value seems to be *ich*, as an affix, and *chi* as a suffix. In Fig. 18 it is a prefix and reads *ich*, suggesting that *ch'i* is the proper phonetic value to be used. The determinatives that we have referred to in this and other articles seem to be phonetic.

Fig. 3 is the *U* of Landa, and there is reason to think that it is correct, for the *o* or *u* attached to it is divided in half by a line which I believe, from results obtained in other directions, is the vowel *o* with the cut-line through it. In the various *Ch'u* (or *Ch'o*) glyphs (Figs. 4 and 5) that we have given this component of the glyph is square (Fig. 16). It has the cut-sign in the middle, or is divided by it, and gives a fair representation of teeth. Co = tooth in Maya (pronounced Coo), and, as in Figs. 3, 4, 5, the cut-sign runs to the perpendicular line (Fig. 17), whose phonetic value in my alphabet = *H*, either end of the *h* glyph touching the *ch* glyph, which envelops it externally, as in Figs. 3, 4, I accept it as a suggestion of *h'* or *ch'u*

What we have designated as the cut-line, or sign, appears in other places. A good example is shown in Fig. 8. It is the well-known honey-sign, but in this case is combined with other glyphs. I act on a principle of analysis which so far has given good results, that the glyphs and Maya decorations are composed of ikonomatic components, and that the Maya scribe-sculptor and his more demotic brethren do not seem to have used any meaningless decorations, either in their hieroglyphs or the ornamentation of their palaces, all these being in keeping with the words which they intended to convey to the reader's mind by the sound of the name of the thing represented. Fig. 8 is a glyph in the second row of the outer page of the Codex Troano. It is placed in front of Plate 35 of Brasseur's work. We will begin our analysis as follows: (*a*) The upper, left-hand glyph and the determinative sign below it on the lower, left-hand side; (*b*) the upper, right-hand glyph and the honey-sign below it at the lower, right-hand side. The *o* or *u* glyph is composed of the eye glyph, *ich*, or *uich*, placed on either side below the tooth-like appendage, *Co*. Just above it, in the elongated, oval glyph, is the *há* or *h* glyph, a line running through *o* or *u*, these two glyphs giving us an admirable suggestion of *ch'u* or *ch'o*. By taking half of this upper glyph it can easily be seen that the *u* of Landa (Fig. 3) is but a variant of this glyph (Fig. 21). The upper right-hand glyph (Fig. 8) has the dotted *sh* aspirate, together with the *i* loop and *l* curve. Descending from the *i* loop is the twisted glyph (or line), whose phonetic value I have so far used with success as *ba* (from *ba*, twisted, tortuous, bent). By trying every combination that can be obtained from this glyph and the preceding glyphs, I find that the following word was probably that intended by the Maya scribe, viz., "ch'u-h-oo-sh-il," or "ch'hucil." Turning to the vocabulary of Brasseur, which seems to suit this kind of work better than the dictionary of Perez, I find that the word in Maya means "sweets." This placed over the honey-sign, at the lower right-hand corner, indicates that we are not far astray in our analysis. The honey-sign has the two small, square, black, count glyphs attached to its left upper and lower corners = *ca*, or "two;" next comes our dotted aspirate line, which has the phonetic value *sh* or *x;* beyond this aspirate, to the left, is the *há* or *h*, a perpendicular line, giving us in connection with the other components and the aspirate "ca-há" (*b* is understood) = *cab*, or "honey." "Sweets-honey" is, I think, a fair interpretation of this glyph, which anyone who has studied the "Bee-Keeper's Narrative" of the Troano will recall as intimately associated with honey and the honey-comb. Its component, *il*, is the antennæ of the bee, with the *i* loop attached.

This antennæ glyph I have shown in a previous article to be intimately associated with the honey-sign *Cab*.

The second *u* of Landa's alphabet (Fig. 14) is expressed by the *o* and *u* and the *l* curve to which the twisted glyph, *ba*, is attached. This gives us "Ho-ba;" and the aspirate of Landa, marked by the indented curve between the *il* and *ba* components of this sign, changes the *bá* into *há* or *yá*, giving us "Ho-ya" = "to water," "sprinkle." The *u* of Landa is often seen placed below the hieroglyph of the firmament, and is intimately connected with *há*, or "water which refreshes the earth with rain," "dew and moisture." *Ca*, *há*, *o*, *u* have an interesting relation with the *ch'i* glyph, and, from what we have related, seem to be determinatives.

The *ch'i* glyph is represented in many different parts of the Troano either as the claw-like appendage of the shell-fish, as in Plate 24 (*b*), Codex Troano, the centipede or tarantula claw, as in Plate 13, Troano (*b.c.*), Plate 18 (*b*), Plate 9 (*c*), or as the "pinching hand," with its crustacean-like thumb on Plate 25 (*b*), Troano.

DEATH OF PROFESSOR W. P. TROWBRIDGE.

PROFESSOR WILLIAM P. TROWBRIDGE, the head of the engineering department of the Columbia College School of Mines, died of heart-failure at his home in New Haven last Friday. He was born in Troy, Oakland County, Mich., May 25, 1828, and entered the West Point Military Academy in 1844, where he graduated four years later, receiving an appointment as second-lieutenant in the corps of engineers. He had served as Assistant Professor of Chemistry during the last year of his course at the academy, and after his graduation he was occupied for some time with astronomical work at the West Point Observatory. In 1851 he was appointed to a position on the Coast Survey under Superintendent Bache, which he held till 1856, and at a later time he took part in the survey of the James and Appomattox Rivers and in a series of surveys on the Pacific coast.

In 1854 he had received a commission as first-lieutenant in the U. S. Army, which he resigned two years later to accept the professorship of mathematics in the University of Michigan; but after a year of service, he resigned his professorship also, and was appointed scientific secretary to the superintendent of the Coast Survey. During the Civil War he again served in the army, and rose to the rank of brigadier-general; his work in the army being largely in connection with fortifications in New York harbor and elsewhere.

After the war was over he resigned his commission again, and entered the Sheffield Scientific School of Yale College as Professor of Dynamic Engineering, but resigned in 1877 to take the professorship of engineering at Columbia, which, as we have stated, he held up to the time of his death.

Professor Trowbridge was the author of a treatise on "Heat as a Source of Power" and several other works on engineering subjects. He was the chief agent of the tenth census for collecting statistics relating to power and machinery employed in manufactures. He was for four years Adjutant-General of Connecticut, was Vice-President of the New York Academy of Sciences and of the American Association for the Advancement of Science, and was a fellow of the National Academy of Sciences. For several years Professor Trowbridge was a director of the Science Company.