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The Landbrotshólar pseudocrater field, southeast Iceland: dynamics and growth of rootless cones with in a lava flow.

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The Landbtotshólar pseudocrater field forms the largest rootless cone field in Iceland. It is situated in the SE, close to the town of Kirkjubæjarklaustur. The pseudocraters formed within the lava flow of Eldgjá (934 AD). The Eldgjá lava is the largest lava flow on earth in historic time, with a volume of some 18 km^3. The eruptive fissure extents for 75 km, from Katla volcano in the south towards Vatnajökull in the NE. The lava from Eldgjá flowed some 40 km before being spread out at the mouth of Skaftá river gorge and onto to the out wash plains of Landbrot and Medalland. The pseudocrater field has an area of some 50 km^2 and the number of rootless cones counts in the thousands. For this study we measured more than 4700 craters within the area of some 27 km^2. Stratigraphic studies in the pseudocrater field show that crater explosions create inverse layering since the substrata are the first to be expelled. Environmental conditions at the time of formation can be deduced from lithics, which suggest that the area flooded by the lava was glacial riverbeds and marches. Statistical studies of the craters indicate that they are in general smaller than there volcanic counterparts. Volume calculation of the ejected material shows that larger craters are more voluminous than can be explained by simple ejection of the underlying lava. Confirming the importance of the substrata and implying lateral magma supply. We will present comprehensive model for pseudocrater generation, supported by field analysis.