1984/68. New data on rock distribution, York Plains area

S.M. Forsyth

Abstract

Further mapping in the York Plains area has enabled an extension of available data on rock distribution.

INTRODUCTION

Several geological maps cover the York Plains area (for example Nye *in* Hills *et al.*, 1922; Gulline and Forsyth, 1976; Forsyth *et al.*, 1976). None of these maps can be considered to adequately present the detailed geology of the York Plains area. It is still not possible to produce a detailed map for the whole area but some new information has become available within the Interlaken and Oatlands Quadrangles and is presented here. The previous compilation by Gulline and Forsyth (1976) relied on known occurrences of coal and occurrences of carbonaceous mudstone in water bores to separate a carbonaceous facies from the otherwise undifferentiated Upper Parmeener Super-Group. The occurrence of the carbonaceous facies had no stratigraphic implication. Regional mapping of the York Plains part of the Oatlands Quadrangle, carried out in the early 1970's, recognised quartz sandstone, 'feldspathic' sandstone and mudstone-siltstone outcrops within the Upper Parmeener Super-Group. Poor rock exposure in the plain area and lack of a stratigraphic framework prevented the mapping of separate stratigraphic units. During compilation of the Oatlands 1:50 000 map (Forsyth *et al.*, 1976) one day's field work was carried out to reconcile differences in previous work and to extend the mapping of litho-assemblages recognised elsewhere in the Oatlands Quadrangle. Subsequently regional mapping north of 42°15' latitude was commenced in the Interlaken Quadrangle. More recently, as part of the student work-experience scheme and during a stratigraphic drilling programme at Coal Mine Hill, a further two days field work has provided new data at a reconnaissance standard south of 42°15'.

GEOLOGY (terminology follows Forsyth, 1984)

Early Triassic quartz arenite crops out in the gorge of Tin Dish Rivulet south of Coal Mine Hill. The overlying rocks are poorly exposed but contain some partly silicified fine-grained sandstone which may be bioturbated and resembles some rocks of the muddy flood plain facies (Rm). Should the Rm sequence be present it appears to be <30 m thick. The rock sequence has a northerly component of dip and one kilometre south of Coal Mine Hill very coarse-grained sandstone and granule sandstone crop out [EP352172]. These rocks are considered to mark the base of the quartz-rich lithic arenite, quartz arenite and lutite sequence (Rs). One kilometre south-west from Coal Mine Hill the granule sandstone is overlain by quartz-rich lithic arenite and lutite (Rsf, lower); this sequence is in turn overlain by quartz arenite and lutite with leaf fossils (Rsq'). The quartz arenite extends along the western or south-western flanks of Coal Mine Hill, its termination against volcanic lithic arenite (Rg) defining the western edge of a graben beneath Coal Mine Hill.

East of Coal Mine Hill the area mapped as Rsq' has been extended and appears to overly Rsf, lower exposed in the vicinity of the track to the coal mine adits. An outcrop of quartz arenite below the adits may be near the base of Rs and east of the graben beneath Coal Mine Hill [EP36151790]. Five hundred metres south of the adits Early Triassic quartz sandstone (Rp) crops out and is intruded by a dolerite dyke [EP361175].

South-west from Handsome Sugerloaf the transition from quartz arenite (Rsq') into volcanic lithic arenite (Rg) is exposed. The intervening rocks consist predominantly of lutite with some thin quartz-rich lithic arenite beds and have been tentatively assigned to Rsf, upper. Faults downthrown on the south-west side cause repetition of the sequence. The southernmost of the mapped faults appears to be intruded by a dolerite dyke [EP388159]. The fault block immediately west of Handsome Sugerloaf includes some quartz sandstone (Rsq'?) and indications of thermal metamorphism. Exposures of quartz-rich lithic arenite and lutite west of the quartz arenite exposures may underlie the quartz arenite but this relationship is uncertain and the locations of bounding faults are not accurately defined. A fault has been inferred between the quartz arenite and volcanic lithic arenite (Rg) but the relationship may be conformable [EP392179].

Diverse leaf fossil assemblages in lutite exposed in water holes indicate the lutite is part of Rsq', Rsf upper or Rg [EP380182, EP382183].

North of 42°15' regional mapping indicates dolerite intrudes Rg near Vincents Hill and north of Mount Pleasant, but in between these areas the dolerite descends below Rg as is indicated by quartz arenite skins (Rs) above the dolerite. Near the Midland Highway Rg is downfaulted in a possible extension of the Coal Mine Hill graben.

REFERENCES

FORSYTH, S.M.; ABTMAIER, B.F.; LEAMAN, D.E. 1976. Geological atlas 1:50 000 series. Zone 7 sheet 68 (8313S). Oatlands. *Department of Mines, Tasmania*.

GULLINE, A.B.; FORSYTH, S.M. 1976. Geological atlas 1:250 000 series. Sheet SK55/6. Oatlands. *Department of Mines, Tasmania*.

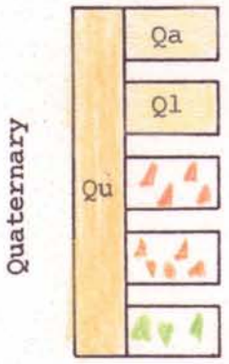
HILLS, C.L.; REID, A.M.; NYE, P.B.; KEID, H.G.W.; REID, W.D. 1922. The coal resources of Tasmania. *Miner.Resour.geol.Surv.Tasm.* 7.

[12 October 1984]

N.B. MAP NOT REPRODUCED

LEGEND

NOTE: Diagonal shading indicates inferred rock type
+++ Indicates thermal metamorphism of sedimentary rocks



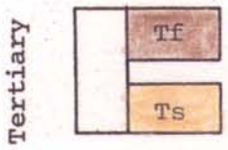
Qa — Alluvium including fan deposits

Ql — Lag deposits from Tertiary and Upper Parmeener rocks

Talus of predominantly dolerite clasts

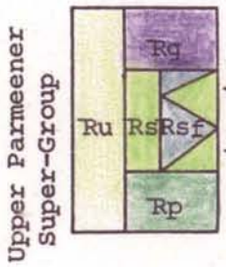
Talus of predominantly basalt clasts

Talus of predominantly quartz arenite clasts



Tf — Ferricrete

Ts — Basaltic agglomerate



Rq — Lithic arenite with volcanic grains

Rsq' / Rsq — Quartz-rich lithic and quartz arenite with interbedded lutite (Rs). Indicated are dominantly quartz-rich lithic arenite and lutite upper and lower sequences (Rsf, upper; Rsf, lower), quartz arenite (Rsq) and quartz arenite, interbedded lutite and occasional carbonaceous beds (Rsq').

Rp - quartz arenite

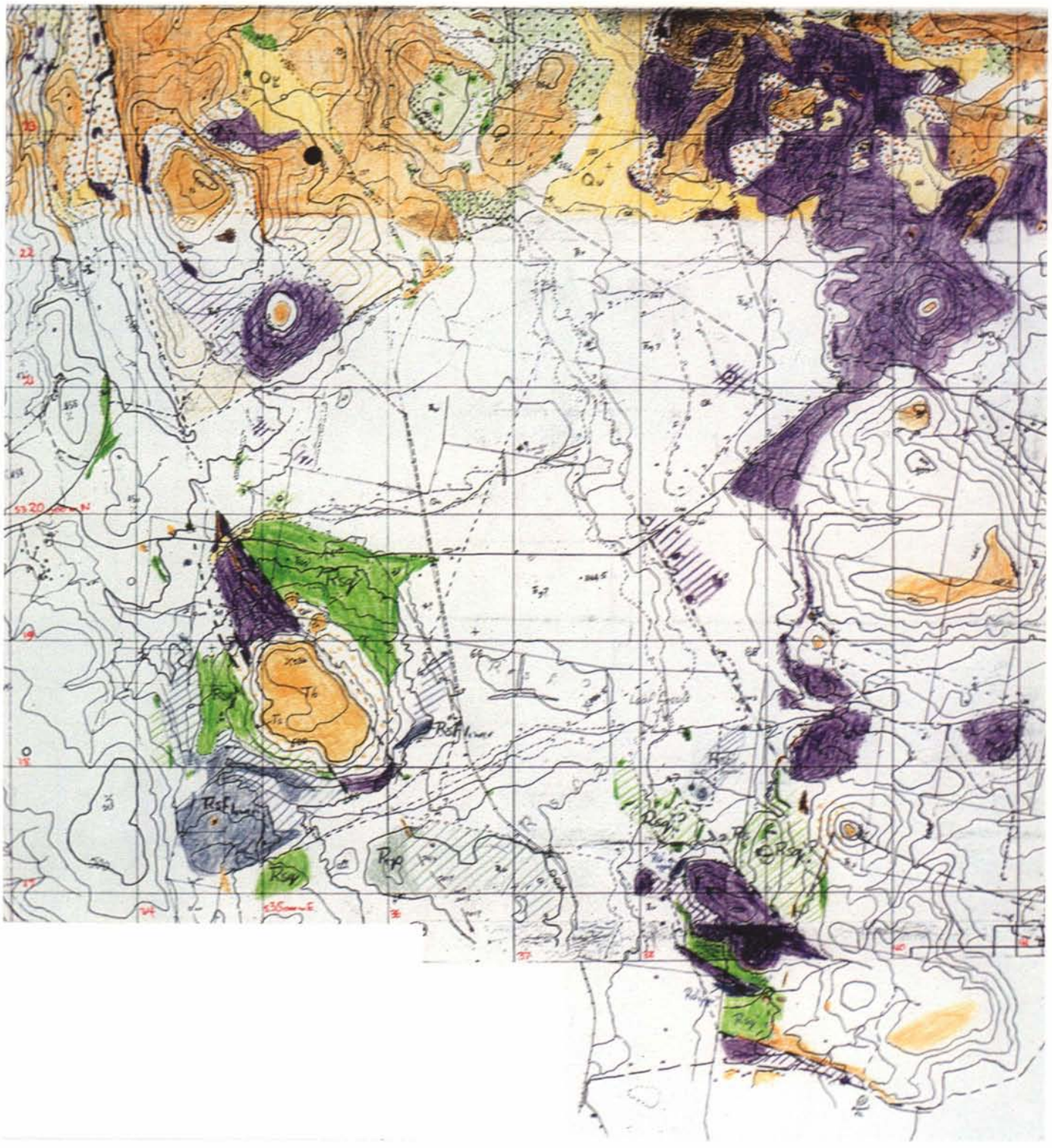
IGNEOUS ROCKS

Tertiary basalt

Jurassic dolerite, with granophyre indicated ▲▲▲
Dolerite of grain size 0 - 0.7 mm (vf), 0.7 - 1.5 mm (F), 0 - 1.5 mm with orthopyroxene phenocrysts (Fo), 1.5 - 3 mm (M) and > 3 mm (C).

Fault - position approximate, down thrown side indicated.

Probable fault]
Possible fault] Includes faults concealed and inferred below Cainozoic sedimentary rocks.



5 cm