reported for other species of plants by several investigators. Likewise, Bonner and Greene found that corn plants did not respond to added vitamin B₁. — H. E. Myers, R. W. Jugenheimer, and E. G. Heyne. Kansas Agricultural Experiment Station, Manhattan, Kans.

**A SOIL BORER THAT PENETRATES DRY AND HARD CLAY SOIL**

NEARLY 20 years ago the writer constructed the soil borer which has been described in several journals, e.g., Soil Science, 43:377–378. This borer has been used in soil mappings carried out by our Institute and has worked very satisfactorily. The borer has provided the soil surveyor with a little sample from the depth he wishes.

The only inconvenience with the borer has been that in spite of the long and sharp point the hardest clay soils, especially during the dry season, have been very difficult to penetrate.

Three years ago the problem was discussed with a Finnish blacksmith. He proposed to provide the point of the borer with a worm. This was done immediately and ever since the difficulties, even in driest soil, have disappeared.

The drawing in Fig. 1 shows the borer in its newest form. The handle is of wood with a steel support and the shaft a steel rod 12 mm thick. The one edge of the slot is drawn out a little and sharpened. If the worm in the point is of suitable form, the borer operates easily and rapidly. — Antti Salminen, Soil Division, Central Agricultural Experiment Station, Helsinki, Finland.

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4 Arnon, D. I. Vitamin B₁ in relation to the growth of green plants. Science, 92:264–266. 1940.

