

# hidden HISTORY

## TOOLS TO CREATE A WRITTEN LANGUAGE

By Sheila Joy

**A**mong the mountain of materials held in the C. Elizabeth Boyd '33 Archives is an odd group of artifacts found in the Kathryn C. Keller '40 Collection. The collection contains the usual manuscripts and photographs, but beyond these are four small mirrors, two oil injector syringes and nine mouth casts.

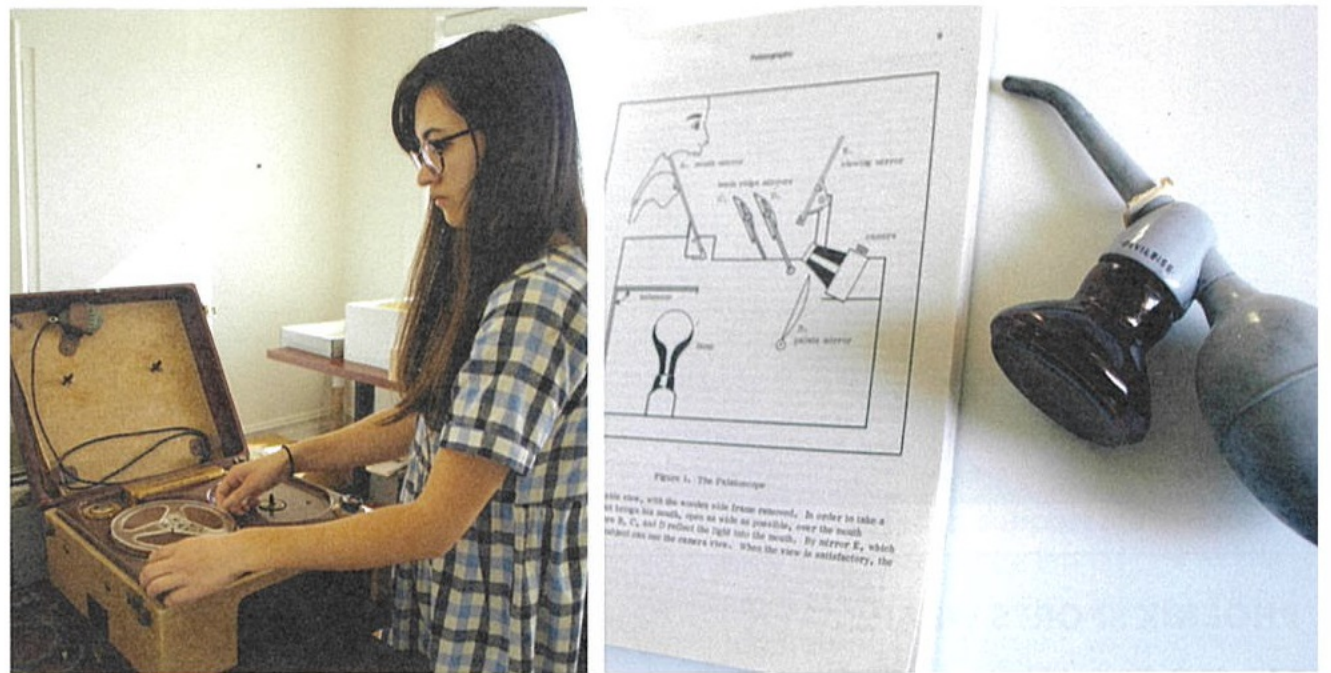
At first glance, one wonders what significance these items hold, as the mouth casts emit a peculiar toothy appearance. Further exploration of the collection reveals that all these items were used by Keller to assist her in creating a written language for the Chontal people, an indigenous tribe of southern Mexico.

Keller grew up in Chambersburg, Pa., and graduated from Wilson College with a bachelor's degree in classics. She then trained to become a missionary and phonetics teacher at the Wycliffe Bible Translators Summer Institute of Linguistics, held in Oklahoma. Beginning in 1943, Keller spent 40 years as a translator and missionary in rural Mexico working with the Chontal. She also earned a master's degree in linguistics from Indiana University in 1958.

Keller's most prominent work was the translation of the New Testament into Chontal, but in order to create the translation, she had to first develop a written form of the tribe's language. To do this, Keller used a technique developed at the University of Edinburgh known as palatography, which is a means of investigating tongue contact with the roof of the mouth in the production of speech sounds. She published a book in 1971, *Instrumental Articulatory Phonetics: An Introduction to Techniques and Results*, in which she explains the technique of using a "marking substance" on the roof of the mouth and then photographing the resulting smudge left after a speech sound is made. The marking medium is either powdered graphite or medicinal charcoal, and is sprayed into the mouth using an oil injector syringe. Then a photograph called a palatogram is taken with the help of a series of mirrors to reflect the image of the mouth cavity.

A second technique involves the use of a plaster mouth cast to create a three-dimensional model of the mouth cavity at the moment a sound is made. In this scenario, an oil injector syringe is filled with plaster cast material and injected into the mouth while a particular sound is being made. The series of mouth casts can then be studied and used to develop the phonics behind the language.

Researchers will also find contained in the collection cassettes, reel-to-reel tapes, LPs and two magnetic tape players/recorders



At left: Hankey Center intern Sheila Joy tries out the reel-to-reel tape recorder in the Kathryn C. Keller '40 Collection. At right: one of the oil injector syringes used by Keller in her phonetics work

that Keller used to record her linguistic work with the Chontal. In addition, the photographs in the collection provide a visual component, encompassing not only Keller's work, but the culture of the Chontal.

The audio materials are especially unique because they provide another dimension to the language and culture of the Chontal. The ability to listen to this group as they practice linguistic exercises and play their indigenous music complements the work produced by Keller and allows the Chontal to essentially speak for themselves.

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