
Appendix 3 Particulars of the microphotographs

This gives the slide-number, the magnification, the minerals visible, and the pages where the subject is described, with other items that may not be given in the text. The one-inch map locality will be found on one of the pages referred to, the six-inch locality being given on the slide-label.

(Plate 2)

1. Schist with encarsioblast. [\(E10139\)](#) [SH 212 805]. × 51. Fine foliated grit of Llwyn Beds. Quartz, muscovite, green-biotite, albite, iron-ores. pp. 42–5, 259.
2. Green-mica-schist. [\(E10151\)](#) [SH 241 829]. × 36. Fine foliated grit of Soldier's Point beds. Seam of saccharoid quartz in upper part; and a reconstituted clastic albite (Figure 27) in middle below. Quartz, albite, muscovite, green biotite, epidote, sphene. pp. 47–8, 145, 269–70.
3. Bedded Jasper. [\(E10536\)](#) [SH 456 932], [\(E10537\)](#) [SH 456 932], [\(E10536\)](#) [SH 456 932], [\(E10537\)](#) [SH 456 932], [\(E10538\)](#) [SH 456 934] × 17. Amlwch Beds. Quartz, haematite, white mica. pp. 53, 303–4.
4. Boulder in Skerries Grits. [\(E10591\)](#) [SH 269 950]. × 17. Nicole crossed. Hypabyssal felsite, rich in micro-pegmatite. Quartz, albite. pp. 60, 318–20.
5. Boulder in Skerries Grits. [\(E10586\)](#) [SH 266 947]. × 10. Nicols crossed. Granite. Quartz, albite, microperthite. pp. 60, 318–20.
6. Tyly Grit. [\(E9839\)](#) [SH 517 767]. × 19. Ashy grit. Quartz, albite, iron-ores, mica; with spilitic lapilli, and a fragment of tourmaline-mica-schist in lower part. pp. 62–3, 356.

(Plate 5)

1. Ellipsoidal Spilite. [\(E9895\)](#) [SH 396 645]. × 20.5. Nicols crossed. Typical spilite of (Plate 3). Albite, augite, iron-ores. pp. 72, 378–9.
2. Variolitic Spilite. [\(E9843\)](#) [SH 520 775]. × 20.5. Haematised variolite of Pentraeth Inliers. Albite, haematite. pp. 72–3, 356.
3. Glassy Variolite. [\(E11222\)](#) [SH 518 785]–[\(E11223\)](#) [SH 518 785]. × 22. Ellipsoidal spilite of the Pentraeth Inliers. Chloritised tachylite, feldspars. pp. 62, 355.
4. Albite-Diabase. [\(E9830\)](#) [SH 523 785]. × 20.5. Most of the basic feldspar-cores are decomposed. Albite, andesine, augite, iron-ores, chlorite. pp. 75, 356.
5. Jasper. [\(E11224\)](#) [SH 557 770]. × 19. Typical, with haematite-cores to quartz-units. Quartz, haematite, carbonates, and quartz-veins. pp. 86, 363.
6. Spherulitic Jasper. [\(E9877\)](#) [SH 520 776]. Quartz and haematite. pp. 86, 357.

(Plate 9)

1. Limestone with Spilite. [\(E10103\)](#) [SH 386 623]–[\(E10104\)](#) [SH 386 623]. × 33. Large dark lapillum of haematised spilite, surrounded by pale rose-dolomite. Dolomite, calcite, hematite, chlorite, feldspar. pp. 84, 382.
2. Gwna Green-schist. [\(E9934\)](#) [SH 559 764]. × 20.5. Clastic grains just vanishing. Quartz, chlorite, mica, albite. pp. 66–7, 363.

3. Gwna Basic Schist. ([E9832](#)) [SH 555 782]. × 19. Chlorite-epidote-schist, with quartz-albite seams. Corner of lane, 170 yards northwest of Rhos. Albite, quartz, chlorite, epidote, actinolite. pp. 77, 364.
4. Gabbro-Schist. ([E10295](#)) [SH 307 768]. × 17. Saussurite, actinolite. pp. 107–8, 273.
5. Tremolite-Schist. ([E10226](#)) [SH 267 773]. × 17. Some cross-sections of tremolite show prismatic cleavages. Tremolite, talc, chromite. pp. 104, 276, (Figure 122).
6. Actinolite-Epidosite. ([E9755](#)) [SH 264 768]. × 17. By dyke, north-north-east of Cromlech farm. Some cross-sections of actinolite show prismatic cleavages. Quartz, epidote, chlorite, iron-ores, actinolite. Alternating chloritic and quartzose folia. pp. 108–9, 277.

(Plate 10)

1. Crypto-crystalline Hornfels. ([E10345](#)) [SH 463 847]. × 108. Mynydd Bodafon. clastic grains in slide, but not seen in figure. Quartz, muscovite, biotite, chlorite, tourmaline. pp. 93, 95–6, 333, 335.
2. Mica-Hornfels. ([E10361](#)) [SH 32 75]. × 17.5. Highly crystalline. Bedding imperceptible in figure. Quartz, orthoclase, albite, muscovite, biotite, iron-ores, tourmaline, zircon. Large porphyroblasts of muscovite, and an allotriomorphic blue tourmaline (dark from pleochroism) near bottom. pp. 94–6, 329–30, 333–4.
3. Hornblende-Hornfels. ([E10002](#)) [SH 425 825]. × 16. Highly crystalline, but bedding perceptible, crossed by hornblendes. Quartz, orthoclase, hornblende, and minute epidote, &c. pp. 94–6, 331, 334.
4. Epidote-Hornfels. ([E9949](#)) [SH 404 800]. × 17. Highly crystalline. Bedding imperceptible. Quartz, orthoclase, epidote, pale hornblende. pp. 94–6, 334. × 13. Quartz and hematite.
5. Albite-Schist. ([E10177](#)) [SH 348 688]. × 21. In Penmynydd mica-schist. Albite, quartz, white-mica, chlorite, epidote, iron-ores, microliths. Large porphyroblasts of albite, full of microliths. pp. 111, 343.
6. Graphitic Schist. ([E10030](#)) [SH 331 704]. × 21. In Penmynydd Zone. Quartz, albite, white-mica, encarsiolastic xanthophyllite, chlorite, rutile, pyrite, leucocene, graphite. Nearly all the clear matter is quartz. pp. 113, 341–2.

Note to 5 and 6 — A figure of typical Penmynydd mica-schist ought perhaps to have been given. But its usual, crystalline characters can be seen in these, if we disregard the porphyroblasts and encarsiolasts.

(Plate 12)

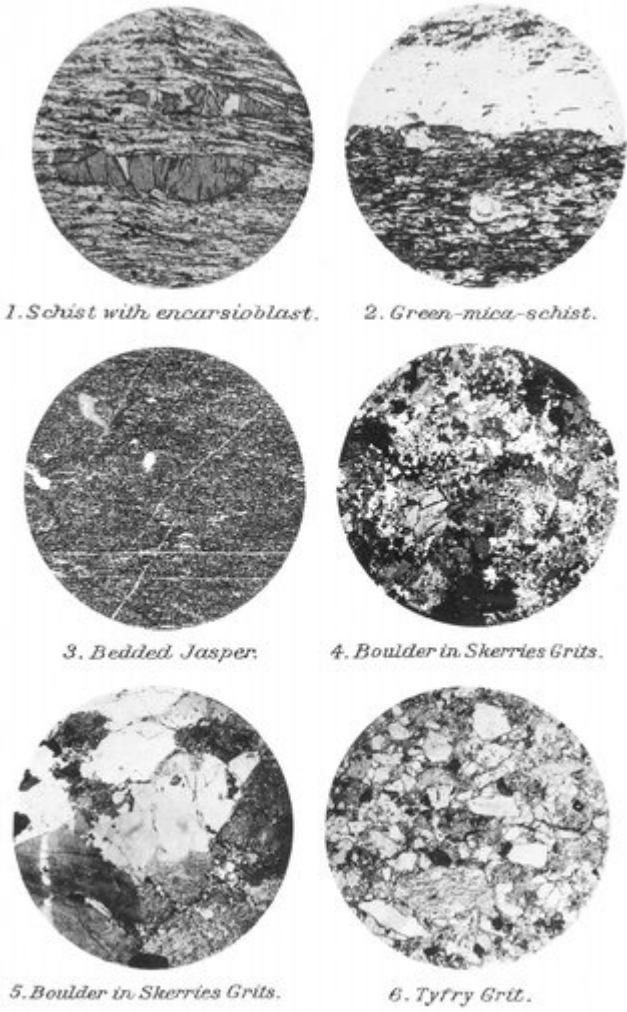
1. Hornblende-Gneiss. ([E9803](#)) [SH 371 774]. × 16. Banded rock, part of a quartz-albite band appearing at top. Quartz, albite (turbid), hornblende, sphene, iron-ores, apatite, epidote, chlorite. pp. 128–9, 322.
2. Sphene in Gneiss. ([E10850](#)) [SH 446 903]. × 24. Sphene, quartz, turbid albite, hornblende, biotite, iron-ores, apatite. pp. 130, 327.
3. Sillimanite-Gneiss. ([E9529](#)) [SH 490 901]. × 43. Haematized biotite-gneiss. Quartz, turbid oligoclase, haematized biotite, sillimanite. In the upper parts, the sillimanite can be seen as isolated needles in quartz; at the bottom is a folium consisting almost wholly of sillimanite. pp. 136, 147, 328.
4. Diorite in Gneiss. ([E9905](#)) [SH 379 777]. × 10.5. Primitive, massive, element of basic gneiss. Albite, hornblende, ilmenite, apatite. Pseudo-porphyrific groups of hornblende. pp. 128–9, 131, 322.
5. Sillimanite-Gneiss. ([E9528](#)) [SH 491 909]. × 43. Quartz. Sillimanite chiefly in (unhaematized) biotite. Much blank space in figure. pp. 136, 329.

(Plate 21)

1. Folding in Jasper. [\(E10537\)](#) [SH 456 932]. × 4. Minor and minimum folding in Amlwch Beds. Quartz, haematite, sericite. pp. 185, 195, 303–4.
2. Folding in Coeden Beds. [\(E10406\)](#) [SH 356 904]. × 10. Minimum folding with thrusting or strain-slip in finer seams. Quartz, white-mica, chloritised biotite, iron-ores. pp. 195, 297–8.
3. Minute Folding in Mica-schist. [\(E10158\)](#) [SH 215 815]. × 200. Minimum isoclinal folding in lepidoblastic seam between thin grits of Llwyn beds. The high magnification should be noted, in order that the minuteness of the folding may be realised. Muscovite and green biotite. pp. 195, 259.
4. Granite Pebble in the Harlech Grits. [\(E9744\)](#). × 18.5. Nicols crossed. Albite-granite of gneissic type. Rhinog grits. p. 252.
5. Mica-schist Pebble in the Harlech Grits. [\(E9746\)](#). × 18.5. Nicols crossed. Barmouth grits, Craig Abermaw. Quartz, albite, white-mica. Quartzose mica-schist, Penmynydd type. The mica-flakes are horizontal in the figure. p. 250–51.

(Plate 28)

1. Oolitic Ironstone. [\(E10352\)](#) [SH 318 897]. × 15.5. Bonw Lane quarry. Glauconite-like mineral, quartz, calcite, siderite. pp. 406–7, 465.
2. Palaeozoic Felsite Dyke. [\(E10827\)](#) [SH 422 914]. × 110. Nicols crossed. The Hafod-onen dyke. Albite, quartz, micro-pegmatite, with compound phenocrysts of albite and microperthite fringed with micro-pegmatite. pp. 494–5, 527–8.
- 3, 4. Palaeozoic Basic Dyke. [\(E10027\)](#) [SH 397 737]. × 16; [\(E10028\)](#) [SH 399 736]. × 16. Core and selvage respectively of 40-foot dyke. The core (Figure 3) is an ophitic dolerite composed of labradorite largely albitised, augite, iron-ores, biotite, apatite, and chlorite. The selvage (Figure 4) consists of feldspar, augite, iron-ores, and a basic glass. pp. 484–7; 520.
5. Keratophyre Pebble in Red Measures. [\(E10565\)](#). × 17. Albite and quartz, with albite phenocrysts. Haematite-staining. pp. 669–70, 674.
6. Late Olivine-Dolerite Dyke. [\(E10205\)](#) [SH 422 709]. × 17. Nicols crossed. The Capel-mawr dyke. Labradorite, augite, olivine, iron-ores, biotite. Ophitic structure. Olivine hypidiomorphic or granular. Contrast the freshness of this rock with the Palaeozoic dyke (Figure 3). pp. 684–5, 687, 692.



Keth coll.

(Plate 2) Microphotographs of the Mona Complex. 1. Schist with encarsioblast. 2. Green-mica-schist. 3. Bedded Jasper. 4. Boulder in Skerries Grits. 5. Boulder in Skerries Grits. 6. Tyfry Grit. See Appendix 3.

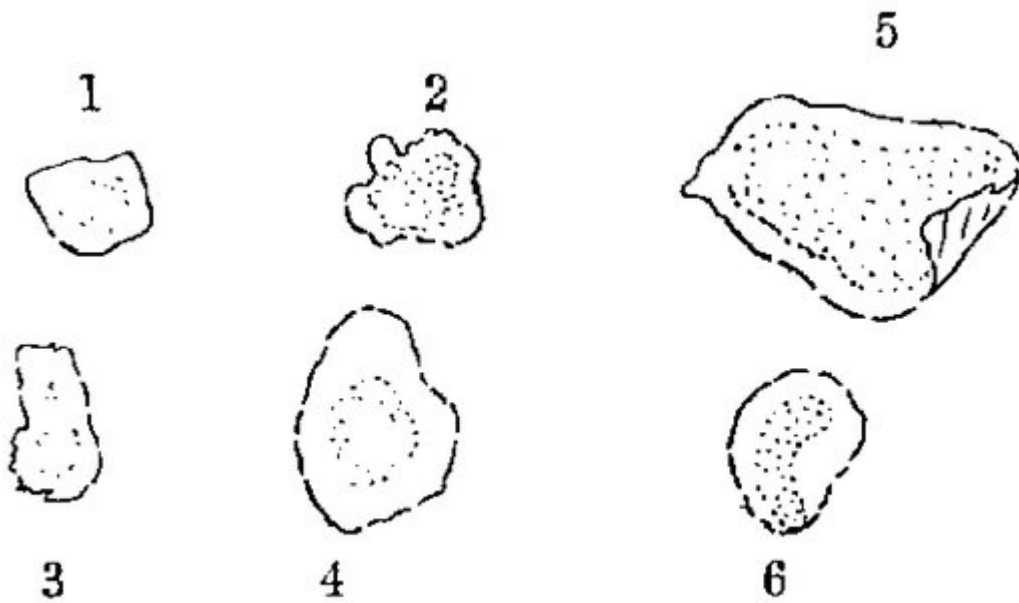
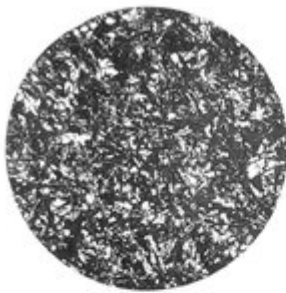


FIG. 27.

(Figure 27) Rejuvenated albites. 1, 2, 3, 4 from [\(E10151\)](#) [SH 241 829] 5, 6 from [\(E10131\)](#) [SH 217 805].

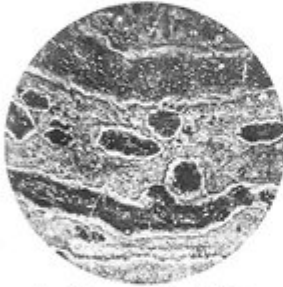
Plate V.



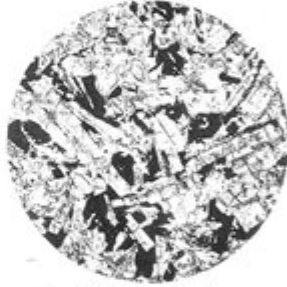
1. Ellipsoidal Spilite.



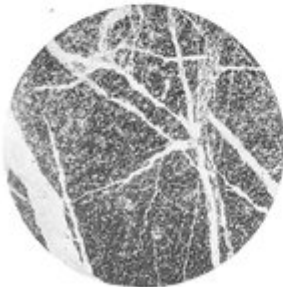
2. Variolitic Spilite.



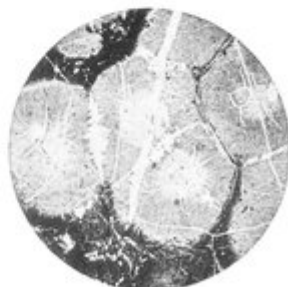
3. Glassy Variolite.



4. Albite - diabase.



5. Jasper.



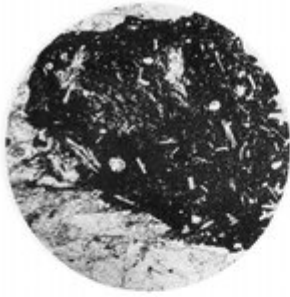
6. Spherulitic Jasper.

Half cell.

(Plate 5) Microphotographs of the Mona Complex. 1. Ellipsoidal Spilite. 2. Variolitic Spilite. 3. Glassy Variolite. 4. Albite-Diabase. 5. Jasper. 6. Spherulitic Jasper. See Appendix 3.



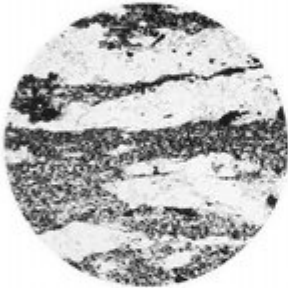
(Plate 3) Ellipsoidal spilitic lava. Dunes of Newborough.



1. Limestone with Spillite.



2. Gwna Green-schist.



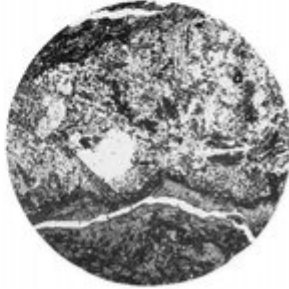
3. Gwna basic schist.



4. Gabbro-schist.



5. Tremolite-schist.



6. Actinolite-epidosite.

K&B coll.

(Plate 9) Microphotographs of the Mona Complex. 1. Limestone with Spillite. 2. Gwna Green-schist. 3. Gwna Basic Schist. 4. Gabbro-Schist. 5. Tremolite-Schist. 6. Actinolite-Epidosite. See Appendix 3.

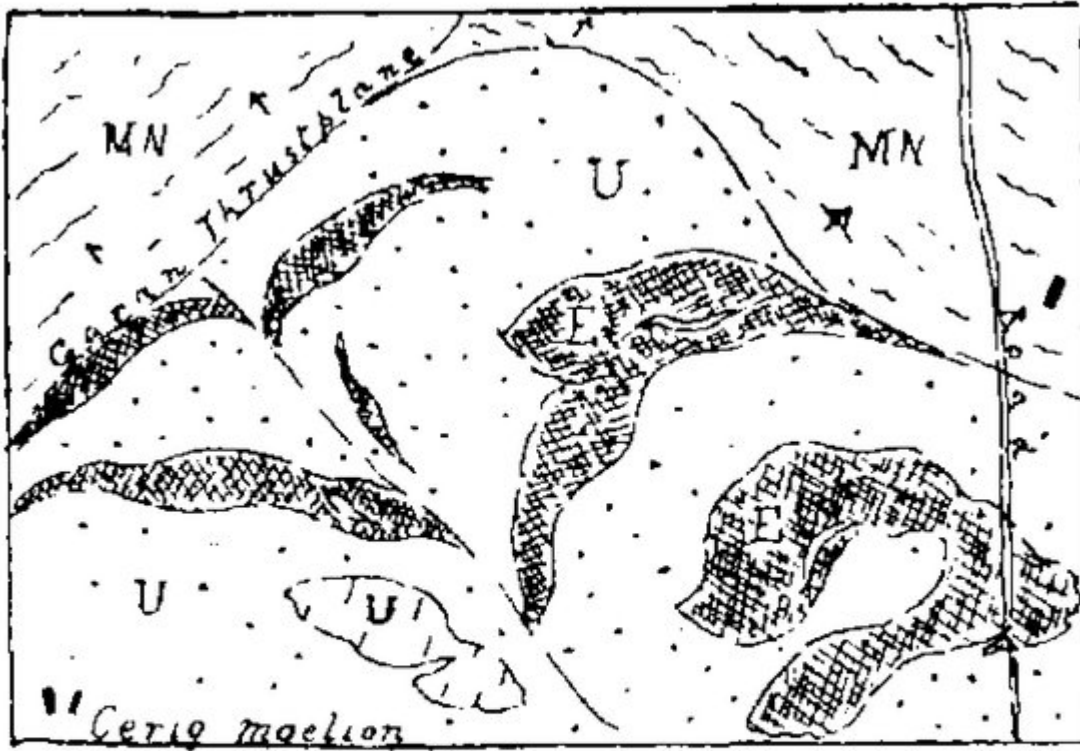
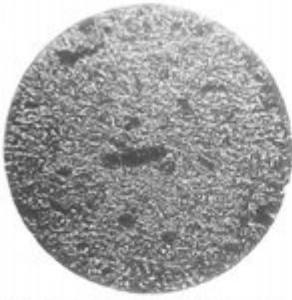


FIG. 122.

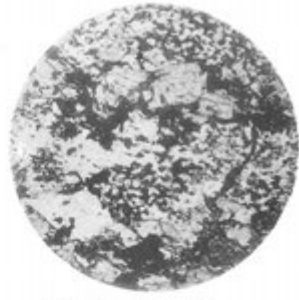
THE CERIG-MOELION INTRUSIONS AND THE GARAN THRUST-PLANE.

(Figure 122) The Cerig-Moelion intrusions and the Garan Thrust-plane. From the six-inch map. Reduced from the .0004 map. MN = New Harbour Beds. U = serpentine and opicalcite. E = gabbro in ring dykes.

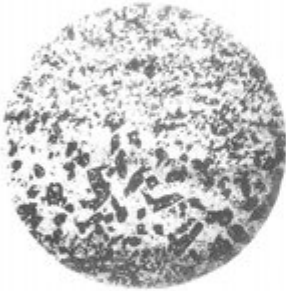
Plate X.



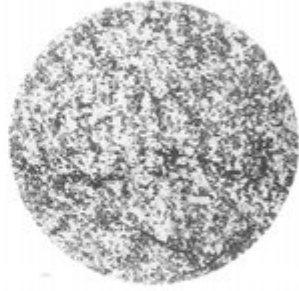
1. Cryptocrystalline Hornfels.



2. Mica-hornfels.



3. Hornblende-hornfels.



4. Epidote-hornfels.



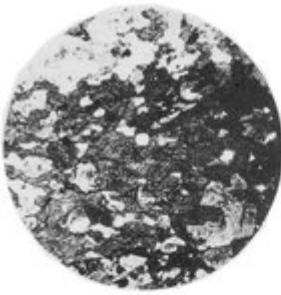
5. Albite-schist.



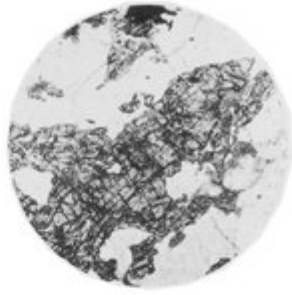
6. Graphitic Schist.

Both coll.

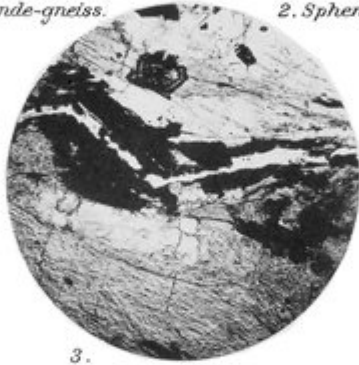
(Plate 10) Microphotographs of the Mona Complex. 1. Crypto-crystalline Hornfels. 2. Mica-Hornfels. 3. Hornblende-Hornfels. 4. Epidote-Hornfels. 5. Albite-Schist. 6. Graphitic Schist. Note to 5 and 6 — A figure of typical Penmyydd mica-schist ought perhaps to have been given. But its usual, crystalline characters can be seen in these, if we disregard the porphyroblasts and encarsio blasts. See Appendix 3.



1. Hornblende-gneiss.

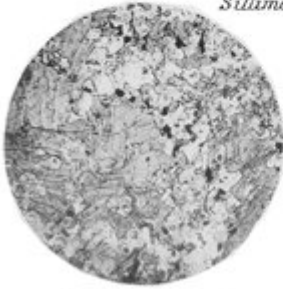


2. Sphene in Gneiss.

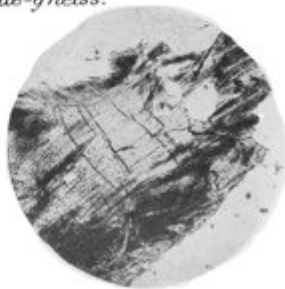


3.

Sillimanite-gneiss.



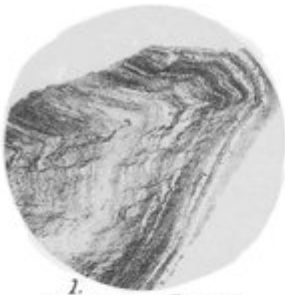
4. Diorite in Gneiss.



5. Sillimanite-gneiss.

Huth coll.

(Plate 12) Microphotographs of the Mona Complex. 1. Hornblende-Gneiss. 2. Sphene in Gneiss. 3. Sillimanite-Gneiss. 4. Diorite in Gneiss. 5. Sillimanite-Gneiss. See Appendix 3.



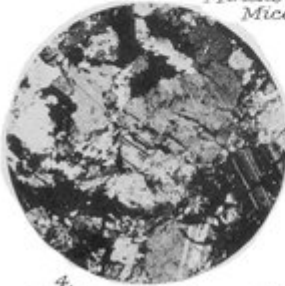
1.
Folding in Jasper.



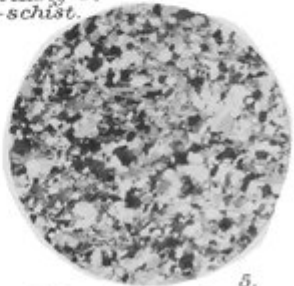
2.
Folding in Coeden Beds.



3
*Minute folding in
Mica-schist.*



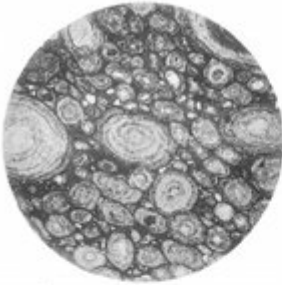
4.
Granite and Mica-schist pebbles in Harlech Grits.



5.
Both coll.

(Plate 21) Microphotographs of the Mona Complex. 1. Folding in Jasper. 2. Folding in Coeden Beds. 3. Minute Folding in Mica-schist. 4. Granite Pebble in the Harlech Grits. 5. Mica-schist Pebble in the Harlech Grits. See Appendix 3.

Plate XXVIII.



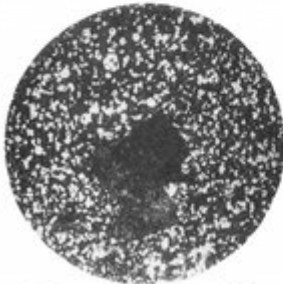
1. Oolitic Ironstone.



2. Palaeozoic felsitic dyke.



3. Palaeozoic basic dyke, core and selvage. 4.



*5. Keratophyre pebble
in Red Measures.*



*6.
Late olivine-dolerite dyke.*

Bath coll.

(Plate 28) Microphotographs of rocks later than the Mona Complex. 1. Oolitic Ironstone. 2. Palaeozoic Felsite Dyke. 3, 4. Palaeozoic Basic Dyke. 5. Keratophyre Pebble in Red Measures. 6. Late Olivine-Dolerite Dyke. See Appendix 3.



FIG. 3.

(Figure 3) Deformed boulder. 8 inches long. The Skerries.

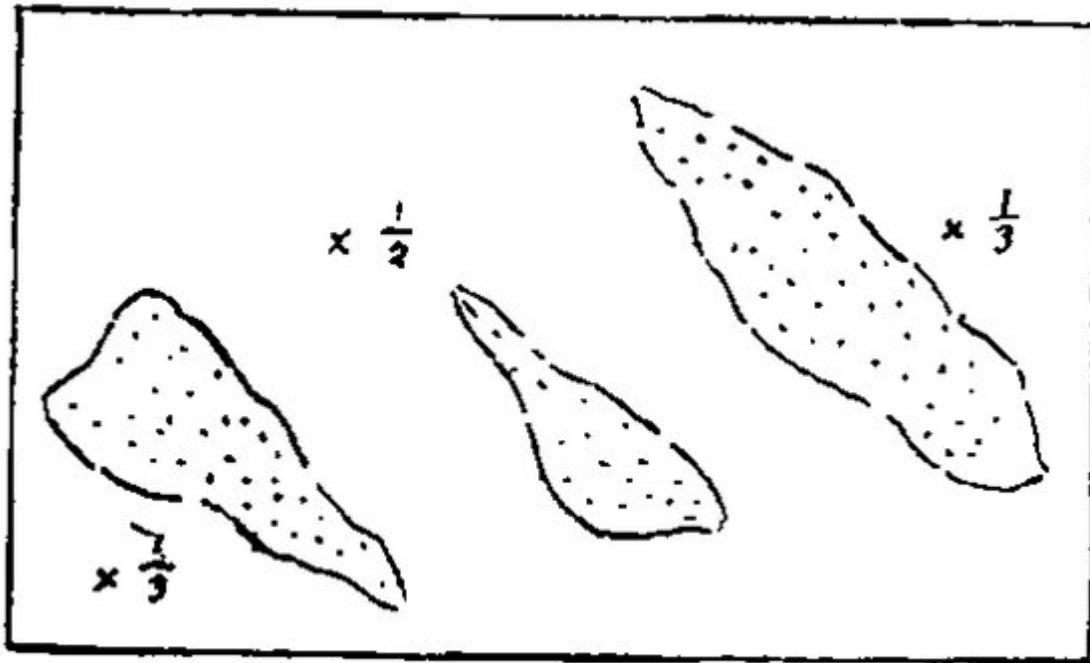


FIG. 4.

(Figure 4) Peacoids of grit in Gwna Mélange. North of Glyn-afon.