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INTERSPECIFIC HYBRIDIZATION OF *Phaseolus vulgaris* WITH  
*P. acutifolius*: ADVANCED GENERATIONS

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Of the ten different F<sub>1</sub> genotypes reported in Vol. 23 BIC, two produced fertile F<sub>2</sub> plants. The F<sub>1</sub> combinations PI 321-638 x L16 (white seeded cultivated tepary x Masterpiece) and PI 321-638 x (L83 x PI 319-441) (same tepary x F<sub>1</sub> intraspecific hybrid ♂ parent pinto UI #114 x wild *P. vulgaris*) have both consistently produced a small number of F<sub>2</sub> seeds which have grown into plants that are fertile to different extents. F<sub>3</sub> families are currently being grown to increase seed for field testing for drought resistance and for disease resistance.

Seed was derived from some BC<sub>1</sub> plants by backcrossing with California cultivars of *P. vulgaris*. This material was grown summer 1980 at Irvine, Calif. with adequate irrigation for field observation and seed increase. Most plants were reasonably fertile and vigorous. Bush plant type was recovered in several lines. Seed from these plants will also be field tested for drought resistance.

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IN FIELD COMPARISON OF ROOTING DEPTH  
OF *Phaseolus vulgaris* AND *P. acutifolius*

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Field trials were conducted to estimate rooting depth of *P. vulgaris* and *P. acutifolius* (teparty bean) cultivars. California common bean cultivars Small White 59, Dark Red Kidney, and Gloria Pink, and tepary lines PI 321-638, PI 310-801, and L172 were planted May 24, 1980 with pre-irrigation, and two 24-hr irrigations four and six days after planting. No more water was applied for the four months of the experiment, and there was no significant rainfall during that period. Beginning June 3, 1980, readings were taken weekly at 30 cm intervals to 180 cm depth with a neutron depth moisture probe.

All the *P. vulgaris* cultivars succumbed to charcoal rot, and it was not possible to estimate their true rooting potential. The three tepary lines grew, flowered, and set seed. Water extraction was detected to at least 180 cm, the limit of the tubes.