

GENTILI'S GLOSSOGRAPH.—AN AUTOMATIC SHORT-HAND APPARATUS.

Amadeo Gentili, C.E., brought before the public a short time ago an invention with which he has been occupied for a number of years. The purpose of this apparatus is to record speech automatically, in easily deciphered characters, with the rapidity of the normal flow of speech. The inventor did not proceed with his studies, as the inventors of the telephone and phonograph, upon the principle of acoustics, because he could not succeed in making practical use of the microscopical characters thus obtained; but he converts the motions of articulation of the organs of speech into visible permanent characters.

An easily managed instrument, shown in Fig. 1, is provided with delicate levers which rest upon the different parts of the tongue and lips, and slender wings swing before the nostrils. The levers of this instrument may be taken in the mouth without any inconvenience.

On speaking these levers and the wings move, and their motions are transferred partly in a mechanical way and partly by electricity to a writing pencil, which marks the single sound with great precision upon six lines parallel and near to each other on a strip of paper, which is moved forward by hand or clockwork. Upon the utterance of the vowels and consonants, moving one or more parts of the organs of speech more or less strongly, or upon the air being exhaled through the nose, the signs corresponding to the sounds uttered are recorded and may be read at once. For example, in uttering *ch*, *r*, *g*, the back part of the tongue is raised; with *s*, *h*, *l*, the tip of the tongue; and with *e*, *i*, the whole tongue is moved; with *s*, *t*, the tongue is pushed forward against the teeth; with *o*, *u*, the under lip, and with *f*, *b*, the upper lip is moved; and with *n*, *m*, the soft palate is depressed in such a manner that the air which otherwise would issue from the mouth finds its way through the nose. These characteristic motions through double levers are transferred in the instrument from the inside to the outside of the mouth in such a way that with the utterance of *ch*, *r*, *g*, lever IV.; with *e*, *i*, levers IV. and V.; with *s*, *ch*, *l*, lever, VI.; with *s*, *t*, levers V. and VI.; with *a*, *o*, *u*, lever III.; with *f*, *b*, levers II. and III. are put in motion and produce larger or smaller variations of the pencil from its position of rest. The nasal sounds, *n* and *m*, place lever I. in motion.

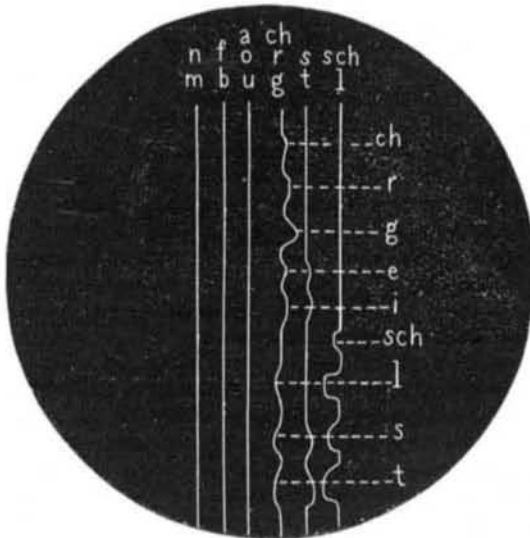
These few signs suffice for the interpretation of language, for in our conventional orthography, taking into consideration only the phonetic sound marks, it will be found that *b*, *d*, and *g* are only less degrees of intensity of sound than *p*, *k*, and *t*; that *c*, *z*, *q*, and *x* are composed from *ts*, *kw*, and *ks*; that between *f* and *v* no difference exists; and that *w* is only a sonorous modification of *v*. The system of writing of this apparatus, as represented in Figs 3 and 4, may be quickly learned. There are certain rules which make the deciphering easier. These rules rest upon the laws of the construction of syllables and the combination of consonants.

The German and Italian languages are best adapted for recording by this apparatus, because in these languages the phonetic mode of writing varies least from the orthography, but this does not prevent its being applied to other languages.

Stenography through the use of this apparatus (which the inventor calls a glossograph) becomes, in a certain measure, the public property of every one who will undertake the easy and interesting labor of learning the key of this "nature's self-writing." This apparatus may be used for the recording of public speeches, not by the orator himself, but by one employed for that purpose, who takes the instrument in his mouth and repeats the speech softly, for the voice plays no part in bringing out the signs.

The glossograph has the advantage over stenography as it is practiced now, as it requires no previous study or practice, it demands no straining of the attention, and consequently causes no weariness. Only the deciphering requires practice. The employment of an apparatus which will enable us to write four or five times as rapidly as formerly, especially in an age when so much writing is done as in ours, will not be confined to the noting down of public speeches, and if the compass of the practical value of this invention has only been glanced at it must be perceived that there is a fruitful principle in it which is capable of great development. Herr Gentili a short time ago gave an exhibition of his invention before the Institute of Physical Chemistry of the University of Leipsic, and gave proofs of the practical utility of the apparatus.

A few imperfections which appeared at the first exhibition of the apparatus have since been obviated by the inventor. He has separated the speaking apparatus from the writing apparatus, and provided the latter with clockwork, so that the writing is more distinct, and by the relative duration of



RECORD OF THE GLOSSOGRAPH.

the single signs a valuable knowledge of the signs may be obtained. The transmission of the motions is made by electricity: the contact of the tongue with the soft palate, or the lips with each other, is imprinted by the closing of the working current. —*Illustrirte Zeitung*.

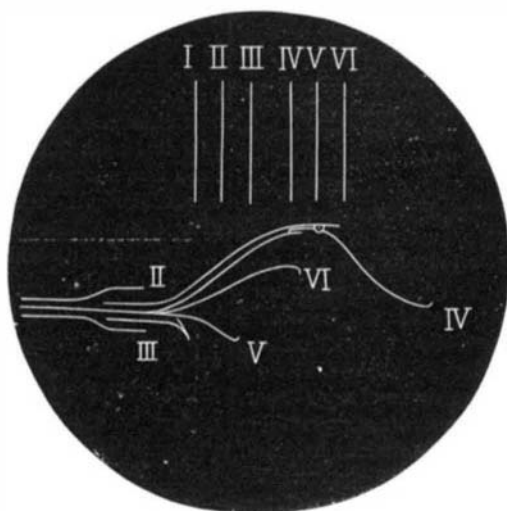
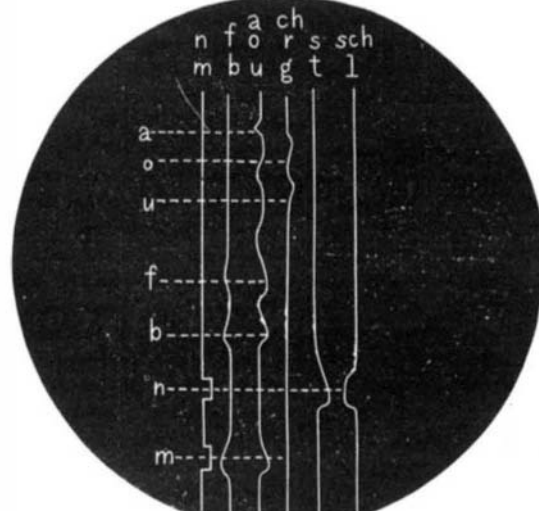


DIAGRAM OF THE LEVERS.



RECORD OF THE GLOSSOGRAPH.

Potash as an Antidote to Snake Poison.

The Brazilian Government has distributed throughout the empire a circular announcing the fact that Dr. J. B. de Lacerda, of Rio Janeiro, has found an antidote to snake poison in permanganate of potash, and explaining the manner of its use. Dr. Lacerda recommends that the per-

that his experiments were made with the venom of the following species: Surucucú (*Lachesis rhombata*), a reptile that attains a large size (two meters and more), and whose bite is considered to be one of the most dangerous; jararaca (*Bothrops jararaca*), the most common of our venomous species, and whose dimensions seldom exceed one meter; jararacussú (*Bothrops jararacussú*), whose bite is as much feared as that of the surucucú, and which attains a larger size than the jararaca; and finally the urutú, a species not very well defined as yet zoologically, but which is similar to the bothrops, and is endowed with a very active poison. He has already collected about forty cases of bites in man, of individuals belonging to these different species, in which hypodermic injections of permanganate of potash have given the best results. Among these there are even two cases of bites by the rattlesnake (*Crotalus horridus*).

Tests applied in India show that the same treatment is efficacious against the poison of the cobra de capello. It is noteworthy that the permanganate of potash, as used by Dr. Lacerda, in a solution of 1 in 100, has no irritating effect.

Dr. John Shortt, formerly Deputy Surgeon General of the Madras Army, in a communication to the *Lancet*, says that as long ago as 1869-70 he publicly demonstrated the efficiency of liquor potassæ as a cure for snake bite, and describes a number of cases of successful treatment of snake bites with this remedy. In summing up Dr. Shortt says: "In the course of a large series of experiments with snake poison, I discovered that the liquor potassæ neutralized the poison completely and rendered it inert. Having thus satisfied myself of this fact, and after further experiments, I found that potash combined with brandy as a diffusible stimulant roused the nervous system, excited the circulation, and thus carried the potash into it as rapidly as possible, and enabled it to overtake and neutralize the poison in the blood. Being satisfied on this point, when the snake bitten cases came for treatment, I, in the most careful manner, put

into practice the plan I had found so successful in my experiments on these patients with perfect success. Of the five cases thus treated two were the bites of cobras, two that of Russell's viper, and the other one that of a green viper. It is difficult to get a succession of cases of snake bite for treatment, but the secret of success by this method consists in bringing the patient's system rapidly under the influence of the potash and brandy, or, in other words, to make the patient drunk as speedily as possible, and maintain this effect for some time after, till the system becomes thoroughly saturated with the potash, and the whole of the secretions become alkaline. I have tested the permanganate of potash also, and have found that it likewise renders

snake poison inert, but as it is the potash alone that possesses the power of neutralizing snake poison, I do not see the advantage of using the compound known as the permanganate of potash."

In Dr. Shortt's treatment the wound was scarified, so as to bleed freely, and then kept wet with a lotion composed of three ounces of liquor potassæ and ten ounces of warm water. Meantime the patient was given hourly doses of one and a half ounces of a mixture of three drachms of liquor potassæ, nine ounces of brandy, and four and a half ounces of water.

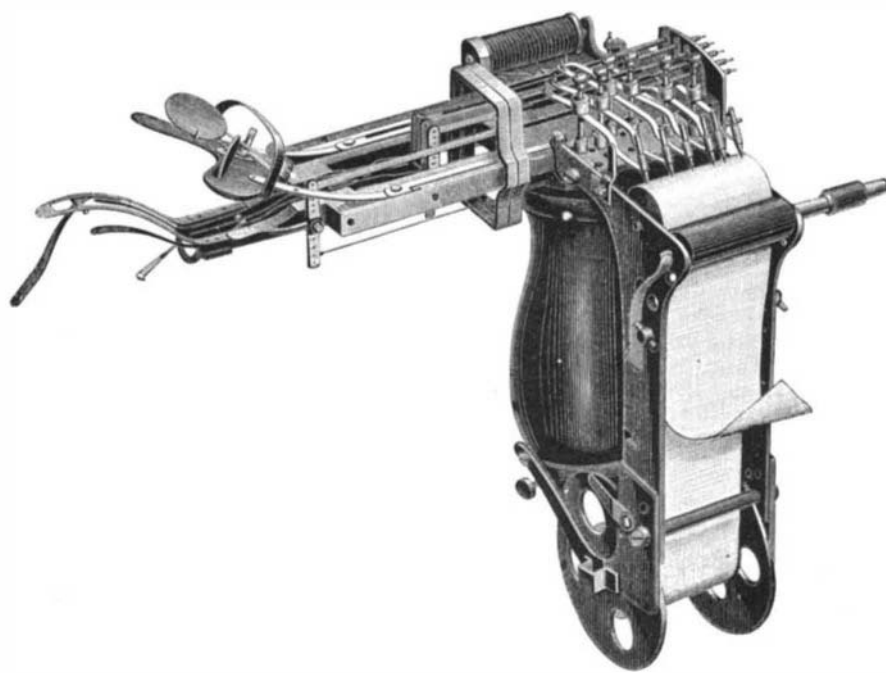
Where obtainable the hypodermic injection of permanganate of potash as prescribed by Dr. Lacerda would seem to be the quicker way to neutralize the poison and one less likely to cause a general disturbance of the patient's system.

New York as a Manufacturing Center.

New York city is popularly regarded as a great commercial center whose prosperity is based entirely upon its foreign trade. It is true that it is the commercial metropolis of the continent; it is also true, but less generally known, that New York is the greatest manufacturing center in the world. The products of the factories of the city proper turn out products worth nearly \$450,000,000 a year, while those of its chief suburbs swell the total to something near \$750,000,000. This vast sum is within a hundred million dollars of the entire foreign commerce of the port. If the manufacturing

progress continues at its present rate a very few years will see the value of manufactured products equal or exceed the city's import and export trade.

CEMENT FOR REPAIRING GLASS.—Dissolve fine glue in strong acetic acid to form a thin paste.



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manganaz, be injected into the wound made by the fangs of the snake, and also into the surrounding tissue in different parts of the member bitten, when the application is delayed. In this way life has been saved eight or ten hours after the bite was received.

In a recent letter to the London *Lancet*, Dr. Lacerda says