

The outcrops skirting the lower slopes of Table Mountain on the northern, western and southern sides consist of clean, white quartz sandstone with cross-bedding and ripple cross-lamination, and occasional thin lenses of granule conglomerate [106229, 109231, 104249]. Features resembling incipient development of the longitudinal sedimentary structure illustrated by Forsyth (1984a, p.64) occur at 116259. Contact metamorphism caused by a Jurassic dolerite intrusion affects the strata, but hardened silicified quartz sandstone may be an earlier diagenetic effect in some areas south of Table Mountain. Interbedded yellow-weathering lutite may occur but is poorly exposed and/or of uncertain stratigraphic position. The interval is overlain by lithic sandstone ('Rls').

Beyond Kitchener Ridge, six kilometres west of Ross, the strata dip south-westerly but are frequently upfaulted towards the Tiers scarp, so that the same horizons repeatedly crop out. Granule sandstone and granule conglomerate lenses with prominent red and pink quartzose grains form the base of the sequence at several localities [273497, 281483, 283481 and 326458]. Laminated clean quartz sandstone occurs rarely above the basal granule sandstone at the last two localities. Incipient longitudinal sedimentary structures were found at the last locality, and from there the granule sandstone appears to pass laterally (northward) into sandstone in which quartz granules are rare. Better developed examples of the longitudinal structure were found further north in blocks of laminated quartz sandstone with feldspathic laminae, associated with yellow and grey-weathering conchoidally fracturing mudstone and minor lithic sandstone, all dug from a waterhole [319472]. Along this fault block are found quartz sandstone with abundant cosets of linguoid ripple cross-lamination, and some massive carbonaceous mudstone of a type found in the equivalent sequence ('Rs') of the Oatlands Quadrangle.

Laminated quartz sandstone crops out west of the Isis River but is erroneously indicated as R₁ on the map (R₁l, 250480; R₁l'?) [253478]. Nearby sandstone, with moulds of sphenosid stems, is probably a southern extension of the same strata beneath the overlying Tertiary cover [255481]. Similar silicified? sandstone with sphenosid stem moulds occurs further south on a lagoon floor [283452]. It is probable that this area conforms to the general structural pattern, and many of the isolated outcrops indicated 'Rls' on the map, and much of the undifferentiated Upper Parmeener strata (R₁—which in this area is quartzose sandstone) probably form a band along the western side of the lagoon extending north to the final mentioned outcrops west of the Isis River. This interpretation is supported, in part, by the occurrence of lithic sandstone immediately west of (overlying?) the band, unlabelled on the map [275358]; possibly at the ferricrete outcrop [267462]; and intersected in the bore in the Isis River where the river crosses through the band [265463].

There are special problems in identifying strata in the Isis River–Ellinthorp Plains area, as occurrences are usually poorly exposed, often occurring as loose blocks on the muddy floors of lagoons or largely obscured by aeolian material. Distinguishing features are rarely encountered or are not well developed. In some lagoons deeply leached Parmeener sandstone resembles slightly-cemented Tertiary sandstone, and has been recognised by the occurrence of joints parallel to the main fault direction. Some sandstone blocks appear to be rotated and may not be *in situ*. Faulting juxtaposes less granule-rich horizons of the quartz sandstone ('Rls') against similar granule-bearing, near-basal horizons of the older quartz sandstone sequence ('Rp'). In this area the older quartz sandstone sequence ('Rp') contains dominantly clear, white or bluish-white quartz granules but rare pink granules have been observed in this unit elsewhere.

In general, in the area south of the Verwood Road, the quartz sandstone indicated as 'Rls' consists of clean, laminated, quartz sandstone, including the unlabelled outcrop [312418], and could occupy a basal or higher stratigraphic position in the sequence 'Rls'. Evidence for inferring a basal stratigraphic position for other outcrops is as follows:- stratigraphic position and presence of a few pink quartz granules ['Rls', 288457, 292457]; the presence of a few rudimentary 'longitudinal sedimentary structures' and white quartz granules [287459]; and stratigraphic position and white quartz granules ['Rls?', 311439]. Sandstone with prominent granules and a ferruginous cement in Clarks Lagoon proved, on drilling, to be a Tertiary sandstone overlying sandstone with abundant pink quartzose grains impregnated with hematite? prior to deposition [Hole RG44 not RG46, 298451]. Microflora in grey carbonaceous mudstone beneath the pink sandstone is assignable to the *Aratrisporites tenuispinosus* Assemblage Zone, and supports a near-basal stratigraphic position for the pink sandstone.

Rocks exposed in Reedy Lagoon (west of Clarks Lagoon) possess a structure thought to be festoon cross-bedding and if correctly interpreted, indicates depositional currents to the south-west ['Rls'?, 293448]. Individual palaeocurrent directions derived from outcrops of quartz sandstone ('Rls') south-east of Reedy Lagoon are towards the south-west, north and north-east, as indicated on the map. Two kilometres to the north-west, in Forest Lagoon, undifferentiated quartz sandstone (R_q) indicates currents to the north-west [278459]. Palaeocurrents deduced from two outcrops where inferred basal beds ('Rls'?) occur range from towards the south to towards ENE, but average south-easterly at both localities [N=4, N=5, 288459, 292454] (fig. 11). At the northernmost outcrop of the basal beds ('Rls'), currents are directed to the north and NNW, and not as indicated on the map [251489]. The basal quartz sandstone ('Rls') was not recognised on a hill east of Hanging Sugarloaf but it is noteworthy here that the palaeocurrent directions in the sandstone (R_p?) approximating the stratigraphic position of the base of the sequence 'Rls' are directed towards the west. South of Mike Howes Marsh [320493 and 222226] palaeocurrents are towards a little east of north (fig. 11).

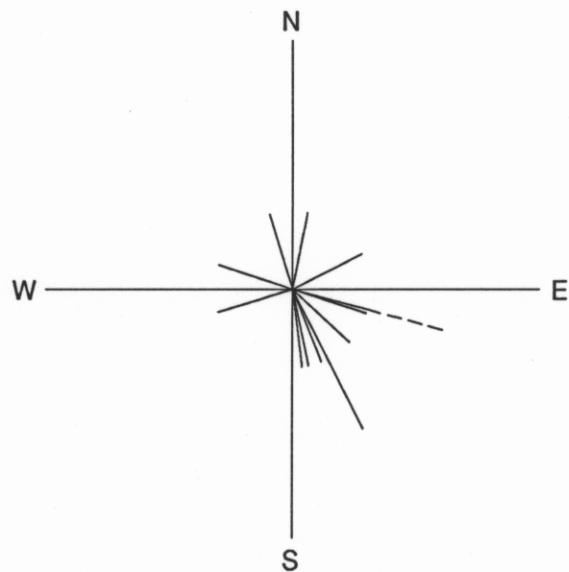


Figure 11. Palaeocurrent vectors, inferred basal quartz sandstone beds ('Rls'?) of dominantly lithic sandstone sequence, Ellinthorp Plains area. Vectors from possible equivalent horizons elsewhere mapped as R_p? are shown dashed. Data locations: 295462 (343°); 288459 (108, 133, 153, 153, 168°); 292454 (63, 103, 158, 173°); 222227 (11, 103°); 319493 (253, 288°); 225248 (298, 343°)

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