Preliminary Report on Specimens of Silicified Wood collected by John Muir, Esq., at Adamana, near Holbrook, Arizona, U.S.A.

BY

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Twelve specimens[1] of fossil wood were sent for examination, and of these, three were not sufficiently well preserved for identification. Two of these three had patches of the tissue preserved, but the third specimen had no structure. The remaining nine were all specimens of *Araucarioxylon*, and one of them is a new species; on this last, more research is necessary before a complete description can be given. An interesting point brought out by this collection is that the darkest and dullest specimens shew more perfect preservation of the tissues than the clearer and brighter ones. It is to be hoped that Mr. Muir may be able to obtain further examples of wood from this locality, and that cones belonging to these trees may also be discovered. The following is a list (with short descriptions) of the specimens:—

No. 1. Stem with tissue preserved only in patches.

No. 2. Thin fragment of wood near the outside of the trunk. The branch bundles have a quincuncial arrangement. The cells have bordered pits on their radial walls, and the medullary rays are from 2 to 10 cells high.

No. 3. A new species of *Araucarioxylon* with broad medullary plates separating the xylem plates. Small normal medullary rays traverse the xylem plates. The cells of the medullary plates are elongated transversely, and

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the leaf-traces pass through them. In transverse sections of the stem these plates have a "herring-bone" structure. The xylem shows bordered pits (sometimes in more than one series) on the radial walls of each tracheide. The preservation is very good.

No. 4. In this specimen the pith is preserved and consists of large thin-walled parenchyma, but here and there are dark-stained elements which probably were resin canals. The protoxylem elements are ranged round the periphery of the pith. The xylem has bordered pits on the radial walls, but they are rather indefinite, as also are the medullary rays.

No. 5. The pith is small, with peripheral protoxylems. The leaf-traces arise from the protoxylems, and fork in the wood, passing out in pairs. They are arranged in pairs in a quincuncial series on the outside. The alternation of active growth and resting periods seems to have varied, and so the zones of small xylem elements vary in thickness. The xylem elements have bordered pits in a single series on their radial walls; the medullary rays are only represented by dark lines.

No. 6. Similar to No. 5, but of greater diameter.

No. 7. No tissue preserved.

No. 8. A wedge of wood some distance from the central pith. The branch-traces are single and quincuncially arranged. Individual cells of the medullary rays are indistinct, but the rays are quite obvious and from 2 to 12 cells high.

No. 9. This is the best-preserved specimen. The xylem consists of cells with one row of bordered pits on their radial walls only. The medullary rays are well preserved, each cell being shewn, and the ray is from 4 to 12 cells high.

No. 10. This stem shows no internal structure.

No. 11. The specimen is slightly crushed, and so the cells are irregular in shape. Nothing definite of the minute cell structure can be discerned.

No. 12. In this stem the cells are much crushed, and the minute structure is indeterminable.