

FOSSIL INSECT BEDS OF BELMONT, N.S.W.

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(One map.)

Fossil insect remains were discovered in the Newcastle Coal Measures in 1898 by Mr. John Mitchell, Principal of the Newcastle Technical College, when a wing, not described and subsequently lost, was found by him in shale overlying the Yard Seam at the base of Flagstaff Hill, Newcastle, and reported in the Proceedings of the Linnean Society of New South Wales, Vol. xxiii, 1898, p. 437.

In 1917 Dr. R. J. Tillyard described a number of wings found by Mr. Mitchell, of which two were found near the Soldiers' Baths, Newcastle, on an horizon just above the Dirty Seam (Proc. Linn. Soc. N.S.W., xlii, 4, p. 721), and in 1921 Dr. Tillyard described a further two wings found by Mr. Mitchell on the railway embankment near Merewether Beach, Newcastle (Proc. Linn. Soc. N.S.W., xlvi, 4, p. 413).

With the exception of these five wings, all the insect remains from the Newcastle Coal Measures have been found on an horizon which was first discovered by Mr. Mitchell in a shallow quarry about two miles north of Belmont, and subsequently traced to other localities between Belmont and Warner's Bay on Lake Macquarie. This horizon has proved to be very prolific in fossil insect remains, and nearly two thousand specimens from it are registered in the Australian Museum collection. Of these, approximately half are represented by the magnificent collection presented to the Museum by Mr. Malcolm S. Stanley in 1943.

During the past three years the writer and Mr. D. Walker have spent such time as was available in mapping the Belmont insect beds and determining their correct relation to the Newcastle Coal Measures. The outcrop is shown by the heavy broken line on the accompanying map.

The original outcrop found by Mr. Mitchell is approximately half a mile north of the John Darling Colliery and a quarter of a mile east of the Pacific Highway at the turnoff to the John Darling Colliery and Redhead. It continues around a low hill to the east of the Highway, and outcrops very prominently at the main gate of the colliery and along its northern boundary.

This eastern outcrop, however, is an isolated one, the main portion of the beds occurring to the west and north of the Pacific Highway.

At the top of Devil's Elbow, on the Pacific Highway, three miles north of Belmont, the beds outcrop about five chains to the west of the highway on the road leading through Violettown to Warner's Bay. This road follows a ridge running north-west for half a mile and then north for another mile and a half, and the insect beds outcrop to the east of the road at distances varying up to 20 chains and at an elevation of 200 to 280 feet above sea level.

West of this road the horizon follows the heads of the gullies feeding Sheppard's Creek and Snake Creek, and crosses the road again about two miles north of the Devil's Elbow.

The dip of the beds is in general W to SW at approximately 3°, but is variable, the strike following roughly the contours of the structural basin of which Lake Macquarie occupies the centre.