CORRESPONDENCE

The Secretary,
The Institution of Civil Engineers.

DEAR SIR,

The Article on " An Investigation of the Bearing Capacity of Some Bored and Driven Piles in London Clay" (*Géotechnique*, III : 7 : 267), by Drs G. G. Meyerhof and L. J. Murdock raises several points on which there can be a difference of opinion. Since the subject is so important to all engineers who have occasion to use or construct bored in-situ piles, I should like to put some of these points on record.

Most important is the method of making the bored pile. The method described by the Authors is not that in general use by contractors engaged in this type of work. I think it is true to say that the majority of reputable contractors who construct bored piles in the London Clay would use a clay-cutter, and neither an auger nor a shell, to bore the hole. The clay-cutter requires the addition of no water, and it has no clack-valve to stick. Not only is the clay-cutter a more efficient boring tool—in large sizes—than the auger, but it has the effect of sealing the sides of the hole against the infiltration of water through fissures.

Another difference between the normal practice and that adopted by the Authors is the consistency of the concrete used. It is good practice in bored-pile construction to use a rich concrete of high workability. With a workable mix which flows easily, any tendency to arching is eliminated, and there is, therefore, no reason to suppose that the full fluid head of concrete does not act on the sides of the hole. Thus the clay is not swelling under zero pressure.

I suggest, therefore, that the method put forward by the Authors is unduly conservative if a proper piling technique under close supervision is employed. The question of whether or not the hole is lined by a steel tube is not of great importance, since any expansion of the clay can take place during the boring operation before the lining tube reaches the bottom of the hole, and any softening of the clay, due to absorption of water from the concrete, if it should occur, can take place equally well after withdrawing the steel lining tube. One further point arises here, and that is that softening may occur while the hole is open if it is left open too long. Thus, in the cases reported by the Authors, boring took as much as 5 days in one case, whereas normally a pile would be bored and concreted in the same day, or certainly the following day.

Pile No.	Diameter : inches	Length : feet	Test load : tons	Settlement : inches	Calculated ultimate load : tons		Percentage of full shear strength on walls to give agreement
					Softened * strength	Full strength	
1	24	30·5	10 less than ultimate	0·12	75	248	—
2	18	31	130	4	54	176	70
3	24	23	125	2	64	170	67

* As Meyerhof and Murdock.