British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS classification of lithodemic units: a classification of onshore Phanerozoic intrusions in the UK

Research Report RR/12/01

BRITISH GEOLOGICAL SURVEY

RESEARCH REPORT RR/12/01

BGS classification of lithodemic units: a classification of onshore Phanerozoic intrusions in the UK

M R Gillespie, S D G Campbell and D Stephenson

Keywords

Classification, lithodemic, intrusions, onshore, UK, Caledonian, Variscan, Atlantean.

Front cover

Large pyroxene crystals, loch Borrolan Syenitic Pluton (P530690).

Bibliographical reference

GILLESPIE, M R, CAMPBELL, S D G, and STEPHENSON, D. 2011. BGS classification of lithodemic units: a classification of onshore Phanerozoic intrusions in the UK. *British Geological Survey Research Report*, RR/12/01. 58pp.

ISBN 978 0 85272 702 7

Keyworth, Nottingham British Geological Survey 2012

BRITISH GEOLOGICAL SURVEY

The full range of our publications is available from BGS shops at Nottingham, Edinburgh, London and Cardiff (Welsh publications only) see contact details below or shop online at www.geologyshop.com

The London Information Office also maintains a reference collection of BGS publications, including maps, for consultation.

We publish an annual catalogue of our maps and other publications; this catalogue is available online or from any of the BGS shops.

The British Geological Survey carries out the geological survey of Great Britain and Northern Ireland (the latter as an agency service for the government of Northern Ireland), and of the surrounding continental shelf, as well as basic research projects. It also undertakes programmes of technical aid in geology in developing countries.

The British Geological Survey is a component body of the Natural Environment Research Council.

British Geological Survey offices

BGS Central Enquiries Desk
Tel 0115 936 3143 Fax 0115 936 3276
e-mail enquires@bgs.ac.uk

Environmental Science Centre,
Keyworth, Nottingham NG12 5GG
Tel 0115 936 3100 Fax 0115 936 3200
e-mail sales@bgs.ac.uk

Murchison House, West Mains Road,
Edinburgh EH9 3LA
Tel 0131 667 1000 Fax 0131 668 2683
e-mail scotsales@bgs.ac.uk

BGS London, Natural History Museum, Cromwell Road,
London SW7 5BD
Tel 020 7589 4090 Fax 020 7584 8270
Tel 020 7942 5344/45 e-mail bgslondon@bgs.ac.uk

Columbus House, Greenmeadow Springs,
Tongwynlais, Cardiff CF15 7NE
Tel 029 2052 1962 Fax 029 2052 1963

Maclean Building, Crowmarsh Gifford,
Wallingford OX10 8BB
Tel 01491 838800 Fax 01491 692345

Geological Survey of Northern Ireland,
Colby House, Stranmillis Court, Belfast BT9 5BF
Tel 028 9038 8462 Fax 028 9038 8461
www.bgs.ac.uk/gsni/

Parent Body

Natural Environment Research Council, Polaris House,
North Star Avenue, Swindon SN2 1EU
Tel 01793 411500 Fax 01793 411501
www.nerc.ac.uk

Website www.bgs.ac.uk
Shop online at www.geologyshop.com

Contents

FIGURES

TABLES

Acknowledgments

The authors would like to thank the members of the BGS Stratigraphy Committee, together with Dr David Millward, Dr Brian Leveridge, Dr Andrew Kerr, and especially Dr Henry Emeleus, for providing reviews.

1 Introduction

This report presents a classification of mapped onshore igneous intrusions of the UK that were emplaced during the Phanerozoic Eon, and which are represented in the BGS DiGMapGB-50 model and its equivalent in Northern Ireland. It represents the first significant step towards a comprehensive, unified classification of lithodemic units in the UK, to complement well-advanced efforts to produce a full classification of lithostratigraphical units (set out in the BGS Stratigraphical Framework report series). The structure of the classification and the procedure for assigning formal names to intrusive units follow the proposals of Gillespie et al. (2008). In that scheme, 34 different types of individual intrusions and groupings of intrusions are arranged in a hierarchical parent–child association spanning six formal ranks (Figure 1); Rank 1 is taken to be the 'highest' and Rank 6 the 'lowest'. A further eight types of lithodemic unit are used to classify mapped units that consist mainly of intrusive rock but have a 'mixed' character, encompassing a significant proportion of non-intrusive rocks (Figure 1).

Full details of the classification scheme are presented in Gillespie et al. (2008), with supporting examples and a glossary. A summary of the key points from that report is presented in Appendix 1, together with details of minor refinements to the original proposals and guidelines used in preparing the classification. Key aspects of the approach and guiding principles adopted herein are outlined below.

- The highest-ranking intrusive unit in the scheme — supersuite (Rank 1) — is used to encompass all of the intrusive units that formed (directly and indirectly) in association with a major tectonothermal event. Three major intrusion-generating Phanerozoic tectonothermal events are represented in onshore UK bedrock geology. Two of these are major compressional (orogenic) events, and the names commonly used to refer to them are incorporated into the formal names of the associated supersuites: *Caledonian Supersuite and Variscan Supersuite*. The third event was the opening of the North Atlantic Ocean, which has not traditionally been referred to by a specific name. Gillespie et al. (2008) proposed that the term Atlantean be introduced to refer to all the processes associated with that extensional event, and that the term is incorporated into the formal name of the associated supersuite. This classification is therefore presented as three supersuites: *Caledonian Supersuite, Variscan Supersuite* and *Atlantean Supersuite*. The many thousands of mapped intrusive units encompassed by these supersuites are classified in the five lower ranks of the hierarchy (ranks 2–6).
- No attempt is made within the supersuite classifications to identify extrusive (lithostratigraphical) units that are known or inferred to share a genetic relationship with one of the intrusive (lithodemic) units; for example, where a mapped *pipe* feeds a mapped lava flow. Such information would undoubtedly be useful, and may be added to the classifications in due course. Relationships of this sort should be noted where appropriate in the BGS Lexicon of Named Rock Units. The informal, well-established terms *province* and *superprovince* can also be used to refer to groups of related igneous lithodemic and lithostratigraphical units within a particular geographical area (Gillespie et al., 2008). This can be a useful way of indicating the wider geographical and/or petrogenetic association of comagmatic and/or contemporaneous intrusive and extrusive units. For example, the North Atlantic Igneous Superprovince encompasses all the extrusive (lithostratigraphical) and intrusive (lithodemic) units that formed in association with the opening of the North Atlantic Ocean. Note, however, that provinces and superprovinces do not form part of this BGS classification, and are informal.
- The various types of unit (*dyke, pluton, suite* etc) that make up the hierarchy of Figure 1 are defined almost entirely on the basis of criteria other than size. In some cases this can result in units having rank positions that could be regarded as anomalous. For example, any *dyke* <u>must</u> be classified at Rank 6 regardless of whether its outcrop is 10 metres long or 100 km long, and any *pluton* <u>must</u> be classified at Rank 5 regardless of whether its outcrop covers 1 km^2 or 1000 km^2. The same principle applies in lithostratigraphical classification. Similarly, above Rank 6, the number and extent of intrusive units is not critical in determining the type or rank of unit used to group them. Hence, for example, any *cluster* <u>must</u> be classified at Rank 4 and any *pipe-swarm* <u>must</u> be classified at Rank 5, even though some pipe-swarms may contain many more intrusions and/or crop out over a larger geographical area than some clusters.

The purpose of this report is to present a full classification (ranks 1 to 6) of the three Phanerozoic supersuites, and to give users an insight into the reasoning used by the authors in identifying and naming those units that occupy ranks 1 to 3. The classification in this form is a framework, within which the substantial tasks of populating relevant entries in the BGS Lexicon of Named Rock Units and re-attributing relevant polygons in the BGS DiGMapGB-50 model can be achieved. In the course of that detailed work a small number of currently incomplete parent–child chains will be completed, and any units currently omitted from the classification will be identified and included.

A classification of Precambrian intrusions, and an extension of the classification to include all the known offshore igneous intrusions, will be added in due course to create a comprehensive hierarchical classification of all the mapped intrusive units of the UK (onshore and offshore).

Figure 2 presents a key to the colour and name conventions used in figures 3–5 and appendices 2–4. Figures 3–5 present a synthesis of ranks 1–3 in each supersuite, and Tables 1–3 contain supporting information for all the units classified at these ranks. The full hierarchical classification of each supersuite is presented in Appendices 2–4.

2 Classification

The full classification of each supersuite is presented in Appendices 2 to 4 in the form of hierarchical trees spanning six formal ranks. A single informal 'rank' below Rank 6, labelled 'Facies, zones and fostered units', is used to accommodate certain types of unit that cannot be incorporated within the six formal ranks of the classification. *Facies* and *zones* are components of an intrusion that are mapped as lithological and/or textural variants of the intrusive rock, but do not have proved or inferred intrusive margins (Gillespie et al., 2008). *Fostered units* are components of mixed-class units whose 'natural' hierarchical parent is not part of the mixed-class unit. For example, mappable units of sandstone (lithostratigraphical units) whose 'natural' hierarchical parent is the *Torridon Group*, form an integral part of the *Northern Marginal Vent-complex* on Rum (Appendix 4); they can therefore be thought of as being 'fostered' by the mixed-class unit in the *Atlantean Supersuite* classification. Similarly, the Skye Central Complex contains fostered units of the *Skye Lava Group* and *Lewisian Gneiss Complex* (Appendix 4). Fostered units can consist of any lithology (including intrusive rock). Commonly, but not exclusively, they consist of the country rock into which an intrusive unit has been emplaced. Different types of fostered unit are highlighted using colour in the classifications (Figure 2 and Appendices 2–4).

A system of colour coding is used in the classification figures to provide an indication of the provenance of all units and their names. Details are provided in Figure 2.

Every effort has been made to standardise the approach to classification and nomenclature, both within and between the supersuites. Tables 1 to 3 set out a range of supporting information for all units classified in ranks 1 to 3 of each supersuite, including a justification for each unit and for the name assigned to it.

2.1 CALEDONIAN SUPERSUITE

The *Caledonian Supersuite* comprises all units of intrusive igneous rock that formed as a direct or indirect consequence of the Caledonian Orogeny.

The Caledonian Orogeny encompasses all of the tectonic and magmatic events arising from closure of the Iapetus Ocean (Stephenson et al., 1999). 'Caledonian' events include: accretion or obduction of oceanic crust and island arc material onto flanking continental margins; subduction beneath the margins; continent–continent collision; uplift; extensional collapse; post-collision transtension. The orogeny encompasses many identifiably separate 'events'. Several of these have commonly used names, most notably the Early to Mid Ordovician peak of deformation and metamorphism in the Scottish Highlands, termed the Grampian Event by many authors, and the mid to late Silurian deformation referred to widely as the Scandian Event. The brief (post-Scandian, Early to Mid Devonian) Acadian event mainly affected northern. England and Wales, but was coeval with some Caledonian plutons in southern Scotland. For convenience, Acadian intrusions are therefore included within the Caledonian Supersuite.

Classification and nomenclature for ranks 1 to 3 of the *Caledonian Supersuite* is presented in Figure 3, and the full classification is presented in Appendix 2. Key information for the units classified in ranks 1 to 3 is presented in Table 1. The number of classified units with formal names is currently as follows: Rank 1 = 1; Rank 2 = 11; Rank 3 = 23; Rank 4 = 41; Rank 5 = 227; Rank 6 = 110. There are significantly fewer entries in Rank 6 than in Rank 5 because many units classified in Rank 6 are too small to be assigned a formal name. The *Wales Suite* has still to be completed below Rank 2.

The main sources of information used in building the classification were Stephenson et al. (1999), Stephenson and Gould (1995), Chadwick et al. (2001), Mykura (1976), the BGS Lexicon of Named Rock Units and the DiGMapGB-50 megatable (v.3), together with relevant BGS memoirs and geological maps.

2.2 VARISCAN SUPERSUITE

The *Variscan Supersuite* comprises all units of intrusive igneous rock that formed as a direct or indirect consequence of the Variscan Orogeny.

The Variscan (or Hercynian) Orogeny encompasses all of the tectonic and magmatic events arising from Late Palaeozoic (approximately 380 to 280 Ma) accretion and oblique collision events between Laurasia (to the north) and Armorica–Bohemia and Gondwana (to the south), to form the supercontinent Pangaea. The orogeny encompasses many identifiably separate events, with associated magmatism, during the Carboniferous and Permian periods. This magmatism occurs both north and south of the 'Variscan Front', a line marking the advancing northernmost limit of 'Variscan' pervasive fold and thrust tectonism. South of the front, crustal compression was followed by extensional collapse, while to its north, in the Variscan northern foreland, crustal extension (and transtension) was dominant.

Classification and nomenclature for ranks 1 to 3 of the *Variscan Supersuite* is presented in Figure 4, and the full classification is presented in Appendix 3. Key information for the units classified in ranks 1 to 3 is presented in Table 2. The number of classified units with formal names is currently as follows: Rank 1 = 1; Rank 2 = 4; Rank 3 = 18; Rank 4 = 19; Rank 5 = 108; Rank 6 = 472.

Gillespie et al. (2008) proposed that Carboniferous and Permian intrusions should be classified in two supersuites: a *Variscan Supersuite* (encompassing intrusions to the south of the 'Variscan Front') and a *Carboniferous–Permian Extension Supersuite* (encompassing intrusions mainly to the north of the 'Variscan Front'). However, during the detailed development of these classifications it was concluded that a better option was to amalgamate the two within a single *Variscan Supersuite*. This arose because of the practical difficulties of uniquely defining two supersuites that overlap in space and time, and because a single supersuite better reflects the likely influence of the Variscan Orogeny on all Carboniferous and Permian magmatism in the United Kingdom.

The *Variscan Supersuite* is characterised mainly by minor intrusions, which occur locally in large numbers. Commonly they form recognisable features in the landscape, and a significant proportion occurs in wellpopulated areas. Consequently, unlike the two other supersuites, a substantial number of units assigned to Rank 6 within the *Variscan Supersuite* have well-established names. A comprehensive review of the spatial distribution of these units was undertaken to support the classification at ranks 4, 5 and 6, and distribution maps are held on file. By contrast, higher order classification (i.e. the equivalent of units placed here at ranks 2 and 3) is historically less well developed for Carboniferous and Permian intrusions. Consequently, identification of the most robust parent-child relationships necessitated a dominantly bottom-up approach to classification, more so than was the case for the two other supersuites. This has meant that the classification at ranks 6 and 5 is better substantiated than in higher ranks, wherein it is commonly difficult to characterise units unambiguously without reference to the foundations at ranks 6 and 5. This situation should be borne in mind when using Table 2.

The main sources of information used in building the classification were Stephenson et al. (2003), Floyd et al. (1993), Upton et al. (2007), the BGS Lexicon of Named Rock Units and the DiGMapGB-50 megatable (v.3), together with relevant BGS memoirs and geological maps.

2.3 ATLANTEAN SUPERSUITE

The *Atlantean Supersuite* comprises all units of intrusive igneous rock resulting from magmatism that was a precursor to, and contemporaneous with, the opening of the North Atlantic Ocean.

Onshore in the UK, the magmatism occurred almost entirely during the Paleocene Epoch, from about 62 Ma to about 55 Ma. However, offshore there are lavas of possible latest Cretaceous age, and volcanism continues now at the Mid-Atlantic Ridge. Onshore, intrusions occur mainly in the Inner Hebrides, the Isle of Arran and Northern Ireland, but dyke-swarms extend over a wider area; from the Outer Hebrides, through central and southern Scotland and into northern England, and from centres in Northern Ireland across the Irish Sea and the Isle of Man. There are also scattered occurrences of Palaeogene igneous rocks in Wales, in central England and forming Lundy Island in the Bristol Channel. To be compatible with the North Atlantic Igneous Superprovince, the supersuite should also encompass offshore occurrences on the north-west continental shelf and could include intrusions in other component provinces, within and on both sides of the North Atlantic.

CLASS	RANK					
	1	2	3	4	5	6
Intrusive units	supersuite	suite	subsuite	centre	pluton	intrusion
					ring-intrusion	
					lopolith	
					intrusion-swarm	
					laccolith-swarm	laccolith
					plug-swarm	plug
					vent-swarm	vent
					pipe-swarm	pipe
					neck-swarm	neck
				cluster	diatreme-swarm	diatreme
					sheet-swarm	sheet
					dyke-swarm	dyke
					sill-swarm	sill
					ring-swarm	ring-dyke
					cone-sheet-swarm	cone-sheet
					vein-swarm	vein
Mixed units of mainly intrusive rock			central complex	sheet-complex *		
			ophiolite-complex	sill-complex *		
			volcano-complex	ring-complex *		
				vein-complex *		
				vent-complex *		

Figure 1 BGS classification of lithodemic units composed wholly or predominantly of intrusive rock.

Figure from Gillespie et al. (2008), with the following modifications: the order of the rank columns has been reversed, to match that used in Figures 3–5 and Appendices 2–4; vent-complex has been added at Rank 4.

Only swarms grouping a single type of Rank 6 unit are listed in Rank 5 (e.g. plug-swarm). Many other types of intrusive unit consisting of two or more types of Rank 6 feature are possible at Rank 5 (e.g. plug-and-vent-swarm). Centre and cluster are positioned in the Rank 4 column to be near to the types of Rank 5 and Rank 6 units they are most likely to encompass; i.e. one or more plutons will usually form a major part of a centre, whereas swarms of minor intrusions will probably form a major part of most clusters. However, many combinations of units classified at ranks 6 and 5 may have either a centre or a cluster as their hierarchical parent.

* These terms hitherto have been used commonly for intrusive lithodemic units; for example, sill-complex used to group a number of sills. They must now be used only for mixed-class units; for example, a sill-complex is a mappable unit consisting of a number of sills and the country rock between them. The examples shown here are not exhaustive, and others may be defined in due course.

Classification and nomenclature for ranks 1–3 of the *Atlantean Supersuite* are presented in Figure 5, and the full classification is presented in Appendix 4. Key information for the units classified in ranks 1 to 3 is presented in Table 3. The number of classified units with formal names is currently as follows: Rank 1 = 1; Rank 2 = 3; Rank 3 = 17; Rank 4 = 57; Rank 5 = 97; Rank 6 = 180.

The main sources of information used in building the classification were Emeleus and Bell (2005), Mitchell (2004), Speight et al. (1982), the BGS Lexicon of Named Rock Units and relevant BGS memoirs and geological maps.

* 'Lexicon' refers to the BGS Lexicon of Named Rock Units.

Figure 2 Key for figures 3–5 and appendices 2–4.

Rank 1	Rank 2	Rank 3
Caledonian Supersuite Caledonian Supersuite	**Shetland Islands Suite** Shetland Granitic Suite	East Shetland Subsuite
		West Shetland Subsuite
		Shetland Minor Intrusion Subsuite
	Scottish Highlands Ordovician Suite	Northeast Grampian Basic Subsuite North-east Grampian Basic Suite
		Northeast Grampian Granitic Subsuite North-east Grampian Granitic Suite (Ordovician)
		Northwest Grampian Granitic Subsuite North-west Grampian Granitic Suite (Ordovician)
		Alford Subsuite
		Highlands Ordovician Minor Intrusion Subsuite
	Scottish Highlands Silurian Suite	Deeside Subsuite Cairngorm Granitic Suite
		Skene Subsuite Crathes Suite
		South Grampian Subsuite South of Scotland Granitic Suite (now divided)
		Glencoe Caldera Volcano-complex Glencoe Caldera-volcano Complex
		Argyll–Northern Highlands Subsuite Argyll & Northern Highlands Granitic Suite
		Northwest Highlands Alkaline Subsuite North-west Highlands Alkaline Plutonic Suite
		Highlands Silurian Minor Intrusion Subsuite
	Scottish Lowlands Suite	Lowlands Minor Intrusion Subsuite
	Trans-Suture Suite Trans-Suture Suite	Galloway Subsuite Galloway Granitic Suite
		North England Subsuite Northern England Devonian Plutonic Suite (formal, national)
		Trans-Suture Minor Intrusion Subsuite
	Lake District Suite	Cumbrian Mountains Felsic Subsuite
	Central England Suite	Midlands Minor Intrusion Subsuite Midlands Minor Intrusive Suite (formal, national)
	Wales Suite	Cymru Minor Intrusion Subsuite
	Isle of Man Suite Manx Granite Suite	Laxey Minor Intrusion Subsuite
	Ireland Ordovician Suite	
	Ireland Silurian Suite	North Ireland Silurian Minor Intrusion Subsuite
Rank 1	Rank 2	Rank 3

Figure 3 Classification and nomenclature for ranks 1 to 3 of the Caledonian Supersuite.

Figure 4 Classification and nomenclature for ranks 1 to 3 of the Variscan Supersuite.

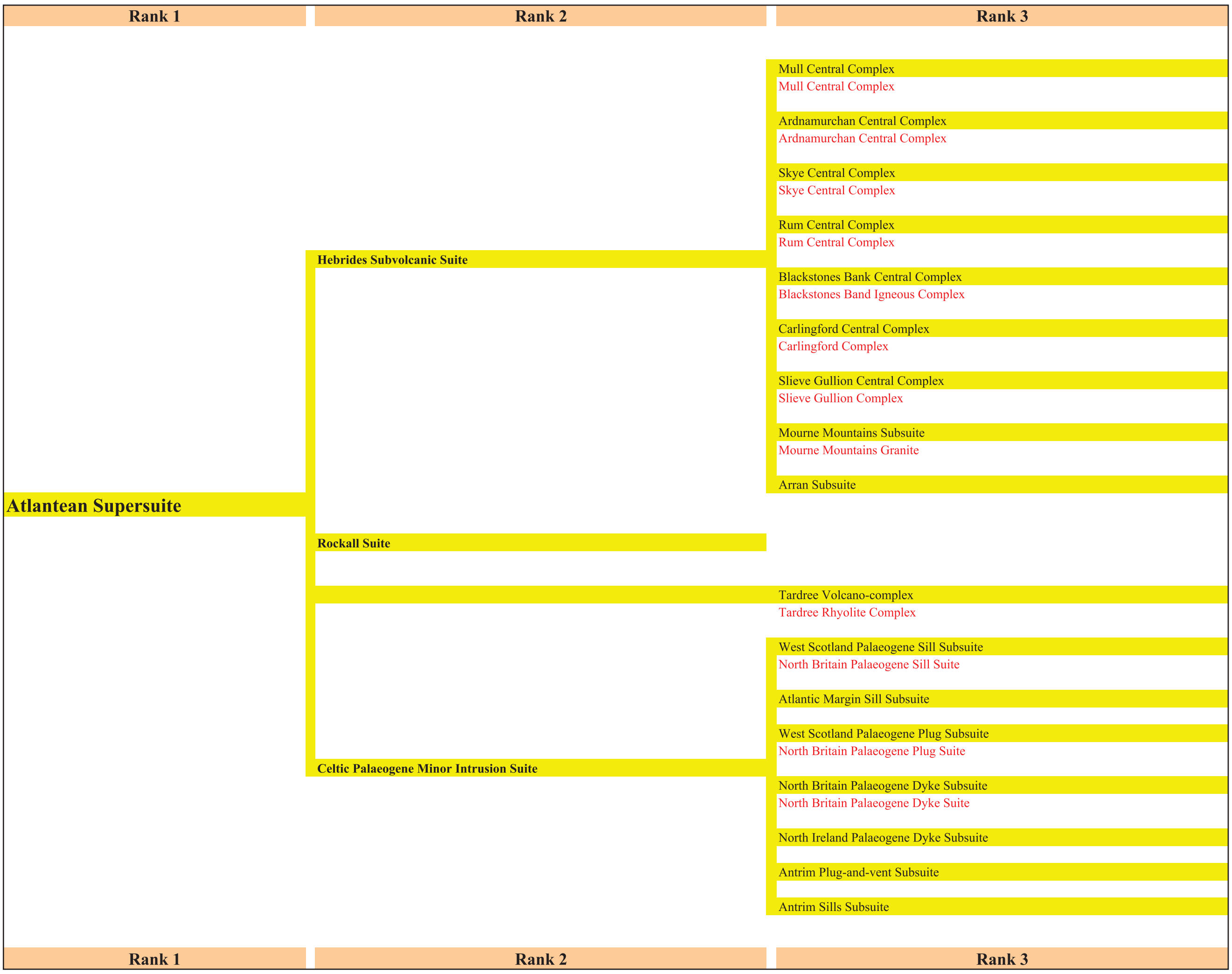


Figure 5 Classification and nomenclature for ranks 1 to 3 of the Atlantean Supersuite.

Appendix 1 Summary of guidelines used to build the classification

The main guidelines that were followed in creating the classification are set out below. Although most are summarised from Gillespie et al. (2008), some were introduced in the course of creating the classifications set out in this report.

CLASSIFICATION GUIDELINES

- Single intrusions and groupings of intrusions are classified in six formal ranks arranged in a hierarchical 'tree' structure (Figure 1).
- Thirteen types of discrete intrusion, distinguished mainly by their shape (and in some cases their setting), are classified at Rank 6; *pluton* and *lopolith* are classified at Rank 5 because they can consist of multiple intrusions, although they can also consist of a single discrete intrusion.
- Groupings of two or more spatially associated intrusions each of Rank 6 type are classified at Rank 5, for example two or more dykes may be grouped within a *dyke-swarm*, and two or more vents may be grouped within a *vent-swarm*. Sixteen types of intrusive unit are classified in Rank 5 on Figure 1. However, any two or more types of Rank 6 unit may be combined in a Rank 5 unit, yielding many more possible types of Rank 5 unit, including *plug-and-vent-swarm*, and *sheet-and-pipe-swarm*.
- Groupings of two or more spatially associated units classified at Rank 5 and/or 6, may be classified at Rank 4 in either of two units, *centre* or *cluster*.
- Ranks 1 to 3 of the hierarchy each contain a single type of lithodemic unit, which groups a 'natural association' of intrusions. These are *subsuite* in Rank 3, *suite* in Rank 2, and *supersuite* in Rank 1. A *subsuite* is a subset of the units within a *suite* (in the same way that a *subgroup* is a subset of the lithostratigraphical units within a *group*).
- At Rank 4 on Figure 1, *vent-complex* has been added as a new type of 'mixed unit of mainly intrusive rock'. This type of unit was not included in the original version of Figure 1 presented in Gillespie et al. (2008).
- Groupings of intrusions (swarms, clusters, suites, etc) are identified on the basis of a shared set of observed features (e.g. lithological characteristics, geological age relations, and the shape, degree of spatial association, and mutual disposition of individual intrusions) rather than measured features (e.g. geochemical and isotope signatures). This should make such groupings reasonably time proof and not prone to change as and when new data or data-driven models become available. Well-constrained, reliable radiometric ages are to an extent excluded from this principle, as they can be valuable in helping to assign intrusions to one grouping or another. However, radiometric ages are used only to support observed criteria, and not as the main criterion in classifying intrusions.
- Mapped components of intrusions that do not themselves have an intrusive margin (including lithological and/or textural variants such as 'facies' and 'zones', and fragmental components such as rafts) appear in the classification in an informal 'rank' below Rank 6.
- There is no requirement to occupy all ranks in a parent–child chain, or adjacent ranks. One or more ranks may be 'skipped' if necessary or appropriate.
- Minor intrusions are classified according to their geological context. Where they are associated closely with a major intrusion they may be classified with it (e.g. a *pluton* and associated *dyke-swarm* can be united within a *cluster*); where they are not associated with other intrusions they are classified in a 'catch-all' unit for minor intrusions, according to their locality and age (e.g. *Lowlands Minor Intrusion Subsuite*).

NOMENCLATURE GUIDELINES

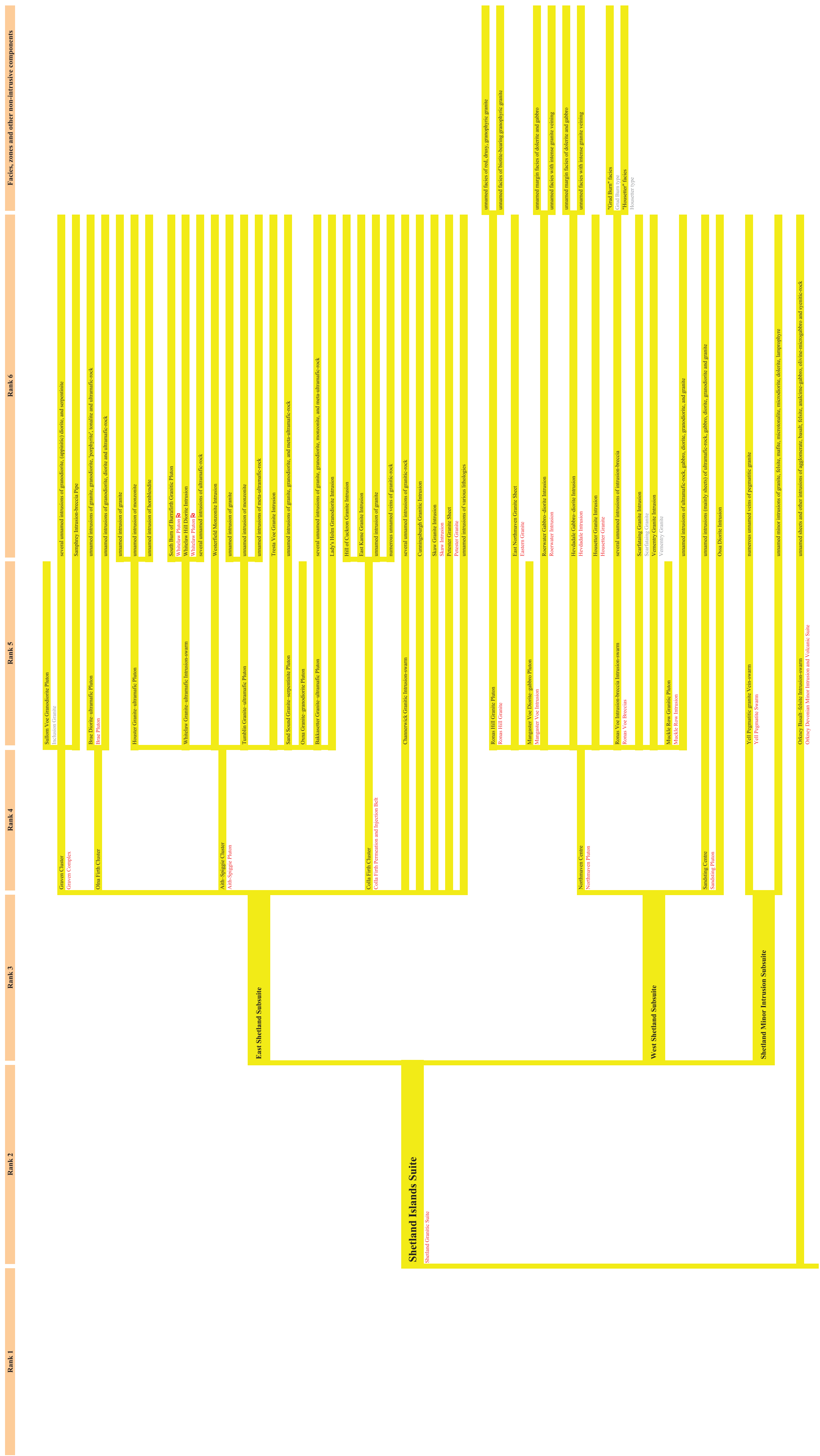
- Intrusive units classified in ranks 6 and 5 are assigned names with a geographical, a lithological and a lithodemic component, in that order; for example *Eskdale Granite Pluton*. The geographical component should provide a reasonable indication of the location or extent of the unit, and it should ideally be unique (i.e. not used in the formal name of any other unit in the Lexicon); some exceptions are described below. The lithological component should be an approved root term from Volume 1 'Igneous materials' of the BGS Rock Classification Scheme (Gillespie and Styles, 2010); some exceptions are described below. The lithodemic component should be one of the terms listed in Figure 1.
- Lithodemic units classified in ranks 4, 3 and 2 are usually assigned names with a geographical and a lithodemic component, in that order; for example *Scottish Lowlands Suite*. A lithological component is not required, because groupings of units in these ranks are commonly lithologically diverse. However, in some instances a third, and exceptionally even a fourth component may be included in a name (always between the geographical and lithodemic components) to make it sufficiently distinctive; for example *South Scotland Early Carboniferous Mafic Subsuite*. The use of chronostratigraphical terms is not recommended in lithodemic classification, but they have been used selectively here (in ranks 2 and 3 only) to avoid ambiguity and/or to emphasise an essential attribute; for example *Scottish Highlands Ordovician Suite* and *Scottish Highlands Silurian Suite*.
- Units classified in Rank 1 are assigned names that combine a term for the tectonothermal event responsible for generating the magmatism, with the lithodemic term *supersuite*; for example *Caledonian Supersuite*. In Gillespie et al. (2008) it was proposed that the term 'igneous' would also appear in the names of units classified at Rank 1 (e.g. *Atlantean Igneous Supersuite*). However, this has been dropped following a more recent decision that the term 'suite' will not be used in the names of other (non-intrusive) types of lithodemic units, which removes any logical need to keep the word 'igneous' in the formal names of supersuites.

- En-rules (or N-rules) can be used to join two or more geographical or lithological terms to make a compound term; for example *Prestwick–Mauchline Dolerite Sill-swarm*, and *Eilean Mhuire Dolerite–syenite Sill*. In the geographical term the en-rule implies 'from Prestwick to Mauchline', whereas in the lithological term the en-rule could imply either that the lithology spans a range of compositions between dolerite and syenite, or that it consists of dolerite and syenite.
- Established geographical names for intrusive units have been retained wherever possible. However, in order to satisfy the hierarchical principles and the nomenclature guidelines the lithodemic term associated with some established geographical names has changed in the classification. For example, the former established name Strontian Pluton (which would have Rank 5 status if adopted in this form) has become *Strontian Centre* (Rank 4), to allow child units at ranks 5 and 6 to be encompassed by the parent 'Strontian' unit at Rank 4.
- In some instances, a broad compositional term such as 'felsic', 'mafic', ultramafic', 'basic' or 'silicic' has been used in a unit name (e.g. *Cumbrian Mountains Felsic Subsuite*) instead of a more precise lithological term. These terms are defined in the igneous volume of the BGS Rock Classification Scheme (RCS) (Gillespie and Styles, 2010), and are therefore acceptable in the absence of a suitable more precise lithological alternative.
- Simple lithological terms in unit names (e.g. *Eskdale Granite Pluto*n) imply a simple lithological character. Any other form of words in the 'lithological' component of unit names (including compound terms linked by en-rules, terms with 'ic' suffixes, and non-RCS terms like 'hybrid') implies a more complicated lithological association. Such terms should act as a 'flag', prompting users to interrogate the Lexicon to find a fuller description of the lithological character of the unit.
- As a general principle, the names assigned to intrusive units have been kept as simple and short as can reasonably be achieved. To that end:

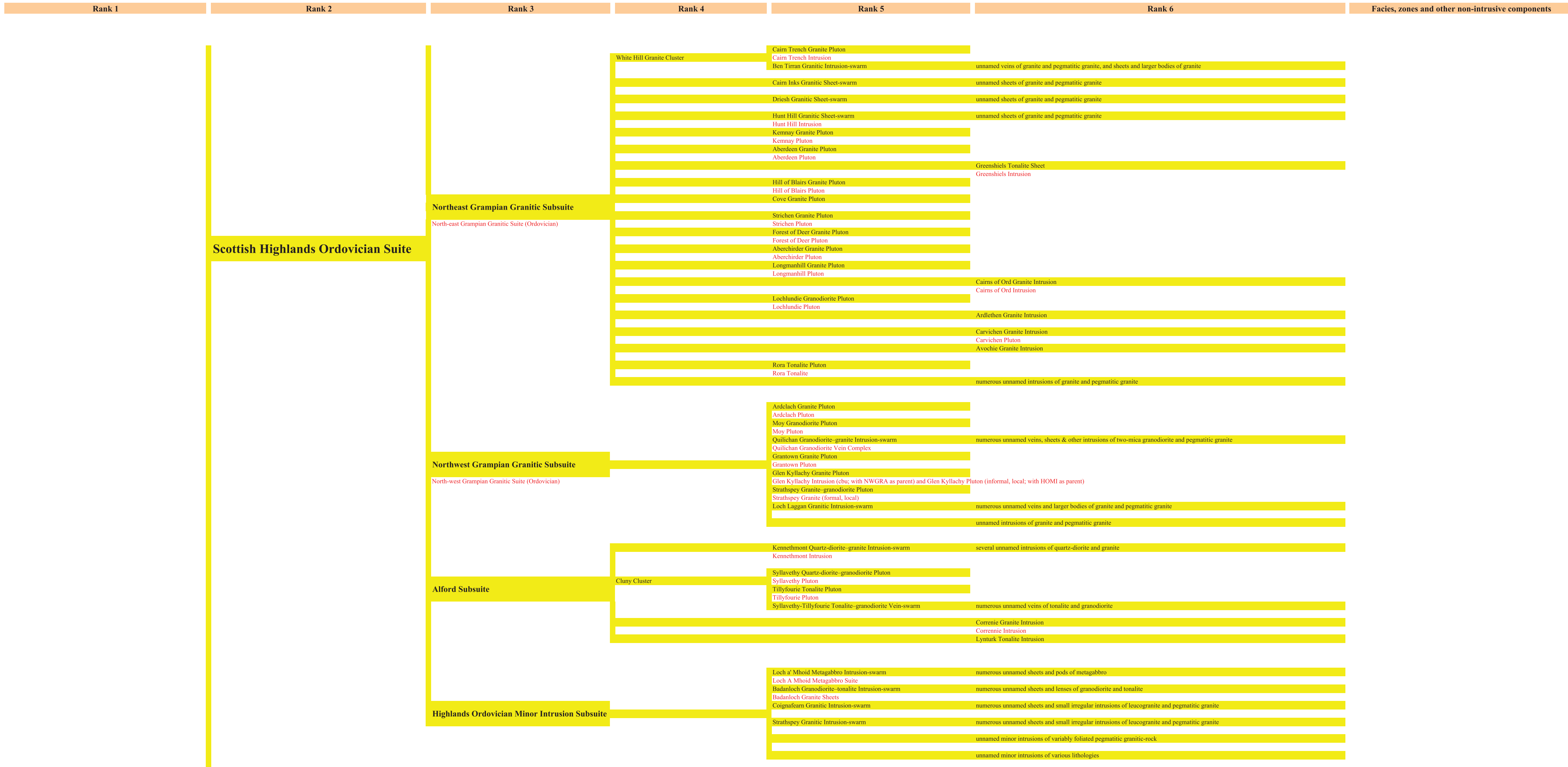
    - small 'linking' words such as 'and', 'to' and 'of' have been omitted from unit names wherever possible, with en-rules used instead where appropriate. For example 'Carboniferous–Permian' instead of 'Carboniferous and Permian', and 'West Scotland' instead of 'West of Scotland'. Hyphens have also been omitted where they are not strictly necessary, for example *Northeast Scotland Quartz-dolerite Dyke-swarm* instead of *North-east Scotland Quartz-dolerite Dyke-swarm*.
    - The '-rock' ending in RCS terms like dioritic-rock is generally dropped from the lithological component of formal names, for example *Glen Doll Dioritic Pluton*.
    - Lithological terms have as far as possible been simplified, for example by omitting qualifiers (e.g. 'analcime-bearing gabbro' is shortened to 'gabbro') and by not including minor lithologies. Where it is important to demonstrate compositional variation in the name, this is generally restricted to two lithologies (e.g. Granite–diorite); three lithologies should only be used in exceptional circumstances.

- Unlike some other BGS standards, including the RCS, there is no significance to the order in which lithology types and lithodemic unit types are listed in the names for units; for example, 'Plug-and-vent-suite' does not imply more vents than plugs, or vice versa, and 'Gabbro–diorite' does not imply more diorite than gabbro, or vice versa.
- The prefix 'meta' can be used with standard root terms from the RCS (e.g. 'metabasalt'), and it is permissible in some instances to use terms for metamorphic rocks rather than igneous rocks in the names for intrusive units (e.g. *Sand Sound Granite–serpentinite Pluton*). However, such terms should only be used where there is sufficient evidence to indicate that the protolith of the unit in question was igneous rock, and that the host unit was intrusive.
- The intrusive unit *cluster,* should be used to group, at Rank 4, spatially associated intrusions that do not form a *centre*. As such, the term *cluster* can be used for widely dispersed associations (e.g. dykes that crop out throughout the Scottish Highlands) as well as genuinely 'clustered' (i.e. closely grouped) associations. Lexicon entries will need to clarify the nature of such distributions.
- It is permissible to use the same geographical term for units in different hierarchical chains, though this should be avoided so far as is reasonably possible.
- Using the same geographical term for different units in the same parent–child chain is avoided as far as possible, but has been used in some circumstances; notably where a name is deeply entrenched or there is a complete absence of alternatives. Where the same geographical term has been used at different ranks in the same parent–child chain it generally implies that there are no more suitable alternatives and that both units occur at the same locality or that the geographical extent of the two units is essentially the same.

Appendix 2 Classification and nomenclature for the Caledonian Supersuite



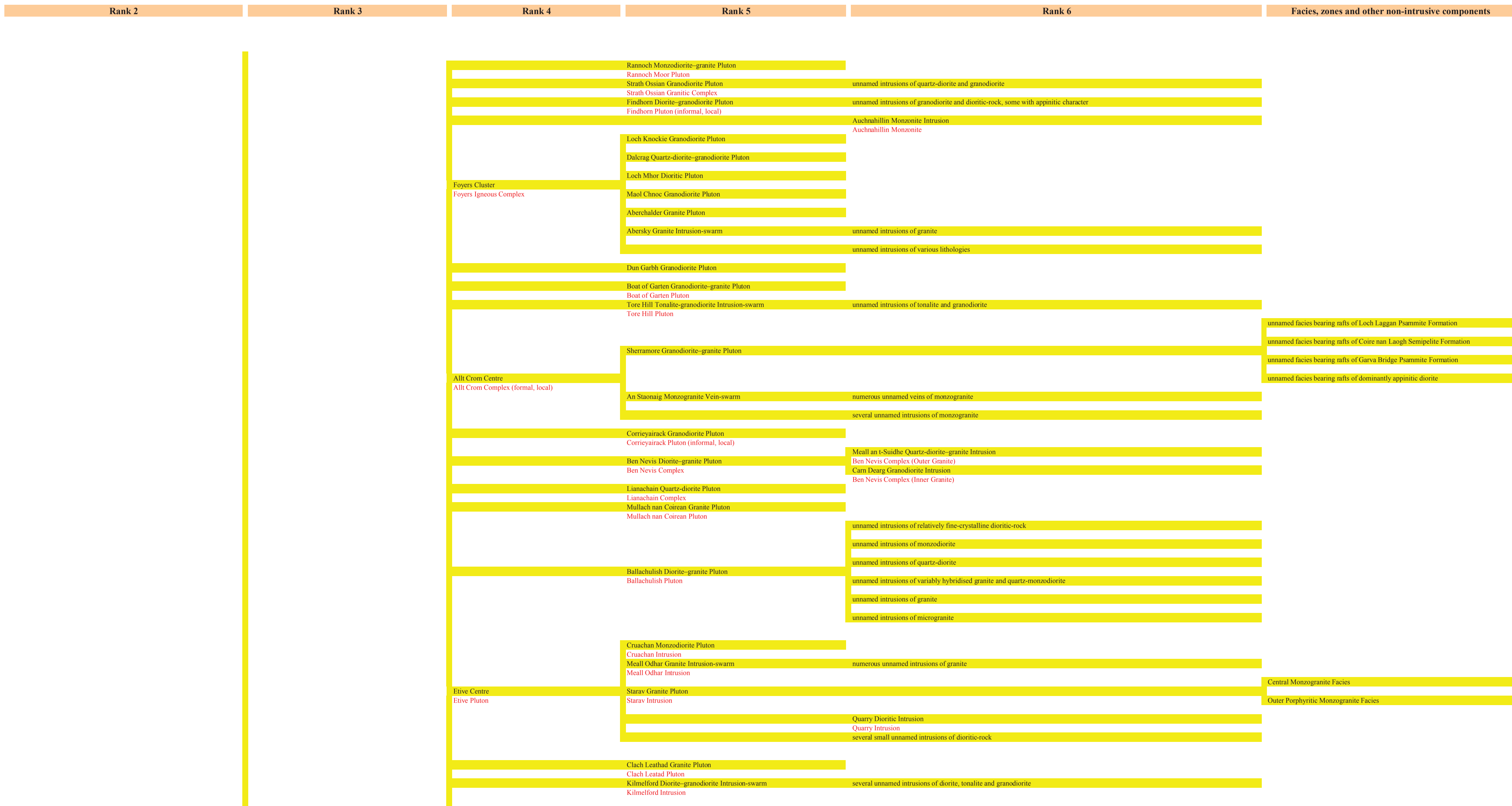

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Insch Upper Zone
Insch Pluton, Upper Zone
Insch Middle Zone
Insch Pluton, Middle Zone
Insch Lower Zone
Insch Pluton, Lower Zone
unnamed units of gabbroic-rock
Insch Gabbro–peridotite Pluton
Insch Pluton
Morven–Cabrach Gabbroic Pluton
Morven-Cabrach Pluton
numerous unnamed mapped units of ultramafic to siliceous rocks
Tarland Norite–gabbro Pluton
Tarland Intrusion
Glenlogie Ultramafic Intrusion
Kildrummy Norite–troctolite Intrusion
Newseat Gabbroic Intrusion
Lower Farmton Ultramafic Intrusion
Woodside Ultramafic Intrusion
Blackwater Mafic–ultramafic Pluton
Blackwater Pluton
Huntly Gabbro–peridotite Pluton
Huntly-Knock Pluton
Knock Gabbro–peridotite Pluton
Huntly-Knock Pluton
Portsoy Gabbro–serpentinite Intrusion-swarm
Portsoy Igneous Complex
Haddo House Norite Pluton
Haddo House Pluton
Arnage Norite Pluton
Arnage Pluton
Arthrath–Dudwick Ultramafic Intrusion
Northeast Grampian Basic Subsuite
North-east Grampian Basic Suite
Maud Noritic Pluton
Maud Pluton
Udny–Pitmedden Norite–gabbro Intrusion
Udny-Pitmedden Intrusion
Kinnadie Norite–gabbro Intrusion
West Crichie Norite–gabbro Intrusion
Boyndie Metagabbro Intrusion-swarm
unnamed intrusions of metagabbro
Marnoch Ultramafic Intrusion-swarm
several unnamed intrusions of ultramafic-rock
Lawel Hill Peridotite–gabbro Intrusion
Coyles of Muick Mafic–ultramafic Intrusion
Coyles of Muick Intrusion
Crathie Ortho-amphibolite Intrusion
Crathie Sheets
Corby Hall Metamafic–ultramafic Intrusion
Corby Hall Intrusion
Lower Glen Gairn Metagabbroic Sheet-swarm
numerous unnamed sheets of metagabbroic-rock and orthoamphibolite
Lower Glen Gairn Sheets
Balintober Mafic–ultramafic Intrusion
Balintober Intrusion
Glen Mark Metadiorite Intrusion
Succoth–Brown Hill Ultramafic Intrusion
Succoth-Brown Hill Intrusion
Belhelvie Dunite–gabbro Pluton
Belhelvie Basic Intrusion
Cairnbulg Diorite Intrusion
Cairnbulg Diorite
unnamed intrusions of mafic-rock and ultramafic-rock



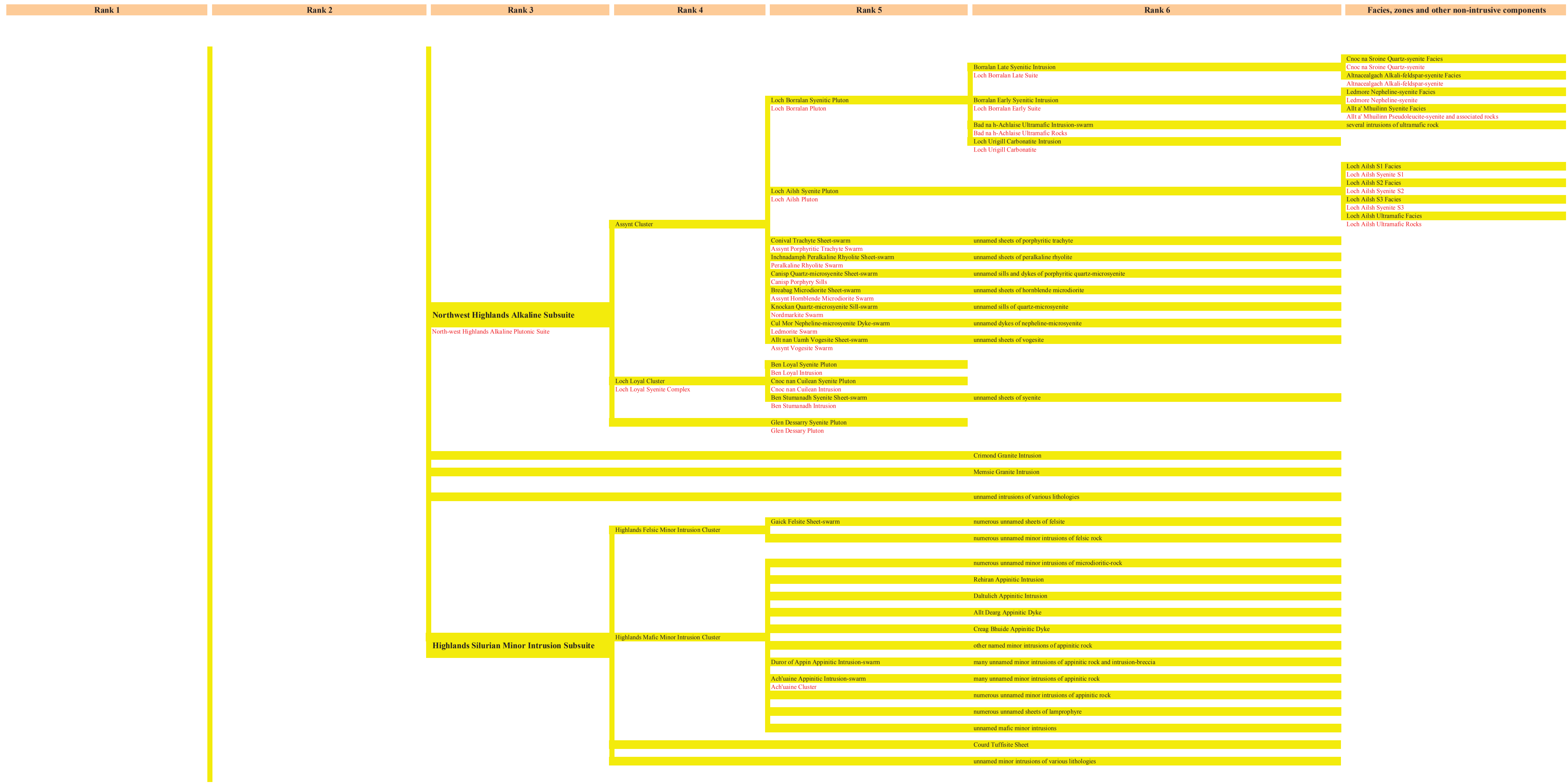
Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Scottish Highlands Ordovician Suite
Northeast Grampian Granitic Subsuite
North-east Grampian Granitic Suite (Ordovician)
White Hill Granite Cluster
Cairn Trench Granite Pluton
Cairn Trench Intrusion
Ben Tirran Granitic Intrusion-swarm
unnamed veins of granite and pegmatitic granite, and sheets and larger bodies of granite
Cairn Inks Granitic Sheet-swarm
unnamed sheets of granite and pegmatitic granite
Driesh Granitic Sheet-swarm
unnamed sheets of granite and pegmatitic granite
Hunt Hill Granitic Sheet-swarm
unnamed sheets of granite and pegmatitic granite
Hunt Hill Intrusion
Kemnay Granite Pluton
Kemnay Pluton
Aberdeen Granite Pluton
Aberdeen Pluton
Greenshiels Tonalite Sheet
Greenshiels Intrusion
Hill of Blairs Granite Pluton
Hill of Blairs Pluton
Cove Granite Pluton
Strichen Granite Pluton
Strichen Pluton
Forest of Deer Granite Pluton
Forest of Deer Pluton
Aberchirder Granite Pluton
Aberchirder Pluton
Longmanhill Granite Pluton
Longmanhill Pluton
Cairns of Ord Granite Intrusion
Cairns of Ord Intrusion
Lochlundie Granodiorite Pluton
Lochlundie Pluton
Ardlethen Granite Intrusion
Carvichen Granite Intrusion
Carvichen Pluton
Avochie Granite Intrusion
Rora Tonalite Pluton
Rora Tonalite
numerous unnamed intrusions of granite and pegmatitic granite
Northwest Grampian Granitic Subsuite
North-west Grampian Granitic Suite (Ordovician)
Ardclach Granite Pluton
Ardclach Pluton
Moy Granodiorite Pluton
Moy Pluton
Quilichan Granodiorite–granite Intrusion-swarm
numerous unnamed veins, sheets & other intrusions of two-mica granodiorite and pegmatitic granite
Quilichan Granodiorite Vein Complex
Grantown Granite Pluton
Grantown Pluton
Glen Kyllachy Granite Pluton
Glen Kyllachy Intrusion (cbu; with NWGRA as parent) and Glen Kyllachy Pluton (informal, local; with HOMI as parent)
Strathspey Granite–granodiorite Pluton
Strathspey Granite (formal, local)
Loch Laggan Granitic Intrusion-swarm
numerous unnamed veins and larger bodies of granite and pegmatitic granite
unnamed intrusions of granite and pegmatitic granite
Alford Subsuite
Kennethmont Quartz-diorite–granite Intrusion-swarm
several unnamed intrusions of quartz-diorite and granite
Kennethmont Intrusion
Cluny Cluster
Syllavethy Quartz-diorite–granodiorite Pluton
Syllavethy Pluton
Tillyfourie Tonalite Pluton
Tillyfourie Pluton
Syllavethy-Tillyfourie Tonalite–granodiorite Vein-swarm
numerous unnamed veins of tonalite and granodiorite
Correnie Granite Intrusion
Correnie Intrusion
Lynturk Tonalite Intrusion
Highlands Ordovician Minor Intrusion Subsuite
Loch a' Mhoid Metagabbro Intrusion-swarm
numerous unnamed sheets and pods of metagabbro
Loch A Mhoid Metagabbro Suite
Badanloch Granodiorite–tonalite Intrusion-swarm
numerous unnamed sheets and lenses of granodiorite and tonalite
Badanloch Granite Sheets
Coignafearn Granitic Intrusion-swarm
numerous unnamed sheets and small irregular intrusions of leucogranite and pegmatitic granite
Strathspey Granitic Intrusion-swarm
numerous unnamed sheets and small irregular intrusions of leucogranite and pegmatitic granite
unnamed minor intrusions of variably foliated pegmatitic granitic-rock
unnamed minor intrusions of various lithologies


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Deeside Subsuite
Cairngorm Granitic Suite
Lochnagar Granite Pluton
Lochnagar Pluton
Lochnagar L1 Granite Intrusion
Lochnagar Pluton, Phase 1
Lochnagar L2 Granite Intrusion
Lochnagar Pluton, Phase 2
Lochnagar L3 Granite Intrusion
Lochnagar Pluton, Phase 3
Cac Carn Mor Microgranite Intrusion
Fafernie Microgranite Intrusion
Khantore Granite Pluton
Khantore Pluton
Mount Battock Granite Pluton
Mount Battock Pluton
Mount Keen Granite Intrusion
Main Non-Porphyritic Granite (Mount Battock Pluton)
Main Porphyritic Granite Intrusion
Main Porphyritic Granite (Mount Battock Pluton)
Water of Feugh Granite Intrusion
Water of Feugh Granite (Mount Battock Pluton)
Cock Cairn Granite Intrusion
Cock Cairn Granite (Mount Battock Pluton)
Fungle Granite Intrusion
Fungle Granite (Mount Battock Pluton)
Clachnaben Granite Intrusion
Clachnaben Granite (Mount Battock Pluton)
Water of Dye Granite Intrusion
Water of Dye Granite (Mount Battock Pluton)
Mongour Granite Intrusion
Mongour Granite (Mount Battock Pluton)
unnamed intrusions of microgranite
Midmar Cluster
Hill of Fare Granite Pluton
Hill of Fare Intrusion
unnamed intrusion of granite
several unnamed intrusions of microgranite
numerous unnamed veins of aplitic granitic-rock and pegmatitic granitic-rock
Cromar Granite Pluton
Cromar Pluton
Cushnie Granite Intrusion
Cushnie Pluton
Pitfichie Cluster
Bennachie Granite Pluton
Bennachie Pluton
unnamed intrusion of granite
several unnamed intrusions of microgranite
numerous unnamed veins of aplitic granitic-rock and pegmatitic granitic-rock
unnamed intrusions of granite
Ord Fundlie Microgranite Intrusion
Ord Fundlie Pluton
Ballater Granite Pluton
Ballater Pluton
Peterhead Granite Pluton
Peterhead Pluton
Glen Gairn Granite Pluton
Glen Gairn Pluton
Coilacriech Granite Pluton
Coilacreich Intrusion
Glenlivet Granite Pluton
Glenlivet Granite
Cairngorm Granite Pluton
Cairngorm Pluton
Monadhliath Granite Pluton
Monadhliath Pluton
Meikle Elrick Microgranite Pluton
Carn Tiekeiver Granite Pluton
Carn Teikever Granite
Carn Mor Granite–felsite Pluton
Ben Rinnes Granite Pluton
Ben Rinnes Pluton
St Fergus Granite Pluton
St Fergus Pluton
Auldearn Granite Pluton
Auldearn (Park) Pluton
Saddle Hill Cluster
Saddle Hill Granite
Beinn Bhuidhe Bheag Granite Pluton
Beinn na-h Iolaire Granite Intrusion
Beinn Bhuchanaich Granite Intrusion
unnamed intrusion of granite
Carn Odhar Granite Intrusion-swarm
Carn Odhar Granite Cupolas
unnamed intrusions of leucocratic granite
Balfreish Microgranite Intrusion-swarm
Balfreish Microgranite Cluster
several unnamed intrusions of phyric microgranite
unnamed intrusions, mainly of granite


Facies, zones and other non-intrusive components
Rank 6
Rank 5
Rank 4
Rank 3
Rank 2
Rank 1
Caledonian Supersuite
Scottish Highlands Silurian Suite
Skene Subsuite
South Grampian Subsuite
Glencoe Caldera Volcano-complex

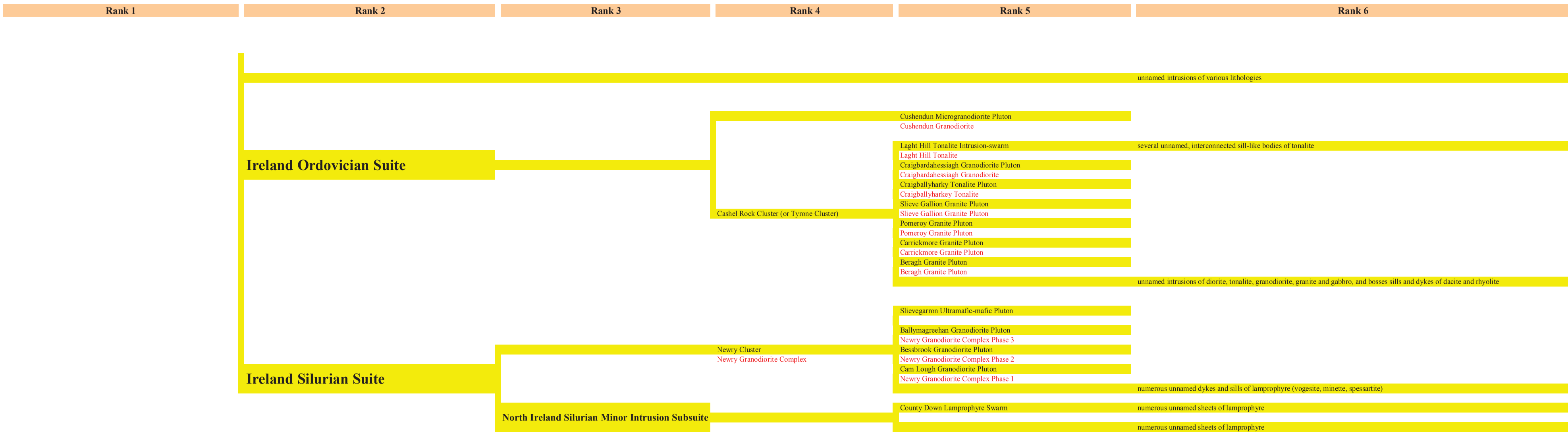

Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Rannoch Monzodiorite–granite Pluton
Rannoch Moor Pluton
Strath Ossian Granodiorite Pluton
Strath Ossian Granitic Complex
unnamed intrusions of quartz-diorite and granodiorite
Findhorn Diorite–granodiorite Pluton
Findhorn Pluton (informal, local)
unnamed intrusions of granodiorite and dioritic-rock, some with appinitic character
Auchnahillin Monzonite Intrusion
Auchnahillin Monzonite
Loch Knockie Granodiorite Pluton
Dalcrag Quartz-diorite–granodiorite Pluton
Loch Mhor Dioritic Pluton
Foyers Cluster
Foyers Igneous Complex
Maol Chnoc Granodiorite Pluton
Aberchalder Granite Pluton
Abersky Granite Intrusion-swarm
unnamed intrusions of granite
unnamed intrusions of various lithologies
Dun Garbh Granodiorite Pluton
Boat of Garten Granodiorite–granite Pluton
Boat of Garten Pluton
Tore Hill Tonalite-granodiorite Intrusion-swarm
Tore Hill Pluton
unnamed intrusions of tonalite and granodiorite
unnamed facies bearing rafts of Loch Laggan Psammite Formation
unnamed facies bearing rafts of Coire nan Laogh Semipelite Formation
Sherramore Granodiorite–granite Pluton
unnamed facies bearing rafts of Garva Bridge Psammite Formation
unnamed facies bearing rafts of dominantly appinitic diorite
Allt Crom Centre
Allt Crom Complex (formal, local)
An Staonaig Monzogranite Vein-swarm
numerous unnamed veins of monzogranite
several unnamed intrusions of monzogranite
Corrieyairack Granodiorite Pluton
Corrieyairack Pluton (informal, local)
Meall an t-Suidhe Quartz-diorite–granite Intrusion
Ben Nevis Complex (Outer Granite)
Ben Nevis Diorite–granite Pluton
Ben Nevis Complex
Carn Dearg Granodiorite Intrusion
Ben Nevis Complex (Inner Granite)
Lianachain Quartz-diorite Pluton
Lianachain Complex
Mullach nan Coirean Granite Pluton
Mullach nan Coirean Pluton
unnamed intrusions of relatively fine-crystalline dioritic-rock
unnamed intrusions of monzodiorite
unnamed intrusions of quartz-diorite
Ballachulish Diorite–granite Pluton
Ballachulish Pluton
unnamed intrusions of variably hybridised granite and quartz-monzodiorite
unnamed intrusions of granite
unnamed intrusions of microgranite
Cruachan Monzodiorite Pluton
Cruachan Intrusion
Meall Odhar Granite Intrusion-swarm
Meall Odhar Intrusion
numerous unnamed intrusions of granite
Central Monzogranite Facies
Etive Centre
Etive Pluton
Starav Granite Pluton
Starav Intrusion
Outer Porphyritic Monzogranite Facies
Quarry Dioritic Intrusion
Quarry Intrusion
several small unnamed intrusions of dioritic-rock
Clach Leathad Granite Pluton
Clach Leatad Pluton
Kilmelford Diorite–granodiorite Intrusion-swarm
Kilmelford Intrusion
several unnamed intrusions of diorite, tonalite and granodiorite

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and other non-intrusive components
						outer facies of porphyritic granodiorite
		Argyll–Northern Highlands Subsuite Argyll & Northern Highlands Granitic Suite		Loch Sunart Granodiorite Pluton Loch Sunart Facies (Strontian Pluton)		inner facies of non-porphyritic granodiorite
						several unnamed autoliths of dioritic-rock
			Strontian Centre Strontian Pluton		unnamed large intrusion of granodiorite	
				Glen Sanda Granodiorite Intrusion-swarm Glen Sands Facies (Strontian Pluton)	numerous unnamed veins of (micro-) granitic-rock	
					unnamed intrusions of appinitic diorite	
				Erroch Gabbro Pluton		
			Glen Loy Centre Glen Loy Complex	Inverskilavulin Diorite Intrusion-swarm	unnamed minor intrusions of diorite	
					unnamed intrusions of appinitic meladiorite and hornblende-gabbro	
					Sgurr na h-Eanchainne Metadioritic Intrusion	
				Glen Scaddle Metadioritic Intrusion-swarm Glen Scaddle Intrusion	several unnamed intrusions of metadioritic-rock	
				Loch Linnhe Granite–granodiorite Intrusion-swarm Loch Linnhe Intrusion	several unnamed intrusions of granite and granodiorite	
				Clunes Tonalite Pluton Clunes Complex		
				Abriachan Granite Pluton		
				Ross of Mull Granite Pluton Ross of Mull Pluton		
				Cluanie Granodiorite Pluton Cluanie Granodiorite		
				Glen Garry Diorite–granite Vein-swarm Glen Garry Vein Complex	numerous unnamed veins and other small intrusions of diorite to granite	
				Glen Moriston Granitic Vein-swarm Glen Moriston Vein Complex	numerous unnamed veins and other small intrusions of granitic-rock	
				Ratagain Dioritic–syenitic Pluton	unnamed intrusions of diorite, monzodiorite and quartz-monzonite, with minor syenite and gabbro	
				Sgulasaig Granitic Intrusion-swarm Western Granite	several unnamed intrusions of granitic-rock	
			Glenelg–Ratagain Centre Ratagain Plutonic Complex	Glen Lichd Quartz-monzonite Pluton		
					unnamed intrusion of granitic-rock or quartz-monzonite	
				Glen Orrin Granite Pluton Glen Orrin Intrusion		
				Fearn Granite Pluton Fearn Pluton		
				Migdale Granite Pluton Migdale Pluton		
					Grudie Leucogranite Intrusion	
				Lairg Quartz-monzodiorite–granite Intrusion-swarm Lairg Intrusions	unnamed intrusions of quartz-monzodiorite and granodiorite	
					unnamed intrusion of quartz-monzodiorite and granodiorite	
				Rogart Quartz-monzodiorite–granite Pluton Rogart Pluton	unnamed intrusion of granite	
					unnamed xenoliths of appinitic rock (ranging from ultramafic types to meladiorite and melasyenogranite)	
				Helmsdale Granite Pluton Helmsdale Granite		
				Strath Halladale Granite–granodiorite Intrusion-swarm Strath Halladale Granite; Strath Halladale Migmatite Complex; Strath Halladale Migmatite Complex and Strath Halladale Granite	unnamed sheets and veins of granite and granodiorite …? and tonalite	
				Strathnaver Metagranite Sheet-swarm Strathnaver Granite	unnamed sheets and veins of metagranite	
					Ben Klibreck Metagranite Sheet	
				Vagastie Bridge Metagranite Sheet-swarm	several unnamed sheets of metagranite	
				Reay Quartz-diorite Pluton Reay Diorite		
					unnamed intrusions of various lithologies	

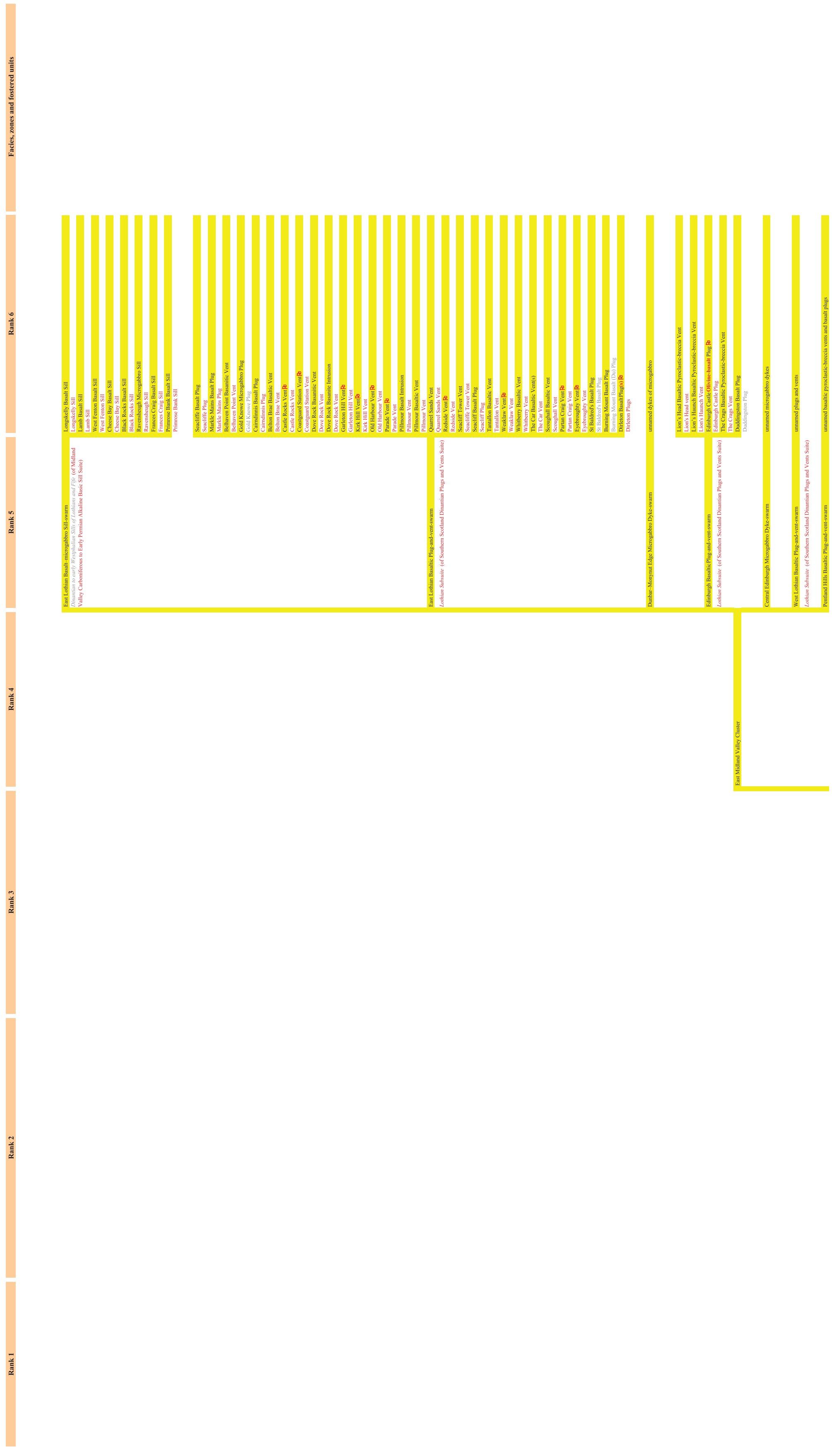

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Cnoc na Sroine Quartz-syenite Facies
Cnoc na Sroine Quartz-syenite
Borralan Late Syenitic Intrusion
Loch Borralan Late Suite
Altnacealgach Alkali-feldspar-syenite Facies
Altnacealgach Alkali-feldspar-syenite
Ledmore Nepheline-syenite Facies
Loch Borralan Syenitic Pluton
Loch Borralan Pluton
Borralan Early Syenitic Intrusion
Loch Borralan Early Suite
Ledmore Nepheline-syenite
Allt a' Mhuilinn Syenite Facies
Allt a' Mhuilinn Pseudoleucite-syenite and associated rocks
Bad na h-Achlaise Ultramafic Intrusion-swarm
several intrusions of ultramafic rock
Bad na h-Achlaise Ultramafic Rocks
Loch Urigill Carbonatite Intrusion
Loch Urigill Carbonatite
Loch Ailsh S1 Facies
Loch Ailsh Syenite S1
Loch Ailsh S2 Facies
Loch Ailsh Syenite Pluton
Loch Ailsh Syenite S2
Loch Ailsh Pluton
Loch Ailsh S3 Facies
Loch Ailsh Syenite S3
Loch Ailsh Ultramafic Facies
Assynt Cluster
Loch Ailsh Ultramafic Rocks
Conival Trachyte Sheet-swarm
unnamed sheets of porphyritic trachyte
Assynt Porphyritic Trachyte Swarm
Inchnadamph Peralkaline Rhyolite Sheet-swarm
unnamed sheets of peralkaline rhyolite
Peralkaline Rhyolite Swarm
Canisp Quartz-microsyenite Sheet-swarm
unnamed sills and dykes of porphyritic quartz-microsyenite
Canisp Porphyry Sills
Breabag Microdiorite Sheet-swarm
unnamed sheets of hornblende microdiorite
Assynt Hornblende Microdiorite Swarm
Knockan Quartz-microsyenite Sill-swarm
unnamed sills of quartz-microsyenite
Northwest Highlands Alkaline Subsuite
Nordmarkite Swarm
Cul Mor Nepheline-microsyenite Dyke-swarm
unnamed dykes of nepheline-microsyenite
Ledmorite Swarm
North-west Highlands Alkaline Plutonic Suite
Allt nan Uamh Vogesite Sheet-swarm
unnamed sheets of vogesite
Assynt Vogesite Swarm
Ben Loyal Syenite Pluton
Ben Loyal Intrusion
Loch Loyal Cluster
Cnoc nan Cuilean Syenite Pluton
Loch Loyal Syenite Complex
Cnoc nan Cuilean Intrusion
Ben Stumanadh Syenite Sheet-swarm
unnamed sheets of syenite
Ben Stumanadh Intrusion
Glen Dessarry Syenite Pluton
Glen Dessary Pluton
Crimond Granite Intrusion
Memsie Granite Intrusion
unnamed intrusions of various lithologies
Gaick Felsite Sheet-swarm
numerous unnamed sheets of felsite
Highlands Felsic Minor Intrusion Cluster
numerous unnamed minor intrusions of felsic rock
numerous unnamed minor intrusions of microdioritic-rock
Rehiran Appinitic Intrusion
Daltulich Appinitic Intrusion
Allt Dearg Appinitic Dyke
Creag Bhuide Appinitic Dyke
Highlands Mafic Minor Intrusion Cluster
Highlands Silurian Minor Intrusion Subsuite
other named minor intrusions of appinitic rock
Duror of Appin Appinitic Intrusion-swarm
many unnamed minor intrusions of appinitic rock and intrusion-breccia
Ach'uaine Appinitic Intrusion-swarm
many unnamed minor intrusions of appinitic rock
Ach'uaine Cluster
numerous unnamed minor intrusions of appinitic rock
numerous unnamed sheets of lamprophyre
unnamed mafic minor intrusions
Courd Tuffisite Sheet
unnamed minor intrusions of various lithologies


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Scottish Lowlands Suite
Barr Muir Centre
Distinkhorn Diorite–granodiorite Pluton
Distinkhorn Pluton
Mid Hill Granodiorite Intrusion
Hart Hill Microdiorite Intrusion
Tincorn Hill Granodiorite–diorite Intrusion
Tincorn Hill Intrusion
Distinkhorn Dioritic–granodioritic Minor Intrusion-swarm
Distinckhorn Dyke Swarm
unnamed minor intrusions of dioritic and grandioritic rocks
Spango Granodiorite Pluton
Spango Pluton (formal, national)
Carsphairn Diorite–granite Pluton
Cairnsmore of Carsphairn Pluton
Loch Doon Diorite–granite Pluton
Loch Doon Pluton (formal, national)
several discrete facies
Carrick Centre
Burnhead Quartz-diorite–granodiorite Intrusion
Burnhead Intrusion
Doon Dyke-swarm
Doon Dyke Swarm
numerous unnamed dykes
unnamed intrusions of granite to diorite composition
Broad Law Granodiorite Intrusion
Broad Law Intrusion (formal, national)
Ballencleuch Law Granitic Sheet
Ballencleuch Law Granite; formal, national name
Priestlaw Granodiorite–norite Pluton
Priestlaw Intrusion
Cockburn's Law Granodiorite–quartz-diorite Pluton
Cockburns Law Intrusion
Cairngarroch Microdiorite Intrusion
Cairngarroch Intrusion (formal, national)
Portencorkrie Diorite–granite Pluton
Portencorkrie Intrusion (formal, national)
Glenluce Diorite Pluton
Glenluce Intrusion (formal, national)
several small unnamed intrusions of diorite
Culvennan Fell Diorite Intrusion-swarm
Culvennan Intrusion (formal, national)
unnamed intrusions of diorite
Mochrum Fell Intrusion
Mochrum Fell Intrusion
Lowlands Minor Intrusion Subsuite
Southeast Scotland Fragmental Cluster
Braids Pyroclastic Neck-swarm
several unnamed necks of pyroclastic-rock
Swanston Pyroclastic Neck-swarm
several unnamed necks of pyroclastic-rock
Eyemouth Intrusion-breccia Vent
Eyemouth Vent
unnamed plugs, necks and vents of intrusion-breccia and pyroclastic-rock
unnamed minor intrusions
Trans-Suture Suite
Trans-Suture Suite
Galloway Subsuite
Galloway Granitic Suite
Cairnsmore of Fleet Granite Pluton
Cairnsmore of Fleet Pluton (formal, national)
three discrete facies
Criffel Granodiorite–granite Pluton
Criffel-Dalbeattie Pluton (formal, national)
five discrete facies
Dalbeattie Centre
numerous unnamed sheets and pipes of andesitic-rock
Black Stockarton Moor Intrusion-swarm
Black Stockarton Moor Subvolcanic Complex
several unnamed sheets of lamprophyre
numerous unnamed sheets and stocks of granodiorite
Kirkmabreck Microgranodioritic Sheet
Kirkmabreck Intrusion (formal, national)
Blackmyre Moor Microgranitic–dioritic Sheet-swarm
several subparallel sheets of microgranitic-rock and microdioritic-rock
Cheviot Granite Pluton
Cheviot Pluton
Weardale Granite Pluton
Weardale Pluton
Shap Felsic Cluster
Shap Granite Pluton
Shap Pluton (formal, national)
Shap Microgranite Dyke-swarm
numerous unnamed dykes of microgranite
North England Subsuite
Northern England Devonian Plutonic Suite (formal, national)
Skiddaw Granite Pluton
Skiddaw Pluton (formal, national)
Rake Beck Microgranite Dyke
Duddon Valley Microgranite Dyke-swarm
unnamed dykes of microgranite
numerous unnamed dykes
Trans-Suture Minor Intrusion Subsuite
unnamed minor intrusions of granitic-rock


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Lake District Suite
Borrowdale Sill Cluster
Borrowdale Sill Suite (formal, national)
numeous unnamed sills
Embleton Microdiorite Swarm
Embleton Microdiorite Intrusions (formal, national)
several unnamed plugs and sheets of microdiorite
Dash Hornblendite Plug
?Dash Picrite (obsolete name and code)
Bassenthwaite Microdiorite Swarm
Bassenthwaite Diorite Intrusions (formal, national)
unnamed intrusions
Derwent Mafic Minor Intrusion Cluster
Pike de Bield Andesite Swarm
unnamed plugs, necks, pipes and dykes
Wasdale Basalt Swarm
many unnamed dykes of basalt
Wallow Crag Gabbro Plug
Naddle Beck Dolerite Plug
Haweswater Gabbro–microdiorite Swarm
Haweswater Intrusions (formal, national)
Birkhouse Hill Microdiorite Plug
unnamed plugs and dykes
Harestones Rhyolite Intrusion
Harestones Rhyolite (formal, national)
Red Covercloth Microgranite Intrusion
Iron Crag Microgranite Intrusion
Iron Crag Microgranite (formal, national)
Carrock Fell Centre
Carrock Fell Complex (formal, national)
Rae Crags Granite Intrusion
Carrock Gabbro–granite Pluton
Carrock Gabbro-microgranite Intrusions (formal, national)
Miton Hill Microgabbro Intrusion
Buck Kirk Quartz-gabbro Intrusion
Mosedale Gabbro Pluton
Mosedale Gabbros (formal, national)
White Crags Gabbro Intrusion
Black Crag Gabbro Intrusion
Eskdale Granite Pluton
Eskdale Intrusions (formal, national)
Broad Oak Granodiorite Pluton
Cumbrian Mountains Felsic Subsuite
Ennerdale Granite Pluton
Ennerdale Intrusion (formal, national)
Wast Water Felsic Dyke-swarm
numerous unnamed dykes of felsic rock
Threlkeld Microgranite Intrusion
Threlkeld Intrusion (formal, national)
unnamed minor intrusions of microgranite and microgranodiorite
Wensleydale Granite Pluton
Wensleydale Pluton (code only)
South Leicestershire Diorite–tonalite Pluton
South Leicestershire Diorite Complex (formal, national)
Swithland Reservoir Gabbro Intrusion
Central England Suite
Mountsorrel Cluster
Mountsorrel Complex (formal, national)
unnamed intrusion of diorite
Buddon Hill Granodiorite Intrusion
Midlands Minor Intrusion Subsuite
Midlands Minor Intrusive Suite (formal, national)
unnamed sheets of lamprophyre and dioritic-rock
to be completed
Wales Suite
Cymru Minor Intrusion Subsuite
to be completed
Poortown Dolerite–andesite Sheet-swarm
Poortown Intrusion
unnamed sheets of dolerite and andesite
Foxdale Granite Pluton
Foxdale Pluton
Isle of Man Suite
Manx Granite Suite
Dhoon Granodiorite Pluton
Dhoon Pluton
Oatlands Microgabbro-granite Pluton
Oatlands Pluton
Laxey Minor Intrusion Subsuite
no matches
numerous unnamed sheets mafic- and felsic-rock


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
unnamed intrusions of various lithologies
Ireland Ordovician Suite
Cushendun Microgranodiorite Pluton
Cushendun Granodiorite
Laght Hill Tonalite Intrusion-swarm
Laght Hill Tonalite
several unnamed, interconnected sill-like bodies of tonalite
Craigbardahessiagh Granodiorite Pluton
Craigbardahessiagh Granodiorite
Craigballyharky Tonalite Pluton
Craigballyharkey Tonalite
Cashel Rock Cluster (or Tyrone Cluster)
Slieve Gallion Granite Pluton
Slieve Gallion Granite Pluton
Pomeroy Granite Pluton
Pomeroy Granite Pluton
Carrickmore Granite Pluton
Carrickmore Granite Pluton
Beragh Granite Pluton
Beragh Granite Pluton
unnamed intrusions of diorite, tonalite, granodiorite, granite and gabbro, and bosses sills and dykes of dacite and rhyolite
Slievegarron Ultramafic-mafic Pluton
Ballymagreehan Granodiorite Pluton
Newry Granodiorite Complex Phase 3
Newry Cluster
Newry Granodiorite Complex
Bessbrook Granodiorite Pluton
Newry Granodiorite Complex Phase 2
Ireland Silurian Suite
Cam Lough Granodiorite Pluton
Newry Granodiorite Complex Phase 1
numerous unnamed dykes and sills of lamprophyre (vogesite, minette, spessartite)
County Down Lamprophyre Swarm
numerous unnamed sheets of lamprophyre
North Ireland Silurian Minor Intrusion Subsuite
numerous unnamed sheets of lamprophyre

Appendix 3 Classification and nomenclature for the Variscan Supersuite



Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6

Rank 5:

West Fife and Lothians Microgabbro Sill-swarm
Dinantian to early Westphalian Sills of Lothians and Fife (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)

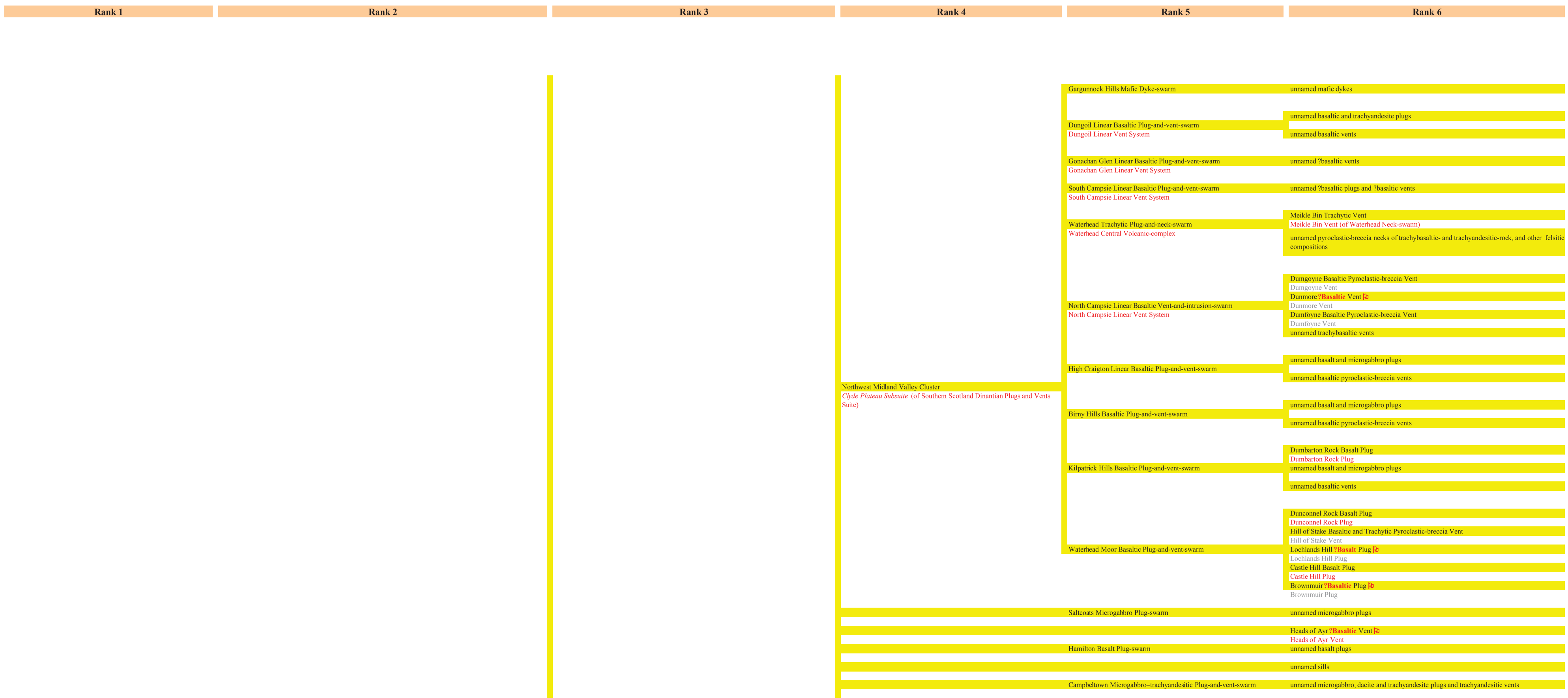
Rank 6:

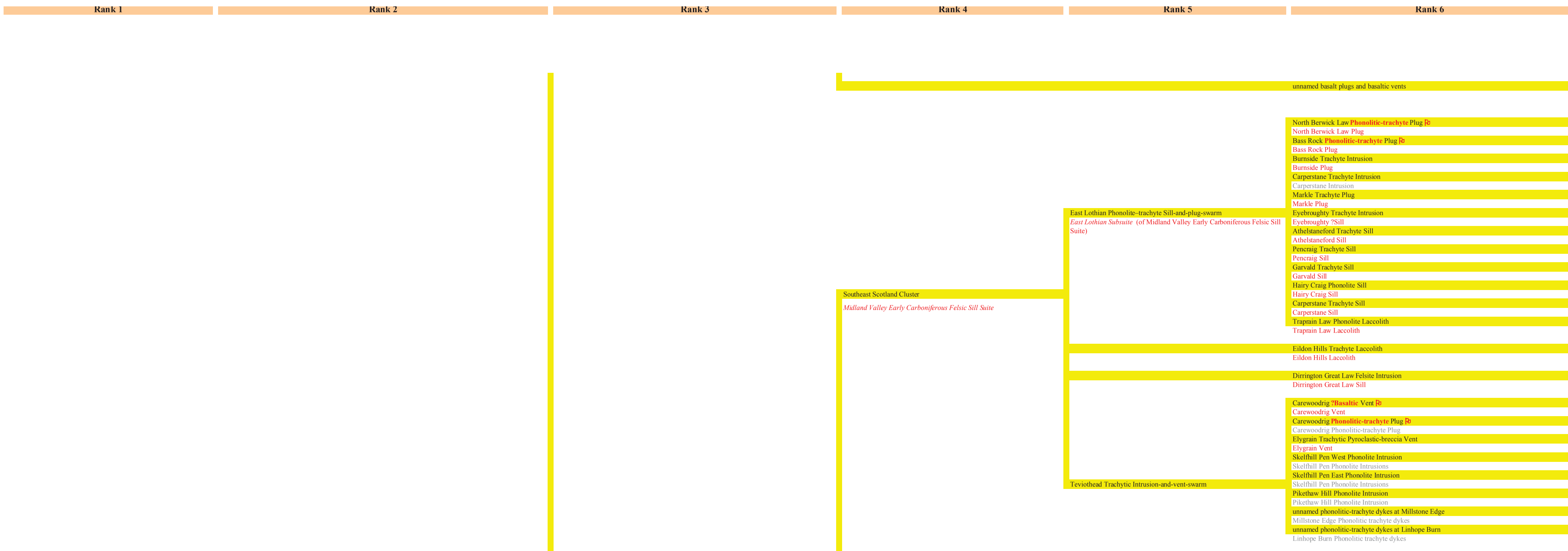
Saughland Basalt Sill
Saughland Basalt (Du) Sill
Salisbury Craigs Microgabbro Sill
Salisbury Craigs Sill
St Leonard's Hawaiite–basalt Sill
St Leonard's Sill
Dasses Benmoreite–basalt Sill
Dasses Sill
Corstorphine Picrite Sill
Corstorphine Sill
Girnal Crag Benmoreite–basalt Sill
Girnal Crag Sill
Whinny Hill Basalt Sill
Whinny Hill intrusion
Stankards Microgabbro Sill
Stankards Sill
Blackness Microgabbro Sill
Blackness Sill
Middleton Hall Microgabbro Sill
Middleton Hall Sill
Broxburn Microgabbro Sill
Broxburn Sill
Houston Wood Microgabbro Sill
Houston Wood Sill
Inchgarvie Microgabbro Sill
Inchgarvie Sill
Mons Hill Microgabbro Sill
Mons Hill Sill
Whitelea Burn Microgabbro Sill
Whitelea Burn Sill
Gogar Bank Mafic Sill
Gogar Bank Sill
Auchinoon Microgabbro Sill
Auchinnon Sill
Richmond Place Microgabbro Sill
Richmond Place Sill
Easter Dalmeny Microgabbro Sill
Easter Dalmahoy Sill
Hawkcraig Point Microgabbro Sill
Hawkcraig Point Sill
Cramond Island Microgabbro Sill
Cramond Island Sill
Lochend Microgabbro Sill
Lochend Sill
Saughland Basalt Sill
Saughland Sill
Hillhouse Microgabbro Sill
Hillhouse Sill
Crombie–Cairneyhill–Bellknowes **?Basaltic** Sill
Crombie-Cairneyhill-Bellknowes Sill
Craigluscar–Cluny–Glenrothes Microgabbro Sill
Craigluscar-Cluny-Glenrothes Sill
Cairnfolds–Dollar–Tillicoultry **?Basaltic** Sill
Cairnfolds-Dollar-Tillicoultry Sill
Dunnygask–Steelend **?Basaltic** Sill
Dunnygask-Steelend Sill
Oakley–Kinnedar–Parklands **?Basaltic** Sill
Oakley-Kinnedar-Parklands Sill
Parkhill–Cowdenbeath–Kinglassie **?Basaltic** Sill
Parkhill-Cowdenbeath-Kinglassie Sill
Townhill–Kingseat **?Basaltic** Sill
Townhill-Kingseat Sill
Raith–Galliston **?Microgabbro** Sill
Raith-Galliston Sill
Valleyfield–Kinnell **?Basaltic** Sill
Valleyfield-Kinnell Sill
Braefoot Microgabbro Sill
Braefoot Anticline Sill
Inchmickery Microgabbro Sill
Inchmickery Sill
Inchcolm Microgabbro–picrite Sill
Inchcolm Sill

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and fostered units
				East Fife Microgabbro Sill-swarm *Dinantian to early Westphalian Sills of Lothians and Fife* (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)	Gathercauld Microgabbro Sill Gathercauld Sill	
					Gilston Microgabbro Sill Gilston Sill	
					Drumcarrow Microgabbro Sill Drumcarrow Sill	
					Greigston Microgabbro Sill Greigston Sill	
					Kilbrackmont–Baldutho **Olivine-basalt** Sill Kilbrackmont-Baldutho Sill	
					Balcarres **Olivine-basalt** Sill Balcarres Sill	
					Dunnoter **Olivine-basalt** Sill Dunnoter Sill-swarm	
					Denork Craig Microgabbro Intrusion Denork Craig Intrusion	
					Denork House Microgabbbro Sill Denork House Intrusion	
					Mount Melville Microgabbro Sill Mount Melville Sill	
					Lumbo Microgabbro Sill Lumbo Sill	
					Catcraig Microgabbro Sill Catgraig Intrusion	
					Lochty Microgabbro Sill Lochty Sill	
					Kinaldy Microgabbro Sill Kinaldy Sill	
					Lathones Microgabbro Sill Lathones Sill	
					Crossgates Microgabbro Sill Crossgates Sill	
					Radernie Microgabbro Sill Radernie Sill	
					Wilkieston Microgabbro Sill Wilkieston Sill	
					Spalefield Basanite Sill Spalefield Sill	
					Cameron Burn Microgabbro Sill Cameron Burn Sill	
					Kingask Microgabbro Sill Kingask Sill	
					Higham Microgabbro Sill Higham Sill	
					Baldastard Microgabbro Intrusion Baldastard Sill	
					West Coates **Olivine-basalt** Sill West Coates Sill	
					Craighall Microgabbro Sill Craighall Sill	
					Cathrie Microgabbro Sill Cathrie Sill	
					Lingo Microgabbro Sill Lingo Sill	
					Isle of May Microgabbro Sill Isle of May Sill	

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6

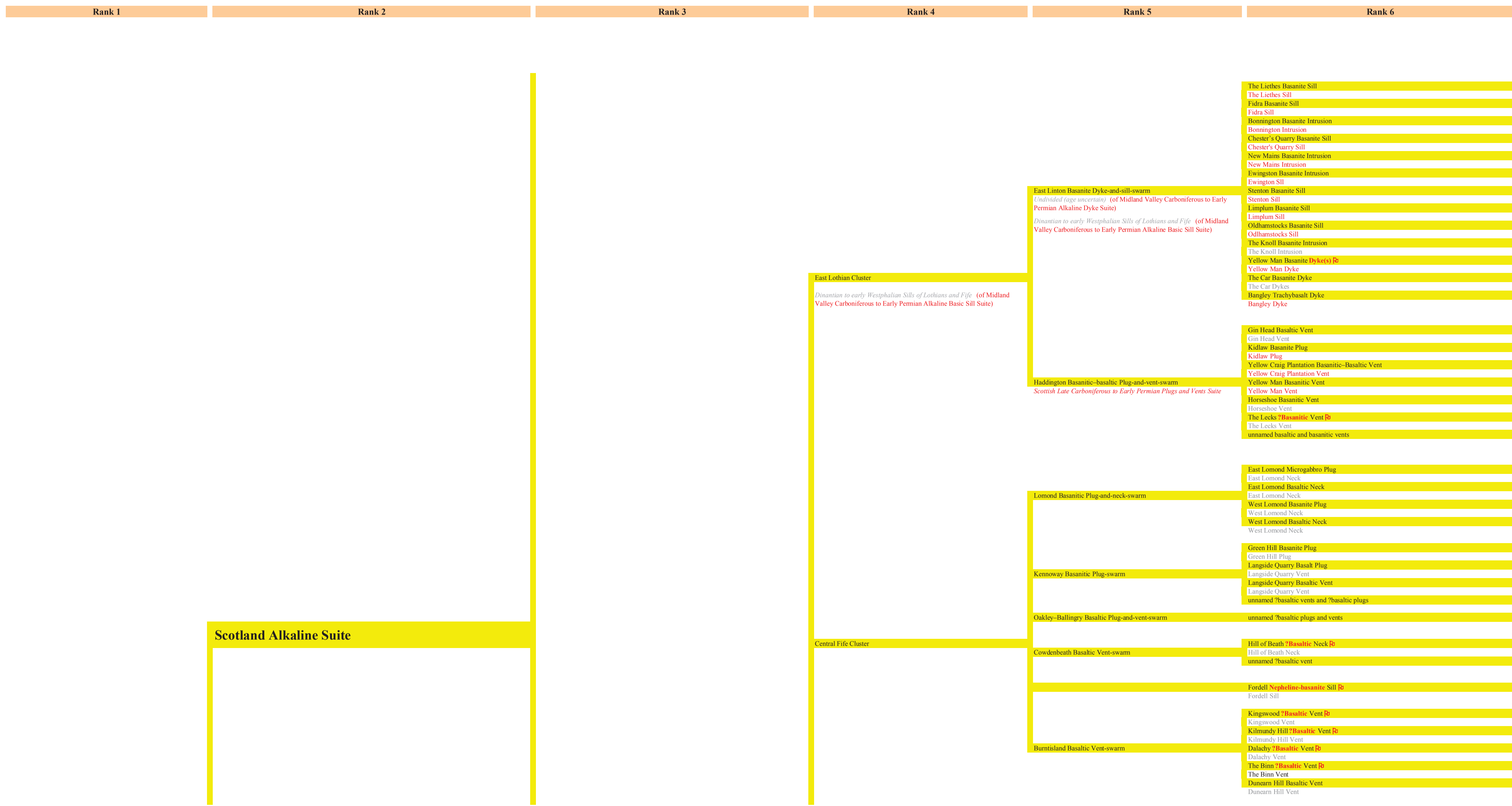
- **South Scotland Early Carboniferous Mafic Subsuite**
  Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite; Southern Scotland Dinantian Plugs and Vents Suite
  - Borders Cluster
    Kelso Subsuite (of Southern Scotland Dinantian Plugs and Vents Suite)
    - Borthwick **Olivine-basalt** Sill
      Borthwick Sill
    - unnamed microgabbro intrusions
    - Kelso Microgabbro–basaltic Plug-and-vent-swarm
      - Haresheugh **?Basaltic** Vent
        Haresheugh Vent
      - Chiefswood **?Basaltic** Vent
        Chiefswood Vent
      - Minto Hills **?Basaltic** Pyroclastic-breccia **Vent(s)**
        Minto Hills Vent-swarm
      - Dunion Hill Microgabbro Plug
        Dunion Hill Plug
      - Bonchester Hill Microgabbro Plug
        Bonchester Hill Plug
      - Needs Law Microgabbro Plug
        Needs Law Plug
      - Hemlaw Basaltic Pyroclastic-breccia Vent
        Hemlaw Plug
      - Lanton Hill Basaltic Pyroclastic-breccia Vent
        Lanton Hill Vent and Plug
      - Rubers Law Microgabbro Plug
        Rubers Law Vent and Plug
      - Rubers Law Basaltic Vent
        Rubers Law Vent and Plug
      - Black Law Basaltic Pyroclastic-breccia Vent
        Black Law Plug
      - Black Law Microgabbro Plug
        Black Law Plug
    - Langholm Basaltic Plug-and-vent-swarm
      - Greatmoor Hill **?Basaltic** Pyroclastic-breccia Vent
        Greatmoor Hill Vent
      - Leap Hill Basaltic Pyroclastic-breccia Vent
        Leap Hill Vent
      - Perter Hill Basaltic Neck
        Perter Hill Neck
      - Bedda Hill Basaltic Neck
        Bedda Hill Neck
      - Black Burn–Rough Gill **?Basaltic** Pyroclastic-breccia Vent
        Black Burn–Rough Gill vent
      - Howgill Sike **?Basaltic** Neck
        Howgill Sike neck
      - Tinnis Hill Basalt Plug
        Tinnis Hill Plug
      - Pike Law Basalt Plug
        Pike Law Plug
      - Strait Hill Basalt Plug
        Strait Hill (Cooms Fell) Plug
      - Pike Fell Basalt Plug
        Pike Fell Plug
      - Rob's Knowe Basalt Plug
        Rob's Knowe Plug
      - Hog Fell Basalt Plug
        Hog Fell Plug
    - Carter Bar Microgabbro–basaltic Plug-and-vent-swarm
      - unnamed microgabbro and basalt plugs and basaltic vents

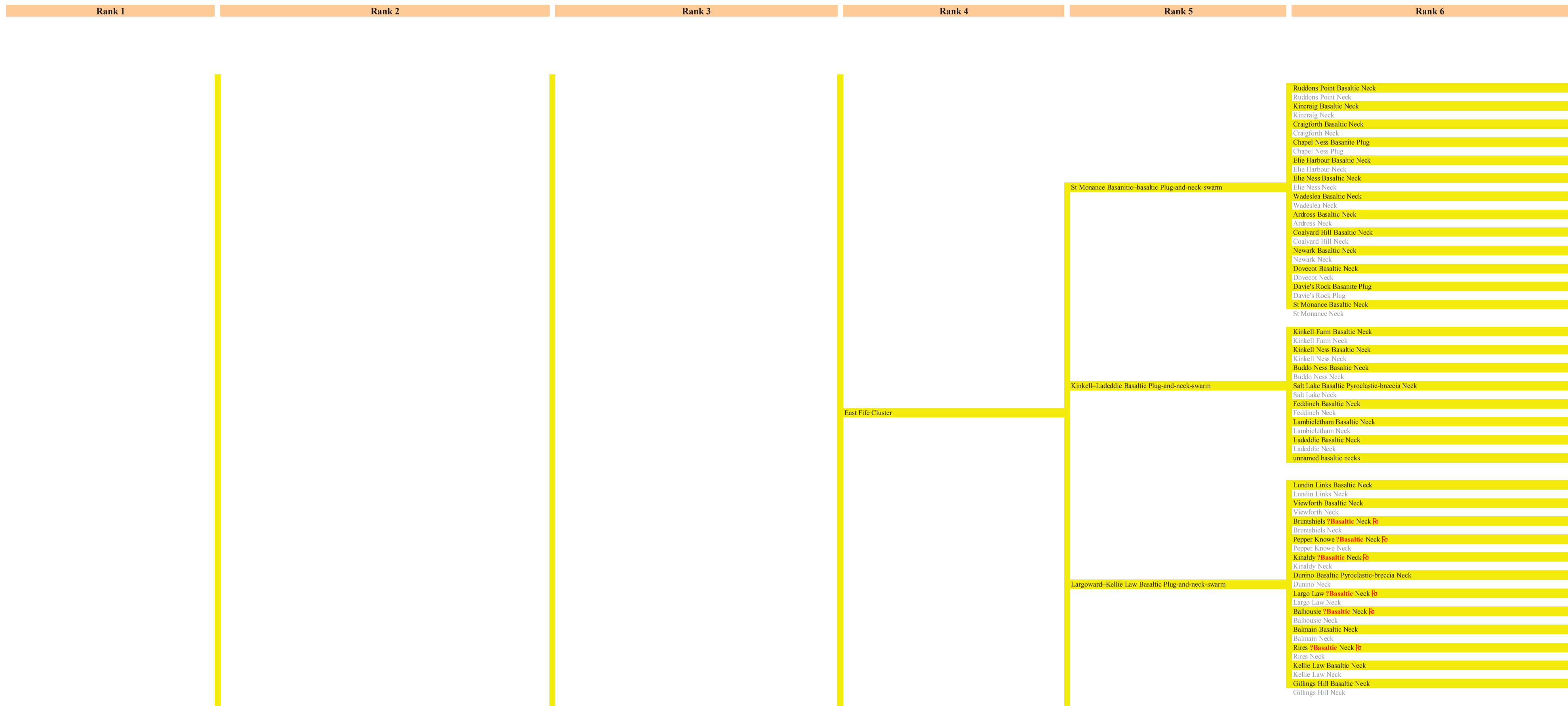

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Gargunnock Hills Mafic Dyke-swarm
unnamed mafic dykes
unnamed basaltic and trachyandesite plugs
Dungoil Linear Basaltic Plug-and-vent-swarm
Dungoil Linear Vent System
unnamed basaltic vents
Gonachan Glen Linear Basaltic Plug-and-vent-swarm
Gonachan Glen Linear Vent System
unnamed ?basaltic vents
South Campsie Linear Basaltic Plug-and-vent-swarm
South Campsie Linear Vent System
unnamed ?basaltic plugs and ?basaltic vents
Meikle Bin Trachytic Vent
Meikle Bin Vent (of Waterhead Neck-swarm)
Waterhead Trachytic Plug-and-neck-swarm
Waterhead Central Volcanic-complex
unnamed pyroclastic-breccia necks of trachybasaltic- and trachyandesitic-rock, and other felsitic compositions
Dumgoyne Basaltic Pyroclastic-breccia Vent
Dumgoyne Vent
Dunmore ?Basaltic Vent
North Campsie Linear Basaltic Vent-and-intrusion-swarm
North Campsie Linear Vent System
Dunmore Vent
Dumfoyne Basaltic Pyroclastic-breccia Vent
Dumfoyne Vent
unnamed trachybasaltic vents
unnamed basalt and microgabbro plugs
High Craigton Linear Basaltic Plug-and-vent-swarm
unnamed basaltic pyroclastic-breccia vents
Northwest Midland Valley Cluster
Clyde Plateau Subsuite (of Southern Scotland Dinantian Plugs and Vents Suite)
unnamed basalt and microgabbro plugs
Birny Hills Basaltic Plug-and-vent-swarm
unnamed basaltic pyroclastic-breccia vents
Dumbarton Rock Basalt Plug
Dumbarton Rock Plug
Kilpatrick Hills Basaltic Plug-and-vent-swarm
unnamed basalt and microgabbro plugs
unnamed basaltic vents
Dunconnel Rock Basalt Plug
Dunconnel Rock Plug
Hill of Stake Basaltic and Trachytic Pyroclastic-breccia Vent
Hill of Stake Vent
Waterhead Moor Basaltic Plug-and-vent-swarm
Lochlands Hill ?Basalt Plug
Lochlands Hill Plug
Castle Hill Basalt Plug
Castle Hill Plug
Brownmuir ?Basaltic Plug
Brownmuir Plug
Saltcoats Microgabbro Plug-swarm
unnamed microgabbro plugs
Heads of Ayr ?Basaltic Vent
Heads of Ayr Vent
Hamilton Basalt Plug-swarm
unnamed basalt plugs
unnamed sills
Campbeltown Microgabbro–trachyandesitic Plug-and-vent-swarm
unnamed microgabbro, dacite and trachyandesite plugs and trachyandesitic vents


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
unnamed basalt plugs and basaltic vents
Southeast Scotland Cluster
Midland Valley Early Carboniferous Felsic Sill Suite
East Lothian Phonolite–trachyte Sill-and-plug-swarm
East Lothian Subsuite (of Midland Valley Early Carboniferous Felsic Sill Suite)
North Berwick Law Phonolitic-trachyte Plug
North Berwick Law Plug
Bass Rock Phonolitic-trachyte Plug
Bass Rock Plug
Burnside Trachyte Intrusion
Burnside Plug
Carperstane Trachyte Intrusion
Carperstane Intrusion
Markle Trachyte Plug
Markle Plug
Eyebroughty Trachyte Intrusion
Eyebroughty ?Sill
Athelstaneford Trachyte Sill
Athelstaneford Sill
Pencraig Trachyte Sill
Pencraig Sill
Garvald Trachyte Sill
Garvald Sill
Hairy Craig Phonolite Sill
Hairy Craig Sill
Carperstane Trachyte Sill
Carperstane Sill
Traprain Law Phonolite Laccolith
Traprain Law Laccolith
Eildon Hills Trachyte Laccolith
Eildon Hills Laccolith
Dirrington Great Law Felsite Intrusion
Dirrington Great Law Sill
Teviothead Trachytic Intrusion-and-vent-swarm
Carewoodrig ?Basaltic Vent
Carewoodrig Vent
Carewoodrig Phonolitic-trachyte Plug
Carewoodrig Phonolitic-trachyte Plug
Elygrain Trachytic Pyroclastic-breccia Vent
Elygrain Vent
Skelfhill Pen West Phonolite Intrusion
Skelfhill Pen Phonolite Intrusions
Skelfhill Pen East Phonolite Intrusion
Skelfhill Pen Phonolite Intrusions
Pikethaw Hill Phonolite Intrusion
Pikethaw Hill Phonolite Intrusion
unnamed phonolitic-trachyte dykes at Millstone Edge
Millstone Edge Phonolitic trachyte dykes
unnamed phonolitic-trachyte dykes at Linhope Burn
Linhope Burn Phonolitic trachyte dykes

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6

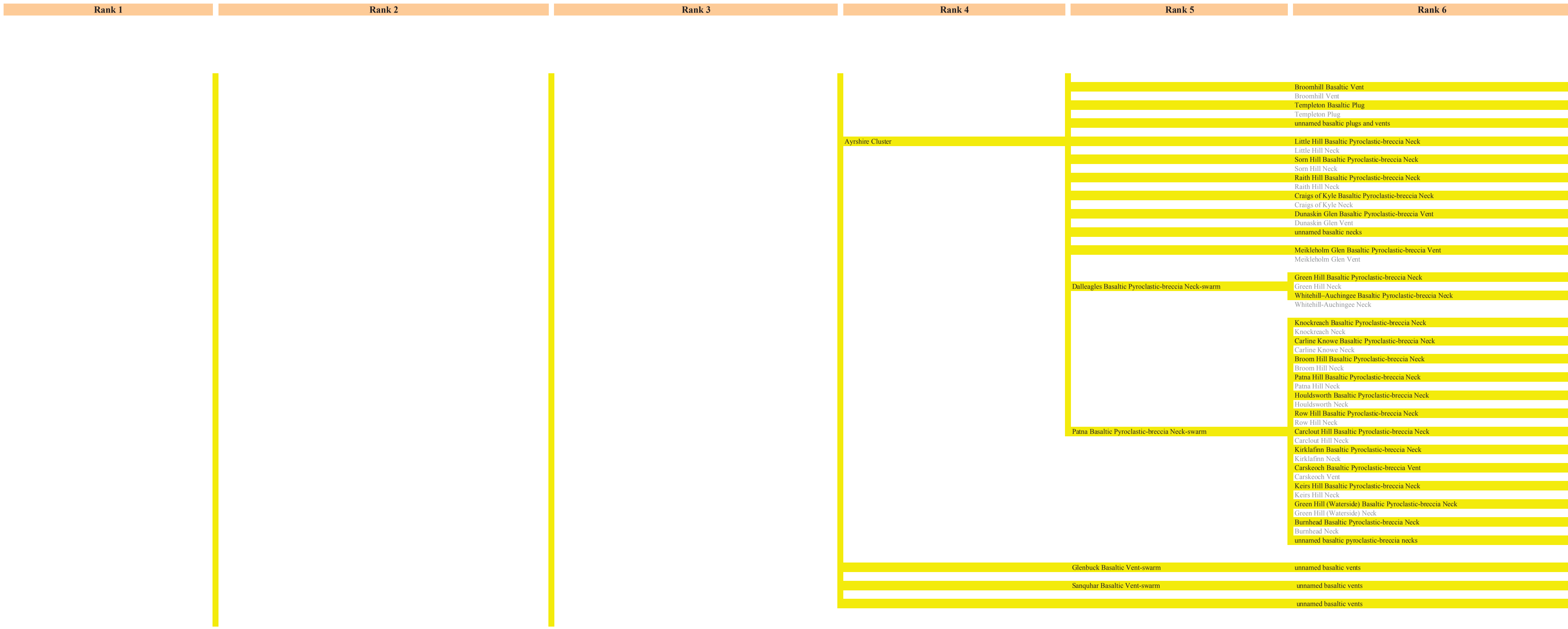
- **South Scotland Trachyte–phonolite Subsuite** (Rank 3)
  Midland Valley Early Carboniferous Felsic Sill Suite; Southern Scotland Dinantian Plugs and Vents Suite
  - West Central Scotland Cluster (Rank 4)
    Southern Scotland Dinantian Plugs and Vents Suite
    - Misty Law Trachytic Sill-and-plug-swarm (Rank 5)
      Misty Law Trachytic Centre
      - Irish Law Trachyte Plug
        Irish Law Plugs
      - Slaty Law Trachyte Plug
        Slaty Law Plug
      - Black Law Trachyte Plug
        Black Law Plug (Greenock)
      - Box Law Trachyte Plug
        Box Law Plug
      - Knockside Hills Trachyte Plug
        Knockside Hills Plug
      - Rye Water Head Felsite Sill
        Rye Water Head Sills
      - High Corby Knowe Granodiorite–diorite Sill
        High Corby Knowe Sill
    - Darvel Trachytic Plug-swarm (Rank 5)
      Clyde Plateau Subsuite (of Southern Scotland Dinantian Plugs and Vents Suite)
      - Loudon Hill Trachyandesite Plug
        Loudon Hill Plug
      - Underlaw **Phonolitic-trachyte** Intrusion
        Underlaw Phonolitic-trachyte Intrusion
      - Laird's Seat **Phonolitic-trachyte** Plug
        Laird's Seat Phonolitic-trachyte Plug
      - Priestland **Phonolitic-trachyte** Intrusion
        Priestland Phonolitic-trachyte Intrusion
      - unnamed trachyte plugs
    - Beith Trachyte Plug-swarm (Rank 5)
      - Townhead of Grange **Phonolitic-trachyte** Plug
        Townhead of Grange Phonolitic-trachyte Plug
      - Mearns **Phonolitic-trachyte** Plug
        Mearns Phonolitic-trachyte Plug
      - unnamed trachyte plugs
    - Hunterston Felsic Sill-swarm (Rank 5)
      Clyde Plateau Subsuite (of Midland Valley Early Carboniferous Felsic Sill Suite)
      - Goldenberry Hill Felsite–microdiorite Sill
        Goldenberry Hill Sill
      - Glentane Hill Rhyolite Sill
        Glentane Hill Sill
      - Caldron Hill Rhyolite Sill
        Caldron Hill Sill
      - Biglees Hill Trachyte Sill
        Biglees Hill Sill
      - unnamed trachyte intrusions
    - Leap Moor Trachyte Sill-swarm (Rank 5)
      - unnamed trachyte sills
    - *Clyde Plateau Subsuite* (of Midland Valley Early Carboniferous Felsic Sill Suite) (Rank 5)
      - Craigmuschat Trachyte Sill
        Craigmuschat Sill
    - (Rank 6, direct)
      - Fintry Phonolite Intrusion
        Fintry Intrusion
    - Great Cumbrae Trachyte-**olivine-basalt** Dyke-swarm (Rank 5)
      Great Cumbrae Dyke Swarm
  - Mull of Kintyre Syenitic Sill-swarm (Rank 5)
    - unnamed trachyandesite and syenite sills

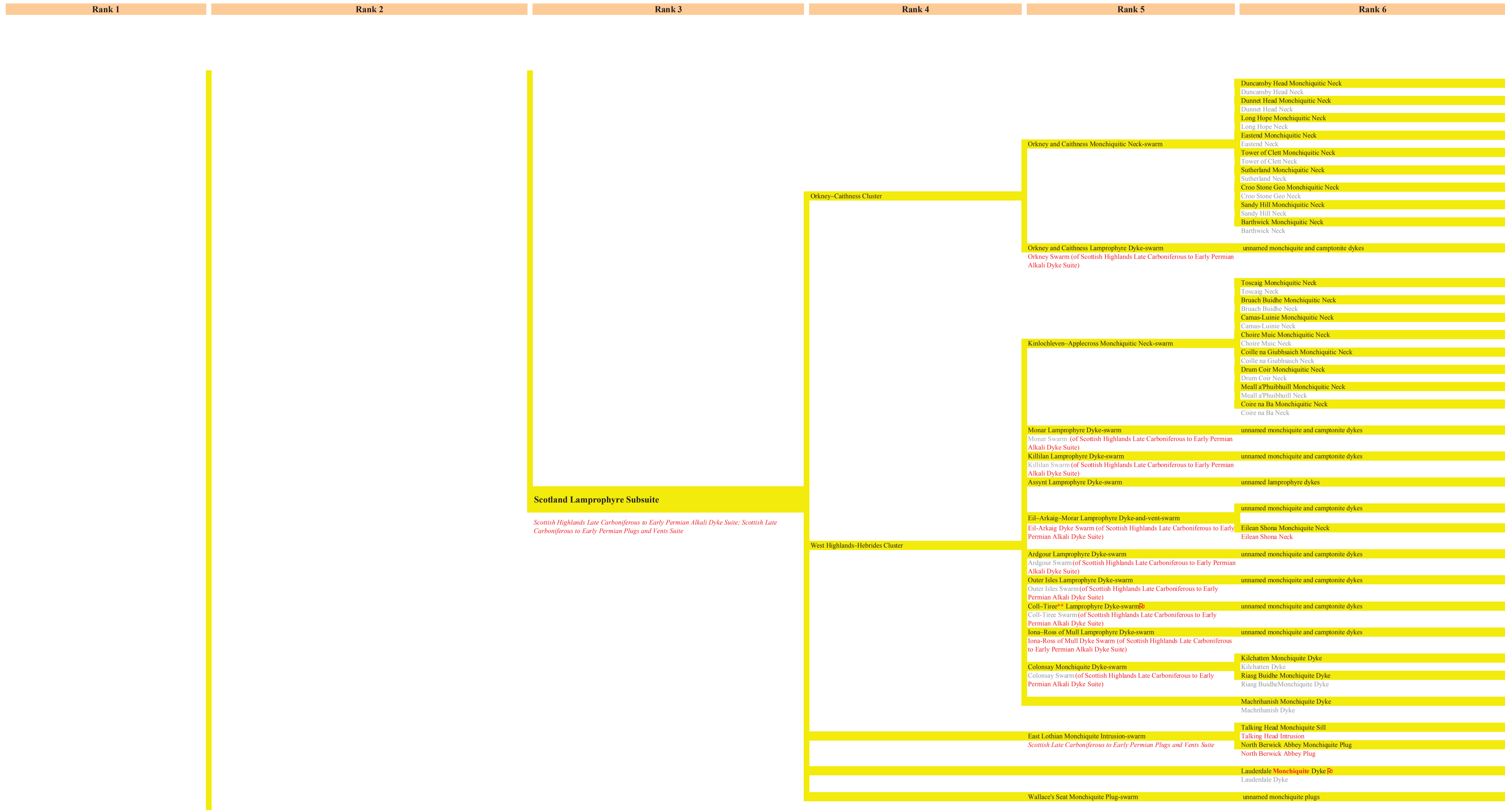

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Scotland Alkaline Suite
East Lothian Cluster
Dinantian to early Westphalian Sills of Lothians and Fife (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)
East Linton Basanite Dyke-and-sill-swarm
Undivided (age uncertain) (of Midland Valley Carboniferous to Early Permian Alkaline Dyke Suite)
Dinantian to early Westphalian Sills of Lothians and Fife (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)
The Liethes Basanite Sill
The Liethes Sill
Fidra Basanite Sill
Fidra Sill
Bonnington Basanite Intrusion
Bonnington Intrusion
Chester's Quarry Basanite Sill
Chester's Quarry Sill
New Mains Basanite Intrusion
New Mains Intrusion
Ewingston Basanite Intrusion
Ewington Sll
Stenton Basanite Sill
Stenton Sill
Limplum Basanite Sill
Limplum Sill
Oldhamstocks Basanite Sill
Odlhamstocks Sill
The Knoll Basanite Intrusion
The Knoll Intrusion
Yellow Man Basanite Dyke(s)
Yellow Man Dyke
The Car Basanite Dyke
The Car Dykes
Bangley Trachybasalt Dyke
Bangley Dyke
Haddington Basanitic–basaltic Plug-and-vent-swarm
Scottish Late Carboniferous to Early Permian Plugs and Vents Suite
Gin Head Basaltic Vent
Gin Head Vent
Kidlaw Basanite Plug
Kidlaw Plug
Yellow Craig Plantation Basanitic–Basaltic Vent
Yellow Craig Plantation Vent
Yellow Man Basanitic Vent
Yellow Man Vent
Horseshoe Basanitic Vent
Horseshoe Vent
The Lecks ?Basanitic Vent
The Lecks Vent
unnamed basaltic and basanitic vents
Central Fife Cluster
Lomond Basanitic Plug-and-neck-swarm
East Lomond Microgabbro Plug
East Lomond Neck
East Lomond Basaltic Neck
East Lomond Neck
West Lomond Basanite Plug
West Lomond Neck
West Lomond Basaltic Neck
West Lomond Neck
Kennoway Basanitic Plug-swarm
Green Hill Basanite Plug
Green Hill Plug
Langside Quarry Basalt Plug
Langside Quarry Vent
Langside Quarry Basaltic Vent
Langside Quarry Vent
unnamed ?basaltic vents and ?basaltic plugs
Oakley–Ballingry Basaltic Plug-and-vent-swarm
unnamed ?basaltic plugs and vents
Cowdenbeath Basaltic Vent-swarm
Hill of Beath ?Basaltic Neck
Hill of Beath Neck
unnamed ?basaltic vent
Fordell Nepheline-basanite Sill
Fordell Sill
Burntisland Basaltic Vent-swarm
Kingswood ?Basaltic Vent
Kingswood Vent
Kilmundy Hill ?Basaltic Vent
Kilmundy Hill Vent
Dalachy ?Basaltic Vent
Dalachy Vent
The Binn ?Basaltic Vent
The Binn Vent
Dunearn Hill Basaltic Vent
Dunearn Hill Vent

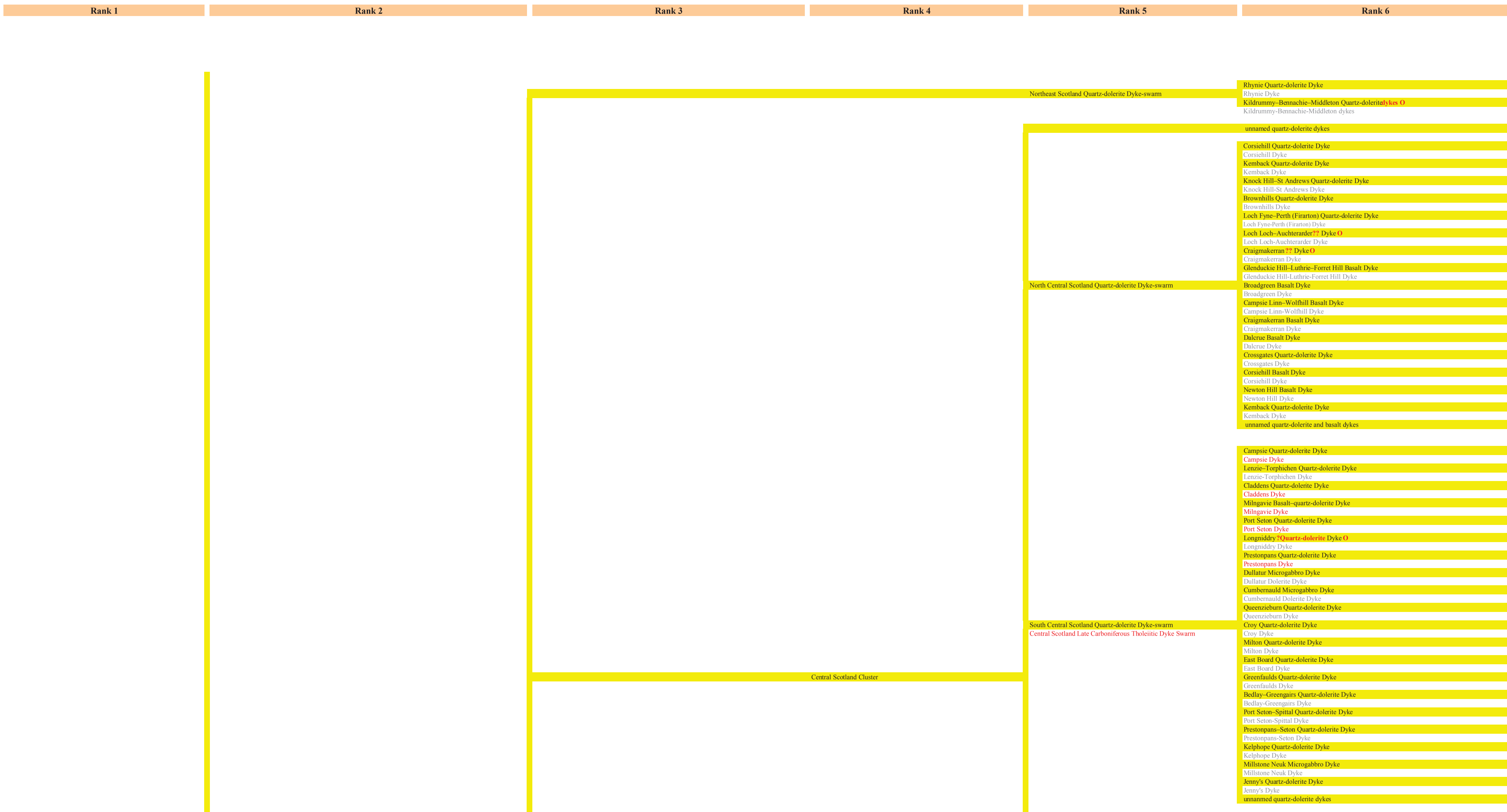

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
East Fife Cluster
St Monance Basanitic–basaltic Plug-and-neck-swarm
Kinkell–Ladeddie Basaltic Plug-and-neck-swarm
Largoward–Kellie Law Basaltic Plug-and-neck-swarm
Ruddons Point Basaltic Neck
Ruddons Point Neck
Kincraig Basaltic Neck
Kincraig Neck
Craigforth Basaltic Neck
Craigforth Neck
Chapel Ness Basanite Plug
Chapel Ness Plug
Elie Harbour Basaltic Neck
Elie Harbour Neck
Elie Ness Basaltic Neck
Elie Ness Neck
Wadeslea Basaltic Neck
Wadeslea Neck
Ardross Basaltic Neck
Ardross Neck
Coalyard Hill Basaltic Neck
Coalyard Hill Neck
Newark Basaltic Neck
Newark Neck
Dovecot Basaltic Neck
Dovecot Neck
Davie's Rock Basanite Plug
Davie's Rock Plug
St Monance Basaltic Neck
St Monance Neck
Kinkell Farm Basaltic Neck
Kinkell Farm Neck
Kinkell Ness Basaltic Neck
Kinkell Ness Neck
Buddo Ness Basaltic Neck
Buddo Ness Neck
Salt Lake Basaltic Pyroclastic-breccia Neck
Salt Lake Neck
Feddinch Basaltic Neck
Feddinch Neck
Lambieletham Basaltic Neck
Lambieletham Neck
Ladeddie Basaltic Neck
Ladeddie Neck
unnamed basaltic necks
Lundin Links Basaltic Neck
Lundin Links Neck
Viewforth Basaltic Neck
Viewforth Neck
Bruntshiels ?Basaltic Neck
Bruntshiels Neck
Pepper Knowe ?Basaltic Neck
Pepper Knowe Neck
Kinaldy ?Basaltic Neck
Kinaldy Neck
Dunino Basaltic Pyroclastic-breccia Neck
Dunino Neck
Largo Law ?Basaltic Neck
Largo Law Neck
Balhousie ?Basaltic Neck
Balhousie Neck
Balmain Basaltic Neck
Balmain Neck
Rires ?Basaltic Neck
Rires Neck
Kellie Law Basaltic Neck
Kellie Law Neck
Gillings Hill Basaltic Neck
Gillings Hill Neck

Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
	South Scotland Late Carboniferous–Permian Mafic Subsuite *Midland Valley Carboniferous to Early Permian Alkaline Dyke Suite; Midland Valley Carboniferous to Early Permian Alkaline Minor Intrusions, other than dykes, sills and plugs; Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite*			unnamed necks
			East Fife Basanite Sill-swarm	unnamed basanite sills
			Southern Uplands Nepheline-gabbro Dyke-swarm *Undivided (age uncertain)* (of Midland Valley Carboniferous to Early Permian Alkaline Dyke Suite)	Wanlockhead Nepheline-gabbro Dyke Wanlockhead Dyke Crawfordjohn Nepheline-gabbro Dyke Crawfordjohn Dyke
				Southdean **Nepheline-basanite** Plug Southdean Plug
			Strathaven Microgabbro Sill-swarm	unnamed microgabbro sills
			Kirkmuirhill Microgabbro Sill-swarm	unnamed microgabbro sills
				Knockencorsan Hill Microgabbro **?Sill** Knockencorsan Hill dolerite
		Glasgow Cluster *Westphalian to early Permian Sills of the Western Midland Valley* (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)	Cathcart Microgabbro Sill-swarm	unnamed microgabbro sills Cathcart Sills
			Necropolis Microgabbro Sill-swarm	unnamed microgabbro sills Necropolis Sills
			Johnstone Microgabbro Sill-swarm	Barshaw Microgabbro Sill Barshaw Sill Kilbarchan Microgabbro Sill Kilbarchan Sill unnamed microgabbro sills Johnstone Sills
			Milngavie Basalt–microgabbro Sill-swarm	Lennoxtown Monzogabbro Plug Lennoxtown Boss unnamed microgabbro sills Milngavie Sills
			Southend Microgabbro Sill-swarm	Machrihanish Microgabbro Sill Machrihanish Sill unnamed microgabbro sills

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
					Lugar Microgabbro–picrite Sill
					Lugar Sill
					Nethershield Microgabbro Sill
					Nethershield Sill
					Whitehaugh Water Microgabbro Sill
					Whitehaugh Sill
					Sorn–Muirkirk Road Microgabbro Sill
					Sorn-Muirkirk Sill
				East Ayrshire Microgabbro Sill-swarm	Glengyron–Aughingilsie Wood Microgabbro Sill
				Westphalian to early Permian Sills of the Western Midland Valley (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)	Glengyron Sill
					Benbeoch Microgabbro Sill
					Benbeoch Sill
					Craigen–Avisyard Microgabbro–picrite Sill
					Craigens – Avisyard Sill
					Craigs of Kyle Microgabbro Sill
					Craigs of Kyle Sill
					Kilmein Hill Sill
					Kilmein Hill Sill
					Saltcoats Main Microgabbro–picrite Sill
					Saltcoats Main Sill
					Castle Craigs Microgabbro–picrite Sill
					Castle Craigs Sill
					Castle Hill Basanite Sill
					Castle Hill Sill
					Inner Nebbock Microgabbro Sill
					Innner Nebbock Sill
					Hillhouse Quarry Microgabbro Sill
					Hillhouse Quarry
				North Ayrshire Microgabbro Sill-swarm	Crosshouse Microgabbro Sill
				Westphalian to early Permian Sills of the Western Midland Valley (of Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite)	Crosshouse Sill
					Caprington Microgabbro Sill
					Caprington Sill
					Duntonknoll Quarry Microgabbro–picrite Sill
					Duntonknoll Quarry Sill
					Montgreenan Microgabbro Sill
					Montgreenan Sill
					Auchentiber Microgabbro Sill
					Auchentiber Sill
					Craigie Microgabbro Sill
					Craigie Sill
					Law Hill Basaltic Neck
					Law Hill Neck
				West Kilbride Basaltic Plug-and-vent-swarm	unnamed plugs
					unnamed vents
					Shewalton Mill Basaltic Pyroclastic-breccia Vent
					Shewalton Mill Vent
				Irvine Basaltic Neck-swarm	Thorntoun Basaltic Pyroclastic-breccia Neck
					Thorntoun Neck
					unnamed basaltic necks
					Helenton Mains Basaltic Pyroclastic-breccia Neck
					Helenton Mains Neck
Variscan Supersuite				Symington Basaltic Vent-swarm	Heughmill Basaltic Pyroclastic-breccia Vent
					Heughmill Vent
					unnamed basaltic necks


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Broomhill Basaltic Vent
Broomhill Vent
Templeton Basaltic Plug
Templeton Plug
unnamed basaltic plugs and vents
Ayrshire Cluster
Little Hill Basaltic Pyroclastic-breccia Neck
Little Hill Neck
Sorn Hill Basaltic Pyroclastic-breccia Neck
Sorn Hill Neck
Raith Hill Basaltic Pyroclastic-breccia Neck
Raith Hill Neck
Craigs of Kyle Basaltic Pyroclastic-breccia Neck
Craigs of Kyle Neck
Dunaskin Glen Basaltic Pyroclastic-breccia Vent
Dunaskin Glen Vent
unnamed basaltic necks
Meikleholm Glen Basaltic Pyroclastic-breccia Vent
Meikleholm Glen Vent
Dalleagles Basaltic Pyroclastic-breccia Neck-swarm
Green Hill Basaltic Pyroclastic-breccia Neck
Green Hill Neck
Whitehill–Auchingee Basaltic Pyroclastic-breccia Neck
Whitehill–Auchingee Neck
Knockreach Basaltic Pyroclastic-breccia Neck
Knockreach Neck
Carline Knowe Basaltic Pyroclastic-breccia Neck
Carline Knowe Neck
Broom Hill Basaltic Pyroclastic-breccia Neck
Broom Hill Neck
Patna Hill Basaltic Pyroclastic-breccia Neck
Patna Hill Neck
Houldsworth Basaltic Pyroclastic-breccia Neck
Houldsworth Neck
Row Hill Basaltic Pyroclastic-breccia Neck
Row Hill Neck
Patna Basaltic Pyroclastic-breccia Neck-swarm
Carclout Hill Basaltic Pyroclastic-breccia Neck
Carclout Hill Neck
Kirklafinn Basaltic Pyroclastic-breccia Neck
Kirklafinn Neck
Carskeoch Basaltic Pyroclastic-breccia Vent
Carskeoch Vent
Keirs Hill Basaltic Pyroclastic-breccia Neck
Keirs Hill Neck
Green Hill (Waterside) Basaltic Pyroclastic-breccia Neck
Green Hill (Waterside) Neck
Burnhead Basaltic Pyroclastic-breccia Neck
Burnhead Neck
unnamed basaltic pyroclastic-breccia necks
Glenbuck Basaltic Vent-swarm
unnamed basaltic vents
Sanquhar Basaltic Vent-swarm
unnamed basaltic vents
unnamed basaltic vents

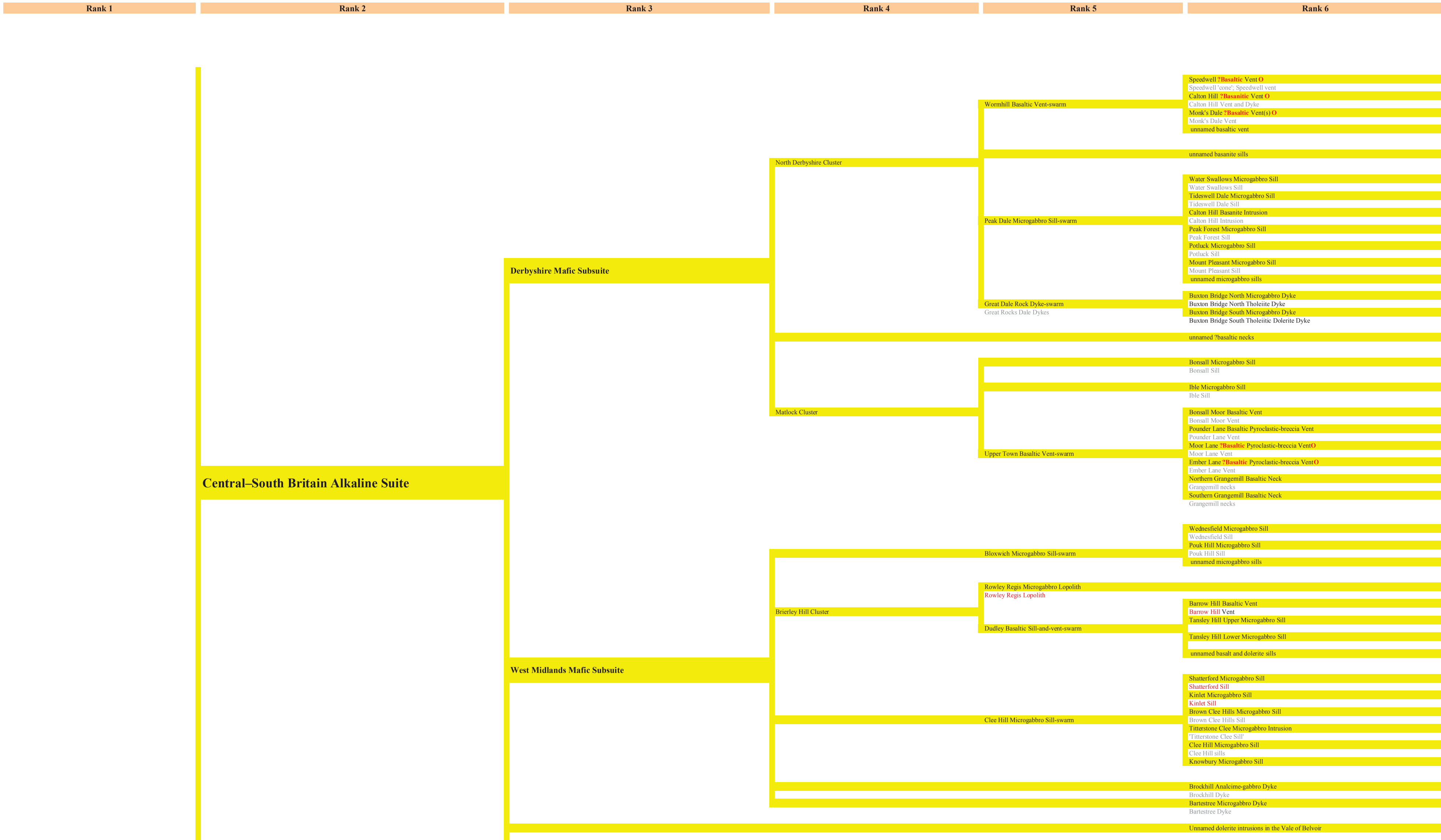

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Scotland Lamprophyre Subsuite
Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite; Scottish Late Carboniferous to Early Permian Plugs and Vents Suite
Orkney–Caithness Cluster
Orkney and Caithness Monchiquitic Neck-swarm
Duncansby Head Monchiquitic Neck
Duncansby Head Neck
Dunnet Head Monchiquitic Neck
Dunnet Head Neck
Long Hope Monchiquitic Neck
Long Hope Neck
Eastend Monchiquitic Neck
Eastend Neck
Tower of Clett Monchiquitic Neck
Tower of Clett Neck
Sutherland Monchiquitic Neck
Sutherland Neck
Croo Stone Geo Monchiquitic Neck
Croo Stone Geo Neck
Sandy Hill Monchiquitic Neck
Sandy Hill Neck
Barthwick Monchiquitic Neck
Barthwick Neck
Orkney and Caithness Lamprophyre Dyke-swarm
Orkney Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
West Highlands–Hebrides Cluster
Kinlochleven–Applecross Monchiquitic Neck-swarm
Toscaig Monchiquitic Neck
Toscaig Neck
Bruach Buidhe Monchiquitic Neck
Bruach Buidhe Neck
Camas-Luinie Monchiquitic Neck
Camas-Luinie Neck
Choire Muic Monchiquitic Neck
Choire Muic Neck
Coille na Giubhsaich Monchiquitic Neck
Coille na Giubhsaich Neck
Drum Coir Monchiquitic Neck
Drum Coir Neck
Meall a'Phubhuill Monchiquitic Neck
Meall a'Phubhuill Neck
Coire na Ba Monchiquitic Neck
Coire na Ba Neck
Monar Lamprophyre Dyke-swarm
Monar Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Killilan Lamprophyre Dyke-swarm
Killilan Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Assynt Lamprophyre Dyke-swarm
unnamed lamprophyre dykes
Eil–Arkaig–Morar Lamprophyre Dyke-and-vent-swarm
Eil-Arkaig Dyke Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Eilean Shona Monchiquite Neck
Eilean Shona Neck
Ardgour Lamprophyre Dyke-swarm
Ardgour Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Outer Isles Lamprophyre Dyke-swarm
Outer Isles Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Coll–Tiree** Lamprophyre Dyke-swarm
Coll-Tiree Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Iona–Ross of Mull Lamprophyre Dyke-swarm
Iona-Ross of Mull Dyke Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
unnamed monchiquite and camptonite dykes
Colonsay Monchiquite Dyke-swarm
Colonsay Swarm (of Scottish Highlands Late Carboniferous to Early Permian Alkali Dyke Suite)
Kilchatten Monchiquite Dyke
Kilchatten Dyke
Riasg Buidhe Monchiquite Dyke
Riasg BuidheMonchiquite Dyke
Machrihanish Monchiquite Dyke
Machrihanish Dyke
East Lothian Monchiquite Intrusion-swarm
Scottish Late Carboniferous to Early Permian Plugs and Vents Suite
Talking Head Monchiquite Sill
Talking Head Intrusion
North Berwick Abbey Monchiquite Plug
North Berwick Abbey Plug
Lauderdale Monchiquite Dyke
Lauderdale Dyke
Wallace's Seat Monchiquite Plug-swarm
unnamed monchiquite plugs



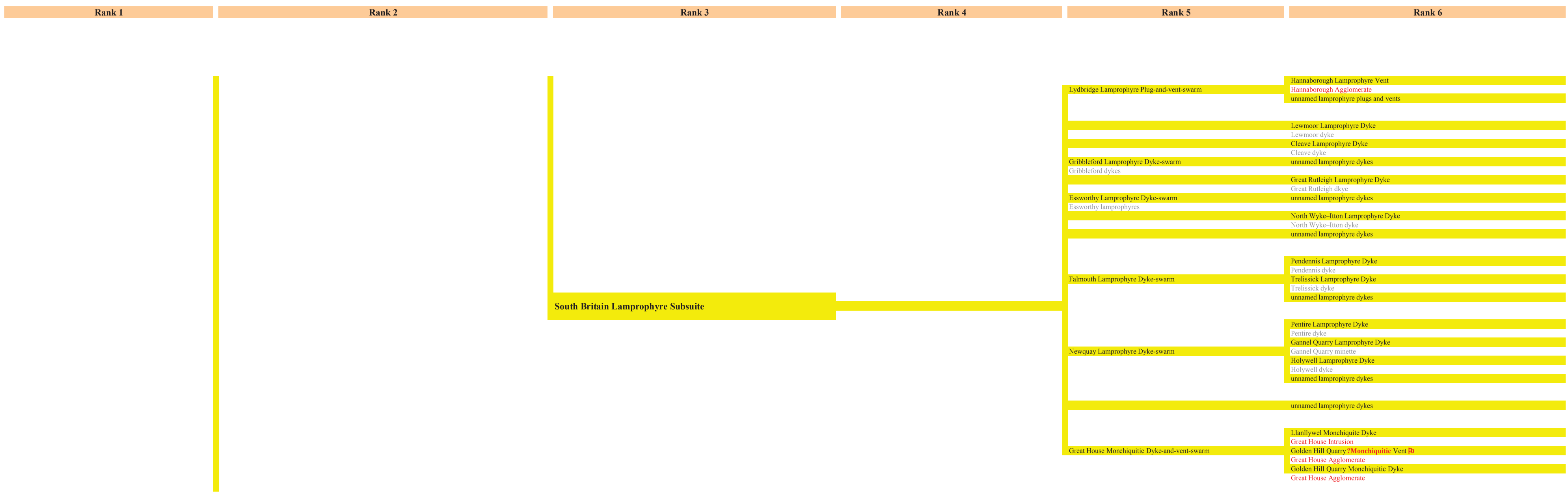
Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Northeast Scotland Quartz-dolerite Dyke-swarm
Rhynie Quartz-dolerite Dyke
Rhynie Dyke
Kildrummy–Bennachie–Middleton Quartz-doleritedykes O
Kildrummy–Bennachie–Middleton dykes
unnamed quartz-dolerite dykes
North Central Scotland Quartz-dolerite Dyke-swarm
Corsiehill Quartz-dolerite Dyke
Corsiehill Dyke
Kemback Quartz-dolerite Dyke
Kemback Dyke
Knock Hill–St Andrews Quartz-dolerite Dyke
Knock Hill–St Andrews Dyke
Brownhills Quartz-dolerite Dyke
Brownhills Dyke
Loch Fyne–Perth (Firarton) Quartz-dolerite Dyke
Loch Fyne–Perth (Firarton) Dyke
Loch Loch–Auchterarder?? Dyke O
Loch Loch–Auchterarder Dyke
Craigmakerran ?? Dyke O
Craigmakerran Dyke
Glenduckie Hill–Luthrie–Forret Hill Basalt Dyke
Glenduckie Hill–Luthrie–Forret Hill Dyke
Broadgreen Basalt Dyke
Broadgreen Dyke
Campsie Linn–Wolfhill Basalt Dyke
Campsie Linn–Wolfhill Dyke
Craigmakerran Basalt Dyke
Craigmakerran Dyke
Dalcrue Basalt Dyke
Dalcrue Dyke
Crossgates Quartz-dolerite Dyke
Crossgates Dyke
Corsiehill Basalt Dyke
Corsiehill Dyke
Newton Hill Basalt Dyke
Newton Hill Dyke
Kemback Quartz-dolerite Dyke
Kemback Dyke
unnamed quartz-dolerite and basalt dykes
Central Scotland Cluster
South Central Scotland Quartz-dolerite Dyke-swarm
Central Scotland Late Carboniferous Tholeiitic Dyke Swarm
Campsie Quartz-dolerite Dyke
Campsie Dyke
Lenzie–Torphichen Quartz-dolerite Dyke
Lenzie–Torphichen Dyke
Claddens Quartz-dolerite Dyke
Claddens Dyke
Milngavie Basalt–quartz-dolerite Dyke
Milngavie Dyke
Port Seton Quartz-dolerite Dyke
Port Seton Dyke
Longniddry ?Quartz-dolerite Dyke O
Longniddry Dyke
Prestonpans Quartz-dolerite Dyke
Prestonpans Dyke
Dullatur Microgabbro Dyke
Dullatur Dolerite Dyke
Cumbernauld Microgabbro Dyke
Cumbernauld Dolerite Dyke
Queenzieburn Quartz-dolerite Dyke
Queenzieburn Dyke
Croy Quartz-dolerite Dyke
Croy Dyke
Milton Quartz-dolerite Dyke
Milton Dyke
East Board Quartz-dolerite Dyke
East Board Dyke
Greenfaulds Quartz-dolerite Dyke
Greenfaulds Dyke
Bedlay–Greengairs Quartz-dolerite Dyke
Bedlay–Greengairs Dyke
Port Seton–Spittal Quartz-dolerite Dyke
Port Seton–Spittal Dyke
Prestonpans–Seton Quartz-dolerite Dyke
Prestonpans–Seton Dyke
Kelphope Quartz-dolerite Dyke
Kelphope Dyke
Millstone Neuk Microgabbro Dyke
Millstone Neuk Dyke
Jenny's Quartz-dolerite Dyke
Jenny's Dyke
unnanmed quartz-dolerite dykes

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6

- **North Britain Tholeiitic Suite** (Rank 2)
  North Britain Late Carboniferous Tholeiitic Suite
  - Midland Valley Quartz-dolerite Sill-swarm (Rank 5)
    Midland Valley Sill-complex
    - Lomond Hills Upper Microgabbro Sill
      Lomond Hills Upper Dolerite Sill
    - Lomond Hills Lower Microgabbro Sill
      Lomond Hills Lower Dolerite Sill
    - Stirling Microgabbro Sill
      Stirling Dolerite Sill
    - Fordell Quartz-dolerite Sill
      Fordell Sill
    - Crombie Quartz-dolerite Sill
      Crombie Sill
    - Inverkeithing Quartz-dolerite Sill
      Inverkeithing Sill
    - New Mains Quartz-dolerite Sill
      New Mains Sill
    - Hound Point Quartz-dolerite Sill
      Hound Point Sill
    - Craigiehall Quartz-dolerite Sill
      Craigiehall (West Craigs) Sill
    - Teasses Quartz-dolerite Sill
      Teasses Sill
    - Fleecefauld Quartz-dolerite Sill
      Fleecefauld Sill
    - Gilston Quartz-dolerite Sill
      Gilston Sill
    - Cerres Quartz-dolerite Intrusion
      Cerres Intrusion
    - Snab Point Quartz-dolerite Sill
      Snab Point Sill
    - Upper Magus Quartz-dolerite Sill
      Upper Magus Sill
    - Kaimes Microgabbro Sill
      Kaimes Sill
    - Dalmahoy Microgabbro Sill
      Dalmahoy Sill
    - Dalmeny Microgabbro Sill
      Dalmeny Sill
    - Craigton Quartz-dolerite Sill
      Craigton Sill
    - Binney Craig Basalt Sill
      Binney Craig Sill
    - Ratho Quartz-dolerite Sill
      Ratho Dolerite Sill
    - unnamed quartz-dolerite dykes
  - Southeast Scotland Basalt Dyke-swarm (Rank 5)
    - unnamed dykes and subordinate sills of quartz-dolerite
    - unnamed dykes and subordinate sills ofquartz-basalt O
    - unnamed dykes and subordinate sills of basalt
  - North England Cluster (Rank 4)
    - Northumbria Basalt Dyke-swarm (Rank 5)
      Northern England Late Carboniferous Tholeiitic Dyke Swarm or Dolerite Sill-swarm
      - Cullernose Quartz-dolerite Dyke
        Cullernose Dyke
      - Muck Quartz-dolerite Dyke
        Muck Dyke
      - High Green Quartz-dolerite Dyke
        High Green Dolerite Dyke
      - Several unnmamed quartz-dolerite dykes associated with the High Green Quartz-dolerite Dyke
        unnmamed quartz-dolerite dykes associated with the High Green Dolerite Dyke
      - Holy Island Quartz-dolerite Dyke
        Holy Island Dolerite Dyke and unnamed quartz-dolerite dykes in the vicinity of Holy Island
      - Several unnmamed quartz-dolerite dykes associated with the Holy Island Quartz-dolerite Dyke
        unnmamed quartz-dolerite dykes associated with the Holy Island Dolerite Dyke
      - St Oswald's Chapel Quartz-dolerite Dyke
        St Oswald's Chapel Dyke and St Oswald's Chapel dyke subswarm
      - Several unnmamed quartz-dolerite dykes associated with the St Oswald's Chapel Quartz-dolerite
        unnmamed quartz-dolerite dykes associated with the St Oswald's Chapel Dyke
      - Hett Quartz-dolerite Dyke and locally associated unnamed quartz-dolerite dykes
        Hett Dolerite Dyke and unnamed quartz-dolerite dykes in the vicinity
      - Several unnmamed quartz-dolerite dykes associated with the Hett Quartz-dolerite Dyke
        unnmamed quartz-dolerite dykes associated with the Hett Dolerite Dyke
      - Causey Park Quartz-dolerite Dyke
        Causey Park Dyke
      - Bavington Quartz-dolerite Dyke
        Bavington Dyke
      - Erring Burn Quartz-dolerite Dyke
        Erring Burn Dyke
      - Ludworth Quartz-dolerite Dyke
        Ludworth Dykes
      - Haltwhistle Basalt Dyke
        Haltwhistle Dyke
      - unnamed dykes of quartz-dolerite
    - Whin Quartz-dolerite Sill-swarm (Rank 5)
      Whin Sill-complex
      - Great Whin Quartz-dolerite Sill
        Great Whin Sill
      - Little Whin Microgabbro Sill
        Little Whin Sill
      - Alnwick Quartz-dolerite Sill
        Alnwick Dolerite Sill
      - Farne Islands Quartz-dolderte Sill
        Farne Islands Quartz-dolderte Sill
  - Central England Tholeiitic Dyke-swarm (Rank 5)
    - Unnamed tholeiitic dykes



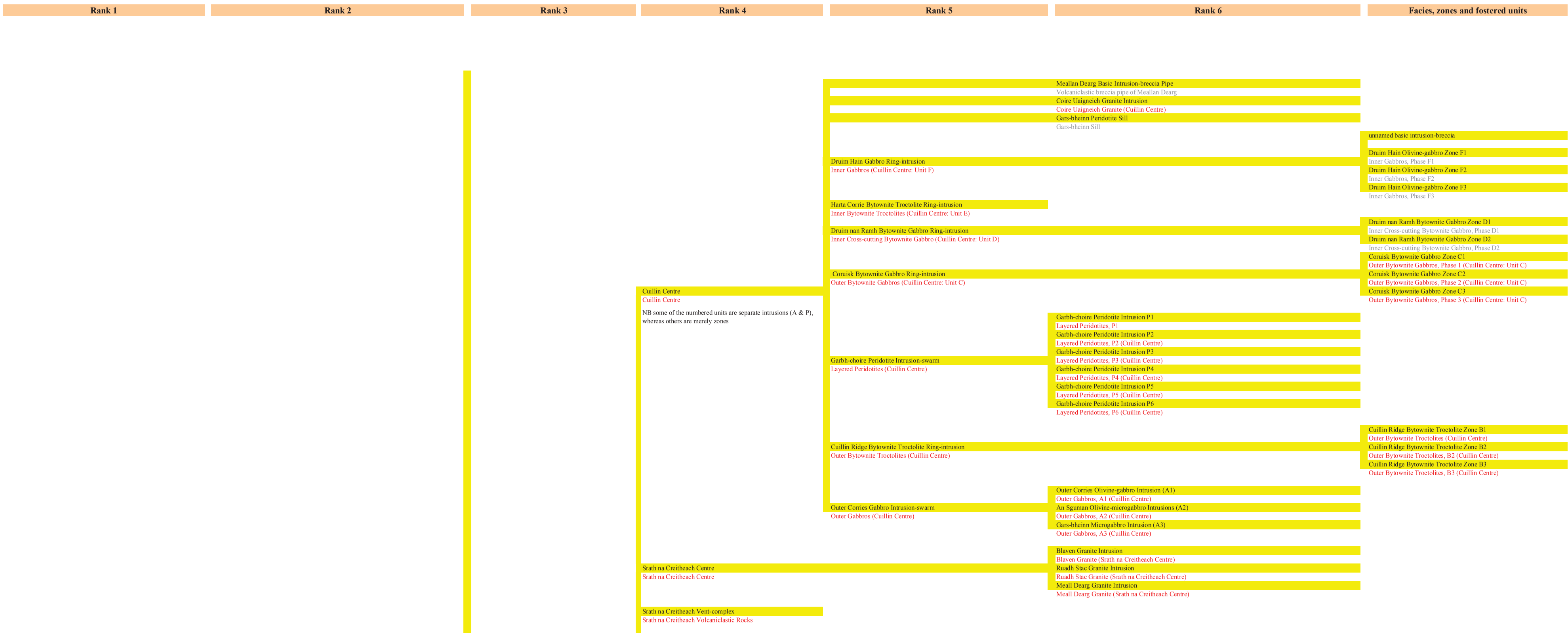
Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Central–South Britain Alkaline Suite
Derbyshire Mafic Subsuite
West Midlands Mafic Subsuite
North Derbyshire Cluster
Matlock Cluster
Brierley Hill Cluster
Wormhill Basaltic Vent-swarm
Peak Dale Microgabbro Sill-swarm
Great Dale Rock Dyke-swarm
Great Rocks Dale Dykes
Upper Town Basaltic Vent-swarm
Bloxwich Microgabbro Sill-swarm
Rowley Regis Microgabbro Lopolith
Rowley Regis Lopolith
Dudley Basaltic Sill-and-vent-swarm
Clee Hill Microgabbro Sill-swarm
Speedwell ?Basaltic Vent O
Speedwell 'cone'; Speedwell vent
Calton Hill ?Basanitic Vent O
Calton Hill Vent and Dyke
Monk's Dale ?Basaltic Vent(s) O
Monk's Dale Vent
unnamed basaltic vent
unnamed basanite sills
Water Swallows Microgabbro Sill
Water Swallows Sill
Tideswell Dale Microgabbro Sill
Tideswell Dale Sill
Calton Hill Basanite Intrusion
Calton Hill Intrusion
Peak Forest Microgabbro Sill
Peak Forest Sill
Potluck Microgabbro Sill
Potluck Sill
Mount Pleasant Microgabbro Sill
Mount Pleasant Sill
unnamed microgabbro sills
Buxton Bridge North Microgabbro Dyke
Buxton Bridge North Tholeiite Dyke
Buxton Bridge South Microgabbro Dyke
Buxton Bridge South Tholeiitic Dolerite Dyke
unnamed ?basaltic necks
Bonsall Microgabbro Sill
Bonsall Sill
Ible Microgabbro Sill
Ible Sill
Bonsall Moor Basaltic Vent
Bonsall Moor Vent
Pounder Lane Basaltic Pyroclastic-breccia Vent
Pounder Lane Vent
Moor Lane ?Basaltic Pyroclastic-breccia VentO
Moor Lane Vent
Ember Lane ?Basaltic Pyroclastic-breccia VentO
Ember Lane Vent
Northern Grangemill Basaltic Neck
Grangemill necks
Southern Grangemill Basaltic Neck
Grangemill necks
Wednesfield Microgabbro Sill
Wednesfield Sill
Pouk Hill Microgabbro Sill
Pouk Hill Sill
unnamed microgabbro sills
Barrow Hill Basaltic Vent
Barrow Hill Vent
Tansley Hill Upper Microgabbro Sill
Tansley Hill Lower Microgabbro Sill
unnamed basalt and dolerite sills
Shatterford Microgabbro Sill
Shatterford Sill
Kinlet Microgabbro Sill
Kinlet Sill
Brown Clee Hills Microgabbro Sill
Brown Clee Hills Sill
Titterstone Clee Microgabbro Intrusion
'Titterstone Clee Sill'
Clee Hill Microgabbro Sill
Clee Hill sills
Knowbury Microgabbro Sill
Brockhill Analcime-gabbro Dyke
Brockhill Dyke
Bartestree Microgabbro Dyke
Bartestree Dyke
Unnamed dolerite intrusions in the Vale of Belvoir


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
South Britain Lamprophyre Subsuite
Lydbridge Lamprophyre Plug-and-vent-swarm
Hannaborough Lamprophyre Vent
Hannaborough Agglomerate
unnamed lamprophyre plugs and vents
Lewmoor Lamprophyre Dyke
Lewmoor dyke
Cleave Lamprophyre Dyke
Cleave dyke
Gribbleford Lamprophyre Dyke-swarm
Gribbleford dykes
unnamed lamprophyre dykes
Great Rutleigh Lamprophyre Dyke
Great Rutleigh dkye
Essworthy Lamprophyre Dyke-swarm
Essworthy lamprophyres
unnamed lamprophyre dykes
North Wyke–Itton Lamprophyre Dyke
North Wyke–Itton dyke
unnamed lamprophyre dykes
Falmouth Lamprophyre Dyke-swarm
Pendennis Lamprophyre Dyke
Pendennis dyke
Trelissick Lamprophyre Dyke
Trelissick dyke
unnamed lamprophyre dykes
Newquay Lamprophyre Dyke-swarm
Pentire Lamprophyre Dyke
Pentire dyke
Gannel Quarry Lamprophyre Dyke
Gannel Quarry minette
Holywell Lamprophyre Dyke
Holywell dyke
unnamed lamprophyre dykes
unnamed lamprophyre dykes
Great House Monchiquitic Dyke-and-vent-swarm
Llanllywel Monchiquite Dyke
Great House Intrusion
Golden Hill Quarry ?Monchiquitic Vent R
Great House Agglomerate
Golden Hill Quarry Monchiquitic Dyke
Great House Agglomerate

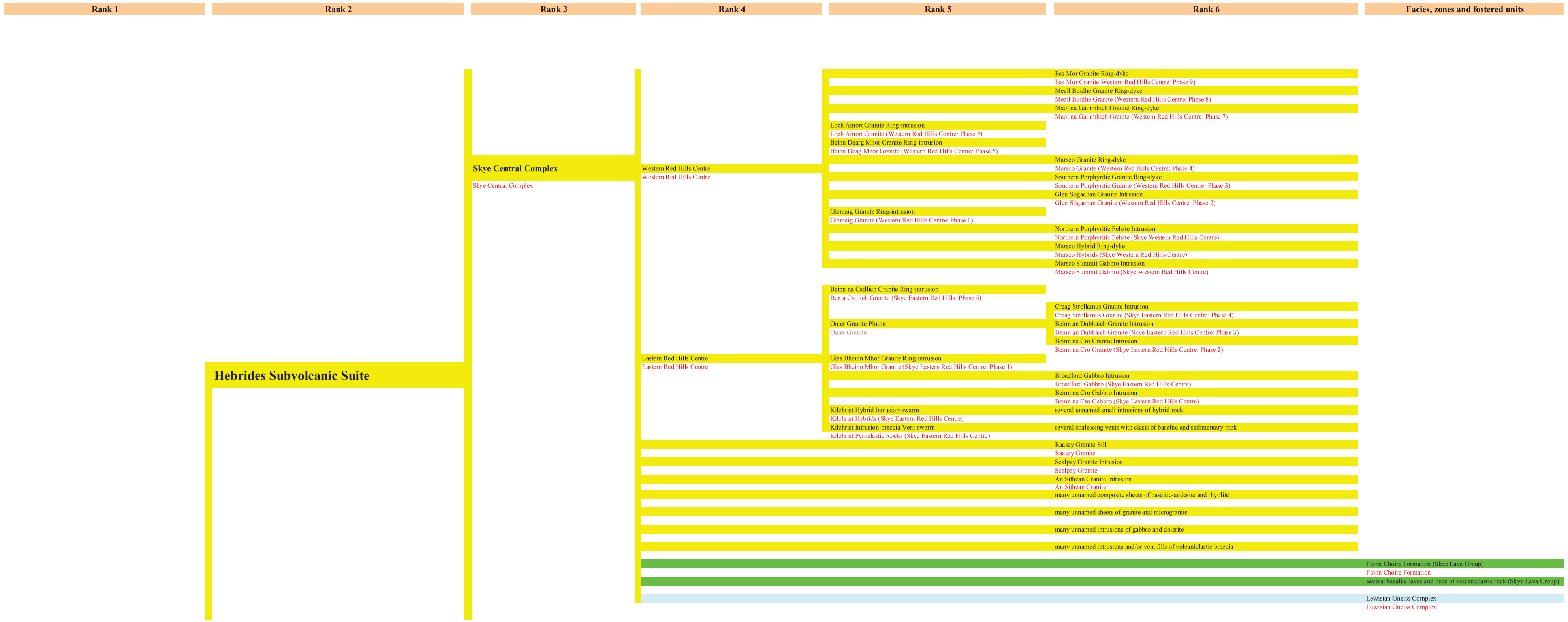

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Cornubian Suite
Cornubian granite batholith
Isles of Scilly Granite Pluton
Isles of Scilly Intrusion
Meldon Microgranite Dyke
Meldon Intrusion
Dartmoor Granite Pluton
Dartmoor Intrusion
Hamerdon Granite Intrusion
Hamerdon Intrusion
Hingston Down Granite Intrusion
Hingston Down
Liskeard Cluster
Kit Hill Granite Intrusion
Kit Hill Granite
Bodmin Moor Granite Pluton
Bodmin Intrusion
St Austell Granite Pluton
St Austell Intrusion
Castle-an-Dinas Granite Intrusion
Castle-an-Dinas Intrusion
Belowda Beacon Granite Intrusion
Belowda Beacon Granite
St Agnes Granite Intrusion
St Agnes Intrusion
Cligga Head Granite Pluton
Cligga Head Intrusion
Carn Marth Granite Intrusion
Carn Marth Granite
Carn Brea Granite Intrusion
Carn Brea Granite
Carnmenellis Granite Pluton
Carnmenellis Intrusion
Land's End Granite Pluton
Land's End Intrusion
Penzance Cluster
Godolphin Granite Pluton
Godolphin Intrusion
Tregonning Granite Pluton
Tregonning Intrusion
St Michael's Mount Granite Pluton
St Michael's Mount Intrusion
unnamed granite intrusions
unnamed intrusions
Perranporth Felsite Dyke
St Agnes elvan or St Agnes dyke
Perranporth Granite Dyke
Perranporth granitic elvan
Duchy Peru Felsite Dyke
Duchy Peru elvan
Grenofen Felsite Dyke
Grenofen elvan
Knowle Quarry Felsite Dyke
Knowle Quarry elvan
South Crofty Felsite Dyke
South Crofty Elvan
Brannel Felsite Dyke
Brannel Elvan
Wherry Felsite Dyke
Wherry Elvan
Southwest England Felsite Subsuite
unnamed felsite dykes
Hobb's Hill Felsite Dyke
Hobb's Hill elvan
Pentewan Felsite Dyke
Pentewan elvan
St Stephen's Coombe Felsite Dyke
St Stephen's Coombe dyke
Polgooth Felsite Dyke
Coombe Felsite Dyke-swarm
Polgooth elvan dyke
Trethullan Castle Felsite Dyke
Trethullan Castle elvan
Brannel Felsite Dyke
Brannel elvan
Trewithian Felsite Dyke
Trewithian elvan
Gover Felsite Dyke

Appendix 4 Classification and nomenclature for the Atlantean Supersuite

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Ardnamurchan Central Complex
Ardnamurchan Central Complex
Ardnamurchan Centre 1
Centre 1 (Ardnamurchan Complex)
Centre 1 Basic-Silicic Cone-sheet-swarm
Centre 1 Cone-sheet-swarm
numerous unnamed quartz-dolerite cone-sheets
a few andesitic cone-sheets
a few composite basic–silicic cone-sheets
Ben Hiant Pitchstone Sheet-swarm
Ben Hiant Pitchstone Sheet-swarm
several unnamed sheets of andesitic pitchstone
Ben Hiant Quartz-dolerite Intrusion
Ben Hiant Intrusion
Beinn an Leathaid Microgranite – Dolerite Intrusion
Beinn an Leathaid Granodiorite Intrusion
granophyric microgranite facies
hybridised mafic facies
Camphouse Quartz-dolerite Intrusion
Camphouse Quartz-dolerite Intrusion
marginal augite diorite zone
main quartz-dolerite zone
Ben Hiant Porphyritic Dolerite Intrusion
Ben Hiant Intrusion
Glas Bheinn Porphyritic Dolerite intrusion
Glas Bheinn Porphyritic Dolerite intrusion
Meall Buidhe Mor Granite Intrusion
Meall Buidhe Mor Granite Intrusion
Meall Buidhe Mor Quartz-gabbro Intrusion
Meall Buidhe Mor Quartz-gabbro Intrusion
Meall nan Con Gabbro Intrusion
Meall nan Con Gabbro Intrusion
unnamed gabbro/dolerite intrusions
Torr na Moine Trachyte Plug
Torr na Moine Trachyte Plug
Ardnamurchan Centre 2
Centre 2 (Ardnamurchan Complex)
Centre 2 Outer Dolerite Cone-sheet-swarm
Centre 2 Outer Basic Cone-sheet-swarm
numerous unnamed basic cone-sheets, mainly quartz-dolerite
Centre 2 Inner Dolerite Cone-sheet-swarm
Centre 2 Inner Basic Cone-sheet-swarm
numerous unnamed basic cone-sheets, mainly porphyritic dolerite
Ardnamurchan Point Gabbro Ring-intrusion
Ardnamurchan Point Gabbro Ring-intrusion
Lochan an Aodainn Gabbro Intrusion
Lochan an Aodainn Gabbro Intrusion
Sgurr nam Meann Quartz-dolerite Ring-dyke
Sgurr nam Meann Quartz-dolerite Ring-dyke
Garbh-dhail Quartz-gabbro Ring-intrusion
Garbh-dhail Quartz-gabbro Ring-intrusion
Beinn Buidhe Older Quartz-gabbro Intrusion
Beinn Buidhe Older Quartz-gabbro Intrusion
Grigadale Microgranite Intrusion
Grigadale Microgranite Intrusion
Glas Eilean Vent
Glas Eilean Basaltic Vent
Ardnamurchan Centre 3
Centre 3 (Ardnamurchan Complex)
Centre 3 Dolerite Cone-sheet-swarm
Centre 3 Basic Cone-sheet-swarm
a few unnamed basic cone-sheets
Loch Caorach Quartz-gabbro Ring-intrusion
Loch Caorach Quartz-gabbro Ring-intrusion
Beinn na Seilg Quartz-gabbro Facies
no matches
Loch Caorach Quartz-gabbro Facies
no matches
Beinn nan Ord Gabbro Ring-dyke
Beinn nan Ord Gabbro Ring-dyke
Centre 3 Layered Gabbro Lopolith
Centre 3 Layered Gabbro Lopolith
Outer Quartz-gabbro Zone
Outer Quartz-gabbro Zone
Fascadale Laminated Gabbro Zone
Faskadale Laminated Gabbro Zone
Outer Unlayered Gabbro Zone
Outer Unlayered Gabbro Zone
Olivine-glomerocrystic Gabbro Raft Zone
Olivine-glomercrystic Gabbro Raft Zone
Outer Layered Gabbro Zone
Outer Layered Gabbro Zone
Inner Layered Gabbro Zone
Inner Layered Gabbro Zone
Sithean Mor Laminated Gabbro Zone
Sithean Mor Laminated Gabbro Zone
Glendrian Laminated Gabbro Zone
Glendrian Laminated Gabbro Zone
Achnaha Quartz-gabbro Zone
Achnaha Quartz-gabbro Zone
Achnaha Tonalite–quartz-monzonite Intrusion
Achnaha Tonalite–quartz-monzonite Intrusion
Achnaha Tonalite Facies
Achnaha Tonalite Facies
Achnaha Quartz-monzonite Facies
Achnaha Quartz-monzonite Facies
Coire na Rainich Hybrid Ring-dyke
Coire na Rainich Hybrid Ring-dyke
Coire na Rainich Peridotite Raft
Coire na Rainich Peridotite Raft
Meall an Tarmachain Quartz-gabbro Intrusion
Meall an Tarmachain Summit Quartz-gabbro Intrusion
Meall nan Con Net-veined Dolerite Roof Zone
Meall nan Con Net-veined Dolerite Roof Zone
several basaltic lavas and beds of volcaniclastic sedimentary rock (Mull Lava Group)

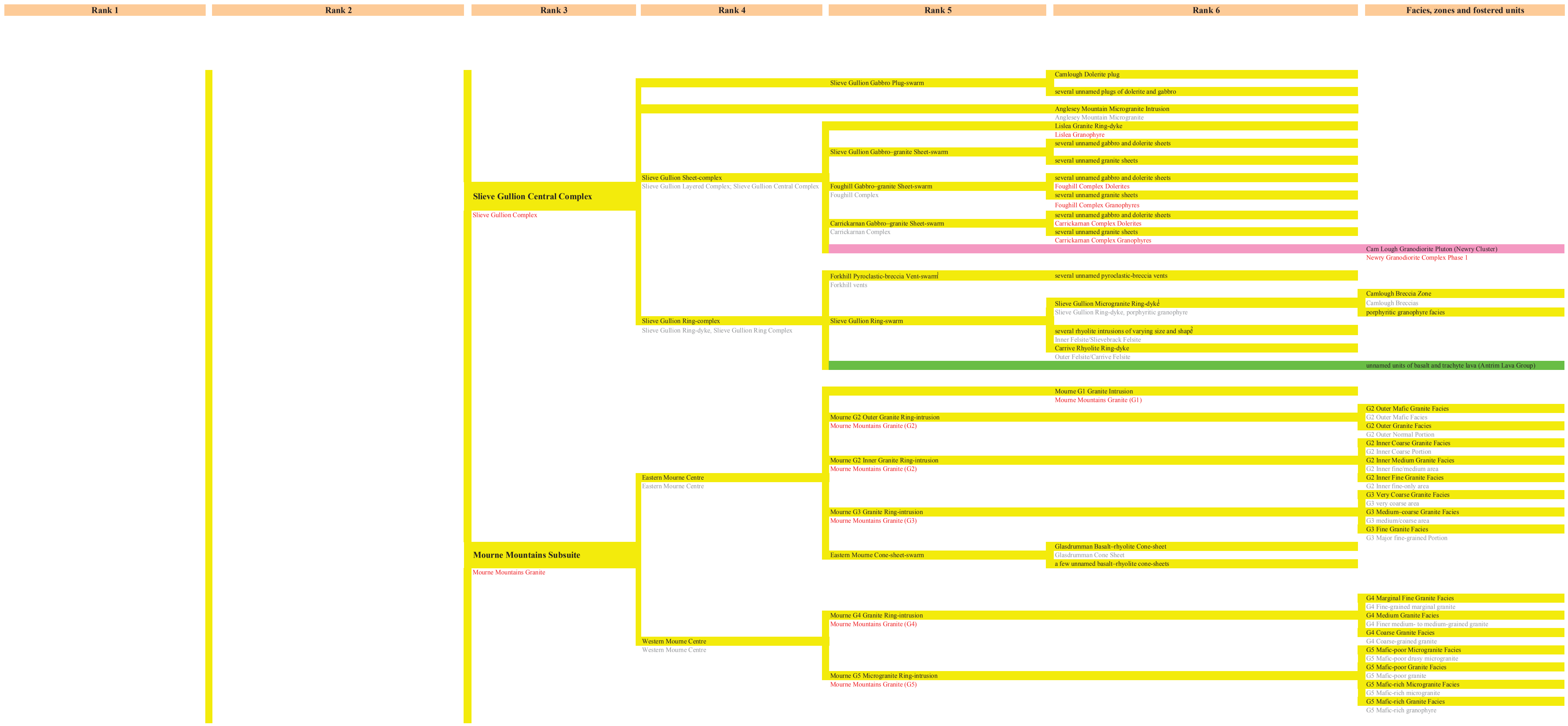


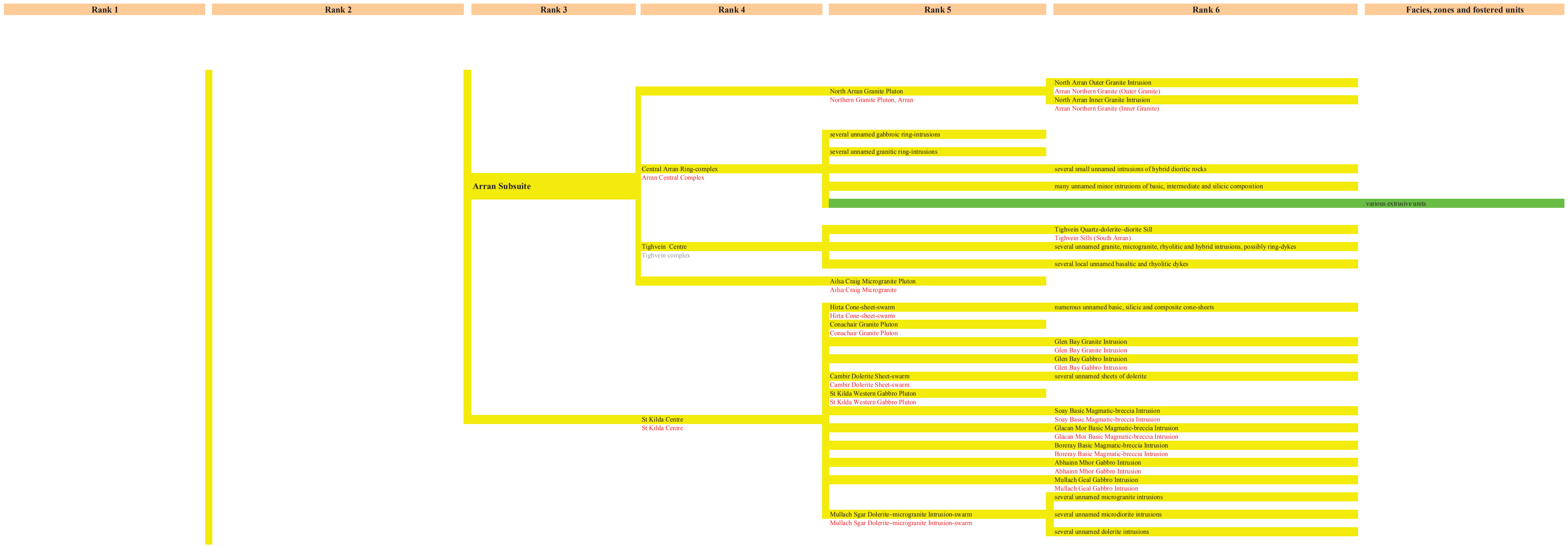
Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Meallan Dearg Basic Intrusion-breccia Pipe
Volcaniclastic breccia pipe of Meallan Dearg
Coire Uaigneich Granite Intrusion
Coire Uaigneich Granite (Cuillin Centre)
Gars-bheinn Peridotite Sill
Gars-bheinn Sill
unnamed basic intrusion-breccia
Druim Hain Olivine-gabbro Zone F1
Inner Gabbros, Phase F1
Druim Hain Gabbro Ring-intrusion
Inner Gabbros (Cuillin Centre: Unit F)
Druim Hain Olivine-gabbro Zone F2
Inner Gabbros, Phase F2
Druim Hain Olivine-gabbro Zone F3
Inner Gabbros, Phase F3
Harta Corrie Bytownite Troctolite Ring-intrusion
Inner Bytownite Troctolites (Cuillin Centre: Unit E)
Druim nan Ramh Bytownite Gabbro Zone D1
Inner Cross-cutting Bytownite Gabbro, Phase D1
Druim nan Ramh Bytownite Gabbro Ring-intrusion
Inner Cross-cutting Bytownite Gabbro (Cuillin Centre: Unit D)
Druim nan Ramh Bytownite Gabbro Zone D2
Inner Cross-cutting Bytownite Gabbro, Phase D2
Coruisk Bytownite Gabbro Zone C1
Outer Bytownite Gabbros, Phase 1 (Cuillin Centre: Unit C)
Coruisk Bytownite Gabbro Ring-intrusion
Outer Bytownite Gabbros (Cuillin Centre: Unit C)
Coruisk Bytownite Gabbro Zone C2
Outer Bytownite Gabbros, Phase 2 (Cuillin Centre: Unit C)
Cuillin Centre
Cuillin Centre
Coruisk Bytownite Gabbro Zone C3
Outer Bytownite Gabbros, Phase 3 (Cuillin Centre: Unit C)
NB some of the numbered units are separate intrusions (A & P),
whereas others are merely zones
Garbh-choire Peridotite Intrusion P1
Layered Peridotites, P1
Garbh-choire Peridotite Intrusion P2
Layered Peridotites, P2 (Cuillin Centre)
Garbh-choire Peridotite Intrusion P3
Garbh-choire Peridotite Intrusion-swarm
Layered Peridotites (Cuillin Centre)
Layered Peridotites, P3 (Cuillin Centre)
Garbh-choire Peridotite Intrusion P4
Layered Peridotites, P4 (Cuillin Centre)
Garbh-choire Peridotite Intrusion P5
Layered Peridotites, P5 (Cuillin Centre)
Garbh-choire Peridotite Intrusion P6
Layered Peridotites, P6 (Cuillin Centre)
Cuillin Ridge Bytownite Troctolite Zone B1
Outer Bytownite Troctolites (Cuillin Centre)
Cuillin Ridge Bytownite Troctolite Ring-intrusion
Outer Bytownite Troctolites (Cuillin Centre)
Cuillin Ridge Bytownite Troctolite Zone B2
Outer Bytownite Troctolites, B2 (Cuillin Centre)
Cuillin Ridge Bytownite Troctolite Zone B3
Outer Bytownite Troctolites, B3 (Cuillin Centre)
Outer Corries Olivine-gabbro Intrusion (A1)
Outer Gabbros, A1 (Cuillin Centre)
Outer Corries Gabbro Intrusion-swarm
Outer Gabbros (Cuillin Centre)
An Sgurnan Olivine-microgabbro Intrusions (A2)
Outer Gabbros, A2 (Cuillin Centre)
Gars-bheinn Microgabbro Intrusion (A3)
Outer Gabbros, A3 (Cuillin Centre)
Blaven Granite Intrusion
Blaven Granite (Strath na Creitheach Centre)
Strath na Creitheach Centre
Strath na Creitheach Centre
Ruadh Stac Granite Intrusion
Ruadh Stac Granite (Strath na Creitheach Centre)
Meall Dearg Granite Intrusion
Meall Dearg Granite (Strath na Creitheach Centre)
Strath na Creitheach Vent-complex
Strath na Creitheach Volcaniclastic Rocks



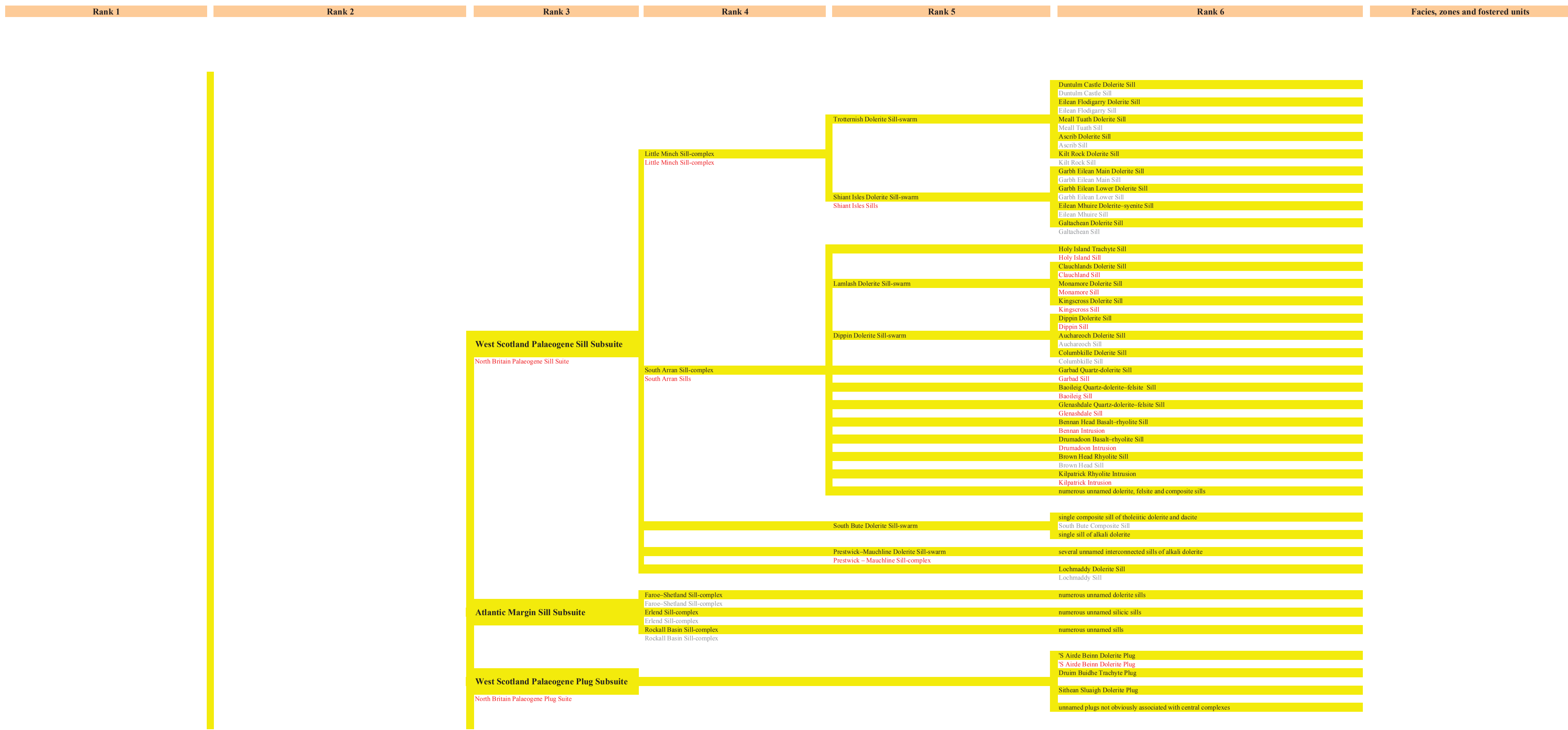
Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Hebrides Subvolcanic Suite
Skye Central Complex
Skye Central Complex
Western Red Hills Centre
Western Red Hills Centre
Eas Mor Granite Ring-dyke
Eas Mor Granite Western Red Hills Centre: Phase 9)
Meall Buidhe Granite Ring-dyke
Meall Buidhe Granite (Western Red Hills Centre: Phase 8)
Maol na Gainmhich Granite Ring-dyke
Maol na Gainmhich Granite (Western Red Hills Centre: Phase 7)
Loch Ainort Granite Ring-intrusion
Loch Ainort Granite (Western Red Hills Centre: Phase 6)
Beinn Dearg Mhor Granite Ring-intrusion
Beinn Deag Mhor Granite (Western Red Hills Centre: Phase 5)
Marsco Granite Ring-dyke
Marsco Granite (Western Red Hills Centre: Phase 4)
Southern Porphyritic Granite Ring-dyke
Southern Porphyritic Granite (Western Red Hills Centre: Phase 3)
Glen Sligachan Granite Intrusion
Glen Sligachan Granite (Western Red Hills Centre: Phase 2)
Glamaig Granite Ring-intrusion
Glamaig Granite (Western Red Hills Centre: Phase 1)
Northern Porphyritic Felsite Intrusion
Northern Porphyritic Felsite (Skye Western Red Hills Centre)
Marsco Hybrid Ring-dyke
Marsco Hybrids (Skye Western Red Hills Centre)
Marsco Summit Gabbro Intrusion
Marsco Summit Gabbro (Skye Western Red Hills Centre)
Eastern Red Hills Centre
Eastern Red Hills Centre
Beinn na Caillich Granite Ring-intrusion
Ben a Caillich Granite (Skye Eastern Red Hills: Phase 5)
Outer Granite Pluton
Outer Granite
Creag Strollamus Granite Intrusion
Creag Strollamus Granite (Skye Eastern Red Hills Centre: Phase 4)
Beinn an Dubhaich Granite Intrusion
Beinn an Dubhaich Granite (Skye Eastern Red Hills Centre: Phase 3)
Beinn na Cro Granite Intrusion
Beinn na Cro Granite (Skye Eastern Red Hills Centre: Phase 2)
Glas Bheinn Mhor Granite Ring-intrusion
Glas Bheinn Mhor Granite (Skye Eastern Red Hills Centre: Phase 1)
Broadford Gabbro Intrusion
Broadford Gabbro (Skye Eastern Red Hills Centre)
Beinn na Cro Gabbro Intrusion
Beinn na Cro Gabbro (Skye Eastern Red Hills Centre)
Kilchrist Hybrid Intrusion-swarm
Kilchrist Hybrids (Skye Eastern Red Hills Centre)
several unnamed small intrusions of hybrid rock
Kilchrist Intrusion-breccia Vent-swarm
Kilchrist Pyroclastic Rocks (Skye Eastern Red Hills Centre)
several coalescing vents with clasts of basaltic and sedimentary rock
Raasay Granite Sill
Raasay Granite
Scalpay Granite Intrusion
Scalpay Granite
An Sithean Granite Intrusion
An Sithean Granite
many unnamed composite sheets of basaltic-andesite and rhyolite
many unnamed sheets of granite and microgranite
many unnamed intrusions of gabbro and dolerite
many unnamed intrusions and/or vent fills of volcaniclastic breccia
Fionn Choire Formation (Skye Lava Group)
Fionn Choire Formation
several basaltic lavas and beds of volcaniclastic rock (Skye Lava Group)
Lewisian Gneiss Complex
Lewisian Gneiss Complex

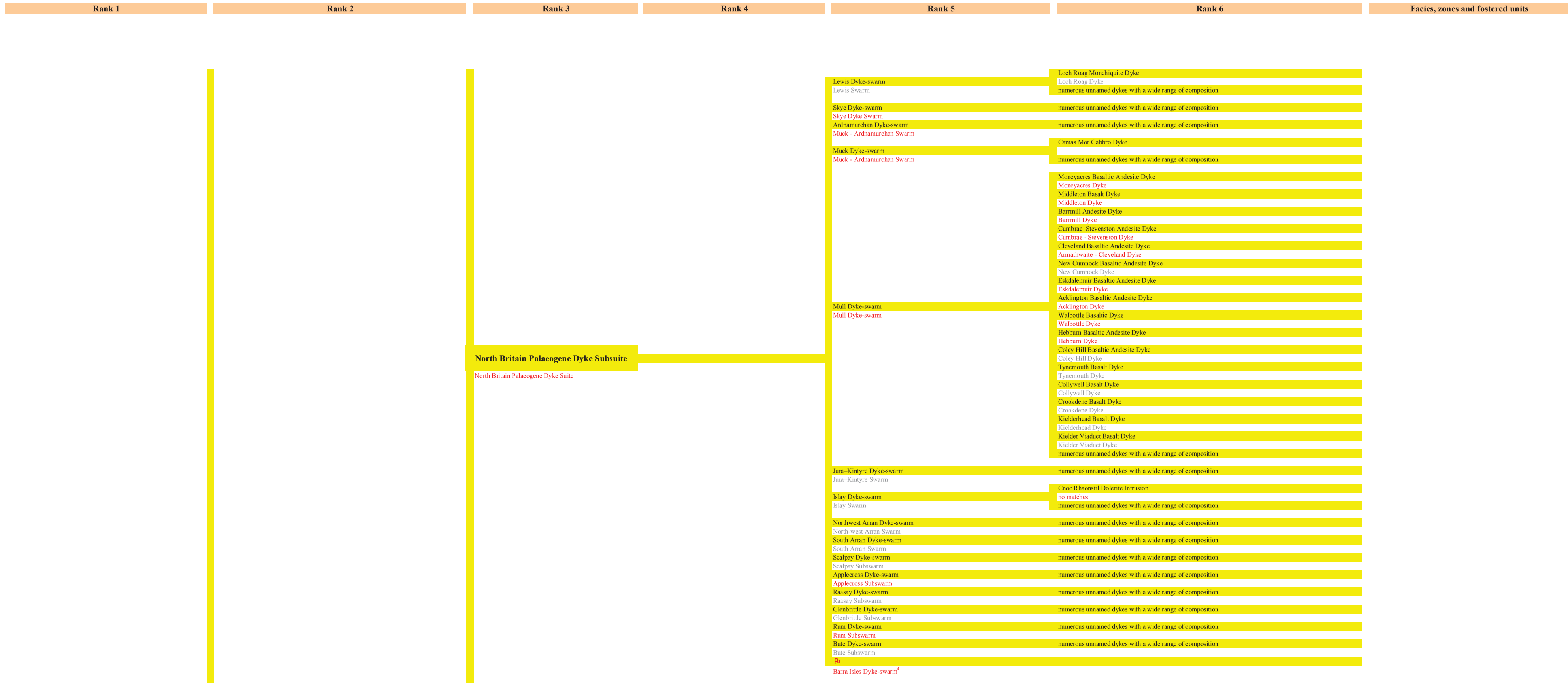

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
many small intrusive and extrusive units, mostly unnamed
Papadil Microgranite Intrusion
Papadil Granite
Eigg Lava Formation
Eigg Lava Formation
Southern Mountains Vent-complex
Southern Mountain Zone
Coire Dubh Breccias[2]
Coire Dubh Breccias
Broadford Beds Formation
Broadford Beds Formation
Torridon Group
Torridon Group
Lewisian Gneiss Complex
Lewisian Gneiss Complex
many small intrusive and extrusive units, mostly unnamed
Long Loch Microgranite Intrusion
Long Loch Granite
Northern Marginal Vent-complex
Northern Marginal Zone
Am Mam Magmatic-Breccia Intrusion-swarm
Northern Marginal Zone, Am Mam Breccias
several intrusions of magmatic breccia focussed upon the Main Ring-fault
Coire Dubh Breccias[2]
Coire Dubh Breccias
Torridon Group
Torridon Group
Lewisian Gneiss Complex
Lewisian Gneiss Complex
Ruinsival Mafic Zone
Ruinsival Member
Rum Central Complex
Rum Central Complex
Central Mafic Intrusion
Long Loch Mafic Zone
Long Loch Member
Dornabac Mafic Zone
Dornabac Member
Harris Bay Mafic Zone
Harris Bay Member
Rum Layered Centre
Rum Layered Suite
Western Layered Mafic Intrusion
Western Intrusion (Rum Layered Suite)
Transitional Mafic Zone
Transitional Member
Ard Meall Mafic Zone
Ard Meall Member
Eastern Layered Mafic Intrusion
Eastern Intrusion (Rum Layered Suite)
Layered mafic units 1 - 16
Eastern Layered Intrusion, units 1 - 15 (Rum Layered Suite)
Western Rum Granite Pluton
Western Granite
Microgranite facies
Western Granite, fine-grained phase
Granite facies
Western Granite, medium-grained phase
West Sgaorishal Peridotite Plug
West Sgaorishal Plug
East Sgaorishal Peridotite Plug
East Sgaorishal Plug
Glen Shellesder Peridotite Plug
Glen Shellesder Plug
North Rum Mafic–ultramafic Plug-swarm
Kinloch Glen Peridotite Plug
Kinloch Glen Plug
Kinloch Road Peridotite Plug
Kinloch Road Plug
many unnamed mafic and ultramafic plugs
Rum Mafic Cone-sheet-swarm
many unnamed mafic sheets, mostly cone-sheets
Blackstones Bank Central Complex
Blackstones Band Igneous Complex
several unnamed and unmapped intrusions, mainly of gabbro, with granite, microgranite and tuffisite; thermally metamorphosed Mesozoic sedimentary rocks include calcsilicate hornfels
Carlingford Basic Cone-sheet-swarm
numerous unnamed basic cone-sheets
Carlingford Granite Ring-intrusion
Carlingford granophyre
Carlingford Vent-swarm
several unnamed, mainly basaltic vents
Carlingford Central Complex[1]
Carlingford Complex
Slieve Foye Gabbro Pulse 4
Slieve Foye Gabbro Pulse 3
Slieve Foye Gabbro Intrusion
Carlingford later gabbros
Slieve Foye Gabbro Pulse 2
Slieve Foye Gabbro Pulse 1
Trumpet Hill Gabbro Plug
Carlingford Gabbro Plug-swarm
Carlingford early gabbros
Ballymakellet Bridge Gabbro Plug
unnamed units of basalt and hawaiite lava (Antrim Lava Group)


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Slieve Gullion Central Complex
Slieve Gullion Complex
Slieve Gullion Sheet-complex
Slieve Gullion Layered Complex; Slieve Gullion Central Complex
Slieve Gullion Gabbro Plug-swarm
Camlough Dolerite plug
several unnamed plugs of dolerite and gabbro
Anglesey Mountain Microgranite Intrusion
Anglesey Mountain Microgranite
Lislea Granite Ring-dyke
Lislea Granophyre
Slieve Gullion Gabbro–granite Sheet-swarm
several unnamed gabbro and dolerite sheets
several unnamed granite sheets
Foughill Gabbro–granite Sheet-swarm
Foughill Complex
several unnamed gabbro and dolerite sheets
Foughill Complex Dolerites
several unnamed granite sheets
Foughill Complex Granophyres
Carrickarnan Gabbro–granite Sheet-swarm
Carrickarnan Complex
several unnamed gabbro and dolerite sheets
Carrickarnan Complex Dolerites
several unnamed granite sheets
Carrickarnan Complex Granophyres
Cam Lough Granodiorite Pluton (Newry Cluster)
Newry Granodiorite Complex Phase 1
Slieve Gullion Ring-complex
Slieve Gullion Ring-dyke, Slieve Gullion Ring Complex
Forkhill Pyroclastic-breccia Vent-swarm
Forkhill vents
several unnamed pyroclastic-breccia vents
Camlough Breccia Zone
Camlough Breccias
Slieve Gullion Ring-swarm
Slieve Gullion Microgranite Ring-dyke
Slieve Gullion Ring-dyke, porphyritic granophyre
porphyritic granophyre facies
several rhyolite intrusions of varying size and shape
Inner Felsite/Slievebrack Felsite
Carrive Rhyolite Ring-dyke
Outer Felsite/Carrive Felsite
unnamed units of basalt and trachyte lava (Antrim Lava Group)
Mourne Mountains Subsuite
Mourne Mountains Granite
Eastern Mourne Centre
Eastern Mourne Centre
Mourne G1 Granite Intrusion
Mourne Mountains Granite (G1)
Mourne G2 Outer Granite Ring-intrusion
Mourne Mountains Granite (G2)
G2 Outer Mafic Granite Facies
G2 Outer Mafic Facies
G2 Outer Granite Facies
G2 Outer Normal Portion
G2 Inner Coarse Granite Facies
G2 Inner Coarse Portion
Mourne G2 Inner Granite Ring-intrusion
Mourne Mountains Granite (G2)
G2 Inner Medium Granite Facies
G2 Inner fine/medium area
G2 Inner Fine Granite Facies
G2 Inner fine-only area
G3 Very Coarse Granite Facies
G3 very coarse area
Mourne G3 Granite Ring-intrusion
Mourne Mountains Granite (G3)
G3 Medium–coarse Granite Facies
G3 medium/coarse area
G3 Fine Granite Facies
G3 Major fine-grained Portion
Eastern Mourne Cone-sheet-swarm
Glasdrumman Basalt–rhyolite Cone-sheet
Glasdrumman Cone Sheet
a few unnamed basalt–rhyolite cone-sheets
Western Mourne Centre
Western Mourne Centre
Mourne G4 Granite Ring-intrusion
Mourne Mountains Granite (G4)
G4 Marginal Fine Granite Facies
G4 Fine-grained marginal granite
G4 Medium Granite Facies
G4 Finer medium- to medium-grained granite
G4 Coarse Granite Facies
G4 Coarse-grained granite
Mourne G5 Microgranite Ring-intrusion
Mourne Mountains Granite (G5)
G5 Mafic-poor Microgranite Facies
G5 Mafic-poor drusy microgranite
G5 Mafic-poor Granite Facies
G5 Mafic-poor granite
G5 Mafic-rich Microgranite Facies
G5 Mafic-rich microgranite
G5 Mafic-rich Granite Facies
G5 Mafic-rich granophyre

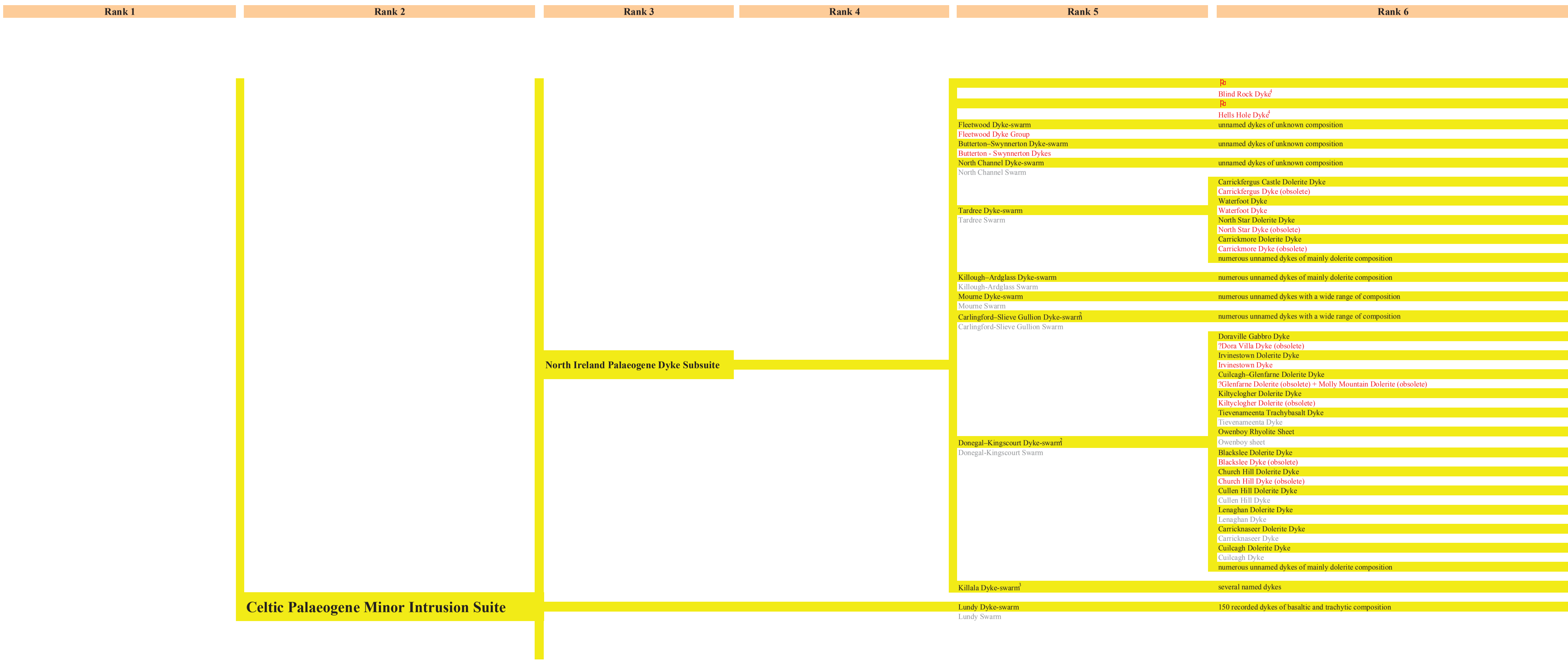

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Arran Subsuite
North Arran Granite Pluton
Northern Granite Pluton, Arran
North Arran Outer Granite Intrusion
Arran Northern Granite (Outer Granite)
North Arran Inner Granite Intrusion
Arran Northern Granite (Inner Granite)
several unnamed gabbroic ring-intrusions
several unnamed granitic ring-intrusions
Central Arran Ring-complex
Arran Central Complex
several small unnamed intrusions of hybrid dioritic rocks
many unnamed minor intrusions of basic, intermediate and silicic composition
various extrusive units
Tighvein Quartz-dolerite-diorite Sill
Tighvein Sills (South Arran)
Tighvein Centre
Tighvein complex
several unnamed granite, microgranite, rhyolitic and hybrid intrusions, possibly ring-dykes
several local unnamed basaltic and rhyolitic dykes
Ailsa Craig Microgranite Pluton
Ailsa Craig Microgranite
Hirta Cone-sheet-swarm
Hirta Cone-sheet-swarm
numerous unnamed basic, silicic and composite cone-sheets
Conachair Granite Pluton
Conachair Granite Pluton
Glen Bay Granite Intrusion
Glen Bay Granite Intrusion
Glen Bay Gabbro Intrusion
Glen Bay Gabbro Intrusion
Cambir Dolerite Sheet-swarm
Cambir Dolerite Sheet-swarm
several unnamed sheets of dolerite
St Kilda Western Gabbro Pluton
St Kilda Western Gabbro Pluton
Soay Basic Magmatic-breccia Intrusion
Soay Basic Magmatic-breccia Intrusion
St Kilda Centre
St Kilda Centre
Glacan Mor Basic Magmatic-breccia Intrusion
Glacan Mor Basic Magmatic-breccia Intrusion
Boreray Basic Magmatic-breccia Intrusion
Boreray Basic Magmatic-breccia Intrusion
Abhainn Mhor Gabbro Intrusion
Abhainn Mhor Gabbro Intrusion
Mullach Geal Gabbro Intrusion
Mullach Geal Gabbro Intrusion
several unnamed microgranite intrusions
Mullach Sgar Dolerite–microgranite Intrusion-swarm
Mullach Sgar Dolerite–microgranite Intrusion-swarm
several unnamed microdiorite intrusions
several unnamed dolerite intrusions


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Atlantean Supersuite
Rockall Suite
Anton Dohrn Centre
Anton Dohrn Centre
Brendan (Shetland) Centre
Brendan (Shetland) Centre
Brendan (Ireland) Centre
Brendan (Ireland) Centre
Darwin Centre
Darwin Centre
Donn Centre
Donn Centre
Drekaegya Centre
Drekaegya Centre
Drol Centre
Drol Centre
East George Bligh Centre
East George Bligh Centre
Eriador Centre
Eriador Centre
Erland Centre
Erland Centre
Faroe Bank Centre
Faroe Bank Centre
Faroe Bank Channel Knoll Centre
Faroe Bank Channel Knoll Centre
Fraenir Centre
Fraenir Centre
Geikie Centre
Geikie Centre
Gondor Centre
Gondor Centre
Hebrides Terrace Centre
Hebrides Terrace Centre
Lyonesse Centre
Lyonesse Centre
Mammal Centre
Mammal Centre
Mentone Centre
Mentone Centre
Owlsgard Centre
Owlsgard Centre
Regin Smidur Centre
Regin Smidur Centre
Rockall Centre
Rockall Centre
Rockall Granite Pluton
Rockall Granite
Helen's Reef Microgabbro Intrusion
Helen's Reef Microgabbro
Rohan Centre
Rohan Centre
Rosemary Bank Centre
Rosemary Bank Centre
Sandarro Centre
Sandarro Centre
Sandastre Centre
Sandastre Centre
Sigmundur Centre
Sigmundur Centre
Sula Sgeir Centre
Sula Sgeir Centre
Swithin Centre
Swithin Centre
West Erland Centre
West Erland Centre
West George Bligh Centre
West George Bligh Centre
Lundy Granite Pluton
Lundy Island Intrusion
Lundy G1 Granite Intrusion
Granite G1 (upper)
Lundy G2 Granite Intrusion
Granite G2 (lower)
Tardree Volcano-complex
Tardree Rhyolite Complex
Sandy Braes Rhyolitic Vent
Sandy Braes Vent (obsolete)
Tardree Rhyolite Formation (Antrim Lava Group)


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Duntulm Castle Dolerite Sill
Duntulm Castle Sill
Eilean Flodigarry Dolerite Sill
Eilean Flodigarry Sill
Trotternish Dolerite Sill-swarm
Meall Tuath Dolerite Sill
Meall Tuath Sill
Ascrib Dolerite Sill
Ascrib Sill
Little Minch Sill-complex
Kilt Rock Dolerite Sill
Little Minch Sill-complex
Kilt Rock Sill
Garbh Eilean Main Dolerite Sill
Garbh Eilean Main Sill
Garbh Eilean Lower Dolerite Sill
Shiant Isles Dolerite Sill-swarm
Garbh Eilean Lower Sill
Shiant Isles Sills
Eilean Mhuire Dolerite–syenite Sill
Eilean Mhuire Sill
Galtachean Dolerite Sill
Galtachean Sill
Holy Island Trachyte Sill
Holy Island Sill
Clauchlands Dolerite Sill
Clauchland Sill
Lamlash Dolerite Sill-swarm
Monamore Dolerite Sill
Monamore Sill
Kingscross Dolerite Sill
Kingscross Sill
Dippin Dolerite Sill
Dippin Sill
Dippin Dolerite Sill-swarm
Auchareoch Dolerite Sill
West Scotland Palaeogene Sill Subsuite
Auchareoch Sill
Columbkille Dolerite Sill
North Britain Palaeogene Sill Suite
Columbkille Sill
South Arran Sill-complex
Garbad Quartz-dolerite Sill
South Arran Sills
Garbad Sill
Baoileig Quartz-dolerite–felsite Sill
Baoileig Sill
Glenashdale Quartz-dolerite–felsite Sill
Glenashdale Sill
Bennan Head Basalt–rhyolite Sill
Bennan Intrusion
Drumadoon Basalt–rhyolite Sill
Drumadoon Intrusion
Brown Head Rhyolite Sill
Brown Head Sill
Kilpatrick Rhyolite Intrusion
Kilpatrick Intrusion
numerous unnamed dolerite, felsite and composite sills
single composite sill of tholeiitic dolerite and dacite
South Bute Dolerite Sill-swarm
South Bute Composite Sill
single sill of alkali dolerite
Prestwick–Mauchline Dolerite Sill-swarm
several unnamed interconnected sills of alkali dolerite
Prestwick – Mauchline Sill-complex
Lochmaddy Dolerite Sill
Lochmaddy Sill
Faroe–Shetland Sill-complex
numerous unnamed dolerite sills
Faroe–Shetland Sill-complex
Atlantic Margin Sill Subsuite
Erlend Sill-complex
numerous unnamed silicic sills
Erlend Sill-complex
Rockall Basin Sill-complex
numerous unnamed sills
Rockall Basin Sill-complex
'S Airde Beinn Dolerite Plug
'S Airde Beinn Dolerite Plug
Druim Buidhe Trachyte Plug
West Scotland Palaeogene Plug Subsuite
North Britain Palaeogene Plug Suite
Sithean Sluaigh Dolerite Plug
unnamed plugs not obviously associated with central complexes



Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
North Britain Palaeogene Dyke Subsuite
North Britain Palaeogene Dyke Suite
Lewis Dyke-swarm
Lewis Swarm
Loch Roag Monchiquite Dyke
Loch Roag Dyke
numerous unnamed dykes with a wide range of composition
Skye Dyke-swarm
Skye Dyke Swarm
numerous unnamed dykes with a wide range of composition
Ardnamurchan Dyke-swarm
Muck - Ardnamurchan Swarm
numerous unnamed dykes with a wide range of composition
Muck Dyke-swarm
Muck - Ardnamurchan Swarm
Camas Mor Gabbro Dyke
numerous unnamed dykes with a wide range of composition
Mull Dyke-swarm
Mull Dyke-swarm
Moneyacres Basaltic Andesite Dyke
Moneyacres Dyke
Middleton Basalt Dyke
Middleton Dyke
Barrmill Andesite Dyke
Barrmill Dyke
Cumbrae–Stevenston Andesite Dyke
Cumbrae - Stevenston Dyke
Cleveland Basaltic Andesite Dyke
Armathwaite - Cleveland Dyke
New Cumnock Basaltic Andesite Dyke
New Cumnock Dyke
Eskdalemuir Basaltic Andesite Dyke
Eskdalemuir Dyke
Acklington Basaltic Andesite Dyke
Acklington Dyke
Walbottle Basaltic Dyke
Walbottle Dyke
Hebburn Basaltic Andesite Dyke
Hebburn Dyke
Coley Hill Basaltic Andesite Dyke
Coley Hill Dyke
Tynemouth Basalt Dyke
Tynemouth Dyke
Collywell Basalt Dyke
Collywell Dyke
Crookdene Basalt Dyke
Crookdene Dyke
Kielderhead Basalt Dyke
Kielderhead Dyke
Kielder Viaduct Basalt Dyke
Kielder Viaduct Dyke
numerous unnamed dykes with a wide range of composition
Jura–Kintyre Dyke-swarm
Jura–Kintyre Swarm
numerous unnamed dykes with a wide range of composition
Islay Dyke-swarm
Islay Swarm
Cnoc Rhaonstil Dolerite Intrusion
no matches
numerous unnamed dykes with a wide range of composition
Northwest Arran Dyke-swarm
North-west Arran Swarm
numerous unnamed dykes with a wide range of composition
South Arran Dyke-swarm
South Arran Swarm
numerous unnamed dykes with a wide range of composition
Scalpay Dyke-swarm
Scalpay Subswarm
numerous unnamed dykes with a wide range of composition
Applecross Dyke-swarm
Applecross Subswarm
numerous unnamed dykes with a wide range of composition
Raasay Dyke-swarm
Raasay Subswarm
numerous unnamed dykes with a wide range of composition
Glenbrittle Dyke-swarm
Glenbrittle Subswarm
numerous unnamed dykes with a wide range of composition
Rum Dyke-swarm
Rum Subswarm
numerous unnamed dykes with a wide range of composition
Bute Dyke-swarm
Bute Subswarm
numerous unnamed dykes with a wide range of composition
Barra Isles Dyke-swarm[4]


Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Celtic Palaeogene Minor Intrusion Suite
North Ireland Palaeogene Dyke Subsuite
Blind Rock Dyke
Hells Hole Dyke
Fleetwood Dyke-swarm
Fleetwood Dyke Group
unnamed dykes of unknown composition
Butterton–Swynnerton Dyke-swarm
Butterton - Swynnerton Dykes
unnamed dykes of unknown composition
North Channel Dyke-swarm
North Channel Swarm
unnamed dykes of unknown composition
Tardree Dyke-swarm
Tardree Swarm
Carrickfergus Castle Dolerite Dyke
Carrickfergus Dyke (obsolete)
Waterfoot Dyke
Waterfoot Dyke
North Star Dolerite Dyke
North Star Dyke (obsolete)
Carrickmore Dolerite Dyke
Carrickmore Dyke (obsolete)
numerous unnamed dykes of mainly dolerite composition
Killough–Ardglass Dyke-swarm
Killough-Ardglass Swarm
numerous unnamed dykes of mainly dolerite composition
Mourne Dyke-swarm
Mourne Swarm
numerous unnamed dykes with a wide range of composition
Carlingford–Slieve Gullion Dyke-swarm
Carlingford-Slieve Gullion Swarm
numerous unnamed dykes with a wide range of composition
Donegal–Kingscourt Dyke-swarm
Donegal-Kingscourt Swarm
Doraville Gabbro Dyke
?Dora Villa Dyke (obsolete)
Irvinestown Dolerite Dyke
Irvinestown Dyke
Cuilcagh–Glenfarne Dolerite Dyke
?Glenfarne Dolerite (obsolete) + Molly Mountain Dolerite (obsolete)
Kiltyclogher Dolerite Dyke
Kiltyclogher Dolerite (obsolete)
Tievenameenta Trachybasalt Dyke
Tievenameenta Dyke
Owenboy Rhyolite Sheet
Owenboy sheet
Blackslee Dolerite Dyke
Blackslee Dyke (obsolete)
Church Hill Dolerite Dyke
Church Hill Dyke (obsolete)
Cullen Hill Dolerite Dyke
Cullen Hill Dyke
Lenaghan Dolerite Dyke
Lenaghan Dyke
Carricknaseer Dolerite Dyke
Carricknaseer Dyke
Cuilcagh Dolerite Dyke
Cuilcagh Dyke
numerous unnamed dykes of mainly dolerite composition
Killala Dyke-swarm
several named dykes
Lundy Dyke-swarm
Lundy Swarm
150 recorded dykes of basaltic and trachytic composition

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and fostered units
		Antrim Plug-and-vent Subsuite		Donegore Dolerite Plug-swarm Donegore Plugs (obsolete)	unnamed dolerite plugs	
					Slemish Dolerite Plug Slemish Plug	
					Tievebulliagh Dolerite Plug Tievebulliagh Plug (obsolete)	
					Scawt Hill Dolerite Plug Scawt Hill Plug	
					Carneal Dolerite Plug Carneal Plug (obsolete)	
					Ballycraigy Dolerite Plug Ballycraigy Plug (obsolete)	
					Tieveragh Dolerite Plug Tieveragh Plug (obsolete)	
					Glassmullen Dolerite Plug Glassmullen Plug	
					Corkey Rocks Dolerite Plug and Sill Corkey Rocks Plug	
					Ballygalley Head Dolerite Plug Ballygalley Head Plug	
					Brockley Dolerite Plug Brockley Plug	
					Skeagh Dolerite Plug Skeagh Plug	
					Doonbought Dolerite Plug Doonbought Plug	
					Craigcluggan Dolerite Plug Craigcluggan Plug	
					Skerrywhirry Dolerite Plug Skerrywhirry Plug	
					Carnmoney Dolerite Plug Carnmoney Plug	
					Trosk Dolerite Plug Trosk Plug	
					Skerry Rock Dolerite Plug Skerry Rock [Igneous Intrusion]	
					Carrickbrackan Dolerite Plug Carrickabrackan Plug	
					Bendoo Dolerite Plug Bendoo Plug	
				Lacknakilly Vent-swarm	a few unnamed basaltic vents	
					Lacknakilly Dolerite Plug Lacknakilly Plug	
				Kinbane Vent-swarm Kinbane Vent	several unnamed basaltic vents	
					several unnamed dolerite intrusions	
				White Rocks Vent-swarm White Rocks vents	several unnamed basaltic vents	
					Carrickarade Basaltic Vent Carrickarade Vent	
					Templepatrick Rhyolite Intrusion Templepatrick Rhyolite	
					Ballygowan Rhyolite Intrusion	
					Shane's Hill Rhyodacite Intrusion Shane's Hill Rhyodacite	
		Antrim Sills Subsuite			Scrabo Dolerite Sill Scrabo Sill	
					Fair Head Dolerite Sill Fair Head Sill	
					Binnagapple Dolerite Sill Binnagapple Sill	
					Knocksoghey Dolerite Sill Knocksoghey Sill	
					Portrush Dolerite Sill Portrush Sill	
					Magilligan Dolerite Sill Magilligan Sill	
					Dundonald Dolerite Sill Dundonald Sill	
					Ballyrainey Dolerite Sill Ballyrainey Sill	
					Ardtrea Dolerite Sill Ardtrea Sill	
					Ballyalton Dolerite Sill Ballyalton Sill	
					Garrison Dolerite Sill Garrison Sill / Sliegallow Dolerite (2 entries)	
					Ballygomartin Dolerite Sill Ballygomartin Sill	
					Gobb Dolerite Sill Gobb Sill	
					Kingscourt Dolerite Sill[3] Kingscourt Sill	

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and fostered units

Rank 2

1

Rank 3

1 Although the Carlingfom Central Complex is located entirely in the Republic of Ireland, it is one of four closely associated Palaeogene central complexes and centres and hence is included here for completeness.

Rank 5

1 Significant parts of the Forkhill breccias have been re-interpreted as landslide deposits resulting from the collapse of caldera walls (Stevenson et al., 2008)

2 partly in the Republic of Ireland

3 entirely within the Republic of Ireland. Included here for completeness.

4 Where is it?

Rank 6

1 The Slieve Gullion Microgranite Ring-dyke has been re-interpreted as an original horizontal sheet, domed upwards above the later sheet-complex (Stevenson et al., 2008)

2 Large parts of the rhyolite ring-swarm have been re-interpreted as extrusive ignimbrite flows (Stevenson et al., 2008)

3 Entirely within the Republic of Ireland but gives its name to the Donegal - Kingscourt Dyke-swarm, which crosses Co Fermanagh

4 Where is it?

Facies, zones and fostered units

1 The Coire Mor Breccias are of uncertain origin. Although they could include intrusive units, by analogy with similar lithologies elsewhere in the Hebridean Igneous Province they are most likely to be extrusive with a high proportion of volcaniclastic sedimentary material.

2 Although they might include some explosion breccias, the Coire Dubh Breccias are mainly sedimentary breccias composed almost entirely of clasts and matrix of sedimentary rock fragments. They probably originated mainly as collapse breccias formed as landslips off caldera walls or by sedimentary reworking of such deposits.

References

The British Geological Survey holds most of the references listed below, and copies may be obtained via the library service subject to copyright legislation (contact libuser@bgs.ac.uk for details). The library catalogue is available at: http://geolib.bgs.ac.uk.

BROWN, P E, RYAN, P D, SOPER, N J, and WOODCOCK, N H. 2008. The Newer Granite problem revisited: a trans-tensional origin for the Early Devonian Trans-Suture Suite. *Geological Magazine*, Vol. 145, 235–256.

CHADWICK, R A, JACKSON, D I, BARNES, R P, KIMBELL, G S, JOHNSON, H, CHIVERRELL, R C, THOMAS, G S P, JONES, N S, RILEY, N J, PICKETT, E A, YOUNG, B, HOLLIDAY, D W, BALL, D F, MOLYNEUX, S G, LONG, D, POWER, G M, and ROBERTS, D H. 2001. Geology of the Isle of Man and its offshore areas. *British Geological Survey Research Report*, RR/01/06, 143 pp.

EMELEUS, C H, and BELL, B R. 2005. *British Regional Geology: the Palaeogene volcanic districts of Scotland* (Fourth edition) (Nottingham: British Geological Survey.)

FLOYD, P A, EXLEY, C S, and STYLES, M T. 1993. Igneous rocks of South-West England. *Geological Conservation Review Series*, No. 5. (Peterborough: Joint Nature Conservation Committee.)

GILLESPIE, M R, STEPHENSON, D, and MILLWARD, D. 2008. BGS classification of lithodemic units: proposals for classifying units of intrusive rock. *British Geological Survey Research Report*, RR/08/05.

GILLESPIE, M R, and STYLES, M T. 2010. BGS Rock Classification Scheme Volume 1 (2010 revision): Classifying and naming igneous materials. *British Geological Survey Research Report*, RR/10/04.

HIGHTON, A J. 1999. Introduction, Late Silurian and Devonian granitic intrusions of Scotland. 397–405 *in* Caledonian igneous rocks of Great Britain. *Geological Conservation Review Series*, No. 27. (Peterborough: Joint Nature Conservation Committee.)

KIMBELL, G S, and STONE, P. 1995. Crustal magnetization variations across the Iapetus Suture. *Geological Magazine*, Vol. 132, 599–609.

MILLWARD, D. 2002. Early Palaeozoic magmatism in the English Lake District. *Proceedings of the Yorkshire Geological Society*, Vol. 54, 65–93.

MITCHELL, W I. (editor) 2004. *The Geology of Northern Ireland — Our natural foundation* (Second Edition). (Belfast: Geological Survey of Northern Ireland.)

MYKURA, W. 1976. *British regional geology: Orkney and Shetland*. (Edinburgh: HMSO for the Institute of Geological Sciences.)

SHAND, P. 1989. Late Caledonian magma genesis in Southern Scotland. Unpublished PhD thesis, University of Aston, Birmingham.

SPEIGHT, J M, SKELHORN, R R, SLOAN, T, and KNAAP, R J. 1982. The dyke swarms of Scotland. 449–460 in *Igneous rocks of the British Isles.* SUTHERLAND, D S (Editor). (Chichester: Wiley Interscience.)

STEPHENSON, D, and GOULD, D. 1995. *British regional geology: the Grampian Highlands* (Fourth edition). (London: HMSO for the British Geological Survey.)

STEPHENSON, D, BEVINS, R E, MILLWARD, D, HIGHTON, A J, PARSONS, I, STONE, P, and WADSWORTH, W J. 1999. Caledonian igneous rocks of Great Britain. *Geological Conservation Review Series*, No. 17. (Peterborough: Joint Nature Conservation Committee.)

STEPHENSON, D, LOUGHLIN, S C, MILLWARD, D, WATERS, C N, and WILLIAMSON, I T. 2003. Carboniferous and Permian Igneous Rocks of Great Britain North of the Variscan Front. *Geological Conservation Review Series*, No. 27. (Peterborough: Joint Nature Conservation Committee.)

UPTON, B G J, STEPHENSON , D, and ELLAM, R M. 2007. Silica-undersaturated trachytic rocks of central Scotland. Scottish Journal of Geology, Vol. 43, 143–153.

Table 1 Supporting information for units classified at ranks 1 to 3 of the Caledonian Supersuite.

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
1	Caledonian Supersuite	All units of intrusive igneous rock that formed as a direct or indirect consequence of the Caledonian Orogeny. The Caledonian Orogeny encompasses all of the tectonic and magmatic events arising from closure of the Iapetus Ocean (Stephenson et al. 1999). 'Caledonian' events include accretion or obduction of oceanic crust and island arc material onto flanking continental margins; subduction beneath the margins; and ultimately continent-continent collision, uplift, and extensional collapse. The orogeny encompasses many identifiably separate 'events', most notably the Early to Mid Ordovician peak of deformation and metamorphism in the Scottish Highlands, termed the Grampian Event by many authors, and the mid to late Silurian deformation referred to widely as the Scandian Event. The brief (post-Scandian, Early to Mid Devonian) Acadian Event mainly affected northern England and Wales, but was coeval with some Caledonian plutons in southern Scotland. Acadian intrusions are therefore included within the Caledonian Supersuite for convenience.	(i) The association is geologically meaningful, uniting all intrusive lithodemic units formed as a direct or indirect consequence of the Caledonian Orogeny. (ii) There is an historical precedent, the Caledonian Supersuite having long been regarded as a lithodemic unit.	A well established, widely used name (with a few variations, including Caledonian Igneous Supersuite).
2	Shetland Islands Suite	All components of the Caledonian Supersuite that occur on the Shetland islands.	(i) Lithodemic and petrogenetic links to lithodemic units on the Scottish mainland are unclear and unproved, so subsuming Shetland intrusions within another Rank 2 or Rank 3 lithodemic unit(s) is unsafe. (ii) The Shetland intrusions differ in some significant respects (including lithological range and, in some cases, age) from those on the mainland. (iii) The intrusions have a clear geographical association. (iv) There is an historical precedent, a 'Shetland Granitic Suite' already existing in the BGS Lexicon of Named Rock Units.	The formal name is a modified version of the established name Shetland Granitic Suite.
2	Scottish Highlands Ordovician Suite	All components of the Caledonian Supersuite that occur within the Northern Highlands and Grampian Highlands regions and formed broadly in association with the Grampian Event. This is the older (Ordovician) of the two main tectonothermal events of the Caledonian Orogeny in Scotland.	(i) The association is geologically meaningful, uniting all intrusions formed in association with a defined tectonothermal event (the Grampian Event). (ii) There is a clearly defined geographical association, all the intrusions occur within the Northern Highlands and Grampian Highlands regions. (iii) The spatial limits (the coast and Highland Boundary Fault) are well defined (the Boundary Fault is also a terrane boundary). (iv) Most units display a distinctive field character (pervasive deformation).	This is a new lithodemic unit, so there is no direct precedent. The name clearly distinguishes this unit, comprising intrusions of known or inferred Ordovician age formed in association with the Grampian Event, from the Scottish Highlands Silurian Suite, comprising intrusions that also occur in the Scottish Highlands, but formed broadly in association with the Scandian Event. The alternative names Scottish Highlands Deformed Suite, Scottish Highlands Grampian Suite, and Scottish Highlands Older Suite are considered inferior.
2	Scottish Highlands Silurian Suite	All components of the Caledonian Supersuite that occur within the Northern Highlands and Grampian Highlands regions and formed broadly in association with the Scandian Event. This is the younger (Silurian) of the two main tectonothermal events of the Caledonian Orogeny in Scotland.	(i) The association is geologically meaningful, uniting all intrusions formed in association with a defined tectonothermal event (the Scandian Event). (ii) There is a clearly defined geographical association, all the intrusions occurring within the Northern Highlands and Grampian Highlands regions. (iii) The spatial limits (the coast and Highland Boundary Fault) are well defined (the Highland Boundary Fault is also a terrane boundary). (iv) The intrusions have a field character (generally not pervasively deformed) that distinguishes them from units of the Scottish Highlands Ordovician Suite (though this is not true in every case). (v) This lithodemic unit unites several major, well-established lithodemic units (referred to previously as suites but classified here as subsuites) that share a natural association, but have not previously been grouped lithodemically.	This is a new lithodemic unit, so there is no direct precedent. The name clearly distinguishes this unit, comprising intrusions of known or inferred Silurian age (and a very small proportion that are known to be of Early Devonian age) formed broadly in association with the Scandian Event, from the Scottish Highlands Ordovician Suite, comprising intrusions that also occur in the Scottish Highlands, but formed broadly in association with the Grampian Event. The alternative names Scottish Highlands Non-deformed Suite, Scottish Highlands Scandian Suite, and Scottish Highlands Younger Suite are considered inferior.
2	Scottish Lowlands Suite	All components of the Caledonian Supersuite that occur within the Midland Valley of Scotland and the Southern Uplands region north of the Moniaive Shear zone.	(i) The association is geologically meaningful, uniting intrusions within a defined area that are of similar petrological character and age (Early Devonian), suggesting a common origin. (ii) Spatial limits are well defined by geographical and terrane boundaries. (iii) There are too few children to merit two suites separated by the Southern Uplands Fault terrane boundary (i.e. a Midland Valley Suite and a Southern Uplands Suite). (iv) The major intrusions are older than, and petrologically distinct from, the nearby Galloway Subsuite (most notably in being wholly of I-type character). (v) The Moniaive Shear zone is thought to be the surface expression of a major discontinuity that extends into the mantle and separates basement of contrasting character (e.g. Highton, 1999; Kimbell and Stone, 1995; Shand, 1989).	This is a new lithodemic unit, so there is no direct precedent. The term Scottish Lowlands is not used elsewhere in the BGS Lexicon of Named Rock Units, and describes clearly the geographical extent of the suite.

Table 1 *Continued.*

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
2	Trans-Suture Suite	All components of the Caledonian Supersuite that occur south of the Moniaive Shear zone in the Southern Uplands region of Scotland and in Northern England (i.e. straddling the Iapetus Suture zone), and formed during the Devonian Period in association with the Acadian Event (Brown et al., 2008). This new lithodemic unit unites two well established units (the former 'Galloway Granitic Suite' and 'Northern England Devonian Plutonic Suite', both now classified as subsuites) that occur on either side of the trace of the Iapetus Suture in the UK.	(i) The association is geologically meaningful, uniting all the intrusions believed to have formed broadly in association with the Acadian Event (Brown et al., 2008). (ii) The intrusions are geographically associated, occurring within about 70 km of the trace of the Iapetus Suture. (iii) The major intrusions are broadly conical or cylindrical plutons, which in England distinguishes them from larger intrusions of the Lake District Suite (which typically have sheet-like geometry; Millward, 2002).	The name Trans-Suture Suite was introduced for these intrusions by Brown et al. (2008).
2	Lake District Suite	All components of the Caledonian Supersuite that occur within the Lake District area and formed during the Ordovician Period.	(i) The intrusions have a strong geographical association. (ii) The major intrusions have a common (sheet-like) geometry. (iii) Within the Lake District area it is important to distinguish intrusions of the Lake District Suite (which are typically sheet-like and believed to be associated genetically with the major Caradoc volcanism) from those of the Trans-Suture Suite (which are conical or cylindrical and believed to be associated with the significantly younger Acadian Event).	This is a new lithodemic unit, so there is no direct precedent. Once the rationalisations arising from this new classification of intrusive units have been completed, the term Lake District will not appear elsewhere in the Lexicon. The term describes clearly the geographical extent of the suite.
2	Central England Suite	All components of the Caledonian Supersuite that occur within central England.	(i) The intrusions have a strong geographical association (restricted to central England). (ii) The intrusions are spatially remote from others of the Caledonian Supersuite. (iii) There are not enough units (and not enough observations?) to justify two or more suites.	This is a new lithodemic unit, so there is no direct precedent. The term Central England is not used elsewhere in the BGS Lexicon of Named Rock units, and describes clearly the geographical extent of the suite.
2	Wales Suite	All components of the Caledonian Supersuite that occur within Wales.	(i) The intrusions have a strong geographical association (restricted to Wales). (ii) The intrusions are spatially remote from others of the Caledonian Supersuite. (iii) Many units share a high-level (sub-volcanic) character at outcrop.	This is a new lithodemic unit, so there is no direct precedent. The term Wales describes clearly the geographical extent of the suite.
2	Isle of Man Suite	All components of the Caledonian Supersuite that occur within the Isle of Man.	(i) The intrusions have a strong geographical association (restricted to the Isle of Man). (ii) The intrusions are spatially remote from others of the Caledonian Supersuite.	This is a new lithodemic unit, so there is no direct precedent. The term Isle of Man clearly describes the geographical extent of the suite.
2	Ireland Ordovician Suite	All components of the Caledonian Supersuite that occur within Ireland (the classification is currently limited to those units that occur in Northern Ireland) and formed broadly in association with the Grampian Event, which is the older (Ordovician) of the two main tectonothermal events of the Caledonian Orogeny (c.f. Scottish Highlands Ordovician Suite).	(i) The association is geologically meaningful, uniting all intrusions formed in association with a defined tectonothermal event (the Grampian Event). (ii) There is a clearly defined geographical association (the intrusions occur within Ireland).	This is a new lithodemic unit, so there is no direct precedent. The name clearly distinguishes this unit, comprising intrusions of known or inferred Ordovician age formed in association with the Grampian Event, from the Ireland Silurian Suite, comprising intrusions that also occur in Ireland but formed broadly in association with the Scandian Event.
2	Ireland Silurian Suite	All components of the Caledonian Supersuite that occur within Ireland (the classification is currently limited to those units that occur in Northern Ireland), and formed broadly in association with the Scandian Event, which is the younger (Silurian) of the two main tectonothermal events of the Caledonian Orogeny (c.f. Scottish Highlands Silurian Suite).	(i) The association is geologically meaningful, uniting all intrusions formed in association with a defined tectonothermal event (the Scandian Event). (ii) There is a clearly defined geographical association (the intrusions occur within Ireland).	This is a new lithodemic unit, so there is no direct precedent. The name clearly distinguishes this unit, comprising intrusions of known or inferred Silurian age formed broadly in association with the Scandian Event, from the Ireland Ordovician Suite, comprising intrusions that also occur in Ireland but formed broadly in association with the Grampian Event.
3	East Shetland Subsuite	Major intrusions of the Shetland Islands Suite that occur east of Walls Boundary Fault.	Intrusions of the Shetland Islands Suite are apparently temporally distinct on either side of Walls Boundary Fault.	self-explanatory
3	West Shetland Subsuite	Major intrusions of the Shetland Islands Suite that occur west of Walls Boundary Fault.	Intrusions of the Shetland Islands Suite are apparently temporally distinct on either side of Walls Boundary Fault.	self-explanatory
3	Shetland Minor Intrusion Subsuite	Minor intrusions of the Shetland Islands Suite not assigned to other subsuites.	self-explanatory	self-explanatory
3	Northeast Grampian Basic Subsuite	Major intrusions of the Scottish Highlands Ordovician Suite that occur within the north-east part of the Grampian Highlands region and consist dominantly of basic rock.	(i) The intrusions have a distinctive lithological association (composed dominantly of basic rocks). (ii) They occur only in the north-east part of the Grampian Highlands region, hence there is a strong geographical association. (iii) There is an historical precedent, these intrusions previously having been grouped lithodemically in the BGS Lexicon of Named Rock Units (North-east Grampian Basic Suite).	The formal name is a slightly modified form of the name currently assigned to this lithodemic unit (North-east Grampian Basic Suite) in the BGS Lexicon of Named Rock Units.

Table 1 *Continued.*

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
3	Northeast Grampian Granitic Subsuite	Major intrusions of the Scottish Highlands Ordovician Suite that occur in the north-east part of the Grampian Highlands region and consist of granitic rock.	(i) The intrusions have a distinctive lithological association (two mica granite, generally pervasively deformed). (ii) They have a geographical association (confined within the north-east part of the Grampian Highlands region). (iii) They are spatially remote from lithologically similar intrusions of the Northwest Grampian Granitic Subsuite. (iv) There is an historical precedent, the intrusions previously having been grouped lithodemically in the BGS Lexicon of Named Rock Units (North-east Grampian Granitic Suite). (v) All intrusions are emplaced in the Dalradian Supergroup (c.f. Northwest Grampian Granitic Subsuite).	The formal name is a slightly modified form of the name currently assigned to this lithodemic unit (North-east Grampian Granitic Suite) in the BGS Lexicon of Named Rock Units.
3	Northwest Grampian Granitic Subsuite	Major intrusions of the Scottish Highlands Ordovician Suite that occur in the north-west part of the Grampian Highlands region and consist of granitic rock.	(i) The intrusions have a clear lithological association (granite with primary muscovite and biotite mica and locally granodiorite, locally pervasively deformed). (ii) They have a geographical association (confined within the north-west part of the Grampian Highlands region). (iii) They are spatially remote from lithologically similar intrusions of the Northeast Grampian Granitic Subsuite. (iv) There is an historical precedent, the intrusions previously having been grouped lithodemically in the BGS Lexicon of Named Rock Units (North-west Grampian Granitic Suite). (v) The intrusions are emplaced mainly in the Dava and Glen Banchor successions (c.f. Northeast Grampian Granitic Subsuite).	The formal name is a slightly modified form of the name currently assigned to this lithodemic unit (North-west Grampian Granitic Suite) in the BGS Lexicon of Named Rock Units.
3	Alford Subsuite	Major intrusions of the Scottish Highlands Ordovician Suite that occur in the Alford district and consist of dioritic to granitic rock.	(i) The intrusions have a strong geographical association (they all occur within 15 km of the town of Alford) and their spatial extent does not overlap with units of the Northeast Grampian Granitic Subsuite. (ii) They are lithologically associated (diorite, quartz-diorite, tonalite, granodiorite and granite), and lithologically distinct from other intrusions of the Scottish Highlands Ordovician Suite. (iii) There is an historical precedent, the intrusions previously having been grouped lithodemically in the BGS Lexicon of Named Rock Units (North-eastern diorites to granites).	The new formal name is shorter and more geographically precise than the older name 'North-eastern diorites to granites'. The term Alford is not used elsewhere in the BGS Lexicon of Named Rock Units.
3	Highlands Ordovician Minor Intrusion Subsuite	Minor intrusions of the Scottish Highlands Ordovician Suite not assigned to other subsuites.	self-explanatory	self-explanatory
3	Deeside Subsuite	Major and minor intrusions of the Scottish Highlands Silurian Suite that display a set of shared characteristics (see panel to right) and occur in the north-east part of the Grampian Highlands region, mainly in the vicinity of Deeside.	(i) The intrusions share a set of lithological and other characteristics: they are compositionally restricted, consisting almost entirely of biotite granite and microgranite; they are commonly composite; significant textural variability is common in single intrusions, principally variations in grain size and the degree to which phenocrysts are developed; rocks are typically pale orange to pink (in contrast to, for example, the light to dark grey rocks that typify the Argyll–Northern Highlands Subsuite); the intrusions typically underlie large upland areas; the main intrusions generally do not have spatially associated swarms of minor intrusions (like the dyke-swarms and pipes of appinitic rock that are commonly associated with the main intrusions of the Argyll–Northern Highlands Subsuite). (ii) The intrusions are geographically associated, most of the major units occurring within and adjacent to Deeside. (iii) There is an historical precedent, the intrusions previously having been grouped lithodemically (Cairngorm Granitic Suite).	Intrusions encompassed by this lithodemic unit were known formerly as the Cairngorm Granitic Suite, however the geographical term Cairngorm is now used only for the Rank 5 unit Cairngorm Granite Pluton. Most of the intrusions occur in and around Deeside.
3	Skene Subsuite	Major and minor intrusions of the Scottish Highlands Silurian Suite that form a distinctive lithological association (see panel to right), and occur within a restricted area in the vicinity of Loch Skene (Aberdeenshire), remote from other lithologically similar intrusions.	(i) The intrusions have a geographical association, all cropping out within about 25 km of the village of Torphins. (ii) They are lithologically associated, consisting of granodiorite, tonalite, quartz-diorite, or diorite. (iii) They are lithologically distinct from other intrusions of the Scottish Highlands Silurian Suite within the district. (iv) There is an historical precedent, the intrusions being grouped within a 'Crathes Suite' in current BGS memoirs (but not in the BGS Lexicon of Named Rock Units).	The term Crathes Suite is used for this lithodemic unit in current BGS memoirs. Here, the term Skene replaces Crathes as the geographical term in the new formal name, allowing Crathes to be used as the geographical term in the name Crathes Granodiorite Pluton (Rank 5); suite has been substituted by subsuite allowing this and other former 'suites' to be grouped within a single lithodemic unit (Scottish Highlands Silurian Suite).
3	South Grampian Subsuite	Major and minor intrusions of the Scottish Highlands Silurian Suite that display a set of shared characteristics (see panel to right) and occur mainly in the southern part of the Grampian Highlands region.	(i) The intrusions have a geographical association, most occurring in the south (and in some cases east) part of the Grampian Highlands region. (ii) They share a distinctive physical characteristic, being typically small relative to those in related subsuites. (iii) They share lithological characteristics, with individual intrusions typically displaying a wide range of lithologies between peridotite and granite, usually including (commonly appinitic) diorite and granite. (iv) There is an historical precedent, the intrusions previously having been grouped lithodemically (South Grampian Suite).	The term South Grampian Suite is used for the same lithodemic unit in current BGS memoirs. Here, the term suite has been substituted by subsuite to allow this and other former 'suites' to be grouped within a single lithodemic unit (Scottish Highlands Silurian Suite).
3	Glencoe Caldera Volcano-complex	Intrusions and sedimentary units that occur within the boundary of the Glencoe Caldera.	Meets the criteria required of a volcano-complex.	self-explanatory

Table 1 *Continued.*

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
3	Argyll–Northern Highlands Subsuite	Major and minor intrusions of the Scottish Highlands Silurian Suite that display a set of shared characteristics (see panel to right) and occur almost exclusively in Argyll and the Northern Highlands region.	(i) All intrusions share the following set of lithological and other characteristics: they are typically composite and commonly consist dominantly of granodiorite, but may also contain minor to major components of granite, tonalite, quartz-diorite and diorite, with rare gabbroic-rock and peridotite; rocks with an appinitic character are commonly associated, either as a minor component of the main intrusions or forming satellite intrusions; rocks are typically light to dark grey (in contrast to, for example, the pale orange and pink rocks of the Deeside Subsuite). (ii) The intrusions have a geographical association, virtually all occurring in Argyll and the Northern Highlands region, within 50 km of the Great Glen Fault. (iii) There is an historical precedent, the intrusions previously having been grouped lithodemically (Argyll and Northern Highlands Granitic Suite).	The term Argyll and Northern Highlands Suite is used for the same lithodemic unit in current BGS memoirs. Here, the term suite has been substituted by sub-suite to allow this and other former 'suites' to be grouped within a single lithodemic unit (Scottish Highlands Silurian Suite).
3	Northwest Highlands Alkaline Subsuite	Major and minor intrusions of the Scottish Highlands Silurian Suite that occur in the north-west part of the Scottish Highlands region and generally have lithological and mineralogical compositions typical of alkaline rocks.	(i) The intrusions have a strong geographical association, all occurring in the vicinity of the Moine Thrust Zone in the north-west part of the Scottish Highlands. (ii) They are lithologically associated, the majority consisting of syenitic-rock, and all have a generally alkaline character. (iii) There is an historical precedent, the intrusions previously having been grouped lithodemically (North West Highlands Alkaline Plutonic Suite).	The new formal name replaces the former longer name North West Highlands Alkaline Plutonic Suite. The term suite has been substituted by subsuite in the proposed new name to allow this and other former 'suites' to be grouped within a single lithodemic unit (Scottish Highlands Silurian Suite).
3	Highlands Silurian Minor Intrusion Subsuite	Minor intrusions of the Scottish Highlands Silurian Suite not assigned to other subsuites of this suite.	self-explanatory	self-explanatory
3	Lowlands Minor Intrusion Subsuite	Minor intrusions of the Scottish Lowlands Suite.	self-explanatory	self-explanatory
3	Galloway Subsuite	Major and minor intrusions of the Trans-Suture Suite that occur north of the Iapetus Suture trace.	(i) A geologically meaningful association; this unit and the North England Subsuite encompass those intrusions that occur to the north and south respectively of the Iapetus Suture trace. (ii) There is an historical precedent, the intrusions previously having been grouped lithodemically (Galloway Granitic Suite).	Most of the main intrusions occur in the old county of Galloway. The new formal name is a modified version of the previous name Galloway Granitic Suite. Here, the term suite has been substituted by subsuite to allow this and one other former 'suite' to be grouped within a single lithodemic unit (Trans-Suture Suite).
3	North England Subsuite	Major intrusions of the Trans-Suture Suite that occur south of the Iapetus Suture trace.	(i) A geologically meaningful association, this unit and the Galloway Subsuite encompass those intrusions within the Trans-Suture Suite that occur to the south and north respectively of the Iapetus Suture trace. (ii) There is an historical precedent, the intrusions previously having been grouped lithodemically (Northern England Devonian Plutonic Suite).	The new formal name replaces the former longer name Northern England Devonian Plutonic Suite. Here, the term suite has been substituted by subsuite to allow this and one other former 'suite' to be grouped within a single lithodemic unit (Trans-Suture Suite).
3	Trans-Suture Minor Intrusion Subsuite	Minor intrusions of the Trans-Suture Suite not assigned to other subsuites.	self-explanatory	self-explanatory
3	Cumbrian Mountains Felsic Subsuite	Major and minor intrusions of the Lake District Suite that are felsic and occur within the area of the Cumbrian Mountains.	(i) The unit includes most of the largest intrusions of the Lake District Suite, with their associated minor intrusions. (ii) The intrusions are all felsic and therefore share a lithological association. (iii) The intrusions are all of known or inferred Ordovician age and therefore share a temporal/genetic association.	The new formal name replaces and redefines the former name Lake District Ordovician Felsic Plutonic Suite (Millward, 2002).
3	Midlands Minor Intrusion Subsuite	Minor intrusions of the Central England Suite.	self-explanatory	self-explanatory
3	Cymru Minor Intrusion Subsuite	Minor intrusions of the Wales Suite.	self-explanatory	self-explanatory
3	Ireland Silurian Minor Intrusion Subsuite	Minor intrusions of the Ireland Silurian Suite.	self-explanatory	self-explanatory

Table 2 Supporting information for units classified at ranks 1 to 3 of the Variscan Supersuite.

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
1	Variscan Supersuite	All units of intrusive igneous rock that formed as a direct or indirect consequence of the Variscan Orogeny. The Variscan (or Hercynian) Orogeny encompasses all of the tectonic and magmatic events arising from Late Palaeozoic (approximately 380 to 280 Ma) accretion and oblique collision events between Laurasia (to the north) and Armorica-Bohemia and Gondwana (to the south), to form the supercontinent Pangaea. The orogeny encompasses many identifiably separate events, with associated magmatism, during the Carboniferous and Permian periods. This magmatism occurs to both the north and south of the 'Variscan Front', a line marking the advancing northernmost limit of 'Variscan' pervasive fold and thrust tectonism. To the south of the front, crustal compression was followed by extensional collapse, while to its north, in the Variscan northern foreland, crustal extension (and transtension) was dominant.	(i) The association is geologically meaningful, uniting all intrusive lithodemic units formed as a direct or indirect consequence of the Variscan Orogeny. (ii) The component units have spatial, temporal, lithological and genetic relationships. (iii) The component units are to a large extent distinct in terms of their spatial distribution, lithological character, and intrusive style.	This is a new lithodemic unit, so the formal name has no direct precedent. The name describes clearly what the unit encompasses, and complies with the principle (used in the names of other Phanerozoic supersuites) of uniting the name for a recognised tectonothermal event with the lithodemic term 'super-suite'. The tectonothermal event is interpreted as encompassing both the internal part of the Variscan Orogen, south of the 'Variscan Front', and far-field, predominantly extensional events, in the Variscan foreland north of the 'Variscan Front'.
2	Scotland Alkaline Suite	All components of the Variscan Supersuite that occur in the Variscan foreland in Scotland, and consist predominantly of intrusive alkaline mafic, phonolitic and trachytic rocks, and associated mafic and trachytic volcaniclastic rocks, country rocks and some minor intrusions, and are known or inferred to be of Carboniferous to early Permian age.	(i) Units are lithologically associated (alkaline intrusive and volcaniclastic rocks). (ii) Units are geographically associated (confined to Scotland). (iii) Units are spatially distinct from other suites of vents, necks, plugs, sills and dykes of the Variscan Supersuite.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle of naming units classified at Rank 2 with a geographical term followed by the lithodemic term 'suite', however the term 'Alkaline' is included to make the name more informative and distinctive.
2	North Britain Tholeiitic Suite	All components of the Variscan Supersuite that occur in the Variscan foreland in the north of Britain, and consist predominantly of intrusive tholeiitic quartz-dolerite and basaltic rock, and are known or inferred to be of late Carboniferous age.	(i) Units are lithologically associated (intrusive tholeiitic quartz-dolerite and basaltic rock). (ii) Units are geographically associated (confined to the north part of Britain, principally the Midland Valley of Scotland and the north of England. (iii) Units are lithologically distinct from other suites of sills and dykes of the Variscan Supersuite.	North Britain Late Carboniferous Tholeiitic Suite is an established name for this unit in the BGS Lexicon of Named Rock Units. The words 'Late Carboniferous' are not included in the new formal name to make it more concise. The term 'Tholeiitic' is retained to ensure the name remains informative and distinctive.
2	Central–South Britain Alkaline Suite	All components of the Variscan Supersuite that occur in the Variscan foreland in central and south Britain, and consist predominantly of intrusive alkaline mafic rock and basaltic volcaniclastic rock, and are known or inferred to be of Carboniferous to early Permian age.	(i) Units are lithologically associated (alkaline mafic and basaltic volcaniclastic rocks). (ii) Units are geographically associated (confined to central and south Britain). (iii) Units are lithologically distinct from other suites of the Variscan Supersuite. (iv) Units are spatially distinct from otherwise similar intrusions of the Scotland Alkaline Suite.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle of naming units classified at Rank 2 with a geographical term followed by the lithodemic term 'suite', however, the term 'Alkaline' is included to make the name more informative and distinctive.
2	Cornubian Suite	All components of the Variscan Supersuite that occur to the south of the 'Variscan Front' in the UK. Units are confined exclusively to south-west England (mainly in Cornwall), are known or are inferred to be predominantly of early Permian age, and consist almost entirely of granite, microgranite and felsite.	(i) Unites all intrusive units believed to be associated spatially, temporally and genetically with the 'Cornubian Batholith'. (ii) When/if the classification is extended beyond the UK (e.g. into Ireland and continental Europe), the suite will distinguish UK components of the Variscan Supersuite from others.	This is a new lithodemic unit, so the formal name has no direct precedent. The term 'Cornubian Batholith' has traditionally been used to refer to the vast volume of granitic rocks that is inferred to underlie much of south-west England and to be the 'source' of presently exposed units of the suite.
3	South Scotland Early Carboniferous Mafic Subsuite	All components of the Scotland Alkaline Suite that occur in the Midland Valley and Borders regions of Scotland, consisting predominantly of intrusive alkaline mafic rocks with associated mafic volcaniclastic rocks, and of known or inferred early Carboniferous age.	(i) Units are lithologically associated (intrusive alkaline mafic and volcaniclastic rocks). (ii) Units are geographically associated (confined to the Midland Valley and Borders regions of Scotland). Although individual intrusions assigned to this unit are not characterised by a unique combination of observable characteristics, lower ranked units display a combination of lithological, temporal (inferred to be early Carboniferous), spatial and orientation characteristics that suggest they can be associated lithodemically at this rank.	This is a new lithodemic unit, so the formal name has no direct precedent. The spatial extent of the unit does not lend itself to a concise geographical term, so the terms 'Early Carboniferous' and 'Mafic' are included in the name to make it reasonably informative and distinctive.
3	South Scotland Trachyte–phonolite Subsuite	All components of the Scotland Alkaline Suite that occur in central and south-east Scotland, consisting predominantly of intrusive phonolite and trachyte with associated trachytic volcaniclastic rocks, and of known or inferred early Carboniferous age.	(i) Units are lithologically associated (intrusive phonolite and trachyte, and trachytic volcaniclastic rocks). (ii) Units are geographically associated (confined to the south part of Scotland).	This is a new lithodemic unit, so the formal name has no direct precedent. The spatial extent of the unit does not lend itself to a concise geographical term, so the term 'Trachyte–phonolite' is included in the name to make it reasonably informative and distinctive.
3	South Scotland Late Carboniferous–Permian Mafic Subsuite	All components of the Scotland Alkaline Suite that occur mainly in the Midland Valley of Scotland, but extend into the Southern Uplands region, consisting predominantly of intrusive alkaline mafic rocks (microgabbro, basanite and basaltic rock) and associated basanitic and basaltic volcaniclastic rocks, of known or inferred late Carboniferous to mid Permian age.	(i) Units are lithologically associated (intrusive microgabbro, basanite and basaltic-rock, and basanitic and basaltic volcaniclastic rocks). (ii) Units are geographically associated (confined to the Midland Valley and Southern Uplands regions of Scotland). (iii) Although individual intrusions assigned to this unit are not characterised by a unique combination of observable characteristics, lower ranked units display a combination of lithological, temporal (inferred to be late Carboniferous to mid Permian), spatial and orientation characteristics that suggest they can be associated lithodemically at this rank.	This is a new lithodemic unit, so the formal name has no direct precedent. The spatial extent of the unit does not lend itself to a concise geographical term, so the terms 'Late Carboniferous–Permian' and 'Mafic' are included in the name to make it reasonably informative and distinctive.

Table 2 *Continued.*

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
3	Scotland Lamprophyre Subsuite	All components of the Scotland Alkaline Suite consisting predominantly of intrusive lamprophyre (monchiquite and camptonite) and associated monchiquitic volcaniclastic rocks, of known or inferred late Carboniferous to early Permian age.	(i) Units are lithologically associated (intrusive lamprophyre and volcaniclastic lamprophyric rocks). (ii) Units are geographically associated (confined to Scotland). (iii) Units are spatially distinct from otherwise similar intrusions forming the South Britain Lamprophyre Subsuite.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle that units at Rank 3 are named with a geographical term followed by the lithodemic term 'suite'; the term 'Lamprophyre' is included to make the name more informative and distinctive.
3	Derbyshire Mafic Subsuite	All components of the Central–South Britain Alkaline Suite that occur in Derbyshire, consisting predominantly of intrusive olivine-microgabbro and basaltic volcaniclastic rocks, of known or inferred early Carboniferous age.	(i) Units are lithologically associated (intrusive microgabbro and basaltic volcaniclastic rocks). (ii) Units are geographically associated (confined to Derbyshire). (iii) Units are spatially distinct from otherwise similar intrusions assigned to other subsuites of the Central–South Britain Alkaline Suite. (iv) Units are temporally distinct (early Carboniferous) from otherwise similar intrusions assigned to other subsuites of the Central–South Britain Alkaline Suite.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle that units at Rank 3 are named with a geographical term followed by the lithodemic term 'suite'; the term 'Mafic' is included to make the name more informative and distinctive.
3	West Midlands Mafic Subsuite	All components of the Central–South Britain Alkaline Suite that occur in the West Midlands, consisting predominantly of intrusive olivine-microgabbro and basaltic volcaniclastic rocks, of known or inferred late Carboniferous age.	(i) Units are lithologically associated (intrusive microgabbro and basaltic volcaniclastic rocks). (ii) Units are geographically associated (confined to the West Midlands region). (iii) Units are spatially distinct from otherwise similar intrusions assigned to other subsuites of the Central–South Britain Alkaline Suite.	This is a new lithodemic unit, so the propsoed name has no direct precedent. The name follows the principle that units at Rank 3 are named with a geographical term followed by the lithodemic term 'suite'; the term 'Mafic' is included to make the name more informative and distinctive.
3	South Britain Lamprophyre Subsuite	All components of the Central–South Britain Alkaline Suite that occur in the south part of Britain, consisting predominantly of intrusive lamprophyre, of known or inferred predominantly early Permian age.	(i) Units are lithologically associated (intrusive monchiquite and camptonite, and monchiquitic volcaniclastic rocks). (ii) Units are geographically associated (confined to south parts of Britain). (iii) Units are spatially distinct from otherwise similar intrusions forming the Scotland Lamprophyre Subsuite.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle that units at Rank 3 are named with a geographical term followed by the lithodemic term 'suite'; the term 'Lamprophyre' is included to make the name more informative and distinctive.
3	Southwest England Felsite Subsuite	Components of the Cornubian Suite that consist of dykes of felsite ('quartz-porphyry').	Dykes of felsite ('quartz-porphyry') form a subset of units in the Cornubian Suite that are distinctive in terms of their lithology and intrusive style.	This is a new lithodemic unit, so the formal name has no direct precedent. The name follows the principle that units at Rank 3 are named with a geographical term followed by the lithodemic term 'subsuite'; the lithological term 'Felsite' is included to make the name more informative and distinctive; the name describes clearly what the unit encompasses.

Table 3 Supporting information for units classified at ranks 1 to 3 of the Atlantean Supersuite.

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
1	Atlantean Supersuite	All units of intrusive igneous rock resulting from magmatism that was a precursor to, and contemporaneous with, the opening of the North Atlantic Ocean. Onshore in the UK the magmatism occurred almost entirely during the Paleocene Epoch, from about 62 Ma to about 55 Ma. However, offshore there are lavas of latest Cretaceous age, and volcanism continues to the present day at the Mid-Atlantic Ridge. Onshore, intrusions occur mainly in the Inner Hebrides, the Isle of Arran and Northern Ireland, but dyke-swarms extend over a wider area, from the Outer Hebrides through central and southern Scotland and into northern England. There are also scattered occurrences of Palaeogene igneous rocks in Wales, in central England and forming Lundy Island in the Bristol Channel. To be compatible with the North Atlantic Superprovince, the supersuite should also encompass offshore occurrences on the north-west continental shelf, and could include intrusions in other component provinces within and on both sides of the North Atlantic.	(i) Unites all intrusive lithodemic units that formed as a precursor to, and contemporaneous with, the opening of the North Atlantic Ocean. (ii) Forms an obvious natural grouping. (iii) There is an historical precedent having been long regarded as an igneous province in the UK onshore, and with increasing knowledge of its much wider extension offshore. (iv) Could be extended to include or integrate with nomenclature of other provinces in and around the North Atlantic Ocean.	Emeleus and Bell (2005) formalised on behalf of the BGS the nomenclature for the province and superprovince. Onshore UK occurrences of intrusive and extrusive rocks, together with those on the north-west continental shelf, comprise the Hebridean Igneous Province (referred to in earlier publications as the British Tertiary Igneous [or Volcanic] Province), which is a component of the North Atlantic Igneous Superprovince. Lithodemic terminology needs to be compatible with this, and not generate possible confusion. Hence, the supersuite as defined here should reflect the superprovince. Whereas the geographical term 'North Atlantic' is most appropriate for a superprovince, our aim is to name supersuites after geological events. The obvious term 'Atlantean' appears not to have been used previously to describe the extensional tectonic and magmatic events that resulted in the formation of the Atlantic Ocean.
2	Hebrides Subvolcanic Suite	All onshore central complexes, subvolcanic centres and plutons of the Atlantean Supersuite that occur in the Hebrides and Northern Ireland. Should ultimately be extended to include all central complexes offshore and those in the Republic of Ireland.	(i) Unites all subvolcanic central complexes, centres and plutons in the Hebridean Igneous Province. (ii) Forms an obvious natural grouping.	Most of the Scottish occurrences are in the Inner Hebrides area, including the offshore Blackstones Bank. The only exceptions are on and around Arran in the Firth of Clyde, and the two central complexes in the north of Ireland. As the north of Ireland is included in the Hebridean Igneous Province, this extension of the name should also be permissible. There is the possibility of confusion between Hebrides Subvolcanic Suite and Hebridean Igneous Province, but since the former is the most extensive, most obvious and most well known intrusive component of the latter, this should be acceptable.
2	Rockall Suite	All offshore 'centres' of the Atlantean Supersuite that occur on the UK, Ireland and Faroes continental shelf.	Almost all of these are currently known only from sea-bed morphology (seamounts), geophysical anomalies, seismic profiles and, in some cases, from grab samples of the sea bed. They are currently termed 'centres' but might be central complexes, centres, plutons or volcano-complexes. Until more is known about them it is convenient to unite them within a suite.	There is no convenient regional name other than 'north-west Europe Continental Shelf'. Other geographical names in the region are unique and relatively localised with the exception of 'Rockall'; the names Isle of Rockall, Rockall Bank, Rockall Plateau, Rockall Trough and North Rockall Trough are widely scattered across the shelf.
2	Celtic Palaeogene Minor Intrusion Suite	All Palaeogene dykes, sills, plugs and vents of the Atlantean Supersuite that occur in the UK (and extend into the Republic of Ireland) and are not directly associated with central complexes or other lithodemic units of high rank.	(i) Unites all of the minor intrusions across the region.	The unit extends along and across the 'Celtic Fringe', from the Hebrides to the north of Ireland, and includes dykes extending across northern England, Anglesey, mainland Wales, the Bristol Channel and the West Midlands of England.
3	Mull Central Complex	A component of the Hebrides Subvolcanic Suite comprising three geographically and petrologically related centres (Glen More, Beinn Chaisgidle and Loch Ba) that occur in the mountains of southern Isle of Mull.	A distinct geological entity that includes a wide variety of intrusive and extrusive igneous rocks, together with both sedimentary and metamorphic country rocks, particularly in major vent-complexes.	An obvious and well established name.
3	Ardnamurchan Central Complex	A component of the Hebrides Subvolcanic Suite comprising three geographically and petrologically related centres forming the Ardnamurchan peninsula.	A distinct geological entity that includes a wide variety of intrusive and extrusive igneous rocks, together with both sedimentary and metamorphic country rocks, particularly in major vent-complexes.	An obvious and well established name.
3	Skye Central Complex	A component of the Hebrides Subvolcanic Suite comprising four geographically and petrologically related centres (Cuillin, Srath na Creitheach, Western Red Hills and Eastern Red Hills) with associated volcanic rocks, vent-complexes and many associated individual intrusions, forming the mountainous area of south-central Isle of Skye.	A distinct geological entity that includes a wide variety of intrusive and extrusive igneous rocks, together with both sedimentary and metamorphic country rocks, particularly in at least two major vent-complexes and as slivers along bounding faults.	An obvious and well established name.
3	Rum Central Complex	A component of the Hebrides Subvolcanic Suite comprising two vent-complexes (Northern Marginal and Southern Mountains), Western Granite Pluton and a 'Layered Centre', plus numerous plugs and minor sheets, all geographically and petrologically related. Incorporates elements of Lewisian Gneiss Complex, Torridon Group and Lower Jurassic successions, and early Paleocene Eigg Lava Formation. The units underlie mountains in the southern half of Isle of Rum.	A distinct geological entity that includes a wide variety of intrusive and extrusive igneous rocks, together with both sedimentary and metamorphic country rocks, particularly in the two vent-complexes and in slivers along the Main Ring Fault.	An obvious and well established name.
3	Blackstones Bank Central Complex	A component of the Hebrides Subvolcanic Suite comprising poorly known intrusive units underlying shallow sea bed with rugged topography, 30 km south-south-west of Isle of Tiree. Extent estimated from seismic, magnetic and gravity anomalies.	A distinct geological entity. Scuba dives have recovered typical 'central complex' type lithologies comprising gabbroic and granitic rocks, tuffisites and calcsilicate hornfels.	The established geographical name for the sea-bed feature.
3	Carlingford Central Complex	A component of the Hebrides Subvolcanic Suite comprising intrusions of layered gabbro and granophyric granitic rock, with basalt lavas and vent infills, centred upon the mountain of Slieve Foye in County Louth, Republic of Ireland.	A distinct geological entity that includes both intrusive and extrusive rocks.	A well established name.

Table 3 *Continued.*

Rank	Formal unit name	Units encompassed	Justification for the unit	Justification for the name
3	Slieve Gullion Central Complex	A component of the Hebrides Subvolcanic Suite comprising intrusions, vent infills, screens of country rock and rare lavas, arranged concentrically around the central hill of Slieve Gullion in Northern Ireland.	A distinct geological entity that includes a wide variety of intrusive and extrusive igneous rocks, together with igneous and sedimentary country rocks, in a ring-complex, a sheet-complex and in vents.	A well established name.
3	Mourne Mountains Subsuite	A component of the Hebrides Subvolcanic Suite comprising granitic ring-intrusions of both the Western Mourne and Eastern Mourne centres.	The Western Mourne and Eastern Mourne centres are clearly closely related, but there are no associated volcanic rocks or incorporated sedimentary or metamorphic country rocks to warrant classification as a central complex. However, it is useful and meaningful to group them together as a subsuite at the same rank as the central complexes of the Hebrides Subvolcanic Suite.	The two centres together form the bedrock to most of the high ground of the Mourne Mountains.
3	Arran Subsuite	A component of the Hebrides Subvolcanic Suite comprising the North Arran Granite Pluton, the Central Arran Ring-complex and the Tighvein Centre, together with the more distant Ailsa Craig Microgranite Pluton.	The North Arran Granite Pluton, the Central Arran Ring-complex and the Tighvein Centre are clearly related, but are sufficiently separated geographically to preclude classification as a central complex. However, it is useful and meaningful to group them together as a subsuite at the same rank as the central complexes of the Hebrides Subvolcanic Suite.	The three largest lithodemic components are evenly distributed along the length of the Island of Arran.
3	Tardree Volcano-complex	Mainly extrusive rhyolitic rocks of the Antrim Lava Group, centred upon Tardree Mountain, but includes the Sandy Braes Vent.	Links the closely related extrusive and intrusive rhyolitic rocks forming a rhyolitic volcano within the otherwise basaltic Antrim Lava Group.	An obvious and well-established geographical name.
3	West Scotland Palaeogene Sill Subsuite	A component of the Celtic Palaeogene Minor Intrusion Suite, comprising all Palaeogene sills in the Hebridean Igneous Province which extend from North Uist to Ayrshire. Should be extended eventually to include offshore sills.	(i) Unites all Palaeogene sills and sill-swarms of northern Britain that are not assigned to other Rank 3 units of the Atlantean Supersuite. (ii) Forms an obvious natural grouping, chronological, petrological and geographical.	Sills are restricted to the west of Scotland and its offshore areas. They need to be distinguished from sills of other ages in the same area.
3	Atlantic Margin Sill Subsuite	A component of the Celtic Palaeogene Minor Intrusion Suite, comprising at least three named sill-complexes that crop out in basins on the UK, Ireland and Faroes continental shelf.	A convenient grouping of all offshore sill-complexes, pending potential future additions and further details. They are well separated geographically from the onshore sill-complexes.	Describes the location and character of the unit. There is no obvious and better alternative geographical name.
3	West Scotland Palaeogene Plug Subsuite	A component of the Celtic Palaeogene Minor Intrusion Suite, comprising plugs that occur throughout the Hebridean Province of Scotland that are not associated with central complexes or other high rank lithodemic units; many are associated with the lava fields.	Unites all Palaeogene plugs in Scotland that are not associated with the central complexes or any other higher rank lithodemic unit.	These plugs are restricted to the west of Scotland. They need to be distinguished from plugs of other ages in the same area. NB: there are no known isolated Paleogene vents (i.e. vents not associated with central complexes).
3	North Britain Palaeogene Dyke Subsuite	All Palaeogene dykes of the Celtic Palaeogene Minor Intrusion Suite in northern Britain, which extend from the Outer Hebrides to north Yorkshire. These have been divided into dyke-swarms following Speight et al. (1982).	(i) Unites all Palaeogene dyke-swarms of northern Britain that are not assigned to other Rank 3 units of the Atlantean Supersuite. (ii) Forms an obvious natural grouping, chronological, petrological and geographical.	The dykes extend across the whole of northern Britain. They also need to be distinguished by age from other dyke suites in the region.
3	North Ireland Palaeogene Dyke Subsuite	All Palaeogene dykes of the Celtic Palaeogene Minor Intrusion Suite in Northern Ireland (associated dykes also occur in the north of the Republic of Ireland), plus their continuation into Wales and England. Dyke swarms originating from various authors are summarised by Speight et al. (1982).	Dyke-swarms in Ireland are somewhat distant from those in Scotland and it is convenient to unite them in a separate subsuite.	Having decided upon a separate dyke subsuite for Ireland, the name is obvious; continuations into Wales and England are few.
3	Antrim Plug-and-vent Subsuite	Plugs and vents of the Celtic Palaeogene Minor Intrusion Suite associated with the Antrim Lava Group. Some are grouped into swarms.	(i) Unites all Palaeogene plugs and vents associated with the Antrim Lava Group. (ii) Forms an obvious natural grouping, chronological, petrological and geographical.	Geographically appropriate and makes a link with Antrim Lava Group
3	Antrim Sill Subsuite	Sills of the Celtic Palaeogene Minor Intrusion Suite in and around the outcrop of the Antrim Lava Group.	(i) Unites all Palaeogene sills associated with the Antrim Lava Group. (ii) Forms an obvious natural grouping, chronological, petrological and geographical.	Although the sills extend beyond Antrim, most are associated with Antrim Lava Group and hence the name is appropriate and helps to emphasise the link.

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and other non-intrusive components
Caledonian Supersuite
Shetland Islands Suite
Shetland Granitic Suite
East Shetland Subsuite
West Shetland Subsuite
Shetland Minor Intrusion Subsuite
Graven Cluster
Graven Complex
Olna Firth Cluster
Aith–Spiggie Cluster
Aith–Spiggie Pluton
Colla Firth Cluster
Colla Firth Permeation and Injection Belt
Northmaven Centre
Northmaven Pluton
Sandsting Centre
Sandsting Pluton
Sullom Voe Granodiorite Pluton
Brae Diorite–ultramafic Pluton
Brae Pluton
Houster Granite–ultramafic Pluton
Whitelaw Granite–ultramafic Intrusion-swarm
Tumblin Granite–ultramafic Pluton
Sand Sound Granite–serpentinite Pluton
Oxna Granite–granodiorite Pluton
Bakkasetter Granite–ultramafic Pluton
Channerwick Granitic Intrusion-swarm
Ronas Hill Granite Pluton
Ronas Hill Granite
Mangaster Voe Diorite–gabbro Pluton
Mangaster Voe Intrusion
Ronas Voe Intrusion-breccia Intrusion-swarm
Ronas Voe Breccias
Muckle Roe Granitic Pluton
Muckle Roe Intrusion
Yell Pegmatitic granite Vein-swarm
Yell Pegmatite Swarm
Orkney Basalt–felsite Intrusion-swarm
Orkney Devonian Minor Intrusion and Volcanic Suite
Scottish Highlands Ordovician Suite
Scottish Highlands Silurian Suite
Scottish Lowlands Suite
Trans-Suture Suite
Lake District Suite
Central England Suite
Wales Suite
Isle of Man Suite
Ireland Ordovician Suite
Ireland Silurian Suite

Rank 1
Rank 2
Rank 3
Rank 4
Rank 5
Rank 6
Facies, zones and fostered units
Variscan Supersuite
Scottish Alkaline Suite
North Britain Tholeiitic Suite
Central-South Britain Alkaline Suite
Cornubian Suite

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and fostered units

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Facies, zones and fost
	1	1 Although the Carlingforn Central Complex is located entirely in the Republic of Ireland, it is one of four closely associated Palaeogene central complexes and centres and hence is included here for completeness.		1 Significant parts of the Forkhill breccias have been re-interpreted as landslide deposits resulting from the collapse of caldera walls (Stevenson et al., 2008)	1 The Slieve Gullion Microgranite Ring-dyke has been re-interpreted as an original horizontal sheet, domed upwards above the later sheet-complex (Stevenson et al., 2008)	1 The Coire Mor Breccias are of uncertain origin. intrusive units, by analogy with similar lithologi Igneous Province they are most likely to be extru volcaniclastic sedimentary material.
				2 partly in the Republic of Ireland	2 Large parts of the rhyolite ring-swarm have been re-interpreted as extrusive ignimbrite flows (Stevenson et al., 2008)	2 Although they might include some explosion bre Breccias are mainly sedimentary breccias compo and matrix of sedimentary rock fragments. They collapse breccias formed as landslips off caldera reworking of such deposits.
				3 entirely within the Republic of Ireland. Included here for completeness.	3 Entirely within the Republic of Ireland but gives its name to the Donegal - Kingscourt Dyke-swarm, which crosses Co Fermanagh	
				4 Where is it?	4 Where is it?	