

Flattened Flora – Our Herbarium

Flattened Plants – Our Herbarium Specimens

The Center for Plant Diversity has over 300,000 dead plants called herbarium specimens. Each specimen consists of a flattened and dried plant glued onto a sheet of 11 x 17 inch archival paper with a label in the lower right corner. The label has specimen data, including where, when, and by whom the specimen was collected. These data can provide detailed information about the collection location such as GIS data, elevation, soils, and plant community.

Why would anyone in their right mind keep a collection of dead plants?

The Value of Flattened Flora

While herbarium specimens are not as beautiful as living plants, dead specimens do not need to be watered, fertilized, or repotted. They also take up less space than living plants. The largest herbarium in the United States has over 7 million specimens. Herbarium specimens are like a library of plant species. They are used as an aid in plant identification and to obtain more information on particular species. Herbarium specimens can provide information on flower shape, leaf shape, leaf arrangement, seed structure, pollen structure and much more! They can even be used as a source of DNA for sequence analysis. Plus, because the specimen label provides detailed information on when and where the plant was collected, herbarium specimens are an historical record of where and when plant species have grown. They are the basis of much of the information that is published on plant species in floras and guide books.

How are plants flattened?

Plants are flattened using a plant press, which consists of two wooden endboards (which may be in a latticework to make them lighter), straps, cardboards, blotters, and newspaper. A freshly collected specimen is placed in a fold of newspaper (11 x 13 inches in size). Blotting paper is placed on either side of the newspaper fold. Cardboards are placed to the outside of the two pieces of blotting paper. The endboards are placed to the outside of the cardboard. The straps are used to tighten the press as tightly as possible. More cardboards, blotters, and specimens can be added – as many as the straps can handle. Once the press is tightened, it needs to be placed in a warm place, so that the specimens do not mold. A warm car will do. Most herbaria have plant driers, which are basically just warm cabinets (often heated by light bulbs). Most specimens take three to four days to dry. Succulent plants or juicy fruits can take much longer, and care needs to be taken that these types of specimens do not mold in the press.

How are flattened plants stored?

Our flattened plants are mounted onto archival (acid free) 11 x 17 inch paper using archival glues and strapping tape. The paper gives the specimen support, and if archival-quality materials are used, the specimen can last for hundreds of years. The label with the collection data is also printed on archival paper and is glued in the lower right corner. The mounted specimens are stored in large folders in herbarium cabinets. The folders are usually arranged by plant family, genus, and species for easy retrieval. The main source of damage to herbarium specimens in the United States is insects that like to eat dried plant material (commonly called “herbarium beetles”). Due to this, our collections room is kept at a rather cool 60° F, a temperature that prevents “herbarium beetles” from breeding and feeding. In addition, before incoming dried plant material enters our collections room or other main areas, it has to be frozen at -20° C for one week.