mg grains but interrupted by the phenocrysts.

2481 non-porphyritic medium grained dolerite

interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspars. The grain size is generally between 0.5 and 1 mm. The impression is of an interlocking network of the two crystals but this may mask to some extent the occurrence of larger feldspar grains in which the Fe/Mg grains are embedded. Overall a light to medium coloured weathering of the surface, much darker on less weathered breakages.

2482 non-porphyritic medium grained dolerite

interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspars. The grain size is generally less than 0.5 mm. A light to somewhat denser scatter of feldspar phenocrysts of perhaps two sizes – 3 to 7 mm and 1 to 2.5 mm – show evidence of alteration perhaps contributing a pinkish colour in some cases. In others chalky looking feldsapr patches probably represent sericitic weathering. Overall a light to medium coloured weathering of the surface, much darker on less weathered breakages.

2483 non-porphyritic medium grained likely meta-dolerite

interlocking dense felt of blackish Fe/Mg grains and whitish feldspars. The grain size is generally 0.1 to 0.2 mm; it is difficult to resolve the feldspathic component; there is a moderate scatter of feldspar phenocrysts of small size between 0.3 and 3 mm with one or two larger up to 5/6. Overall a light to medium coloured weathering of the surface, darker on less weathered surfaces which have a tinge of greenish suggesting a meta-dolerite.

2485 non-porphyritic fine grained basalt dyke

probably dense felt of blackish Fe/Mg grains and feldspars. The grain size is generally at the lowest end of hand lens resolution at about 0.2 mm and below; the impression is of a

very regular grain size with little to no variation. Overall the rock is dark brown to very dark grey and could be a basalt dyke. It takes a very smooth polish.

2486 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains and whitish feldspars. The grain size is between 0.1 and 0.2/3 mm. The felt is difficult to resolve with the hand lens. Overall a light to medium grey weathering surface which would be much darker on fresh surfaces. A mottling on one surface probably represents rust spots from oxidation of Fe in the Fe/Mg grains.

2487 non-porphyritic medium grained dolerite
interlocking dense felt of discrete whitish feldspar laths of random orientation with more or less equigranular blackish Fe/Mg grains of various shapes. The grain size is between 0.1 and 0.5 mm. There are very rare feldspars which approach 1 mm in length. . Overall a light grey patterned black and white rock which takes a shiny polish.

2488 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains of various shapes embedded in a whitish feldspar matrix that is impossible to resolve with the hand lens. The grain size of the Fe/Mgs is about 0.5 mm and below. Overall a light grey patterned black and white rock.

2489 non-porphyritic medium grained dolerite
interlocking dense felt of more or less equigranular blackish Fe/Mg grains of various shapes including many blades with whitish to reddish weathering feldspar grains of random orientation and shape. The grain size of the grains is generally more than 0.5 mm but much less than 1 mm. Overall a light to medium grey colour weathering browner in patches.

2490 porphyritic medium grained dolerite
dense felt of blackish Fe/Mg grains in a matrix of whitish feldspar which is difficult to resolve with the hand lens. The grain size of the Fe/Mgs hovers either side of 0.5 mm. There is a scattering of feldspar phenocrysts ranging up to 2/3 mm in size with some laths up to 5 mm. Overall a light to medium grey weathering surface which would be much darker on fresh surfaces. A degree of mottling of the more weathered surfaces probably represents rust spots from oxidation of Fe in the Fe/Mg grains.

2491 porphyritic medium grained dolerite
grey matrix is composed of a dense felt of feldspar and Fe/Mg grains the relationships of which are difficult to resolve with the hand lens. There is a moderately dense scatter of white, randomly orientated phenocrysts of feldspar ranging in size from 1 to 4 mm though with the majority about 2 mm. There are a number of roughly square 1.5 mm blackish possibly Fe/Mg phenocrysts. The rock is well weathered and the feldspars probably sericitic. Overall aspect a medium grey colour made distinctive by the abundant white feldspars.

Identified by M. Patton as Type P dolerite from Jersey in hand specimen.

2492 non-porphyritic medium grained dolerite
dense felt of blackish Fe/Mg grains and whitish feldspar which is difficult to resolve with the hand lens. The grain size of the Fe/Mgs is sub 1 mm and apparently variable down to less than 0.5 mm. to darkOverall a light to medium grey weathering surface which would be much darker on fresh surfaces. The surface is moderately rough as a result of differential weathering of the grains.

2493 non-porphyritic medium grained dolerite
dense felt of blackish Fe/Mg and whitish feldspar grains. The grain size hovers around 0.1/0.2 mm and where the feldspars are not distinct crystals the Fe/Mg and feldspar relationships are difficult to resolve. Overall a light grey weathering surface which would be much darker on fresh surfaces. There is an overall uniformity of texture not broken by any phenocrysts or other mineral grains of larger size than those of the matrix.

2494 porphyritic medium grained dolerite
grey matrix is composed of a dense felt of feldspar and Fe/Mg grains. Many, if not most of the feldspar grains are lath like in form. There is a moderately dense scatter of white, randomly orientated phenocrysts of feldspar ranging in size from about 1 to 12 mm though with the majority about 2/3 mm. The rock is well weathered and the feldspars probably sericitic. Overall aspect a medium grey colour weathering brown made distinctive by the abundant white feldspars.

2495 non-porphyritic medium grained dolerite
dense felt of blackish Fe/Mg and whitish and reddish weathering feldspar grains. The grain size is variable from about 0.4 mm to 1 mm. Many of the feldspars are distinct crystals but some of the Fe/Mg grains are probably embedded in feldspars. Overall weathering to a medium brown colour on most weathered surfaces but where broken a medium grey. The surface overall is quite granular to look and feel as a result of differential weathering of Fe/Mg and feldspar.

2496 non-porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg and whitish and reddish weathering feldspar grains. The grain size hovers around 0.4/0.6 mm and many of the Fe/Mg grains are embedded in feldspars. Overall a medium grey colour on most weathered surfaces but weathering to a brownish colour. Impression of a fine, even grain, pattern of black and white.

2497 non-porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg grains and whitish to reddish weathering feldspar. The individual feldspars are difficult to make out and it is likely that the Fe/g grains are embedded in the feldspar. The grain size of the Fe/Mg grains is of the order of 0.1 to 0.2 mm but some are larger; the feldspar grains may be larger and play host to the Fe/Mg grains. Overall a medium grey colour on most weathered surfaces but weathering to a brownish colour. There is a mottling effect due to rusting of patches of Fe/Mg minerals.

2498 non-porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg grains and whitish feldspar grains many of lath shape. The grain size of the Fe/Mg grains is of the order of 0.2 to 0.4 mm but the feldspars are probably a little larger. Overall a medium grey colour on the fresher surfaces but weathering to a brownish colour elsewhere.

2499 non-porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg grains and whitish feldspar grains. The grain size is of the order of 0.1 to 0.3 mm but some of the feldspars are probably a little larger. Overall a medium grey colour on the fresher surfaces but weathering to a light brownish colour elsewhere.

2500 porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg grains and whitish feldspar grains. The grain size is of the order of 0.2 to 0.4 mm but some of the feldspars are probably a little larger. There is a light to moderate scattering of 1 to 2 mm whitish feldspar phenocrysts. Overall a medium to dark grey colour.

2501 porphyritic medium grained dolerite
dense interlocking felt of dominant blackish Fe/Mg grains and difficult to resolve feldspar background. The grain size of the Fe/Mg grains is of the order of 0.2 to 0.4 mm. There is a light to moderate scattering of 1 to 3 mm whitish feldspar phenocrysts often of lath form and sometimes cored with Fe/Mg. Overall a dark grey colour with a surface roughness as a result of the prominent Fe/Mg grains – presumably the feldspar background has weathered out preferentially.

2502 non-porphyritic medium grained dolerite
irregularly distributed but densely packed blackish Fe/Mg grains in a background whitish feldspathic base. However, many individual feldspar crystals can be distinguished. The grain size of the Fe/Mg grains is of the order of 0.5 to 1 mm and visible feldspar crystals range up to 2/3 mm + often in radiating groups. Overall a medium to dark grey colour with a surface roughness as a result of the prominent Fe/Mg grains – presumably the feldspathic minerals have weathered out preferentially.

2503 porphyritic medium grained dolerite
dense interlocking felt of blackish Fe/Mg grains in a feldspathic base. The grain size of the Fe/Mg grains is of the order of 0.1 to 0.2 mm. There is a light to moderate regular scattering of 1 to 3 mm whitish feldspar phenocrysts often of idiomorphic. Overall a medium to dark grey colour but dominated by the regular scatter of the roughly same size feldspars.

Thin sectioned and identified by M. Patton as Type P2 dolerite from Jersey.

2504 porphyritic medium grained dolerite

dense interlocking felt of blackish Fe/Mg and feldspar grains. The grain size of the Fe/Mg grains is of the order of 0.1 to 0.2 mm. There is a light to moderate rather irregular scattering of 1 to 3 mm whitish feldspar phenocrysts of many different shapes though with many having a basic sub-idiomorphic outline. Overall a medium grey colour made distinctive by the scatter of the roughly same size feldspars.

2505 porphyritic medium grained dolerite

dense interlocking felt of blackish Fe/Mg and feldspar grains. The grain size of the Fe/Mg grains is of the order of 0.1 to 0.2 mm. There is a light to moderate rather irregular scattering of 1 to 2 mm whitish feldspar phenocrysts generally round about the 1 mm size. Shapes are variable though many have a basic sub-idiomorphic outline. Overall a medium grey colour made distinctive by the scatter of the roughly same size feldspars on the broken cross section but elsewhere the more weathered surfaces are brownish and the small feldspar phenocrysts hardly show.

2506 porphyritic medium grained dolerite

dense interlocking felt of blackish Fe/Mg and feldspar grains. The grain size of the Fe/Mg grains is of the order of 0.1 to 0.2 mm. There is a light to moderate rather irregular but dense scattering of 1 to 2 mm whitish feldspar phenocrysts irregularly distributed through the groundmass. Shapes are variable. Overall a medium to dark grey colour given a lighter cast of colour by the scatter of the roughly same size but dull white feldspars.

Thin sectioned and identified by M. Patton as Type P2 dolerite from Jersey

2507 porphyritic medium grained dolerite

dense interlocking felt of blackish Fe/Mg grains embedded in a non-resolvable feldspathic base. The grain size of the Fe/Mg grains is not easy to determine since the grains are so much in contact but are probably of the order of 0.5 mm. There is a dense but irregular scatter of whitish to red weathering feldspar crystals ranging in size from about 0.4 mm up to 3 mm. Shapes are variable. Overall a dark grey colour with the scatter of feldspars creating a distinctive pattern.

2508 non-porphyritic medium grained dolerite

blackish Fe/Mg grains embedded in a matrix of composed of whitish feldspar crystals. The grain size of the Fe/Mg grains is of the order of 0.4 to 0.5 mm but the feldspar grains are larger ranging up to 1 mm and more. Overall a medium to dark grey colour with the intermingling of blackish Fe/Mg grains and the feldspars creating a black and white appearing felt.

2509 porphyritic medium grained dolerite

interlocking framework of lath like, whitish feldspars weathering reddish set in what appears to be patches of Fe/Mg mineral of which the individual grains cannot be resolved. The grain size of the feldspars range from about 1 mm up to a maximum of about 4 mm but with the majority giving the impression of an even grained texture at about 1 to 2 mm. The Fe/Mg patches range up to several mm across. An almost black background of Fe/Mg with and overall lightening caused by the abundant feldspars.

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2519 non-porphyritic medium grained dolerite

dense interlocking network of thin feldspar laths and stubbier Fe/Mg mineral; the feldspar laths are mostly sub 0.5 mm in length as are those of the Fe/Mg mineral. A few plagioclase crystals range up to just over the mm and one appears to enclose an Fe/Mg lath. There is no apparent orientation of the laths though the worked surfaces have a patchy moss like look which appears to result from the artificially induced pattern of impressions over the surface.

2528 non-porphyritic coarse grained intermediate or basic igneous rock

essentially a rather uniform appearing moderately dense scatter of Fe/Mg crystals of very varied shape in what appears to be a plagioclase base. The Fe/Mg crystals are of the order of a mm across. A few of the plagioclases are up to 1.5/2.0 mm across but hardly constitute porphyritic crystals. The relative densities of the feldspar and Fe/Mg constituents give to the rock a comparatively light coloured look of black and white aspect.

2537 non-porphoritic medium grained dolerite

densely porphyritic scatter of white feldspars ranging in size from 1 mm to 2.5 mm for the most part in a matrix composed of Fe/Mg and feldspar constituents of sub c.0.3 mm grain size. The prevalence of the white feldspar porphyritic crystals give the rock a very pale appearance.

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2560 non-porphyritic coarse grained acid to intermediate rock

rather granular interlocking network of whitish feldspar and Fe/Mg crystals of +- 1 mm size. Overall aspect of rock isotropic and a relatively light colour given by the feldspar.

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2571 porphyritic medium grained dolerite

extremely dense scatter of porphyritic crystals of whitish to pinkish feldspars packed into a sub-mm matrix of just resolvable feldspar and Fe/Mg crystals as interstitial material.

One 7 x 4 mm enclave of dark, almost greenish, aspect with a thin dark reaction rim. one or two Fe/Mg phenocrysts 2/3 mm across occur.

Identified by M. Patton as Type P dolerite from Jersey in hand specimen

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2603 the axe form is typical of axes made at Pussulien in Brittany

2633 non-porphyritic coarse grained acid igneous rock
coarse grained rather granular looking, light grey tinged with a hint of reddish purple, rock. The underlying texture appears to be a densely packed somewhat equigranular mix of ?different feldspars and rather indistinct dark mineral(?s). Grain size from about a mm up to 2 to 3 mm. A distinctive rock difficult to characterize. Might be from an acid dyke.

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2652 flint dark blue-black

2666 flint whitish-gray

2957 porphyritic coarse grained basic igneous rock
dense packing of porphyritic feldspar crystals of variable shape size and cross section (from c. 1 mm up to max of about 5 mm) in a sub-mm matrix of feldspar and Fe/Mg crystals more or less all resolvable with the hand lens. A number of the feldspar phenocrysts enclose crystals of Fe/Mg mineral and other mixtures. A distinctive rock. Identified by M. Patton as Type P dolerite from Jersey in hand specimen

3340 porphyritic medium grained igneous rock
rather irregular distribution of feldspar phenocrysts of very different sizes ranging from about 1 mm up to 5/6. A number of the crystals have included Fe/Mg crystal(s). There a number of once filled vesicular like cavities. The matrix is a fine felt of feldspar and Fe/Mg crystals sub-0.3 mm size but just about resolvable with the hand lens. The rock is basically grey but weathers a very light brown. A distinctive rock.
Thin sectioned and identified by M. Patton as Type P1 dolerite from Jersey.

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