DNA was isolated from herbarium specimen of an extinct plant collected 108 years ago from Uzbekistan

Laboratory of “Molecular Phylogeny and Biogeography” at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan is one of the laboratories conducting research in modern areas of botany. Most of the laboratory staff have improved their knowledge and skills in foreign countries. In recent years, the laboratory has been conducting research on the basis of the state program for the creation of DNA barcodes and banks of endemic plants in the flora of Uzbekistan. One such study was conducted by senior researcher Elena Nikitina and junior researcher Inom Juramurodov under the guidance of the head of the laboratory Ph.D. Yusupov Ziyoviddin. Together, the researchers have managed to extract high quality nuclear DNA using leaf samples of the only herbarium sample of the Hedysarum amankutanicum B. Fedtsch collected in 1913 and being kept in The National Herbarium of Uzbekistan (TASH).


TASH001947
Hortus Botanicus Imperialis Petropolitanus.
Гербарій Переселенческаго Управленія.
TASH
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TYPUS
Hedysarum amanenticum
B. Fedtsch.
III 1961
Determ. A. Borissova
Гербарій Переселенческаго Управленія.
Б. А. Федченко: Самаркандско-Бухарская экспедиція 1913 г.
№ 1071
Hedysarum
Самаркандская обл., Самаркандскій уѣздъ
Собр. А. И. Михельсонъ.
B. A. FEDTSCHENKO: Iter Samarcandense Bucharicum 1913.

This plant grew only in Uzbekistan and categorized as “0” in the Red Book of Uzbekistan. The significance of this result is that a new method has been used to isolate the nuclear DNA of the species that has not been found in field researches for many years and thought to be extinct. This new method can be approached not only for Hedysarum amankutanicum, but also for extracting DNA from other herbarium samples of extinct and old specimens. At present, the relevant documents are being prepared for the Intellectual Property Agency under the Ministry of Justice of the Republic of Uzbekistan to obtain a patent for this new method.

