

292

RISCHBIETER, MICHAEL O.*, BENTON M. STIDD. Biology Department, University of North Carolina, Chapel Hill, NC 27514, and Department of Biological Sciences, Western Illinois University, Macomb, Il 61455.- Anatomically and morphologically preserved *Linopteris obliqua* Bunbury from the Herrin No. 6 Coal of Southern Illinois.

The first reported occurrence of permineralized foliage referable to the species *Linopteris obliqua* Bunbury is described from Middle Pennsylvanian coal balls from the Herrin No. 6 Coal of Southern Illinois. Morphological details of the foliage were revealed by splitting coal balls along natural bedding planes, and further degaging any obscuring matrix. This technique and paradermal sectioning allowed comparative identification with compressed *Linopteris* foliage. The characteristic anastomosing vein network and overall dimensions of the foliage were the most useful characters for use in identification. The pinnules range from 12-15 mm long x 5-7 mm wide, are mostly ovate in shape, with a truncate-cordate base. Secondary veins anastomose to give 4-6 sided meshes which vary in length to width proportions. A distinct epidermal layer is sometimes underlain by an indistinct (possibly hypodermal) layer. The mesophyll is composed of a palisade and spongy layer. Midribs of the pinnules are vascularized by a single bundle of 12-15 spiral-scalariform tracheids shaped as an adaxially curved arc. Secondary veins of the lamina are composed of 3-5 spiral-scalariform tracheids surrounded by a prominent bundle sheath. Bundle sheath extension cells have sclerified walls, and extend from the lower to upper epidermis. Cuticles taken from the abaxial surface reveal a dense concentration of stomata and hair bases.

293

ROTHWELL, GAR W.* and ANDREW C. SCOTT. Department of Botany, Ohio University, Athens, Ohio 45701, and Department of Geology, Chelsea College, University of London, London SW10 OUA. - Ecology of the Lower Carboniferous plant remains from Oxroad Bay, East Lothian, Scotland.

Extensive collecting of late Tournaisian plant remains at Oxroad Bay has revealed four different sources of permineralized material, and separate beds that contain compressed specimens. The most abundant remains are permineralized in green basaltic ashes that crop out at the base of a cliff and on the adjacent shore. The cliff section contains a large channel structure with several unconformities that suggest oversteepening during deposition. The sediments show a wide range of grain sizes and bedding structures, including evidence of reverse grading, slumping and mass flow. The ashes probably originated from a tuff-ring or maar volcano and may include base-surge sediments. Incorporated plants are interpreted as gymnospermous colonizers of ash deposits, and some fragments are large enough to permit the reconstruction of whole plants. Remains under investigation include three new species of fertile organs. Two putative lycophyte stems, the only pteridophyte remains, do not represent *Paurodendron* as previously suspected. Some taxa described from Oxroad Bay (including *Oxroadia*) come from other horizons and presumably represent different environments of growth and deposition.

294

ROY, BARBARA A. and LAWRENCE C. MATTEN.* Department of Botany, Southern Illinois University, Carbondale, IL 62901. - Notes on *Lycopogonia callicyrtia* from the New Albany Shale.

Lycopogonia callicyrtia Read was described in 1936 from the Devonian-Mississippian transition of Kentucky. At that time, Read placed the genus in the Lycopsidea. Since then, doubt has been cast on the systematic position of *Lycopogonia* primarily because of the morphology of the leaf traces. The type specimen was re-examined for evidence to support taxonomic assignment to the Lycopsidea or another group of plants. New observations indicate that the specimen is more lycopodiaceous than previously inferred. Each of the helically arranged leaf traces has, in the cortex, a single arc of