INTRODUCTION

Solanaceae, the deadly nightshade family, is known for the toxic substances of many of its members. Nightshade (*Solanum sp.*) is famous for its poisonous qualities; belladonna (*Atropa bella-donna* L.) contains atropine in its berries and has been responsible for human poisonings. tobacco (*Nicotine sp.*) is smoked to produce relaxation and deters many insects; and Sacred Datura (*Datura meteloides*) is a dangerous plant that has been used to induce visions. Interestingly, this family includes one of the most agriculturally important plants, the potato (*Solanum tuberosum* L.) and for that reason is sometimes known as the Potato family. Both potatoes and tomatoes (*Solanum lycopersicum* L.) are found in the nightshade genus and have toxins found in the green parts of the plant (*Poisonous Plants of Canada*).

According to the United States department of Agriculture the US contains 41 different genera of this family both native and naturalized. There are at least 6 genera and species naturalized or native to Pennsylvania (*Rhoades & Block*).
The James C. Parks Herbarium contains 48 specimens of Solanaceae collected between (1940-1981). Additionally, there was one member of Gentianaceae. This collection represents 7 separate genera and 12 separate species. These are shown in a table with collector and collector number for the collection (appendix). The majority of these specimens were growing wild, however 46 were cultivated. A large portion (15-16 specimens) of the collection was composed of Physalis sp. made for a thesis by Spencer S. Stober in 1974. The Comma Delimited (CSV) file attached provides the complete details on each of the specimens (solanaceae.csv).

Most of the specimens are from Lancaster county or other parts of Pennsylvania, but there are also specimens from Alabama, Arizona, Texas and Virginia. GeoLocate was used to construct the map below showing the distribution of these specimens throughout the country.

Figure 1. shows the distribution of solanaceae specimens within the United States.
Genera with specimens of only one species

*Chamaesaracha villosa* Rydb.

The collection contained one specimen of *C. villosa* collected from Big Bend National Park in Texas. This species, commonly known, as TransPecos five eyes is normally found in the southwestern border of Texas were it is native. The genus *Chamaesaracha* has six other species found in the United States, and no species is normally found in Pennsylvania (USDA, Rhoads & Block). The map on the following page shows where this specimen was collected from.

![Map showing the location of Big Bend National Park, Texas, where the *C. villosa* specimen was collected.](image)

Figure 2. shows where the *C. villosa* specimen was collected from in Texas.

*Datura stramonium* L.

The genus *Datura* as a whole is commonly referred to as jimsonweed has native species in the entire continental US except Wyoming. In total there are ten species of this genus commonly found through out the country (USDA). There are two species commonly found in Pennsylvania, *D.
stramonium L. and D. meteloides DC. ex Dunal. The collection contained two specimens of D. stramonium, but none of D. meteloides. With only 49 specimens of this family it is not unexpected that some Pennsylvania species were not found.

*D. stramonium* is classified as a noxious weed and found throughout the continental US (except Wyoming), Puerto Rico, Hawaii, and the Virgin Islands (USDA). This species native range is unknown, but it is common in fields, roadsides and waste areas (Rhoades & Block).

The two specimens found in the collection were from Yorktown county, Virginia and Dauphin county, Pennsylvania. While these are both within the expected range for this plant, the two samples are not enough to make a comparison.

![Figure 3. shows where the D. stramonium specimens were collected from the US.](image-url)
**Nicotiana glauca** Grah.

There are 22 species in this genus. *N. glauca* is an introduced plant commonly called tree tobacco. There are two specimens in the collection from Texas and Arizona. Additionally, this plant is found in California, Maryland, New Jersey, Ohio, Nevada, New Mexico, Florida, Georgia, and Alabama. In Hawaii it is considered invasive (USDA).

![Map showing the distribution of Nicotiana glauca](image)

*Figure 4.* shows where the *N. glauca* specimens were collected from Arizona and Texas.

**Petunia x hybrida** Vilm.

Petunias were introduced as cultivated garden flowers. There are three species of this genus found in the US. This species, *hybrida*, is commonly known as Petunia and derived from a South American species (Rhoades & Block). In Pennsylvania it is grown in gardens and occasionally seeds in waste areas and between pavements. The collected specimen shown on the map on the next page was cultivated (Fig. 5).
Figure 5. shows the location of the garden the \( P. \times h y b r i d a \) specimen was collected from.

**Physalis genus**

Members of this genus are commonly called ground-cherries and found throughout the continental US, Puerto Rico, Hawaii, and the Virgin Islands (USDA). In the US there are 29 species found in this genus some native and some introduced (USDA). Six of these are found in Pennsylvania: \( P. \) Alkekengi, \( P. \) philadelphica, \( P. \) subglabrata, \( P. \) virginiana, \( P. \) pubescens, and \( P. \) heterophylla (Rhoades & Block). The collection contained 25 samples from three species. The distributions of these are shown on the map on the next page (Figure 6).
Figure 6. shows the distribution of *Physalis* specimens within the US.

*Physalis pubescens* L.

The species *pubescens* commonly known as the husk tomato or hairy ground-cherry is native to both the US and Pennsylvania. It is commonly found in most of the US (except New Hampshire and some of the northern Midwest), Puerto Rico, and the Virgin Island. In New York and Maine it is classified as threatened or endangered (USDA). In Pennsylvania it is a facultative upland species and is rare in woods, fields and gardens (Rhoades & Block).
Physalis virginiana Mill. & Var. subglabrata (Mackenzie & Bush) Waterf.

This species is commonly known as the Virginia ground cherry. The two specimens shown on the map below in Alabama were identified as \textit{P. virginiana}. However the other ten of these specimens were further described to the subspecies, Var. \textit{subglabrata} (Mackenzie & Bush) Waterf. This Rhoades & Block does not list this as a subspecies, but has a separate species of a similar name, \textit{P. subglabrata}, commonly called ground-cherry. The USDA does not list this as a species or subspecies of \textit{P. virginiana}. The species is found in Pennsylvania where it is native (Rhoades & Block). In the US, \textit{P. virginiana} is found in the eastern 2/3 of the country except Florida (USDA).
Figure 8. shows where the *P. virginiana* specimens were collected from.

*Physalis heterophylla* Nees.

This species is commonly known as clammy ground-cherry and is native to both the US and Pennsylvania. It is found throughout the continental US except California and Nevada, and it is considered invasive by several sources (USDA). The map shows the distribution of the 12 specimens from the Herbarium collection.

Figure 9. shows where the *P. heterophylla* specimens were collected from.
Solanum genus

Commonly Called nightshades, the genus *Solanum* with 103 species is responsible for the Solanaceae family name. Five of these species are found native or naturalized in PA; *S. Carolinense, S. rostratum, S. dulcamara, S. nigrum,* and *S. Americanum.* The map below shows the distribution of *S. dulcamara, S. Carolinense, S. nigrum,* and *S. tuberosum* in the collection. In total there were 17 specimens of this genus including *S. lycopersicum* L. var. *lycopersicum* under the pseudonym, *Lycopersicon esculentum* Mill.

![Map showing distribution of Solanum species in Pennsylvania](image)

*Figure 10. shows the distribution of Solanum specimens within the Pennsylvania.*

*Solanum Carolinense* L.

There are six specimens of *S. Carolinense,* commonly Called Carolina horsenettle. It is native to PA and common in fields, roadsides and sandy stream banks (Rhoades & Block). It’s classified as a noxious weed in four
states were it is found, and it is found throughout the continental US except in; Nevada, North Dakota, Montana, and Wyoming (USDA).

Figure 11. shows where the *S. Caolinense* specimens were collected from.

*Solanum dulcamara*

Commonly Called climbing nightshade, *S. dulcamara* is classified as a noxious weed (USDA). It is found throughout the continental US with the exception of some of the south-eastern states. It is an introduced plant originally from Eurasia, and is prohibited as a noxious weed in CT (Rhoades & Block, USDA). The collection included six specimens, four of which were found near each other in Lancaster where the majority of the collections were taken from.
Lycopersicon esculentum Mill. (Solanum lycopersicum L. var. lycopersicum)

There was one specimen of the species, *S. lycopersicum* in the collection. This was not mapped with the other members of its genus because it was listed under the pseudonym *Lycopersicon esculentum*. This species is better known as the common garden tomato, an introduced species found in most of the country (USDA). Rhoades & Block do not include this as a naturalized in plant of PA, but the USDA shows it as naturalized in 16 counties of the state (Rhoades & Block, USDA).
Solanum nigrum L.

Better known as black nightshade, *S. nigrum* is a naturalized plant native to Europe (Rhoades & Block). It is common in fields, woods, roadsides, and disturbed moist areas (Rhoades & Block). The USDA lists it as a noxious plant, but not as naturalized to Pennsylvania. All three of the specimens in this collection were found in Lancaster and surrounding Pennsylvania counties, which agrees with Rhoades & Block’s identification of it as naturalized in Pennsylvania.
Figure 14. shows where the *S. nigrum* specimens were collected from PA.

*Solanum tuberosum* L.

The Irish potato, or *S. tuberosum*, was naturalized in Pennsylvania as well as several other states in the US (USDA). Although not listed in Rhoades & Block, the USDA has mapped it as naturalized in 10 Pennsylvanian counties, not including Lancaster. The specimen found in Lancaster in the map below was cultivated, which explains it being found outside of its range.
Figure 15. shows where the *S. tuberosum* specimen was collected from.

Gentianacea & *Gentiana quinquefolia* L.

One specimen from the collection is labeled as a member of the family Gentianaceae. The proper name is *Gentiana quinquefolia* (L.) Small. It has two native subspecies and is known under the common name, agueweed. The subspecies are threatened or endangered over much of their habitat, which combined is made up of the eastern states (except Alabama, Louisiana and Florida) plus Kansas (USDA).
Figure 16. shows where the *G. quinquefolia* specimen was collected from in Pennsylvania.

In total there are 17 genera and 9 species in the US in this family. Rhoades & Block do not include this species, but one named *Gentianella quinquefolia* (L.) Small, otherwise known as stiff gentian and native to higher regions of the state (Rhoades & Block).

**LITERATURE CITED**

USDA Natural Resources Conservation Service from: <http://plants.usda.gov/java/name> United States Department of Agriculture.


**APPENDIX**

Table showing the solanaceae collection of the James C. Parks Herbarium at Millersville University.
<table>
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<th>Genus</th>
<th>Species</th>
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<th>Collector No.</th>
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*The starred species shown in the table are duplicate samples taken from the same location and time and have redundant collection numbers.