REFERENCES


MacCulloch, J. 1819. A description of the western islands of Scotland, including the Isle of Man, comprising an account of their geological structure, with remarks on their agriculture, scenery, and produce. Constable, London, 3 vols.


Mack, E. D. 1986. Structures of dunes at White Sands national monument, New Mexico (and comparison with structures of dunes from other selected areas). Sedimentary Geology, 7, 1-49.


## Index

Page numbers in *italics* refer to Figures and page numbers in **bold** refer to Tables

Abhainn Bad a' Chròitha 94  
Abhainn Bràigh-Horrisdale 95  
accretionary lapilli 9–10, 65, 66, 72  
Achduart 33, 76  
Achduart Member 33, 75, 78, 79, 80, 84  
Achenraver Lodge 77  
Achliltibuie 6, 9, 13, 30, 53, 71, 73  
Achliltibuie sub-area 76–78  
Achmore 81  
A'Clich Thuil 57, 61, 64  
acritarchs see microfossils  
eolaimos 9, 63, 76  
ages  
basement 12, 21  
detrital 41–42  
Sleat Group 27–28  
Stoer Group 21–22  
Torridon Group 41–42, 45–46  
Aird Mhor 104  
albitization  
Sleat Group 26–27  
Stoer Group 17–18, 47  
Torridon Group 36–37, 47  
Alligin 32, 103  
Alligin sub-area 101–102  
Allt a' Choin 111  
Allt an Teanga Odhair 109, 100  
Allt Coire Giagain 109  
Allt Eilean 108  
Allt Loch na Doire Mòire 96  
Allt Mòr 94  
Allt Mòr na h-Uamh 115  
Allt Mòr na h-Uamh Member 113, 115  
Allt Reiraig 108  
Allt Rubha na Moine 115  
Allt na Bàiste Member 93, 94, 95, 99, 100, 102, 103, 107–108  
alluvial fans  
unconfined 8–9, 32–33  
valley-confined 6–8, 32  
A'Mhaighdean 32  
an A'Chaidh, Loch 56  
an Doire Dhuibh, Loch 74, 75  
an Dhub Laimh 113, 114  
an Eicht Dhuibh, Loch 32  
an Grianan, 53  
an Socach 53  
an Teallach 30  
an Torr 98, 112  
an Uaile 63  
an Uaile conglomerate 56, 63  
an Uaichdair, Loch 108  
Annat Bay 81, 104  
Applecross 30, 39  
Applecross Formation  
facies 32–34, 54  
geochemistry 25, 38, 39, 75  
graphic logs 54, 55, 80, 95, 103, 106, 112, 114  
mineralogy 20, 38, 39  
palaeoclimate 43  
palaeocurrents 33, 53, 54, 56, 71, 75, 78, 80, 81, 84, 88, 95, 100, 104, 105, 106, 108, 112, 113  
palaeomagnetism 113  
pebbles 40–42  
regional outcrops  
Achliltibuie 76, 78  
Applecross 104–105  
Caileach Head 79  
Cape Wrath 33, 36, 38, 41, 44, 54  
Diabaig 100–101  
Enard Bay 73  
Gairloch 94–95  
Inveralloch 102  
Isle Ristol 75  
Quinag 56  
Raasay 108  
Rubha Mòr 87–88  
Rubha Stoer 56  
Slent of Skye 112–113  
Soay 114–115  
Stoer 70  
Torridon, Loch 103–104  
source 40–42  
stratigraphy 29, 30  
Applecross sub-area 104–106  
Archaean basement  
geochemistry 12–13  
mineralogy 13  
 Ard Ban 105  
Ardrishaig 96  
Aurnish, Loch 106, 108  
Assynt 31, 62  
Assynt, Loch 56  
atmospheric composition 31–32  
Aultbea 30, 34, 38, 39, 75  
Aultbea Formation  
age 45  
carries 29, 34, 88  
geochemistry 38, 39  
graphic logs 76, 89, 105  
mineralogy 38, 39  
palaeocurrents 34  
palaeomagnetism 105–106  
regional outcrops  
Applecross 105–106  
Aultbea 88  
Longay 109  
Rum 115  
Summer Isles 75–76  
source 34, 36  
stratigraphy 29, 30  
Aultbea sub-area 87–89  
azureite 56  
Bac an Leth-choin 6  
Bac an Leth-choin sub-area 92  
Bad a' Ghail 74, 75  
Bad a' Ghail, Loch 33  
Badachro 94, 95  
Badenscallie 77  
Badentarbat 39, 75  
Badluchrach 56  
bajadas  
Stoer Group 8–9  
Torridon Group 33–34  
Balchladich Bay 56  
Balgy River 102, 104  
Baosbeinn 95  
basement  
age 12, 21  
geochemistry 11–12, 36  
mineralogy 12, 36, 37  
relief 5, 23, 29–31, 73, 74, 76, 84, 86, 94, 96, 102, 107, 115  
weathering 5, 17–18, 19, 30–31, 53, 71, 74  
basin analysis  
Sleat Group 27  
Stoer Group 19–20, 47  
Torridon Group 43–45, 47, 49  
Bay of Stoor 59, 64  
Bay of Stoer Formation  
facies 8–9, 64–68  
geochemistry 16, 17  
graphic logs 9, 56, 92  
mineralogy 16  
palaeoclimate 18–19  
palaeocurrents 6, 7, 20, 59, 64, 66, 68, 70  
palaeomagnetism 18  
pebbles 16, 56  
regional outcrops  
Bac an Leth-choin 92  
Gruiinard Bay 86–87  
Poolewe 90–92  
Statice Point 84–85  
Stoer 64–68  
surface 16  
stratigraphy 5–6  
Beinn Bhreac 95, 111  
Beinn Bhreac Member 113, 114  
Beinn Dearg, Loch 88  
Beinn na Seanaig Formation  
facies 24  
geochemistry 25  
graphic log 111  
mineralogy 24  
outcrops 110–111  
palaeocurrents 24  
Beinn Shieldaig 104  
Ben Drevie sub-area 54  
Big Sand fishing station 39, 95  
Blackrock 117  
Blackrock Formation 117  
boron  
in illite 10, 12, 32, 67, 68, 100  
in Holocene stream sediment 42, 45  
Bowmore Group 117  
Bowmore sub-area 116–117  
braids  
Applecross Formation 34  
Kinloch Formation 24  
Bràigh-Horrisdale, Loch 95  
breccia  
Sleat Group 23  
Torridon Group 32, 35–36  
breccio-conglomerate  
Stoer Group 6–7, 12–13, 57, 63, 89  
Brochel Castle 107, 108  
Brochel Member 106, 107, 108  
Broom, Loch 32, 81  
burial history 47–49  
Caileach Head 6, 80, 35, 39, 82, 83  
Caileach Head Formation  
cyclethems 34–35  
facies 35, 79–81  
geochemistry 36, 39  
graphic logs 82, 83  
stratigraphy 29–30  
Caileach Head sub-area 78–81  
calcite pseudomorphs 67  
Cam Loch 73  
Camas a' Chlarsair 103  
Camas Fhionannairdhill 113  
Camas Mòr 93  
Camas na h-Airigh 95  
Camas na h-Ata 115  
Camas na Nighinn 104  
Camas na Ruthag 79  
Camusnary 30  
Camusnary fault 113  
Camusnary sub-area 113
INDEX

geochemistry 24–27
mineralogy 24–25, 113
outcrop 109–113
palaeoclimates 27
palaeocurrents 4
palaeomagnetism 27
source 25–26
stratigraphy 23, 24
Tectonic setting 27
Sleet Group 27
Spier Group 19–21, 47
Torridon Group 43–45, 47, 49
tephras 11, 15–16
Th in Stoer Group 13–14
Th/Sc ratio 40
thermal history 47–49
tillite 59
Tornavash 104, 105
Torran Member 106
Torridon 30, 38, 41, 53, 102
Torridon, Loch 96
Torridon Group
age 45–46
facies 32–35
geochemistry 35–39
mineralogy 36–39
palaeoclimates 43
palaeocurrents 32–35
palaeomagnetism 42–43, 48, 49
source rocks 39–42
stratigraphy 29, 30, 106, 113
tectonic setting 43–45
Toscaig 30, 34, 104, 105, 112
Toscaig fault 105, 106
total organic carbon (TOC) 67
tournamaline 40, 41, 42, 45
Tournaig 92

U in Stoer Group 13
U/Pb age see zircon ages
Umb an Ort 85
Uisgintuie 117
unconfined alluvial fans 32–33
unconfined bajadas
Stoer Group 8–9
Torridon Group 33–34
Upper Fladlay Member 108
Upper Loch Torridon sub-area 102–104
valley-confined alluvial fans
Stoer Group 6–8
Torridon Group 32
valley-confined lakes 32
valley-confined rivers
Stoer Group 8
Torridon Group 32, 73
valley-confined swamps 8
veins, dilutational 19–20, 61, 62–63, 86, 95–96, 97
vertisol 8
Veyatie, Loch 30, 73, 74, 75
Victoria Falls 95
Victoria, Lake 5
weathering of basement 5, 17, 18–19, 20, 30–31,
53, 71, 74
Y in apatite 55, 75
zircon ages
Stoer Group 16, 21
Torridon Group 41, 42, 45

PLATE CAPTIONS

Plate 1. The Torridonian outcrop in NW Scotland, showing component groups and formations.

Plate 2. The Torridonian outcrop in NW Scotland showing the sub-areas described in the Directory, together with the locations of figured maps and sections.

Downloaded from pub.acs.org/gs/geoisciworld.2015/1352/chapter-pdf/3427351225917818623939688_backmatter.pdf by guest
The Later Proterozoic Torridonian Rocks of Scotland:
their Sedimentology, Geochemistry and Origin

A. D. Stewart

The Torridonian sandstones form one of the principal elements of British stratigraphy. They form the majestic mountains of NW Scotland and also extend westwards under the Minch basin. The sediments were deposited in a Proterozoic rift nearly contemporaneous with the Keweenawan Supergroup of North America.

This book contains the first complete field description of the rocks and the sedimentary environments in which they formed, together with a comprehensive examination of their tectonic and palaeoclimatic significance, geochemistry, palaeomagnetism and diagenesis. It includes the result of over forty years' work by the author, most of it previously unpublished.

- 136 pages
- 115 illustrations
- Two foldout maps showing the whole of the Torridonian outcrop
- Detailed field descriptions of 33 key Torridonian areas

Cover photograph: Stac Polly reflected in the waters of Loch Cùl Dromannan.