DISCUSSION

The old-growth cypress stand in the Okefenokee Swamp consists of an overstory of tall, rather widely spaced Taxodium and a three-tiered understory. The subcanopy has a relatively uniform distribution, is of medium height, and is dominated by Gordonia. The canopy of Ilex melds the subcanopy with the dense shrub layer. The dense shrub layer, although patchy, covers much of the ground surface.

The larger Taxodium in the stand are rather old with estimated ages of 445, 528, and 587 years for three individuals cored by Duever (1979). Duever states that ring quality for Taxodium is "fair-good" (based on a sample size of 126 trees over all of Okefenokee Swamp). Therefore, it is safe to assume that at least several of the older Taxodium have been present in the site for over 400 years. If one assumes some reliable correlation between age and diameter, and given that the 587-year-old Taxodium is 96 cm dbh, then the younger Taxodium must be older than 100-150 years. This figure corresponds with the estimated time of encroachment of the bay species. Selected individuals of Gordonia, a community codominant with Taxodium, have estimated ages of 67, 73, and 91 year for three of the larger trees (ring quality, fair-good; N = 38) (Duever, 1979). Three larger Magnolia have estimated ages of 122, 124, and 145 year. However, ring quality for Magnolia is "poor-fair" (N = 58), and can be used to estimate site age only in conjunction with the other species. The few Pinus elliottii observed at one edge of the site have ages of 98, 124, and 140 year (ring quality, good; N = 32). These are in the upper limits of known ages for P. elliottii (Pomeroy and Cooper, 1956; Hebb and Clewell, 1976). Therefore, based on estimated ages (Duever, 1979) and size class distribution (Table 2), it is apparent that successful establishment of Taxodium has not occurred in the last 100-200 year, indicating long-term succession towards a community dominated by evergreen hardwoods, locally known as bay swamps. This trend concurs with the succession model suggested by Hamilton (1978, 1984) for Okefenokee Swamp and by Monk (1968) for woody swamps in north-central Florida.

Taxodium presently dominates the stand in stature, basal area, and overall community importance. However, Gordonia has already gained a dominant position of importance as a tree species and is replacing Taxodium in community importance. Gordonia currently comprises 22.4% of the community basal area. This plus its significance as a dominant component of the canopy, as reflected in its high frequency and density, makes Gordonia a serious competitor as the potential single community dominant to replace Taxodium. This trend differs considerably from the successional trend of cypress-to-bay communities for this region as noted by Monk (1968) where bay communities are codominated by Magnolia and Persea and to a lesser extent Gordonia. Even a slash pine-to-bay successional community in the panhandle of Florida is becoming dominated by Magnolia with Nyssa and Persea as secondary codominants. Gordonia are not even present in this latter community (Hebb and Clewell, 1976).

The significance of Gordonia as a dominant community component is not well understood, and may be related to numerous factors. However, the process through which terrestriallike communities develop in Okefenokee Swamp