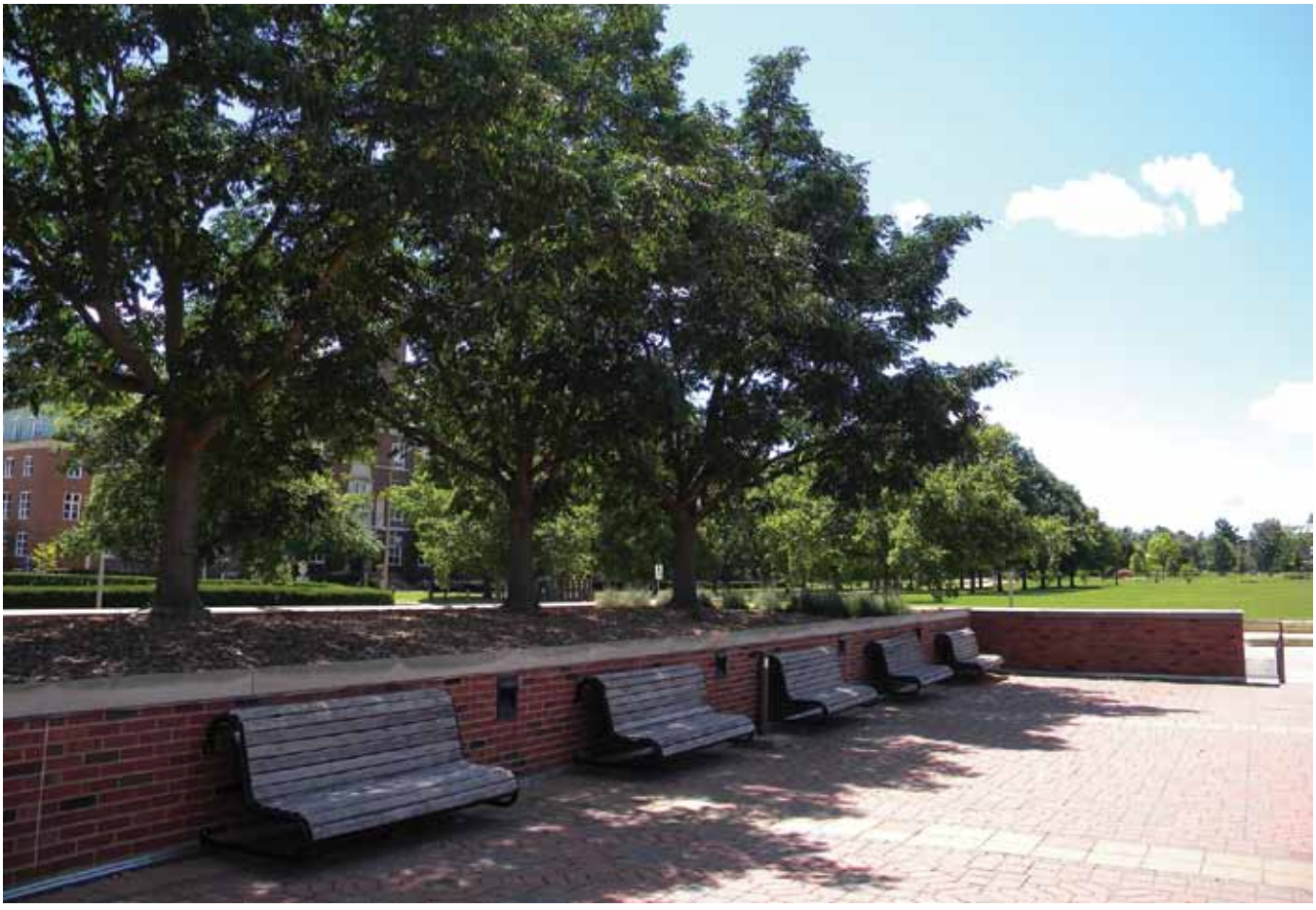
Placing a Value on Research

By Gary Johnson

Think back on the history of modern arboriculture. What was the body of knowledge that guided tree care practices in, say, 1960? Some of that knowledge was unique to arborists, courtesy of the Davey and Bartlett arboricultural schools and laboratories that began early in the 20th century. Much of the knowledge came from shared research on issues close to arboriculture: entomologists and pathologists battling forest health epidemics, public utilities experimenting with tree growth regulators, orchardists striving to maintain production on decades-old apple trees. A wealth of research conducted by ethical scientists and with good experimental designs was published. However, as was often the case, this research was available but not well-known or readily accessible.

In the years prior to planting the seed of what would become the International Society of Arboriculture (est. 1924), the profession did not have an extensive, unique body of knowledge or research information that arboriculture could call its own.

The research behind Alex Shigo's turning-of-the-page in tree care practices was conducted in the 1800s by both European and North American scientists. The foundation for much of our current understanding of cold-temperature damage to woody plants had its roots in some of the most



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painstaking and detailed research conducted early in the 20th century. Every arborist should be aware of J.E. Weaver's article, "Root Distribution of Trees in Relation to Soil Profile" (1938), which appeared in the journal *Ecology* long before modern professionals could easily displace soil with pressurized air tools.

More recently, in the past 55 years, arboriculture has evolved. This is no longer a profession of tree surgeons practicing techniques and treatments that were frequently taught but not necessarily based on research. Certainly, many early practices have withstood the test of time (e.g., "The best pruning wound is a small pruning wound" still rings true); however, good research drives good practice, which makes for better professionals.

In 1664, John Evelyn noted that the most common reason for short-lived trees was planting too deep. His work appeared in *Sylva, A Discourse of Forest-Trees*, a book he authored hundreds of years before research of the past 40 years substantiated such claims.

Too often, practices have been just that—practices—handed down from one generation to the next, often without any questioning because there did not seem to be enough evidence to challenge them. In 1936, ISA's predecessor, the National Shade Tree Conference, sponsored its first research project that specifically addressed a tree care issue. It wasn't until the 1960s that arboricultural-specific research began its steep upward climb. For the profession, the 1960s was a decade full of questions and challenges, and some of our greatest minds responded with imaginative and significant research.

Arborists needed to know if it was helpful, harmful, or wasteful to reduce tree canopies by one-third after transplanting to compensate for root loss. They needed to know if tree cavities should have been filled with concrete or tar (What happened if they weren't?). Others asked whether tree wounds healed like mammal wounds. And what was so magical about tree wound paint?

In the last 55 years, the arboricultural profession has developed its own body of knowledge, as well as its own vocabulary. Plant Health Care, compartmentalization (CODIT), risk assessment, strength loss, biomechanics, breaking strength, subordination, root-collar examinations, codominance, and inclusion. Five-and-a-half decades ago, most of these terms would have required considerable explanation.

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Today's tree care professionals readily acknowledge that to sustainably manage landscapes and tree populations, they must understand and speak plant genetics, plant propagation, soil science, pathology, entomology, tree biomechanics, chemical management of plants, root systems, tree architecture, engineering, consumer preferences and perceptions, and physiology . . . as a start. Why? Because the body of knowledge—experimental research and time-proven practices—has been published, translated, made available, discussed (sometimes vehemently!), amended, and adopted.

How has urban tree care evolved over the past 55 years? You have research to thank for that. How will tree care evolve over the next 55 years? Fund tree care research today and find out.

ISA's Science and Research Committee (SRC) has accepted the challenge and mandate initiated by John Davey. The committee listens to professionals, responds to needs assessments and deficiencies in research and technology transfer, and perhaps most importantly, identifies and builds avenues for this information to be made more accessible to everyone. Some of the SRC volunteer members are researchers and educators; some are practicing professionals; and some are all of the above. However, everyone on the committee is a representative of a segment of our

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community. They represent every facet of ISA membership, and are your advocates. You owe it to your professional growth to find out who your representative is and voice your opinions and ideas to that person.

The SRC also promotes and recommends funding support for the various international summits and symposia that take place. Information and ideas generated from these venues are passed on to the membership via summaries that appear in *Arborist News*; *Arboriculture & Urban Forestry*, a peer-reviewed scientific journal; and in some cases, published research compendia, that is to say, literature reviews.

Literature reviews can be invaluable resources. They unearth all (or nearly all) research-based information that has been published on a specific topic and itemize them for your use. Understandably, you may never have heard of the different journals in which arboricultural data and analysis has been published. Perhaps the articles and information have been available to you, but are not easily accessible. Literature reviews solve this dilemma. A recent example of one of the literature surveys (funded by the SRC) was published in *Arboriculture & Urban Forestry* (November 2015), "The Costs of Maintaining and Not Maintaining the Urban Forest: A Review of the Urban Forestry and Arboriculture Literature." Give it a read. It's an outstanding synthesis of more than 45 years' worth of published research in this area.

The SRC is at its best when the representatives have a steady stream of ideas and opinions from you. Contacting the SRC committee and getting involved in the dialogue is as simple as going to the ISA website (www.isa-arbor.com), clicking on Contact Us, then clicking on ISA Committees, and following the string. Learning is one of the easiest things to do. Relearning takes an open mind and a willingness to relearn, and the SRC is here to help.

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