*This paper investigates the dynamics of food storage and food security within the contexts of food availability, access and preference; as defined by the World Health Organization (WHO). These standards allow the evaluation of human-plant interaction at the Bofiat (locus ‘A’) rock shelter at Kpatritinga, using archaeological, archaeobotanical, palynological, ethnographic and environmental data. These pieces of evidence reveal the past subsistence strategies and/or plant tradition and the nature of vegetation, as well as a continuity in the use of granaries for storing food crops. Also, the role of granaries as food storage facilities is highlighted as occupying a central position within the spectrum of food security. Elements of socio-economic and political relations within the society in the context of food procurement, storage, and redistribution are inferred from the studies of these granaries.*