

# **Holocene paleoenvironments of the peat imbedded in the ditch based on the diatom assemblages , of Liaodong Peninsula in china**

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Drill sampling was conducted in 12 ditches along the Dagu Mountain of the Liaodong Peninsula. This paper, through diatom analyses of the samples, identified that there exist sea facies layers in seven of the ditches, and ascertained that the peat covering the sea facies was formed mainly from several surroundings such as swamps, fresh water lakes and lagoons or salty water billabongs, etc. Different types of the peat formed under different environments have different indicative significance to the offing. It also conducted <sup>14</sup>C time measurements to the shells in the sea facies silt from one of the seven drill holes in different ditches at the bottom of the peat and on the coastal plain, and made clear that this region reached the peak of the Holocene surging sea 6000-5500 years ago, when the sea water rose to more than 4m (average high tide) elevation, over than 1 meter higher than today's sea surface. The bottom part of the peat that was developing on top of the sea facies was formed in the two periods of 6000-5000aB.P. and 3200-2600aB.P., representing the high sea surface period and the low sea surface period respectively. Studies have found out that the peat at about 8m height and the shell accumulations at 8-10m of the yellow-earth bank of the Dagu Mountain in the high sea surface period were much higher than the maximum height of more than 4m of the sea facies in the ditches. The sediments under the former peat should not be the sediments of the sea facies, and the latter were accumulations of shell tumulus. So their heights cannot be used to judge the sea water table. The height of about 4m of the sea facies around the Dagu Mountain is lower than the that of the lagoon peat of Bacha Ditch, Changxing Island on the west of the Liaodong Peninsula, indicating that the formative movements on the east and the west

of the Liaodong Peninsula might be different after the high sea surface period, and probably there were tilting movements from the west to the east, which needs further studies.

Key words: peat, Dagu Mountain Ditch, highest sea-level