

THE ISA RESEARCH PROGRAM

by Francis W. Holmes

Abstract. Over the 12-year period 1975 through 1986, ISA has extended 116 research grants totaling \$118,500, to 102 investigators at 57 institutions, and indexed as covering 294 subjects. Besides bringing about discoveries needed for practical arboriculture, the grants have generally stimulated research in this field. The annual deadline for proposals is December 1st. Proposal rules and requirements are listed.

Why we need a research program. For centuries tree care was carried out only under the aegis of royalty and the wealthy. Methods were based on chance observations of amateurs and slavish subservience to every word of a few ancient philosophers. In contrast, the progressive arboricultural profession now finds that it must be based firmly on an ever-improving scientific knowledge.

In America, the 20th century saw vigorous operation of the network of state and federal Land-Grant Colleges (begun in 1860's) and *Agricultural* Experiment Stations (begun in 1880's). Still, shade trees were studied by only a few notable exceptions, such as Professor George C. Stone (2,3), who was Head of Botany at the Massachusetts Agricultural College in the late 1800's and early 1900's, and also the Founder and first President of the Massachusetts Tree Wardens' and Foresters' Association (1).

Thus the scientific advances of professional *horticulture*, including particularly arboriculture, remained a sadly neglected step-child. Arborists often have had to base decisions on results of forestry and orchard-oriented research. Arboricultural needs received attention from only by a few devoted university faculty.

Program establishment. At ISA's 50th anniversary meeting, in 1974 in Atlanta, Georgia, John Duling [Duling Tree Expert Co.] presented an idea, encouraged by Olaf J. ("Andy") Andersen [consulting arborist, now deceased] and Hyland Johns [Asplundh Tree Expert Co.]. By this idea, the ISA leaped into the breach and created a new research program for all arborists' tree problems. This program is now moving forward into the 21st Century. The very first year, President-elect Duling traveled to Chapter meetings carrying pledge

forms and collected \$36,000 of pledges for research, which was raised at the Detroit meeting in 1975 to \$50,000. The legal agreement, establishing the Trust, was signed in 1976 at St. Louis.

Extent of the program. To stimulate biologists in the nearly 4,000 colleges, universities, and agricultural research stations in North America—and potentially many more on the other continents—one hundred and sixteen research grants, totaling \$118,500, have been made under this program during the twelve years, 1975-1986, inclusive. The wide range of subjects covered is thoroughly reported to every ISA member by the complete list published each year in our Society Yearbook (pages 30-37 in the 1985 book).

This year about one out of every three proposals submitted will receive a grant; it has been as low as one out of every four. These figures are well within the usual range for granting agencies.

Results of the program. Discoveries. Of the two types of results we have had from this wide-flung net of shade tree research, the most obvious type consists of what was learned, such as:

a. that winter injury to trees is ameliorated, not by watering just before winter began but by watering in any-and-all dry spells the whole preceding growing season;

b. that the Dutch elm disease fungus could alter itself so that it tolerated benomyl fungicide in the elm vessels;

Stimulation. Equally important, but less obvious, has been an over-all increase of biological research in ISA's own area of interest. Grants to as many scientists as possible, in as many different institutions as possible, will create an *attitude* among scientists and among their administrators, such that, increasingly, researchers will turn their attention to problems faced by arborists!

Publication. The ISA requires that its grantees publish the results of ISA grant projects in ISA's *Journal of Arboriculture* so that all our members

will receive copies. The investigators often also publish later in journals of their choice, within their respective scientific disciplines, and/or issue extension circulars in their respective states and provinces, and explain their findings at meetings when and where they wish.

A computer index of 189 different topics studied, at 48 different research laboratories, by 77 different scientists in the first decade of this program was presented to the Trustees of the Memorial Research Trust in June 1984. This was up-dated for 1985 and now is being up-dated yet again for 1986.

Structure. Trustees. So that gifts for this research can be tax-deductible, a non-profit, charitable organization, separate from ISA, had to be set up. This organization is the ISA Memorial Research Trust. It has 12 Trustees, chaired by John Duling of Indiana. (The Trustees are listed in each ISA Yearbook.) These Trustees legally hold the money, and disburse it by their vote. For a parallel tax reason, two separate funds in Canada were established for gifts originating in Canada; these funds are administered by the two affiliated Chapters in Canada, and pay the grants awarded by ISA to Canadian researchers.

Research Committee. Besides the Trust, with its Trustees, ISA also has a Research Committee (currently of 9 members), which publicizes our grant program, receives and evaluates all proposals, and makes recommendations to the Trustees, (who re-evaluate the recommended candidates). The Research Committee was chaired by Dr. Spencer Davis, of New Jersey, in the 1970's, and by Dr. Francis Holmes, of Massachusetts, in the 1980's. Research Committee membership (listed in each ISA Yearbook) is selected by two criteria:

Expertise. There are 4 scientists (to be sure the proposed research really could prove something), plus 4 arborists (to be sure this research has any use).

Location. Research Committee members are selected from States and Provinces in widely separated locations, to be sure the proposed research has general application—not only to some very limited, local problem.

Timing. June. Early each summer, announcements of the ISA grant program are mailed

to at least 16 different journal editors. (Some editors need as much as 5 months of "lead time" before their magazines reach their subscribers.)

August. At an annual meeting, the Trustees vote how many grants (and how many dollars) they will award next spring (spring 1987 = 15 grants at \$1,500 each).

September. As our campuses open for their fall semester, 9 copies of the announcement are mailed to *each* of 56 Canadian universities and 57 U.S. state universities. (They go separately to the Departments of Entomology, Botany & Plant Pathology, Ornamental Horticulture, Forestry, and Landscape Architecture; to the Office of Grants & Contracts or Financial Aid, of the Dean of Agriculture or Science; of the Agricultural Experiment Station; and of the Cooperative Extension Service.)

In addition, single copies are sent currently to 63 botanical gardens and forestry experiment stations. This makes 1,133 mailed announcements. At present, to reach scientists on other campuses or outside North America, we rely wholly upon the journals. (The full announcement text, listing all 9 questions to be answered, appears later in this article.)

December. Each year the deadline for 2-page proposals to reach the Chair of the ISA Research Committee is December 1st. Photocopies of all proposals are promptly sent for evaluation (with a ballot) to each of the other 8 Research Committee members. When 15 grants are to be made, each one is asked to choose the top 30 proposals, and to rate these from 1 (most promising) to 30 (least promising). For each ballot, those *not* among the top 30 are assumed to have a rating of a number halfway between "30" and the total number of proposals; thus if there were 50 proposals, all not in the top 30 would be rated "40."

January. Research Committee members mail back their ballots to reach the Committee Chair by New Year's Day. All results are then tabulated. (The Chair's vote is reserved for breaking ties.) For any proposal found among the "top 30" of 5 or more committee members, the ratings are averaged. This creates a list in order of preference, from first choice downward. The top part of this list—5 proposals *more* than finally will be granted that year—becomes the Research

Committee's recommendation.

February. Before February 1st, the full (2-page) texts of all proposals as recommended by the Research Committee are submitted—nominally to the ISA President, but actually in care of the ISA Executive Secretary and Trust Administrator, namely E. C. Bundy in Urbana, Illinois—for further distribution to the Trust Fund's Trustees. During February the Trustees take their vote. The Executive Secretary then notifies the Chair of the Research Committee about the results.

March. As soon as possible after March 1st, the Research Committee Chair mails letters of congratulations (with enclosed check) to the selected grantees, and letters of condolence to those not qualifying that year.

June. It's time to start the whole cycle again!

Changes. Our ISA research-supporting program is always improving and evolving. Its newest development is the creation of the "John Duling Grant." This special award is to be made occasionally, to an exceptional project—one that stands out prominently above all others. This award more than triples the grant, to \$5000 instead of \$1500. Naturally so outstanding a proposal does not arise every year! A few years ago we had a proposal that was rated "1" by three members and "2" by yet another (out of 7 votes)! But in December 1985, no single project was rated "1" by even two Research Committee members. So the Committee did not recommend a John Duling Award this year.

Fund-raising. The foundation of *all* ISA activities, of course, is always our membership around the world, in our many Chapters. Nearly all funds for our research program have been raised by the Chapters. Banner streamers are awarded to Chapters at our annual meetings, and cash rebates are sent to Chapters on new-member dues the next year, in return for their achieving the 2-year goals (currently \$25 per member). Chapters that meet this goal are also allowed to assign an honorary name (for that year only) to one of the grants given.

If it were not for our members' devoted fund-raising projects, there could be no ISA research program. At the same time, the fund-raising projects also have sometimes given our Chapters very pleasant social events!

Other research money comes to ISA from gifts in memory of friends. These gifts are recorded for posterity in a Memorial Book. For safety, the book is kept at ISA headquarters, but a copy is on display at all ISA annual meetings.

Other grants for trees. The nursery industry gives grants to support research on their problems, through their "Horticultural Research Institute" in Washington, D.C. Some of the nursery industry's problems are our Society's problems, too, so these two research programs overlap. Each to some extent helps the other group!

Naturally, nothing stops any citizen, any group of individuals, or even any Chapter of ISA from spending money as he/she/they/it may choose, including private support of research. Occasionally, therefore, a grant from within the ISA has been made that was not processed through the Research Trust. Such a grant, of course, does not support a project that had been compared with the many other proposals received in a given year, or with such depth and care as the Research Committee's evaluation followed by the Trustees' evaluation. (And naturally such a private grant, being unrelated to ISA's Trust, could hardly qualify for credit towards any recognition made by our Trustees to honor the support that was given to the ISA Research Trust Fund's grants.)

Other help needed. Chapter members often want research to be done on special topics of their personal concern, or be done at a certain location (usually near their home), or be done by one or other particular scientist, someone they respect from personal acquaintance.

Therefore it is important to realize, as is made very clear from the procedures outlined above in this article, that the Research Committee and the Memorial Research Fund Trustees can only judge among the proposals *that are sent to them*. Neither group can *create* a research proposal. Responsibility, then, lies with such a concerned ISA member to go to that favorite research station and to convince that favorite researcher to submit to the ISA a grant proposal on that favorite topic! *Only then* can this proposal come into consideration for an ISA Research Trust Fund grant!

Accordingly, for the ISA research program, the raising of funds is only one part of our job as members. Encouragement of the submission of

proposals is the *other* part. In the section below is reproduced the entire text of the announcement we send out. You are welcome to photocopy it (the Editor hereby gives permission!), so as to carry it with you, to give to your scientist-friend!

Instructions and Rules for Proposals

EXPECTED GRANTS FOR SHADE TREE RESEARCH

Each year since 1975, the International Society of Arboriculture has awarded grants to encourage scientific research on shade trees. Horticulturists, plant pathologists, entomologists, soil specialists, and others, are invited to submit a brief outline of a proposed project, for which a grant of \$1500 might assist in purchase of equipment, technical or student help, or otherwise contribute to the research. (The number of grants and dollar amounts for the coming year have been voted at 15 grants, of \$1500 each.)

Individuals self-supported or privately or publically employed are eligible. There are no restrictions on the basis of religion, race, sex, age, politics, or nationality of the applicant. The grants are not expected to cover all research costs but to aid, stimulate, and encourage scientific studies of shade trees. The ISA requires that administrative overhead *not* be deducted from the grants it awards.

Interested researchers should prepare *no more than 2 pages* outlining the following (only one copy need be submitted):

- (1) Name, address, and telephone number of Principal Investigator.
- (2) Institution(s) and date(s) of Investigator's college and/or graduate degrees.
- (3) Title and purpose of the project.
- (4) Intended use of the grant money. (NO "overhead" is allowed!)
- (5) Individuals involved in the research.
- (6) Citations to 2 relevant publications by the researcher.

(DON'T send reprints!)

(7) *IMPORTANT: How will the expected results help ALL arborists with daily work?* (Bear in mind: some reviewers are arborists, others are scientists.)

(8) What is the anticipated total cost of the entire project, regardless of whether or not you get an ISA grant and regardless of the amount of the grant?

(9) What is the anticipated total duration of the entire project, regardless of whether or not you get an ISA grant?

To be considered, proposals—which will be reviewed separately by each member of the ISA Research Committee—*must be received by December first!* Please mail early: proposals received after December first will be considered a year *later!* Recipients of grants are notified about mid-March. Send your proposal to:

Dr. Francis W. Holmes
Director of Shade Tree Laboratories
University of Massachusetts
Amherst, MA 01003.

Remember: ONLY TWO PAGES per application will be sent to Committee members to judge! Out of fairness to applicants who confine their texts to 2 pages, we reserve the right, if we receive a proposal of more than 2 pages, to forward *only the first 2 pages* to the members of the evaluating committee!

Literature Cited

1. Basile, Fred C., ed. 1962. The Golden Year: 1913-1963. Mass. Tree Wardens' & Foresters' Association, 61 pages.
2. Stone, George C. 1914. Electrical injuries to trees. Mass. Agr. Expt. Station. Bulletin 156: 19 pages.
3. Stone, George C. 1916. Shade trees, characteristics, adaptation, diseases and care. Mass. Agr. Expt. Station. Bulletin 170: pages 123-264.

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CORRECTION

In the article on energy savings with trees by Dr. Gordon M. Heisler in the May issue of the Journal (Vol. 12, No. 5), a correction should be inserted in your copy on page 113. In the last line of paragraph 3 in column 2, the figure should be **\$400,000,000** not \$400,000, and the line should read "...would amount to \$400,000,000 annually."