

*NOTES ON A PROBLEM IN THE MECHANISM OF THE
ZULU CLICKS*

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AUTHORITIES on the language of the Nama Hottentots give instances of the clicks made in combination with the velar plosive **k** and other instances of "pure" clicks made without this plosive. This presents the interesting possibility of there being two distinct varieties of click, in the first of which the boundaries of the rarification would be tongue-front and tongue-back, and in the second tongue-front and glottis.

In discussing this point with a Zulu, Frank Nxele, a native of Zululand, I found that Nxele could make two distinct clicks, one with audible **k**, and the other without any audible **k**. He maintained that in normal Zulu clicks the back of his tongue did not rise as it does for **k** and **g**. Owing to the absolute closure effected by the front of the tongue, the movements of the back of the tongue could not be optically observed. And, moreover, a false palate cannot be used for observations further back than the hard palate. In order to solve this question indisputably it was necessary to have recourse to X-ray observation.

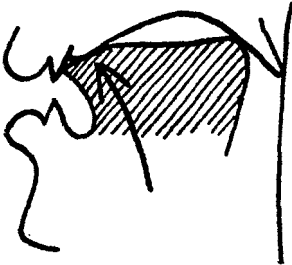
Dr. P. J. Olivier, of Johannesburg, very kindly offered to put Nxele under X-rays. In order to penetrate the thick material of the jaw a ray of such strength had to be used as would completely obscure the tongue. Hence a scheme had to be devised to indicate exactly the tongue position and the movements of that organ. Small squares of thin lead were hammered on to a strong thread in the same manner as has been done by Mr. Stephen Jones in the Phonetic Laboratory of University College, London. A light flexible chain was thus made and inserted into the mouth and down the throat of Nxele in such a way that it lay flat over the tongue. It was found that this did not impede him in articulating the clicks.

Observed on the X-ray screen, it was seen conclusively that for the articulation of each click the back of the tongue was raised to touch the velum. The following interesting points were observed:—

back of the tongue must touch the velum but lightly; but when voicing the clicks the tongue must become more tense. In the case of the nasal clicks, the lowering of the uvula would push the leads against the root of the tongue.

In enunciating the sounds **k** and **g** the concentration, both physical and mental, is on that velar point of articulation. In enunciating the clicks, however, while the back of the tongue remains as for **k** and **g**, the concentration both physical and mental is, with Zulus, upon the forward point of articulation. Now, it is possible that in certain cases the Hottentot may shift the concentration to the velar point even in pronouncing the clicks, and so enunciate them with **k** audibly present: but this does not take place, as far as I am aware, in normal Zulu.

DIAGRAMS SHOWING POINTS OF CONCENTRATION.



Dental clicks **ɬ** and **ɽ**.



Velar-plosives **k** and **g**.
