ALFRED KELLEHER
RESEARCH CORPORATION
405 LEXINGTON AVENUE
NEW YORK 17

September 6, 1962

Dr. Grote Reber
c/o Dr. Fitzhugh
Hospital - University of Virginia
Charlottesville, Virginia

Dear Grote:

I called Howard Curtis at Brookhaven Laboratory and found out that the branch-tying exercise is, in fact, merely another method of dwarfing, or bringing about the effects of dwarfing that are normally achieved by grafting on a different root stock.

The result was that Howard got a crop earlier -- that is, in the life of the tree -- than would otherwise be the case. There was no significant increase in size of the crop, and probably in the final analysis, the productivity of the tree over its full life span is less than would otherwise have been the case.

There is much material in the literature on dwarfing and its effects.

Sincerely,

Alfred Kelleher

AK/mh

Best wishes for good results and early recovery + discharge.
K

# Researcher Finds Plants Exhibit 'Right Handidness' in Growth

By HAROLD M. SCHMECK Jr.

Special to The New York Times.

WILLIAMSTOWN, Mass., June 13 — An unexpected but apparently basic "right-handedness" has been found in growing plants.

The finding, reported here today, appears to add a new dimension to the well-known concept of polarity, by which a plant somehow "knows" which end ought to be up as it sends out new shoots.

In contrast to this longitudinal polarity, the new type reported by Dr. Seymour Shapiro of Brookhaven National Laboratory is circumferential. The plant appears to "know" right from left.

The finding was reported to the annual symposium of the Society for the Study of Development and Growth being held here at Williams College. The symposium subject is regeneration.

In formal discussions of Dr. Shapiro's report, Dr. William P. Jacobs of Princeton University, president of the society, said the finding appeared to be particularly important for better understanding of plant growth and the basic factors that control it.

Longitudinal polarity, known and studied for a century, manifests itself clearly in plants capable of regenerative growth. If, for example, a branch or piece of branch is cut from a Lombardy polar and kept alive, new shoots and leaves will grow from the end that was uppermost when the piece was growing as a part of the tree.

Though there are no discernible differences between the top and bottom portions of this living stick, even under the microscope, buds do not grow from the bottom end.

The relationships remain true even when the piece is horizontal or upside down.

The stick will not send out shoots from the end it "views" as bottom even if this happens to be on top.

To study this phenomenon, Dr. Shapiro split his cut sticks lengthwise. To his surprise substantially more new buds appeared on the right-hand edge of the split surface, with its original "up" and upward, than on the left-hand edge.

The difference was so persistent that he began to study it for its own sake. He found the phenomenon persisted even when he split each half again in half. The difference in the number of new buds generated proved to be statistically significant and showed a 60-40 preference for the right side.

*Memorandum from*

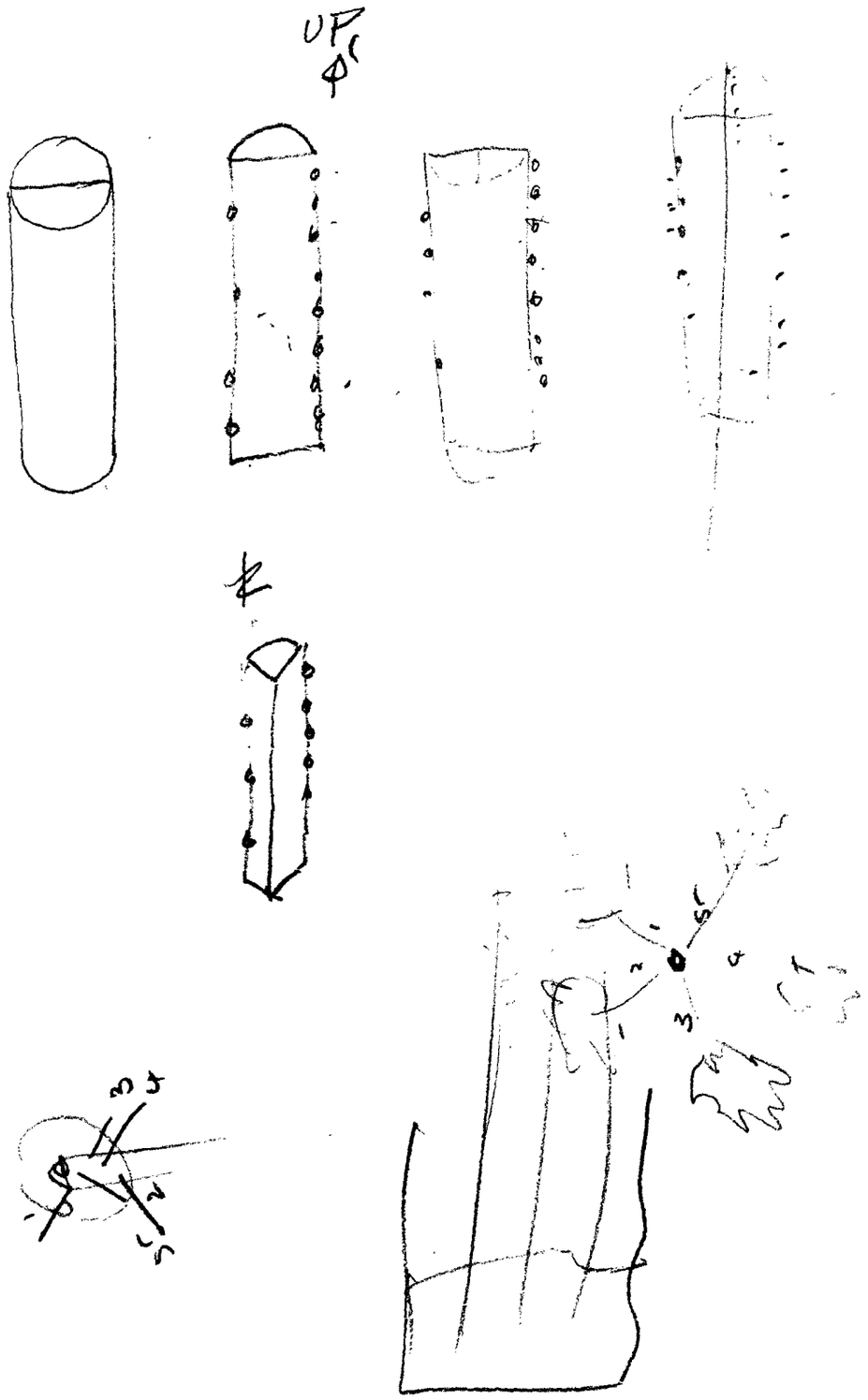
ALFRED KELLEHER

Dear Lute

Sam Shapiro is a good poker player too!

Wonder if your left-handed beaus observe the newly observed(?) "horizontal polarity(?)" down to the last separate cell?

Kel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