

APPENDIX G

NOTES ON SAND AND LOESS SPECIMENS

BROUGHT BY DR. M. A. STEIN FROM THE REGION OF KHOTAN

BY

L. DE LÓCZY

PROFESSOR OF GEOGRAPHY IN BUDAPEST UNIVERSITY, ETC.

I.—YÖTKAN.

THE specimens of soil from Yötkan were obtained from two strata of the banks excavated in the course of gold-washing operations.

(i) The upper stratum, identical with the fertile soil of light yellowish colour at present under cultivation, shows a thickness varying from 9–20 ft. near the hamlet of Khalche. The three specimens from this stratum consist of a very uniform loess-like substance. One was taken west of Khalche from a depth of 6 ft.; the second east of it from a depth of 16 ft.; the third from the same place at a depth of 10 ft.

The first specimen (marked No. 3) contains grains of gypsum, and remains of charcoal, straw, and grass. Under the microscope the material proves to consist of angular quartz and mica. The diameter of the angular quartz grains varies from 0.009–0.09 mm. The second specimen (No. 10) is also angular quartz sand with plentiful mica; the grains, finer even than in the first specimen, show a diameter of 0.004–0.060 mm. Among the fine sand are found here and there mica scales, 0.19–0.28 mm. in diameter. Under hydrochloric acid the two specimens undergo scarcely any effervescence. On the whole the upper stratum at Yötkan is formed by very fine quartz sand containing a very slight quantity of clayey dust. It is this fine dust, almost unmeasurable in diameter, which effervesces under hydrochloric acid; it is hence chalky. The fine clayey and chalky dust binds the quartz grains and mica into small clumps showing slight cohesion.

The third specimen (Nos. 6 and 7), found to the east of Khalche, in the immediate vicinity of a sandy layer (No. 5), agrees completely with the two previous ones. The angular quartz and mica grains of No. 6 vary from 0.0095 to 0.09 mm. in diameter. Its coarser grains attain 0.19 mm. in diameter. In specimen No. 5, taken from the sandy layer (10–12 inches thick) referred to below, the fine dust grains measure 0.0019–0.0097 mm., the coarser grains 0.028–0.381 mm. Otherwise this sandy layer, in regard to its substance and character, is identical with the three previous specimens marked as 'silt.' Specimen No. 7 consists of quartz and mica, 0.0066–0.0476 mm. in diameter, with an admixture of coarser grains (0.0095–0.095 mm.) and of a somewhat larger quantity of chalk dust.

(ii) Of the 'culture-stratum' of Yötkan, which lies under the light-yellowish upper stratum in a thickness of 5–14 ft., and shows a darker (brownish) colour, there are two specimens in the collection. One (No. 4) was taken from a depth of 17 ft., the other (No. 9) from a depth of 18 ft. Specimen No. 4 is a fine sandy substance full of angular chalk concretions. These concretions have formed around plant stems or roots, and resemble those small, irregularly angular concretions which are common in the mud of the ancient alluvium along the Tisza and Maros rivers. The interior of the concretions is formed by a grey, clayey and sandy fresh-water chalk, full of biotite mica scales. Outside, the concretions are covered with a fine dust. Under