SUMMARY AND CONCLUSIONS

The method of solution used in the analysis of one-and two-dimensional parametric variations in the compression of cylindrical wafers is considered to be valid, and is adequately supported with numerous experimental data. The use of the displacement function has served to demonstrate the type of solution to be obtained with a retention of the appropriate terms. It also indicates the next term to be added if a more extensive analysis is to be performed. The solutions are limited to situations involving low shearing stresses at the anvil-wafer interface, and are somewhat cumbersum to use. However, in view of the fact that the solutions embody the effects of material strain hardening, anvil deflection, surface shear, radial constraints, magnitude of load and strain, etc., they should be regarded as useful analytical tools for determining the stress and pressure gradients existing in Bridgman-type pressure cells (a term generally adapted for confined compression wafers). In the compression of unconfined, short cylinders, these solutions should also describe the "end effects" that are commonly excluded.

The stress distributions, for confined and unconfined wafers, all indicate that the stress, and pressure, is greatest at the wafer center, and decreases with increase in radial position. This observation is consistent with the results reported in References (c), and (j), and is in partial agreement with the conclusions of Reference (b). The admittance