SOIL ORIGINS AND ENVIRONMENTAL CONDITIONS AS RELATED TO DEVELOPMENT OF DIAGNOSTIC HORIZONS AT EL FAYOUM ARAE, EGYPT.

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ABSTRACT

The current work aims at devoting much attention to identify the genetic and diagnostic horizons that predominate within the main sediments in El Fayoum region. Depending on the previous studies which exactly distinguished the locations of different parent materialsat the area. Seventeen soil profiles were chosen to represent these sediments to run up the soil physical, chemical and mineralogical analysis. Some of six soil profiles were selected to represent the uniform soil parent materials to assessment their soil development.

Soils of Nile fluvial deposits are likely non saline, non alkaline and have low content of $CaCO_3$ and gypsum. The most abundant features are the formation of argillic and Bt horizons in some developed soils. These soils belonged to Torrifluvents, Haplargids, and Torriorthents

Soils of fluvio-lacustrine deposits comprise a clayey to sandy clayey loams in their texture. The soils weakly affected with salinity and alkalinity. The cultivation practices are the main factors affecting soil development. Some of these soils are Haplcacids and Haplargids.

Soils of fluvio–desertic deposits have different lithological and environmental parameters. The most abundent genetic horizons aresalic, gypsic, calcic and Bt horizons. The accumulation of these constituents ismore related with cultivation practices. Some soils are Calcigypsids and Torripsamments.

Soils of lacustrine deposits differentiated into recent and old according to the deposional age. The recent deposits composed of gypsiferous shale white marls limestons and sand, forming the present Lake shore lines. The old lacustrine deposits comprised limestone mixed gravels and sand with pebbles making the old shorelines in the historical periods. These soils show many

genetic and diagnostic horizon, *i.e.*, salic, calcic, argillicgypsic and Bt horizons.

Desertic deposits differentiated into aeolian and aquous deposits according to the agent of transportation and media of deposition. These soils varied in texture between sandy to clayey soils. The recoginised diagnostic horizons are salic, calcic, argillicand gypsic. The soils are Haplocalcids and Haplosalids.

The uniformity ratio confirms the existence of many uniform soils which put under further investigations to study their development. Also the weathering ratios were used to differentiate the intensity of the weathering processes.

The soil development may be established via assessment the movements of soil constituents. The total elemental analysis comprised the variation in elements contents. Studying loss and gain and amorphous materialsshowed their differences with depth in some soils. The micromorphological investigations may confirm the distinguished genetic horizons and soil development.