

Zeitschrift: Eclogae Geologicae Helvetiae
Herausgeber: Schweizerische Geologische Gesellschaft
Band: 53 (1960)
Heft: 1

Artikel: Géologie de la région de Mt. Compass (feuille Milang), Australie Méridionale
Autor: Horwitz, Rudolph C.
Kapitel: Summary
DOI: <https://doi.org/10.5169/seals-162711>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. [Siehe Rechtliche Hinweise.](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. [Voir Informations légales.](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. [See Legal notice.](#)

Download PDF: 17.02.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Summary

The region surrounding Mt. Compass is in South Australia, 50 km South of Adelaide. The continuation towards the S of the Mt. Lofty Ranges stretches across the region with a SW-NE orientation. It is thus bordered by two plains.

The Archaean outcrops in anticlinal cores. Gneisses have been retromorphosed to sericite and chlorite schists during lower Palaeozoic orogenic phases.

The Proterozoic sedimentary mantle is known as the Adelaide System, characterised by a glacial sequence. The units are:

1) The Torrenian: detrital formations in the Mt. Compass area, mostly precipitated calcareous rock-types further N in the sedimentary basin.

2) The Sturtian: a) Lower glacial (tillites and conglomerates of marine and glacial origin); b) Interglacial (detrital with calcareous developments). Limestones and boulders beds are related. A possible explanation is that increase of temperature caused calcareous precipitation and sudden melting of ice cap.

3) The Marinoan: a) Upper glacial at the base, and b) a molassic facies at the summit.

The Cambrian is predominantly calcareous, locally fossiliferous.

Towards the E, a great thickness of detrital rocks are found: the Kanmantoo. It is a more geosynclinal Cambrian equivalent and transgressif on the Adelaide System. In this region, changes of facies also affect the Adelaide System. Orogenic movements ended during the Lower Palaeozoic.

The style of folding is complex, thrusts are frequent in older rock-types. There are fold axis oriented NE-SW, crossed by others, oriented N-S. The first form an overthrust anticline that butts against the shield, thus moulding itself to it.

Permian glaciers have overdeepened broad valleys and filled them with moraine. This material has been considerably reworked since.

Next deposits are glazed iron pisoliths which pre-date the Oligo-Miocene transgression. Tertiary seas advanced into old Permian valleys from the W.

Continental conditions prevailed during the Pliocene. It is a laterized surface, depressed on top of Permian valleys.

An epeirogenic phase had a time of paroxysm after Pliocene laterite formation. It determines broad arched folds, the anticlinal domes are collapsed, producing small grabens.

The faults that determined the horst and grabens are oriented NE-SW, in this region. They are thus parallel to those of the Lower Palaeozoic folds that mould themselves to the shield. A zig-zag in recent fault-lines might be due to this adaptation.

The distribution of Quaternary deposits is controlled by horst-graben disposition and by rejuvenated old Permian glacial valleys. Pleistocene deposits are encrusted by calcareous material, whilst late Quaternary deposits are not.