

Supporting Online Material

Systematic Paleontology

Genus *Vernanimalcula* gen. et sp. nov.

Etymology: Generic name denotes (from Latin) small spring animal (i.e., after Snowball Earth winter).

Diagnosis: Small triploblastic bilaterian animal (about 120-180 microns in length), with an oval-shaped dorsal view. The alimentary canal is differentiated into a pharynx, which is muscular and multi-layered (three, possibly four single cell layers), running anterior-posterior with a collared mouth situating ventrally near anterior margin of the body. The pharynx opens into an expanded stomach/intestine, which terminates at the posterior end with an anus. Alimentary canal is flanked by paired coeloms, which are bounded with single-cell mesodermal layers. Externally the mesodermal layers are covered with ectoderm layers and internally they abut the endodermal wall of the alimentary tract. The body is convex dorsally and there are at least three pits on each side of the outer surface. These pits are floored with small cells. The ventral surface is interpreted to be flat.

Type species: *Vernanimalcula guizhouena* gen. et sp. nov. (Fig. 1 A; Table 1).

Etymology: Specific name refers to Guizhou Province, where the fossils came from.

Holotype: The holotype represents a complete animal preserved; the section runs nearly parallel to the ventral surface of the animal.

Material: Five specimens, all of which are nearly complete. Specimen numbers are given in Table 1. Diagnosis: Same as the generic diagnosis. This and the other specimens

described are housed at the Early Life Research Center in Chengjiang, Yunnan, China.

Locality and Stratigraphy: Badoushan, Weng'an County, Central Guizhou; from ~2-m-thick basal black bituminous phosphorite layer of the Precambrian lower Weng'an Phosphate Member, Doushantuo Formation.