tional Council of Garden Clubs, The Flower and Garden Foundation, Longwood Gar-
ed, and many state 4-H and F.F.A. organi-
zations and businesses have involved them.
The Board of Trustees of the National Ju-
ior Horticultural Foundation, Inc., is the
governing body of the National Junior Hor-
ticulture Association. Included on the Foun-
dation Board are representatives from horticulturally-related corporations and as-
ociations, Land-Grant Colleges, the Coop-
erative Extension Service, and other youth-
serving agencies.
The Foundation Board appoints the pro-
gram chairman, program vice chairman, re-
gional program leaders, advisor, and the
executive secretary to coordinate the national
program of NJHA. The national program
chairman appoints national project leaders,
committee chairmen, and state program
leaders. At the annual national convention
of NJHA, 8 officers are elected (from the
senior youth division) to serve a 1-year term.
Also, a number of young people are design-
ated as youth coordinators to provide as-
sistance to the state program leaders.
The NJHA is financed through voluntary,
tax deductible contributions from corpora-
tions, associations, agencies, and individuals
who are interested in youths in horticulture.
ASHS has contributed to the NJHA Program
for many years, and it is only through such
contributions and interest that this youth pro-
gram has survived.

It is always difficult to assess the value of
an organization like NJHA objectively, but
through my association with the organization
for the past 2 years, I am convinced that
the youths participating in the NJHA pro-
gram and attending the Annual Convention:
• learn that there is a lot more to horti-
culture than they realized;
• find that there are some good career
opportunities in horticulture;
• become motivated to acquire addi-
tional education exceeding their ini-
tial plans;
• find that horticulture can be a good
hobby; and
• find that their outlook on life is
broadened by exposure to individuals
from different backgrounds and by
visiting other geographical areas.

For many 15- and 16-year-old youths, at-
tendance at the Annual Convention often is
their 1st out-of-state trip, or their 1st trip
focused on an educational theme. It is not
uncommon for young people to remark on
their way home from a convention that it was
the best experience that they ever had. For
most, the loss of a few school days was not
a sacrifice when compared to the educational
experiences gained. Almost all youths pay a
substantial part of the cost to attend the con-
vention, even though many horticulture or-
ganizations and businesses help sponsor their
trips.

One of the greatest challenges facing NJHA
is to attract more young participants, when
they have little time, interest, and enthusiasm
for horticultural efforts. Once they enter high
school, it becomes difficult to find time to
conduct a project or to report on it after it
has been completed.

Information about the NJHA program can
be obtained by writing to National Junior Hor-
ticultural Association, 5885 104th Street,
Fremont, MI 49412. A listing of national
personnel, state chairmen, and officers is
available, along with enrollment forms and
descriptions of projects and activities. There
is no enrollment or membership fee.

An Alumni Program is being developed,
and former members are invited to attend
alumni functions during the Annual Conven-
tion. The best time for alumni and visitors
to attend the convention to observe contests
in action is on a Saturday. About 150 dele-
gates will be involved in the morning Hor-
ticulture Contest, and another 100 in the
"Speaking of Horticulture" and Demonstra-
tion Contests in the afternoon.

The need for a horticultural organization
for youths is just as great today as it was 50
years ago when the National Junior Vege-
table Growers Association was founded.
Simply stated, the purpose of the NJHA Pro-
gram is to turn kids on to horticulture by
providing several different projects and con-
tests in which they can participate. While
being involved in a project, they also learn
about careers, citizenship, cooperation, and
leadership. It is always a rewarding experi-
ence to see young people 'discover' horti-
culture, knowing that you played a part in
making that discovery possible.

LETTERS

IN DEFENSE OF THE J-14 HYDRAULIC PRESS

I wish to point out a discrepancy in the
conclusion on the value of the J-14 hydraulic
press by A.H. Markhart, III, and B. Smit-
that the J-14 readings prevent reliable pre-
dictions of the Scholander pressure bomb for
leaf water potential measurements.

In the specific case of Phaseolus vulgaris
(pinto bean type), the authors found a linear
regression of $y = 0.99 + 1.39x$, $r = 0.75$,
n = 154, with $x$ (independent variable) being
the J-14 press readings and $y$ Scholander's
standardized leaf water potential values. De-
spite the significance of $r$ and that only 11
points of 154 are beyond the confidence level
(10%) (see their Fig. 1a), the authors pro-
cluded the use of the J-14 jack press. They
used pieces of foliage of bean trifoliolate leaves
and established the endpoint as the appear-
ce of fluid at the uncut edges.

We found a well-fitted linear model on
black beans of $y = 0.556 + 1.055x$, $r = 0.97$,
n = 25 within a range of $-3$ to $-10$
bars for leaf water potential that allowed us
to discriminate among genotypes for suscep-
tibility or tolerance to water stress. We also
obtained acceptable calibration curves be-
tween J-14 press and pressure-bomb mea-
surements in grape (Vitis vinifera) cultivars
(Fig. 1) useful for a stress physiology project
involving an antitranspirant application. The
data we found are in agreement with results
obtained by G. Campbell (personal com-
munication) on red canary grass (Phalaris
arundinacea), wheat (Triticum aestivum),
suca (Rhhus glabra), and ponderosa pine
(Pinus ponderosa).

A critical factor in the use of the J-14 jack
press is the subjectivity involved in estab-
lishing the endpoint. The release of water
from tissue compressed between the glass
window and the elastic membrane is rather
subjective, and it is sometimes difficult to
stop the pump handle instantaneously.
We use 2-cm diameter leaf disks compressing
diagonally the main vein of the foliole (for
beans) or lobule (for grape leaves). Water
released to from a drop-shape wet area in
front of each vein cut end was selected as a
very consistent endpoint. Another improve-
ment was to change the manometric gauge

Letters to the editor, with the writer's name and address, should be sent to: ASHS Editorial Office,
Lincoln C. Peirce, Science Editor, Dept. of Plant Science, Nesmith Hall, Univ. of New Hampshire,
Durham, NH 03824. Letters may be edited for purposes of clarity or space.

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Fig. 1. Scatter plot of leaf water potential measurements from the Scholander pressure bomb (ordinate) and the J-14 jack press (abscissa). The regression lines are drawn for each grape cultivar: 

- **y** (Pais) = 51.66 + 2.26x, \( r = 0.96 \), \( n = 25 \);
- **y** (Carignan) = 49.04 + 1.93x, \( r = 0.96 \), \( n = 18 \); and
- **y** (Moscatel A.) = 33.55 + 2.13x, \( r = 0.97 \), \( n = 19 \).

at the J-14 press to increase the precision of the readings by using a reduced scale span of 0 to 300 psi. With these changes, the J-14 press is still a reliable, inexpensive, and useful instrument appropriate for genetic or physiology work, including screening of stress-tolerant lines or monitoring the water leaf potential in water-stressed plots of irrigation studies.

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**Author’s reply**

Izquierdo points out several procedural improvements that could improve the performance of the J-14 press. The use of standardized leaf disks and observing water expressed from the cut main vein is an excellent idea and deserves further investigation. In our work we used the techniques suggested in the documentation that accompanied the press and, as our paper points out, they were less than satisfactory. We also contemplated replacing the gauge that comes with the press with a more sensitive one, but the construction of the press requires major disassembly to replace just the gauge. These improvements may increase the ability of the press to predict the ‘true’ water potential of a leaf. The data Izquierdo included with his letter suggests that this is the case for several grape varieties.

Despite these improvements, several points should be considered when evaluating the usefulness of the J-14 press. In a calibration curve the confidence interval (CI) at any given value is more important than the significance of the \( R^2 \) value. The major problem that we found was that the confidence intervals were so large that we could not predict confidently the ‘true’ water potential from a J-14 reading. In our best case with an \( R^2 = 0.91 \), the CI at a J-14 reading of 6.8 bars was \( \pm 3 \) bars. This is too large for many purposes. We do, however, point out that this degree of predictability may be appropriate for more qualitative water relations work. Although Izquierdo presents data with high \( R^2 \) values, I suggest that he calculate the confidence intervals for his data. It appears that the variability of the data at the low water potentials could pose some problems.

The J-14 press seems to work better with some species than others, and could explain the success of Izquierdo. I look forward to learning the experiences of other investigators. The simplicity and low cost of the J-14 invites its use; however, careful consideration of its effectiveness in each case is warranted.

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**CORRIGENDA**

In the article ‘Two Types of Internal Breakdown in ‘Delicious’ Apples’ by Hiroyuki Fukuda [HortScience 18(6):917–918, 1983], the captions for Figures 1 and 2 were reversed. The correct figures and captions read:

**Fig. 1.** Type I breakdown in ‘Richared Delicious’.

**Fig. 2.** Type II breakdown in ‘Richared Delicious’.

In the CSHS Awards—1984 section of Society Affairs [HortScience 19(5):760] a caption appeared with the wrong picture. The correct picture and caption:

**CSHS Special Recognition Award:** CSHS President A.R. (Fred) Maurer (left) and Ian F. Greenwood.

Also in the CSHS Awards – 1984 section of Society Affairs [HortScience 19(5):760] the correct spelling of one of the Honorary Life Members is Emit T. Anderson.