

Where have all the flowers gone?

Some flowering plants may be headed for the fate of the passenger pigeon: extinction. The cause, say biologists at Notre Dame, is Man's alteration of his environment.



A recent study by scientists at Notre Dame University suggests that certain flowering plants may become casualties of "progress."

"More and more flowering plants are falling into the categories of threatened and endangered," said Professor Theodore J. Crovello, chairman of Notre Dame's Department of Biology. "Threatened" is a less severe classification than "endangered."

"As Man moves into new areas and alters the environment, by draining areas for farming, for example, flowers decline and disappear. Orchids that grew in Indiana not many years ago are gone."

The conclusion that certain flowers are disappearing is based on a three-year study that used an IBM computer to analyze 35,000 botanical specimens collected in North America over the last 180 years. The specimens were from collections at 75 museums and universities across the country.

"Our study is helping determine the status of certain plants," said Dr. Crovello. "Research, for example, indicates that relatives of the

mustard are disappearing. On the other hand, we might find that a species thought to be extinct or disappearing had been mislabeled in some collections; or hadn't been collected for some years; or exists in only a few collections, but is still thriving in the wild."

The Notre Dame researchers have supplied endangered species information to scientists in Ohio studying plants of the mustard family there. Preliminary research indicates that while some plant species in Ohio are threatened and endangered, others can be removed from the list. Analysis of certain "spring flora" such as various types of spring watercress shows some are disappearing while others are plentiful. Another part of the study, the Flora Indiana Project (FLIP), is focuses on the 2,500 different species of flowers found in Indiana.

The biologists built their files of information by entering names of plants, when and where found, environmental conditions at time of collection, and other information. The IBM System/370 Model 158 produces reports by states and coun-

ties showing numbers of plants gathered by century and decade since 1800.

"As you look back into history, collectors' records become sketchy," said Dr. Crovello. "A botanist might simply have noted 'picked up by the Missouri River' or 'collected in Indiana territory' and just recorded the year. Today, researchers provide more accurate records, sometimes even the street address. Still, we see plants shrinking in geographic distribution over time — the indication of an endangered species.

"This is more than just an aesthetic loss: Man benefits significantly from certain plant species, particularly those that supply important medicines. Yet most plants have not even begun to be analyzed for products useful to people. Who knows what potentially valuable chemicals we are losing with every species that becomes extinct.

"Urbanization and other activities of Man can irrevocably alter the environment, and this forces us to set priorities."