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Eocene deposits of the Mississippi embayment have provided an abundance of very well preserved leaves, fruits, seeds, and wood. Thalli of the alga Phycopeltis have been found as epiphytes upon several leaves from these sediments. The shape of the thallus varies with the species and may be circular or tongue-shaped and often lobed. Thalli are composed of radiating rows of cells and are a single cell thick. They adhere to either the upper or lower surface of the leaves. Developmental stages from spore-like structures to mature thalli have been found. Reproductive cells are present on mature thalli of one species. Kück described Phycopeltis from Eocene deposits of Germany, and Kirchheimer described another Phycopeltis from the Lower Oligocene of Germany. Kirchheimer assigns these 2 forms to separate species on the basis of their morphology. Both species occur in Eocene deposits of the Mississippi embayment. A discussion of techniques is also included.

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