3. LIMITS TO PHYSICAL ACCURACY.

For all *practical* purposes, in reference to the Asiatic languages, I think that the use of Sir WILLIAM JONES'S alphabet, with a few modifications, perhaps as indicated below, will be sufficient even as a *phonetic* medium for the aboriginal Indian languages, Tibetan, &c., although a most detailed transliteration is in general necessary for *philological* questions.[1] In some instances a phonetic transcription, with even more minute distinctions than the native alphabets will allow of, may be desirable for ethnographical considerations. A perfectly accurate *physical* distinction between all the modifications of vowels, and particularly of consonants, really existing, is an object which comparative philology has as yet not taken up. Such an inquiry may be highly interesting as regards physiological ethnography, though the distinctions would be decidedly too minute for practical use. Sufficient accuracy can only be attained, it seems to me, when such questions can be connected with a graphic representation of sound. Thus, the vibrations of a membrane against which one is speaking might communicate themselves to a mechanical hand registering their motion on a sheet of paper which is passed along by clockwork. Several experiments of the kind have already been made, but as yet without the success anticipated.[2]

Even in the languages possessing the most rational orthography, the distinctions made are not complete. This soon becomes apparent when we attempt to define the sound more closely by the assistance of physical experiments, such as the application of acoustic tubes to the larynx, the prolongation of sound for decomposing diphthongs, &c. In the first volume we have already had occasion to mention the respective experiments made with the múnshi in Professor BRÜCKE'S[3] laboratory, when, on our return

[1] For Hindostáni especially the practical mode of transcription may be easily chosen so as only to differ in reference to the number of distinctions made from the complete transliteration. In the transcription generally used by us we found it practically unavoidable in some cases to sacrifice critical accuracy to simplicity.

[2] I especially allude to some curves produced by a similar method, which our friend M. NICOLAI DE KHANIKOFF, the well-known traveller in Bokhára and Persia, showed us in 1860 at the Oxford Meeting of the British Association; these experiments had been made by Mr. SCOTT at Paris. Also the mechanical principles of machines imitating human speech, may be, with advantage, kept in view when defining the elements of speech in any language, particularly those of unusual sound.

[3] Ueber die Aussprache der Aspiraten im Hindostáni; Sitzungsberichte der philosophish-historischen Classe der Wiener Academie, 1859.