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SIGN LANGUAGE IN PRINT.

BY FREDERICK STARR, UNIVERSITY OF CHICAGO, CHICAGO, ILL.

MY attention has lately been called to a matter which seems to me of some interest. It is well known to all readers of *Science* that gesture language is a common means of communication between our different Indian tribes.

Mr. Lewis Hadley of Chicago is at present engaged upon a plan for reducing the sign language to print. The purpose of the work is benevolent and religious, the idea being to bring religious instruction to the old Indians. It is well known that old Indians will never learn to read our language. It is believed by Mr. Hadley and his friends that they will quickly learn a printed sign language. Of course, all these old men make constant use of gestures and signs; and, if they take kindly to the printed gestures, there is no question that considerable progress might be made.

Mr. Hadley has had difficulties to contend with in carrying out his work. He has been hampered by the lack of funds and by the novelty of the undertaking. In his first experiment he cut the dies for printing himself, and the resulting impressions were black designs with the figures in white lines, and the result was exceedingly ugly. He has since then simplified the designs and made them in the form of ordinary type, and has now an extensive font of several thousand types, which will be used in printing cards and tracts for the instruction of the Indians.

There are two points to be considered in reference to this plan: First, its feasibility; second, its methodology.

There are three questions that arise in reference to feasibility:—

1. Is there a universal sign language among the Indians?
2. Can the signs be represented by type?
3. Will the Indians care to learn it?

1. As regards the first of these, Mallery says that there is no absolutely fixed sign language in general use among the Indians. While this is true, it is also true that all Indians gesture, and the gestures are so natural and so self-expressive that there is no question that natural signs, although new, would be generally understood.

2. There is, of course, a difficulty in representing the gestures by type so that they can be readily recognized. This difficulty all who have attempted to work in the subject of gesture language realize. Mr. Hadley has changed the forms of his type repeatedly. He has produced finally what appears to be simple, plain, and easily understood characters. Many of these may have to be still further changed, but in large measure they meet the requirements.

3. There is a very serious question as to the favorable reception of this printed gesture language by the Indians themselves. It is, however, in a certain sense picture-writing, and picture-writing is natural to the North American. Mr. Hadley is doing, on a large scale and at one stroke, what the Indians have begun to do in many cases. Colonel Mallery has shown in his papers the

close relationship between gesture language and pictography. The picture character is often only an attempt to represent a gesture. This being so, it may be possible that a kind reception will be given by the Indians to the printed sign language.

As to the method of introducing the printed sign language into use, Mr. Hadley has devised a game of cards, which, he believes, will help greatly in the work of teaching. Each card has upon its face, in unusually large type, a gesture. Upon its back is printed the English equivalent for the gesture. The game to be played with these cards is based upon certain gambling games, already quite familiar to the Indian, and success in the game depends upon the Indian giving the English word for the sign represented. All games of an instructive kind are more or less of a nuisance, but it is not impossible that these cards may be successful in the way they are intended. Besides the game of cards, the purpose of which is really to teach the speaking and reading of English through the printed sign language, a considerable number of texts, mainly of a religious character, are to be issued. It is expected that an Indian who has a story or a passage printed in the sign character will himself make the signs represented, and by making the signs he will gain the idea to be conveyed.

Every text of the sign type has under it the English equivalent words. In order to convey an idea what this test is like, I present herewith a line of the text as it appears in print.



It will be seen that, quite apart from its religious and educational purpose, this matter is one of scientific importance, and we shall watch with interest how far it may succeed.

CURRENT NOTES ON ANTHROPOLOGY.—XXVIII.

[Edited by D. G. Brinton, M.D., LL.D., D.Sc.]

The Present Position of the Hittite Question.

THE ethnic position of the Hittites has been a perplexing question for many years. It seems to have been answered in a certain degree by the recent excavations of Von Luschan at Sindjirli, which is in ancient Hittite territory. Halévy has shown that the two stelae brought from there to Berlin are in a Phoenician dialect. The Hittites of the Bible were, therefore, probably Semites.

Unfortunately, this solution leaves the real problem untouched; for it is now clearly established by Belck, Lehmann, and others, that the mysterious syllabic inscriptions and bas-reliefs at Pteris, Nymphi, and about Lake Van, were not by the Semitic Hittites, but by a wholly different people, who called themselves Chaldi, after their chief divinity, Chaldis. To their land they gave the name Biaina (Urartu, —Ararat, in Assyrian), and their chief city Van, their own name of which was Tuspa-na, was founded about 833, B.C., by their early king, Menuas.

The confusion partly arose from the fact that the Semitic Hittites, previously tributary to the Assyrian monarchs, were subjugated by the Chaldi king, Argistis I., about 800, B.C.; and, further, that at the fall of the Chaldic kingdom, about the close of the seventh century, B.C., many of the Chaldic people were driven southward into Cilicia and its neighborhood.

The question therefore remains, Who were the Chaldi? The prevailing theory has been that their language had Mongolian or Turkish affinities; but Professor Sayce has pretty clearly shown that it had regular declensions, a nominative ending in *s*, an accusative in *n*, oblique cases in terminal vowels, and an adjective which followed the noun and agreed with it in these respects. This is not at all analogous to any Mongolian or Turanian language, and, if correct, disproves the theory.

A bolder one is advanced, not entirely for the first time, by M. Salomon Reinach in the *Revue Archéologique* for January. He maintains that the migration of the Chaldi, or supposed Hittites,