

GENERAL SCIENCE

Dead Head and Live Tenor Aid Study of Human Voice

Carnegie Institution Reviews Its Achievements In New Yearbook and the Annual Exhibition

A DEAD man's head, equipped with an artificial voice-box, collaborated with the very-much-alive Lawrence Tibbett in supplying new information on the human voice and where it comes from, in researches reported in the *Yearbook* of the Carnegie Institution of Washington.

These experiments are still being carried out, their results to date were collated for the present *Yearbook* by Prof. G. Oscar Russell of Ohio State University, research associate of the Carnegie Institution. They are aimed at getting more definite information regarding the respective parts played by the larynx or voice-box and the various nose, mouth and throat cavities in the production of the human voice.

In the dead-man's-head experiment, an actual cadaver head was used. It was given an artificial larynx, through which sounds were produced. Then the sinuses and other cavities were filled up or otherwise blocked out of action, while sensitive electro-photographic instruments made records of changes thus induced in the sound waves.

Lawrence Tibbett's contribution to science was his consent to have motion pictures made down his throat, showing his vocal cords in action. Using these, Prof. Russell has been constructing life-size models in hard plaster and resilient materials of the great tenor's vocal apparatus, in the various positions it showed during the production of different vowels, pitches and voice qualities.

Early American "Bowl"

NOTHING new under the sun are California's famous Rose Bowl and its companion bowls in other parts of the country, that will presently be filled with howling football fans. At Pechal in Yucatan, Dr. A. V. Kidder and his colleagues of the Institution's division of historical research found a peculiar elliptical mound, broken only in four places, as if for entrances.

When they dug away the covering earth they brought to light a series of

eighteen to twenty steps, running up to a high wall, quite in the manner of a modern football field. The seating capacity, very conservatively estimated, is placed at 8,000. The court enclosed by this ancient grandstand is more nearly square than a modern football field. It is approximately 225 by 250 feet. Its use can only be conjectured; perhaps it was for athletic contests, perhaps for religious ceremonials.

Indian Baby Mummy

THE pathetic little mummy of an Indian baby who died many centuries ago was one of the features of the annual exhibit of the Carnegie Institution of Washington. Its skin turned parchment-like with the drought of the

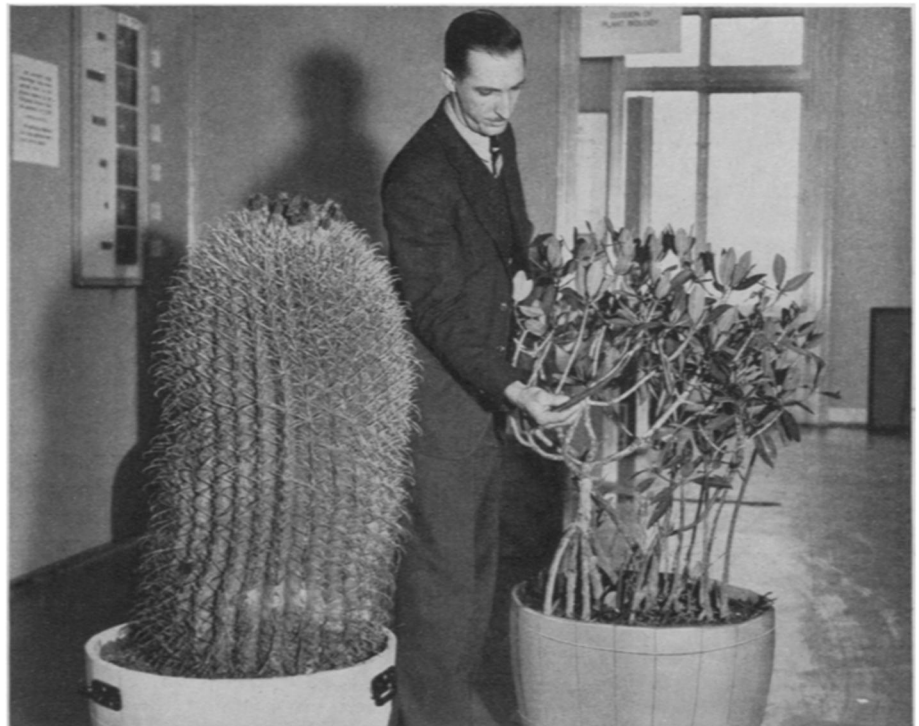
ages, the little one lies on its back under a woven coverlet, with its toys laid about it, to take into the next world.

Nearby, in a separate case, is the mummy of a woman of the same Southwestern culture-group, the Basket-Makers. Mummification of the burials of this people does not resemble that of the ancient Egyptians; the Basket-Makers had no art of embalming, and their mummies resulted simply from the natural drying out of the bodies in the arid air of their caves.

Desert plants of two widely different types, from habitats far apart, stand nearly side by side in the exhibit hall. One is easily recognized as a desert inhabitant; it is a 350-pound barrel cactus from the Arizona desert—a valuable source of water to hard-pressed travelers in the dry country.

The second is not so easily imagined as a desert plant, for it is a mangrove clump from the Gulf coast of Florida, which normally stands on its stilt-like roots actually in the water. But the water is salt, and as unpalatable to plants as it is to humans, so that the plant shows the thick, hard leaves with shining, varnished surfaces that one finds in arid regions.

Half a million years of man's earliest



XEROPHYTE MEETS XEROPHYTE

The mangrove, whose "viviparous" seedling Dr. T. D. Mallery is shown examining, is as much a xerophyte, or desert plant, as the barrel cactus, even though it grows with its roots constantly in water. The water is salt, and therefore "dry."