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## NEW HYBRIDS FROM INCOMPATIBLE CROSSES IN DATURA THROUGH CULTURE OF EXCISED EMBRYOS ON MALT MEDIA<sup>1</sup>

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INCREASINGLY of recent years it is becoming possible to control the activities of the living plant by chemical treatment. The success in doubling chromosomal numbers with colchicine and other stimuli naturally led to an attempt to halve the chromosomal number by some similarly simple treatment. The fact that over two hundred haploids ( $1n$ ) had turned up spontaneously in our cultures of *Daturas* since 1921 showed that the plant is capable of producing individuals with half the normal  $2n$  chromosomal com-

<sup>1</sup>Read before the American Philosophical Society, November 19, 1943. Contributions from the Department of Botany, Smith College, New Series, No. 12. This investigation was supported in part by the Carnegie Institution of Washington and by a grant from the American Philosophical Society. The authors are indebted to Margaret Conlin, Jean Cummings, Susanne McLean and Mary Sanders, who as graduate assistants have made a large proportion of the dissections.

plement. Preliminary attempts to induce the production of  $1n$  offspring by treating the unfertilized egg cells with a wide series of stimuli were entirely unsuccessful. In the summer of 1940 the cooperation of Drs. J. van Overbeek and Marie Conklin was secured in a more intensive attack on the problem. Something was learned about the processes involved in embryo development,<sup>2</sup> but none of the stimuli tested induced the production of  $1n$  embryos. In the summer of 1941 they attacked the problem from a different standpoint in order to learn more about the factors involved in embryo development and attempted to dig out the young embryos and cultivate them on artificial media. The older embryos could be thus readily cultivated, but the smaller ones (under 0.5 mm in *D.*

<sup>2</sup>J. van Overbeek, M. E. Conklin and A. F. Blakeslee, *Am. Jour. Bot.*, 28: 647-656, 1941.

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