Hardy CR. 2014. Millersville University's Trees of Distinction (www.wikiplantatlas.org/trees). *Parksia* 3: 5-13. Available at http://herbarium.millersville.edu.

PARKSIA

Dedicated to the dissemination of useful information regarding plants

@ http://herbarium.millersville.edu

MILLERSVILLE UNIVERSITY'S TREES OF DISTINCTION (WWW.WIKIPLANTATLAS.ORG/TREES)

CHRISTOPHER R. HARDY

Department of Biology and the James C. Parks Herbarium, Millersville University of Pennsylvania, PO Box 1002, Millersville, Pennsylvania, 17551, United States of America

Trees on the Millersville University campus are invaluable assets to the University in many ways. They provide subjects for educational and scientific study, they are objects of beauty in their own right, and they have stories to tell. In order to help nurture a campus-wide awareness of their value, the James C. Parks Herbarium and Botany Program of the Biology Department at Millersville hereby releases their new website, *Millersville University's Trees of Distinction* (www.wikiplantatlas.org/trees).

The trees of distinction profiled here are those that are especially large, unique, or otherwise noteworthy such that their loss would have a noticeable negative impact on the aesthetics and educational value of the campus. Included among them are the campus's tallest tree (a sycamore near the pond), a coconut palm and banana tree over in Roddy Hall, and the "Stinky but Special" female ginkgo tree near the former sight of Hobbs Hall. It is hoped that the campus community will feel free to contact the author with any comments or with information or trees that they believe should be added to this atlas.

This *Parksia* article provides a set of aerial maps depicting the campus and the locations and descriptions of the 21 trees featured in this first release (Figs 1-3). This article thereby serves as a printable, portable version of the website that readers can take with them on a tour of the trees of distinction on campus.

Tree List & Description

1. Semblance of an Old American Icon
Chinese chestnut (*Castanea mollisima*)

About the Species: Chinese chestnut is a close, Asian relative of our American chestnut. It is similar in many respects, including its edible seeds. Its seeds, however, are generally considered inferior in taste to the American chestnut. The species is popular in the United States primarily as a landscape ornamental.

Our Specimen: This particular specimen is one of several on campus that is known for producing abundant nuts enclosed by a spiny, burr-like case. This tree is special primarily because it offers our students a glimpse of what our American chestnut would look like, since American chestnut is not easy to find in cultivation or in the wild on account of the Chestnut Blight which largely wiped out the once-dominant American chestnut following the introduction of the blight in or about 1900. Ironically, the importation of ornamental Chinese chestnuts is partly

responsible for the introduction of the blight to America.

2. A Gift from Japan

Japanese flowering cherry (*Prunus serrulata*)

About the Species: Although all cherry trees in the genus *Prunus* produce flowers, Japanese breeders have a great tradition of producing cultivars and hybrids that are rather prolific in this regard.

Our Specimen: This is one of several (6 in March 2014) Japanese flowering cherry trees along the pond guarded by Miller and Seville. These Joseph M. Sheaffer Memorial Trees were were gifted to the University by his daughter and the Government of Japan on 7 April 1977. These trees produce a spectacular display of blossoms in the spring.

3. Our Tallest Tree

Sycamore, American plane (*Platanus occidentalis*)

About the Species: This is a native, deciduous tree. In the wild it seems to prefer the water-logged soils along rivers and streams, and because of this tolerance of dense, oxygen-poor soils it is also a popular street tree. The leaves superficially resemble those of a maple, but the delightfully mottled bark with bright patches of white ensure that you will not mistake it for one.

Our Specimen: This is the largest of several sycamores planted along the path south of the pond guarded by Miller and Seville. It is 114 ft (35 m) tall and has a DBH trunk diameter of 59 in (149 cm) as of March of 2014. It surpasses the tuliptree outside of Biemesderfer Executive Center in size, making it the largest tree of the campus landscape. It may certainly be the most graceful -- as its mottled, grey and white, flaky trunk twists along its ascent to the sky.

4. A Living Fossil from the Age of Reptiles

Male Ginkgo, Maidenhair tree (*Ginkgo biloba*)

About the Species: This is a male (pollen-producing-only) tree of the popular landscape species known as ginkgo (after its scientific name) or maidenhair tree (after the resemblance of the smooth, flowing veins of its fan-shaped leaves). It is a deciduous tree that is a distant relative of conifers. In the spring one will find wind-borne pollen being produced in pendulous, male catkins from short, stubby side shoots on its branches.

Our Specimen: This is the only remaining ginkgo tree in the vicinity of central campus. Botany students find this an important landscape tree because it represents the last-living species of an otherwise long-extinct group of ginkgophytes that first appeared in the fossil record some 270 million years ago (Ma), which is more than 100 million years before the origin of the flowering plants that now dominate the earth. In fact, all ginkgos were thought to be extinct until they were discovered being cultivated in Japanese and Chinese monasteries in the 1790s. In no other species will you find such an unusual tree: from its fan-shaped leaves with dichotomous venation, to its pollen with motile (flagellate) sperm and, on female trees, unusual reproductive structure bearing two fleshy seeds not enclosed by a cone or a fruit.

5. Behemoth Balsam

Balsam fir (*Abies balsamea*)

About the Species: Balsam fir is native to the more northern and higher altitude locales in Pennsylvania and extends from there into the northern reaches of Canada. The species is popular as a Christmas tree, although not as popular as its close sibling, Fraser fir, with which it shares many similarities. The young bark of this species has distinctive "resin blisters," which are the source of a sticky resin that is available commercially as "Canada balsam." Because of its high optical quality and similarity of its refractive index to that of crown glass, Canada balsam has traditionally been used as a glue to join optical lenses and as a mounting medium for biological specimens on glass slides for light microscopy.

Our Specimen: This particular specimen on campus is one of a pair at this locality - with this western-most tree being the larger of the two. This tree is special not only because it is one of just a few balsam firs on campus for Botany students to study, but it also is particularly large for the species: with a diameter (DBH) of 29 in (73 cm) and height of 78 ft (24 m) in March of

2014. Balsam firs generally do not exceed 80 ft in the wild, and so our specimen is surely one of the tallest in the world.

6. Sweet and Southern

Southern magnolia (*Magnolia grandiflora*)

About the Species: This species is native to the southeastern United States, reaching its northern most limit in Maryland. It grows well as an ornamental landscape tree, however, in Pennsylvania. The summer bloomtime and glossy, dark-green, evergreen foliage of this species stand in strong contrast to the more familiar, spring-flowering, deciduous magnolia species and hybrids.

Our Specimen: This is the largest southern magnolia on campus and its large, glossy, evergreen leaves and super large (10 in diameter), unbelievably sweet-smelling flowers lend a southern, even tropical, feeling to this small part of campus. The fruits of this tree resemble the cones of conifers, but they are not actually cones, but rather aggregates of small fruitlets.

7. A Tree with Character

Saucer magnolia (*Magnolia soulangeana*)

About the Species: This is a hybrid, flowering magnolia of European origin. It is very popular as a landscape ornamental due the size, fragrance and duration of its flowers which last from mid-spring to, sometimes, the autumn. As an artificial hybrid, it has no native range.

Our Specimen: This is the largest saucer magnolia and is perhaps the most charismatic tree on campus. This large, deciduous magnolia assumes a leisurely, reclining posture and its broad, round canopy litters the ground with pink and white flower petals in the spring, and casts a delightful shade in summer. Indeed, it is fitting that this tree, so rich in character, helps to frame the sign to Rafters Theater outside the south entrance to Dutcher Hall.

8. Stately Oak

English oak (*Quercus robur*)

About the Species: English oak is native to Europe, Asia Minor and Northern Africa. The species is popular worldwide as an ornamental and is somewhat closely related to our native white oak. The leaves of this species have rounded lobes, like our white oak, and it is distinguished by the very small ear-lobe-like lobes at the base of the blade where it meets the leaf stalk.

Our Specimen: This particular specimen on campus is surely one of the oldest and largest-diameter trees on campus: its age exceeds that of the University (probably between 160-200 yrs old in 2014) and its diameter at breast height (DBH) is nearly 6 ft (2 m). Unfortunately, the space it has to grow in has repeatedly seen drastic reductions in recent years due to construction in and around Boyer and the Library.

9. Our Tallest Pine

White pine (*Pinus strobus*)

About the Species: A fast-growing, native, evergreen conifer that is commonly found in the wild, landscape, and Christmas tree lots. Pines are distinguished from other conifers as having their needles borne in tight fascicles of 2-5. Our white pine has them borne in fascicles of 4-5. So-named because of its light-colored wood which is white when freshly cut. This species is the provincial tree of Ontario and the state tree of Maine and Michigan. It is capable of growing straight for over 200 feet (65 m) in the wild; however, such tall trees are not so common these days due to its being heavily logged in Colonial days to supply ship masts to the British navy. Today it remains an important timber tree.

Our Specimen: This white pine is the largest one on campus and represents the only native pine to have needles in fascicles of 4-5. It also represents our tallest native conifer species.

10. Atlas Cedar

Blue Atlas cedar (*Cedrus atlantica*)

About the Species: Blue Atlas cedar is an evergreen conifer native to NW Africa (e.g., the Atlas Mountains of Morocco). It is called "blue" because of a bluish wax that covers its needles. This wax can be rubbed off with your fingers to reveal the green needles. The species is popular worldwide as an ornamental and is closely

related to the Cedar-of-Lebanon, another popular ornamental that lacks the bluish wax. The needles of species of the genus *Cedrus* are distinctive in the way that they are both evergreen and occur tufted on short lateral shoots of the main branches.

Our Specimen: This particular specimen on campus is surely the oldest and largest of the species on campus: how fitting it is that this tree graces the lawn outside of the office of our president.

11. Executive Priviledge

Tuliptree (*Liriodendron tulipifera*)

About the Species: How nice it is to think that tulips also grow on trees. Indeed, the large late-spring to early-summer blossoms of this native deciduous tree do resemble tulips, but the tree is actually more closely related to magnolia (it is in the magnolia family) than it is to tulips. This species is fast-growing and can approach 200 ft (70 m) in height in the wild. It is also known colloquially as the "tulip-poplar" perhaps because of the way that the large leaves quake and tremble with a light breeze, just like the poplars and aspens of the distantly related genus *Populus*. The species has distinctive, 4-lobed leaves that turn yellow in autumn.

Our Specimen: A towering behemoth cast with thousands of tulip-like flowers in early summer: what better way to grace the entrance to Biemesderfer Executive Center? This particular specimen is the largest one of this species on the campus landscape, and is among the top 5 most-massive trees on campus with a diameter at breast height (DBH) of 46 in (118 cm) and height of 93 ft (28 m) in March of 2014.

12. Our State Tree

Eastern hemlock (*Tsuga canadensis*)

About the Species: Eastern hemlock, also known as Canadian hemlock, is a short-needled, evergreen conifer native to Pennsylvania and surrounding states. The combination of its short, flat, blunt-tipped needles and its small, pendulous cones distinguish it from other native conifers.

Our Specimen: Eastern hemlock is the state tree of Pennsylvania and this particular tree is one of the larger specimens of it on campus at 58 ft (18 m) tall and a trunk diameter (DBH) of 20 in (51 cm) as of March of 2014. It was designated our state tree on account of its abundance in the wilds and its historical importance as a source of wood in the timber industry and tannins (from the bark) for the leather tanning industry.

13. A Coffee Tree from Kentucky?

Kentucky coffee tree (*Gymnocladus dioica*)

About the Species: This member of the economically important legume family is native to western Pennsylvania, Ohio and further west, but it is commonly found in cultivation as an ornamental in Pennsylvania. It is reported that the seeds can be roasted and used as a substitute for or additive to coffee, but the raw seeds and pods are toxic. In the landscape, this provides a specimen-tree with large dark-brown pods, large attractive leaves, and graceful architecture.

Our Specimen: This tree is one of just two known Kentucky coffee trees on campus and is the largest of the two. The second is outside Caputo Hall. This specimen is important because it represents a rather unique and distinctive species on campus: it has the largest pods of any other legume species on campus, it possesses twice- and thrice-pinnately compound leaves, which are rare in nature and provide a living-learning opportunity for our Botany students, and it has been used as a substitute for coffee on the American frontier.

14. Flowers from Dagger Wood

Flowering dogwood (*Cornus florida*)

About the Species: This is a small, native, deciduous tree known for its large white blossoms in the spring. A common quip used by botany professors to help their students identify this tree, "*You can tell a dogwood by its bark*," alludes to its distinctive bark. The term "dogwood," however, actually stems from "dagwood" on account the age-old practice of using the hard, dense wood of this and related species to make handles for "dags" or "daggers." People often mistake the four large, white bracts surrounding the cluster of very small flowers for

the petals of a single flower. If you have made the same mistake, then you have company with insect pollinators which do the same.

Our Specimen: This is one of several unusually large specimens of the species outside of the offices that sit across the street from the SMC. Although not particularly large in their own right, they are large for this species.

15. Charming Couple

London plane, Hybrid sycamore (*Platanus acerifolia*)

About the Species: This is an artificial hybrid made from a cross between our American plane or sycamore, *Platanus occidentalis*, and the Oriental plane, *Platanus orientalis*. It is very popular as a street and landscape tree. The leaves and bark of this tree are similar to our American sycamore, the most distinctive difference being that the white patches of the bark of the American sycamore are replaced by yellow-greenish patches. These trees can grow very large and become very attractive, making them popular specimen-trees on estates and institutional campuses that take pride in their landscape.

Our Specimens: Here is a pair of London planes that frame the entrance to a charming old, wooden garage on Anne St. behind Bedford House. It is worthwhile comparing this to our native *Platanus* near the central campus pond and Brookes Field.

16. Walnut Grove

Black walnut (*Juglans nigra*)

About the Species: This is a native, deciduous tree species prized for its dark wood and edible and otherwise useful seeds. Black walnuts have a stronger taste than the milder, English or Persian walnuts found in the store. Historically, the husk of the large, pungent fruits were used as a natural source of brown dye. Botany students at Millersville have the opportunity each semester to experiment with dyeing using these fruits, and the result is their own, richly colored t-shirts that they get to take home.

Our Specimen: This particular specimen is one of several walnuts that form a graceful walnut grove on Anne St. behind Bedford House. It is here where our Botany professors and students conduct their annual walnut harvest in preparation for the dyeing labs in Concepts of Botany (BIOL 221). This walnut grove is just one of many examples of the invaluable nature of the campus landscape for educational use.

17. A Taste of Persia

Persian walnut (*Juglans regia*)

About the Species: This deciduous tree is native to Asia and it is familiar to us all in the form of the walnuts available in stores worldwide. Persian walnuts, sometimes called English walnuts, have a milder taste than the stronger black walnuts that are native to Pennsylvania. The bark of this species is distinctively lighter grey than our native black walnut.

Our Specimen: This and the nearby second specimen of this species are trees of distinction on campus because they represent living specimens of an extremely economically important crop species. They also provide a nice contrast to the nearby black walnuts on campus for our Botany students learning tree identification.

18. Stinky but Special

Female Ginkgo, Maidenhair tree (*Ginkgo biloba*)

About the Species: This is a female (seed-producing-only) tree of the popular landscape species known as ginkgo (after its scientific name) or maidenhair tree (after the resemblance of the smooth, flowing veins of its fan-shaped leaves). It is a deciduous tree that is a distant relative of conifers. In the summer through fall, seeds will form naked on pendulous stalks borne from short, stubby side shoots on its branches.

Our Specimen: This is the only female ginkgo tree on campus. Botany students find this an important landscape tree because female ginkgos are otherwise very hard to find. This is because landscapers generally prefer to plant male trees on account of the stinky seeds of female trees. As such, this female tree represents a rare opportunity for students to make a study of a living female. Ginkgo trees also are special

because they represent the last-living species of an otherwise long-extinct group of ginkgophytes that first appeared in the fossil record some 270 million years ago (Ma), which is more than 100 million years before the origin of the flowering plants that now dominate the earth. In fact, all ginkgos were thought to be extinct until they were discovered being cultivated in Japanese and Chinese monasteries in the 1790s. In no other species will you find such an unusual tree: from its fan-shaped leaves with dichotomous venation, to its pollen with motile (flagellate) sperm and, on female trees, unusual reproductive structure bearing two fleshy seeds not enclosed by a cone or a fruit.

19. A Living Fossil Redwood

Dawn redwood (*Metasequoia glyptostroboides*)

About the Species: Dawn redwood is a deciduous conifer native today to China. However, the fossil record for this species goes back millions of years and indicates that this was once found throughout North America. Its orange, fibrous bark and foliage is reminiscent of the coastal redwoods (*Sequoia sempervirens*) of California, which are related as members of the cypress family.

Our Specimen: This particular specimen is special for a multitude of reasons. Firstly, it is a living fossil in the sense that it was known until 1944 only from the fossil record, after which it was discovered growing live in the wilds of China. Secondly, it is a rare example of a deciduous conifer. Thirdly, its foliage and cones resemble those of the coastal redwood, to which it is closely related.

20. Tropical Island Treat

Coconut palm (*Cocos nucifera*)

About the Species: This tropical evergreen palm tree is native to the Indopacific, although it is cultivated in tropical and subtropical areas worldwide. It is the source of coconuts.

Our Specimen: This tree inside the stairwell area between Roddy and Caputo Halls was collected as a seedling in Florida on a botanical expedition in August 2007. It is still rather small because it does not get much light in its location. Nevertheless, it is a wonderful, living specimen that is accompanied by an adjacent glass-encased exhibit of information and ethnobotanical artifacts relating to one of the world's most economically important species. You are urged come by at your leisure to see this plant: no reservations needed.

21. An Important Tropical Crop

Dwarf Cavendish banana (*Musa acuminata* cv. Dwarf Cavendish)

About the Species: This tropical evergreen tree is native to SE Asia, although it is cultivated in tropical areas worldwide. It is the source of our common grocery store banana.

Our Specimen: Although found only in our greenhouse, this qualifies as a tree of distinction on campus because most members of the campus community have never seen the beautiful plants from which our bananas come. You are urged to contact Drs. Hardy, Wagner, or Zhong (the Botany professors in the Biology Dept.) if you would like to arrange a visit to see them.

FIGURES TO FOLLOW...

HOW TO CITE THIS ARTICLE

Hardy CR. 2014. Millersville University's Trees of Distinction (www.wikiplantatlas.org/trees). *Parksia* 3: 5-13. Available at http://herbarium.millersville.edu.

Published April 2, 2014

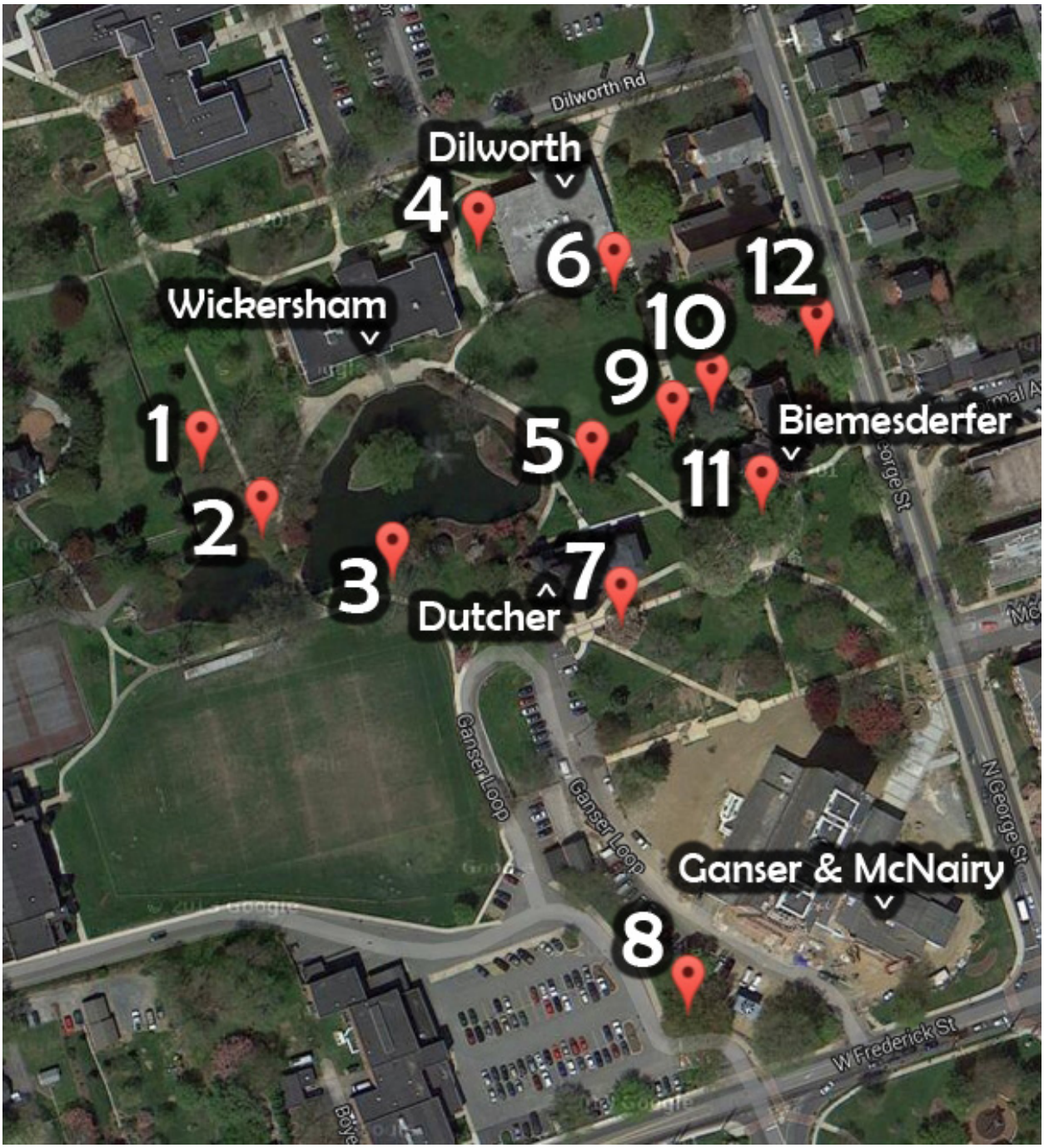

Fig 1. Center Campus. The marker numbers here correspond to trees 1-12 in the list of the preceding text. Aerial imagery provided by Google Maps API version 3.

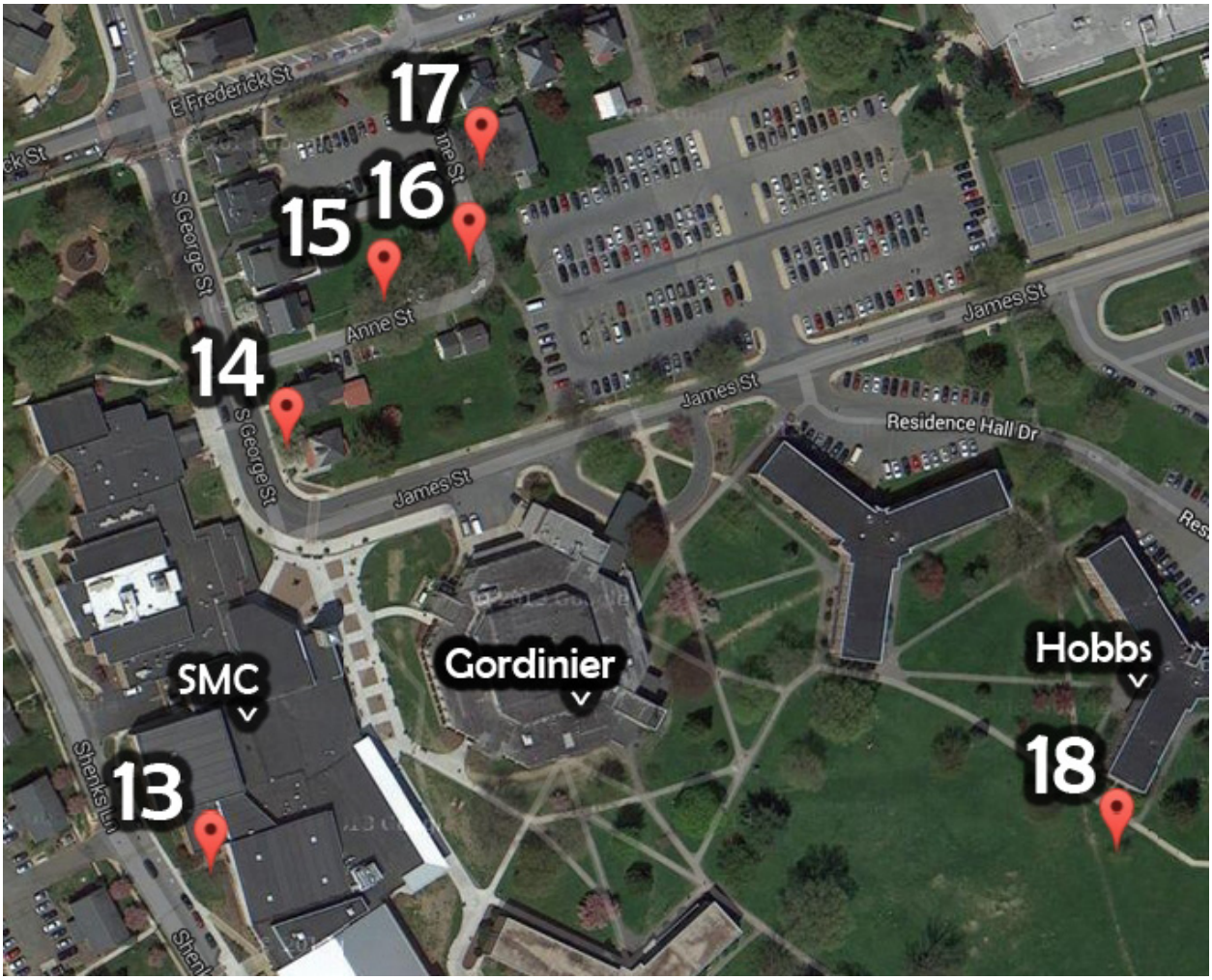

Fig 2. South Campus. The marker numbers here correspond to trees 13-18 in the list of the preceding text. Aerial imagery provided by Google Maps API version 3.

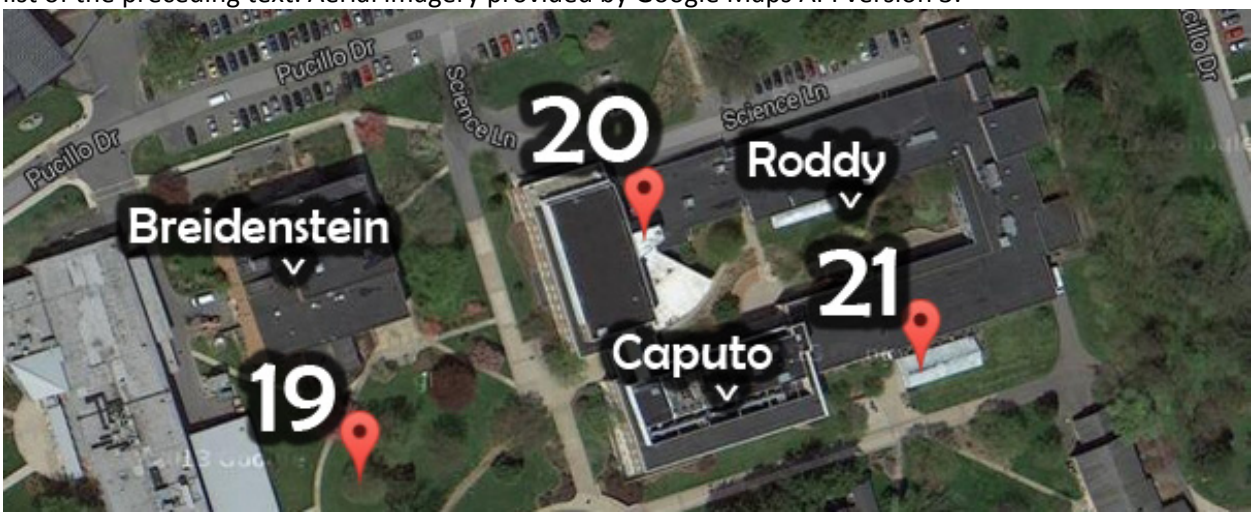

Fig 3. East Campus. The marker numbers here correspond to trees 19-21 in the list of the preceding text. Aerial imagery provided by Google Maps API version 3.

PARKSIA

Editor
Christopher R. Hardy
James C. Parks Herbarium, Department of Biology, Millersville University of Pennsylvania, PO Box 1002, Millersville, Pennsylvania, 17551, United States of America

About Parksia

Parksia is published periodically by the James C. Parks Herbarium of The Department of Biology, Millersville University of Pennsylvania. It is dedicated to publishing short encyclopedic articles and essays containing useful information about plants. *Parksia* is available for free, on the Web at http://herbarium.millersville.edu. The street mailing address for the Herbarium is James C. Parks Herbarium, Department of Biology, Millersville University of Pennsylvania, 288 Roddy Science Building, 50 E Frederick St, Millersville, Pennsylvania, 17551, United States of America.

Contributions

If you are interested in contributing to *Parksia*, please send correspondence to the *Editor* at the address above.