Discussion

R. B. Peck[1] *(written discussion)*—The writer agrees with the author that the relationship between coefficient of consolidation and liquid limit, reproduced as Fig. 2 from the 1967 text of Terzaghi and Peck, is likely to be misleading, but not for the reasons given by the author. The coefficient of consolidation, as evaluated by the results of consolidation tests, differs markedly for a good undisturbed sample depending on whether the vertical pressure on the sample is below or above the preconsolidation pressure. This finding was noted as early as 1949 by L. Zeevaert[2] in his study of the clays of Mexico City, in connection with which he commented: "For the flat branch (of the *e*-log *p* curve) the coefficient of consolidation is at least ten times as great as that corresponding to the steep branch. . . . The coefficients of consolidation are practically the same for the undisturbed and remolded states provided the computations are based on the steep branches of the compressibility curves. This fact also leads to the conclusion (for the Mexico City clay) that the material may be considered completely remolded after the critical load is exceeded, because the coefficients of consolidation in this range approach the same order of magnitude."

Similar trends were noted by Moran, Proctor, Mueser, and Rutledge[3] in their study of sand drains (1958). Several comparisons are shown, for a variety of clays and silty clays. As a rule, the coefficients of consolidation decreased by factors of five to ten in tests on undisturbed samples upon increasing the pressure from below to above the preconsolidation load, whereas those for tests on completely remolded samples of the same material were roughly equal to or perhaps half as great as those corresponding to the virgin branches of the *e*-log *p* curves.

It is not certain that all values plotted in Fig. 2 refer to stresses greater than the preconsolidation load; hence, the figure bears scrutiny. For most of the values, however, the condition was satisfied. If the results indicate values nearly corresponding to the remolded state, the reason is the altera-

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[1] Professor of Foundation Engineering, University of Illinois, Urbana, Ill.

[2] Zeevaert, L., "An Investigation of the Engineering Characteristics of the Volcanic Lacustrine Clay Deposit Beneath Mexico City," Ph.D. thesis, University of Illinois, Urbana, 1949.

[3] Moran, Proctor, Mueser, and Rutledge, "Study of Deep Soil Stabilization by Vertical Sand Drains," NOy 88812, Bureau of Yards and Docks, Department of the Navy, Washington, D. C., June 1958.

tion of the soil structure as the preconsolidation load is passed. It is not necessary to invoke the concept of fabric in the sense that the small size of the samples precluded investigating the large-scale characteristics of the deposit.

P. W. Rowe (author's closure)—Professor Peck refers to a well-known influence of the preconsolidation pressure on the coefficient of consolidation of a sample and mentions factors of five to ten. This influence is associated with a variation in *compressibility* of the soil. However, the author is concerned with the *permeability* of the soil which can affect the measurement of the coefficient of consolidation by factors up to 1000 or greater.

Professor Peck's concluding sentence appears to contradict his opening sentence in that he accepts that the small size of his samples "precluded investigating the large-scale characteristics of the deposit." Such investigations are the objective of sampling and the very purpose of the present paper.