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Several species of fossil fruits, leaves and pollen from the Eocene of southeastern United States have been assigned to the genus Engelhardia. Recent examination of modern representatives of Old and New World sections indicates sufficient diversity to warrant segregating the New World members into the genus Oreomunnea. Two fruits of E. puryearensis Berry were obtained from the Puryear clay pit, Puryear, Tennessee; both specimens are impressions of the three anterior lobes. No fourth posterior lobe is present. The anterior wings of the fossil show venation patterns similar to the New World group, particularly O. mexicana. Based on the fruits, E. puryearensis is more closely aligned to Central American populations than Asiatic taxa. Other Engelhardia fruits reported by Berry suggest the presence of both genera in the southeastern United States during the Eocene. Modern pollen is not sufficiently distinctive to conclusively separate New and Old world sections. To date, no fossil leaves have been obtained that can be assigned to either the genus Engelhardia or Oreomunnea, although the two extant genera show distinct morphological and cuticular differences. The presence of leaves could be important for determining the relationship of the fruits to Engelhardia and/or Oreomunnea.

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