

- (g) 5,000 m of virtually no outcrop, probably shales;
- (h) Euglo Formation, 3,000 m thick succession of sandstones and shales;
- (i) Ugalong Dacite, 5,000 m of dacite;
- (j) Weelah Formation: Towards the north from Burcher, intercalated between the Manna Conglomerate and the Ina Volcanics, and possibly partly a facies change of the Manna Conglomerate, a 10,000 m thick sequence of shales, sandstones, conglomerates, calcareous cherts and possibly rhyolites; resembling the Ootha Beds east of Condobolin.

The Weelah Formation contains the following:

- (i) Bogandillon Chert Member, 500 m thick;
- (ii) Manganiferous Shale horizon;
- (iii) Darby Conglomerate Member, similar to the Manna Conglomerate and about 2,000 m thick;
- (iv) Horizon of chert lenses.

All the above formations appear to be conformable with one another except the relationship between the Burcher Greywacke and the Sandal Formation which appears to be slightly unconformable.

Without any definite palaeontological data, dating of the rocks is difficult. However, from regional stratigraphic considerations it would appear that the units from the Manna Conglomerate to the Burcher Greywacke are Silurian, and those from the Sandal Formation to the Ugalong Dacite are Lower Devonian.

Pyritic dolerite sills occur in the Ina Volcanics; small stocks of diorite intrude the Banar Formation; a small granite stock occurs at Billy's Lookout in the southeast and there are other granites in the southwest.

The structure of the area is very simple: it appears to be the western limb of a sheared-out anticline adjoining the Tullamore syncline.

In a regional sense the rocks form the southern continuation of the Nymagee-Melrose belt of sedimentary and volcanic rocks.

Cu-Pb-Zn-Ag mineralization is associated with the acid volcanoclastics of the Ina Volcanics. Gold has been mined from the Banar Formation. Manganese occurs in the Weelah Formation in joints and as coatings and replacements in sandstone and shale.

Explanation of Text-figure.

Swc	— Manna Conglomerate
Swf	— Weelah Formation
Sbm	— Bogandillon Chert Member
Swfm	— Manganiferous shale horizon
Sdc	— Darby Conglomerate Member
Swfc	— Horizon of chert lenses
Scm	— Cowal Member
Snf	— Ina Volcanics
Sbf	— Banar Formation
Sbg	— Burcher Greywacke
Slvm	— Blow Clear Member
Dsf	— Sandal Formation
Def	— Euglo Formation
Dud	— Ugalong Dacite

g	— Granite
Black	— Outcrop
1	— Shelly fossil horizon, Sandal Formation
2,3	— Crinoid stems, Burcher Greywacke
4	— Trilobite, Ina Volcanics

CUPRIFEROUS PYRITE DEPOSITS IN THE GIRILAMBONE BEDS, TOTTENHAM, NEW SOUTH WALES

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Cupriferous pyrite deposits at Tottenham and Albert (19 km to the southeast) occur in poorly outcropping schists and quartzites of the Girilambone Beds. The rocks have undergone greenschist facies metamorphism and are strongly deformed. The schists were originally quartz-rich sediments and basic volcanics. The schists of basic volcanic origin are restricted to the Tottenham area and are folded into the Orange Plains Anticline. This structure has been outlined by surface mapping (Skrzeczynski, 1972; Suppel, 1974) and by an aeromagnetic survey carried out by the Bureau of Mineral Resources (Rees and Taylor, 1973). Drilling in the Tottenham area has revealed a rock type not recognized in outcrop — a well foliated quartz-albite-muscovite (chlorite) schist which is believed to be the host for many of the pyrite bodies. This rock type has a trace element composition similar to that of the basic schist.

The cupriferous pyrite deposits occur in two forms: as narrow stratiform, massive pyrite bodies occurring a short distance above, or within, basic schist units in the Orange Plains Anticline area, and as cross-cutting, fissure-filling quartz reefs near Albert.

Basic schist, together with spatially related quartzite, and ultrabasic and intermediate to basic intrusives occur sporadically throughout the Girilambone Beds. It is suggested that these rocks belong to an incomplete, dismembered ophiolite complex, and that the massive cupriferous pyrite deposits which occur at Tottenham, and also at Girilambone (120 km to the north-northwest), are volcanogenic and are associated with the basic volcanics of the ophiolite complex.

"VOLCANOGENIC" MINERALIZATION AND PALAEOENVIRONMENT AT MINERAL HILL, NEW SOUTH WALES

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The Mineral Hill district, located 50 km north of Condobolin, central NSW, is one of several volcanogenic copper-lead-zinc