HORT HAND EXECUTION BYTE G FOWLER



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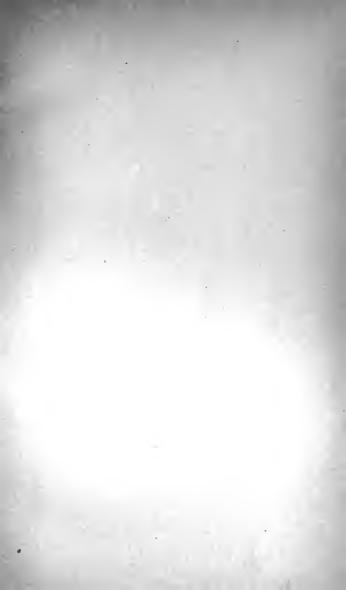
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SHORT-HAND

EXECUTION.

APPLICABLE TO ANY SYSTEM OF

STENOGRAPHY

FOR THE PURPOSE OF MULTIPLYING SPEED AND ENHANCING LEGIBILITY.

F. G. FOWLER.

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PREFACE.

THE value of a work is not necessarily proportioned to the number of its pages. On the contrary, if a given amount of information is embraced in ten pages, it is more easily obtained than when distributed through one hundred. With this view, the author has labored assiduously, in the preparation of this work, to discard everything extraneous, and give, in as concise a form as possible, the essential matter, which might more easily have been extended through many pages. The important consideration with the stenographer is, with a given degree of legibility, how much speed can be realized. And any abridgment that does not conflict with that end should add rather than detract from the value of a work.

Of the various expedients set forth, it is hardly to be expected that any one writer will make use of them all. But any part can be selected that the stenographer chooses to apply, as they are all separate and distinct from each other.

No attempt is made to furnish elementary in-

struction in short-hand suitable for beginners. That can be obtained in text-books especially devoted to its exposition. This work is intended for the more advanced students of the art, enabling them to greatly augment their speed of writing, and in some cases to double and treble it, and with a given speed to attain a higher degree of legibility.

Its principles can be applied, practically, by writers of any system of short-hand, without the necessity of obtaining new apparatus or materials, or resorting to any modification or change in their system of writing. It can be made a superstructure to whatever of short-hand may have been acquired. The writer is thus enabled to follow out his own inclinations in choosing a system of short-hand, and need not abandon any that may have been learned, as it can be rendered available.

It is not intended to extol the merits of any system of short-hand, or detract from the excellences of any; but the aim has been to add to the scope and usefulness of all, to remedy their deficiencies and render them so complete as to be beyond criticism.

At the same time it is believed that the cause of short-hand will be best subserved, not by overestimating its capabilities and ignoring its defects, but by a candid consideration of the facts just as they exist.

INTRODUCTION.

When the human race had so far advanced in civilization that the art of writing became known, the need of a system susceptible of recording language with a facility equal to that with which it could be uttered by the vocal organs at once became apparent. Accordingly, systems have been devised, from time to time, for the purpose of accomplishing this very desirable result, which have been termed shorthand. The earlier of these were to a great extent arbitrary, and imperfect in the method of representing language; while the most ap-· proved of the present day, based on the phonetic principle, is a great improvement upon its predecessors. In the elimination of its principles there has been such a wise adaptation of means to ends, and in the working up of its details, such an ingenious combination of expedients, that a great economy of space, with a degree of speed and legibility, are attained. In its development, able minds have been employed, and of those who have been zealous and untiring in their endeavors, not only to

perfect, but to disseminate their favorite art. For this service, society stands to them indebted; for while they have not been entirely successful, they have done a good work and approximated to the desired end. The result of their labors answers to much that is required of a system of short-hand.

To be all that is desired, short-hand should be such that persons of average capacities can acquire it in a reasonable length of time, and without excessive physical exertion write, in legible characters, all audible utterances that

are in vogue in the affairs of life.

Without referring to the amount of time that may reasonably be devoted to the acquisition of short-hand, or to the tax upon the health inseparable from its practice, let us note the speed that is required of it. That is contained within quite variable limits. For example, a speed of twenty words per minute may suffice for the transaction of some kinds of business. and then long-hand may be employed. The speed of the voice, when operating naturally, ranges all the way from 60 to 350 words per That includes, probably, all that is often attained in practice; yet, under exceptional circumstances, it is considerably greater. some experiments, conducted under the auspices of the United States navy, language was transmitted by telephone at the rate of 500 words per minute. Private individuals have claimed to accomplish the same; and admissions have been made by short-hand authors, that with

tolerable articulation, a speed of from 400 to

500 words per minute may be attained.

To meet these requirements, we have in one system of short hand, as claimed by its author, a speed of 150 words per minute. Another elaims for his nearly 200 words per minute. Other claims have been made, reaching a maximum speed of 250 words per minute, but such claims have been denied by others; yet allowing for short-hand the maximum speed that has been claimed for it, it is then only about one-half the maximum speed of the voice. When the articulation is very rapid, it is less distinct; and where the writing is very rapid, it is less legible; but allowing distinctness of speaking to offset legibility of writing, there would seem to be no doubt, from all that can be gathered on the subject, that the speed with which language can be uttered by the vocal organs, to that with which such language can be recorded in short-hand, is about as two to one.

It is readily seen that while such short-hand systems will answer very well in many cases, there are others in which they would be very

inadequate.

That satisfactory reports have been made of very rapid speeches is true; but such reports, it is claimed, are to be referred more to the superior physical and mental qualities of the stenographers than to the adequacy of the short-hand system employed; and such, without doubt, is the case. Among such qualities may be enumerated, extraordinary retentiveness of

memory, an intimate knowledge of all the details of the subject-matter referred to by the speaker, and an almost intuitive perception of what inaccurate and illegible short-hand characters were intended to represent, and an easy style of Many stenographers are more composition. capable of discussing ably various subjects than the speakers whom they report, and can, by various changes, add elegance and force to their speeches; a proceeding which most speakers submit to with marked resignation. There are also said to be scholarly long-hand reporters, who, without taking down one word in ten of a speech, are able to present a report of it that is quite satisfactory to the public; but such reports are more like the pencil sketch of a landscape that represents, in a pleasing manner, only its general features. They would not be satisfactory were it known that they were to a great extent the work of the reporter, instead of the speaker. The verbatim report, on the contrary, is more like the photograph, which truthfully gives both general features and details.

It is believed that all criticisms of the better systems of short-hand have their origin in the difficulties encountered in attempts to secure the requisite speed. The theory of short-hand can be readily learned, and, with a few weeks' practice, a speed of 100 words per minute may be attained. But it is in securing a high speed that a great length of time is required; for, as the rate is increased, the time required for its attainment increases in a much more rapid

ratio. It has been estimated, by experienced stenographers, that fully one-half of the whole time required was devoted to the attainment of the last one-tenth of the speed realized.

At a speed of 100 words per minute, short-hand can be written with a legibility that is little inferior to print. But as it is increased, the legibility gradually fades. Above 150 words per minute, with the average writer, it begins to enter the domain of uncertainty. At 200 words per minute, many of the outlines are so much distorted, that they would hardly be recognized by the geometrical forms of such words; and the notes, in such cases, are perused, in part, by the aid of memory, or by a kind of sagacity akin to that which enables the American Indian to follow the trail of game by indications that could not be perceived by an ordinary observer.

The fatigue occasioned by writing short-hand is very inconsiderable when writing at a speed of 120 words per minute, and the effort may be maintained, without exhaustion, for a long time. But it is different when the rate is high. It is

then very taxing to the physical powers.

In this connection it may be advantageous to note the contrast between the promoters of

music and those of short-hand.

In the system of musical notation most in use, the promoters of music have maintained great uniformity, so that a musical composition can be read by the musicians of most countries; while the promoters of short-hand have made, and are constantly making, numerous changes

in their methods of representing vocal sounds, so that the writing of few in the same country

is legible to other writers.

In manipulating many of the primitive musical instruments, but a single hand was employed; while in those of modern construction both hands are generally used, and in some cases the feet as well. Yet in the execution of short-hand little advance has been made on methods employed by Tyro, nineteen centuries since, and a single hand is employed now as then.

The masters of the art of music organize their performers into orchestras, whence, by a united and simultaneous action, they are enabled to execute musical compositions and attain results entirely out of the power of a single individual; while in the execution of short-hand, aside from making a transcript, a score of short-hand writers would scarcely be more efficient than one.

The above references to the defects of short-hand are only for the purpose of indicating the means by which they may be obviated. How to remedy such defects is the paramount question, and the only one it is necessary to consider. It is apparent, in the first place, that a high speed of writing, as ordinarily executed, must be avoided. The necessary speed must be developed from a moderate rate. We must secure rapidity when writing slowly, anomalous as such a proposition may seem.

To the attainment of this end, the general principles upon which the well-tried expedients employed by musicians are founded, may be applied; for while the execution of airs upon musical instruments is not identical with the execution of short-hand, there is in many respects a similarity, and by a proper adaptation such principles may be applied as advantageously in the execution of short-hand as of musical compositions.

The means by which that is accomplished

will be explained in a succeeding chapter.

WRITING IN CONCERT.

This method involves simultaneous writing, by two or more writers, each writing alternate takes or passages of about ten or fifteen words each, in a regular rotation. There is scarcely a limit to the number of writers that may be employed, or to the speed that may be attained. The writing is regulated by a system of cues or signals, by which each writer is enabled to determine the particular portion of the passage assigned to him, and which also prevent any confusion in perusing the notes. These cues are, invariably, the last word of each passage.

An explanation of the manner of writing in concert, and the application of cues, will be more readily understood after making an examination of a specimen of the writing. Accordingly an exercise is herewith given, which is ex-

ecuted by four writers.

KEY TO ANNEXED EXERCISE.

Perhaps, in this neglected spot is laid.

Some heart once pregnant with celestial fire;
Hands that the rod of empire might have swayed,
Or waked to ecstasy the living lyre.

But knowledge to their eyes her ample page, Rich with the spoils of time, did ne'er unroll; Chill penury repressed their noble rage, And froze the genial current of the soul.

Full many a gem of purest ray serene
The dark, unfathomed caves of ocean bear;
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air.

Some village Hampden, that with dauntless breast

The little tyrant of his fields withstood, Some mute, inglorious Milton here may rest; Some Cromwell, guiltless of his country's blood. Th' applause of listening senates to command,
The threats of pain and ruin to despise,
To scatter plenty o'er a smiling land,
And read their history in a nation's eyes,

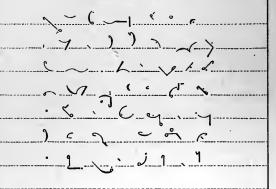
Their lot forbade; nor circumscribed alone
Their growing virtues, but their crimes confined;

Forbade to wade through slaughter to a throne, And shut the gates of mercy on mankind.

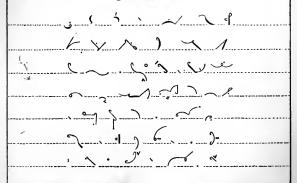
The struggling pangs of conscious truth to hide, To quench the blushes of ingenuous shame, Or heap the shrine of luxury and pride With incense kindled at the muse's flame.



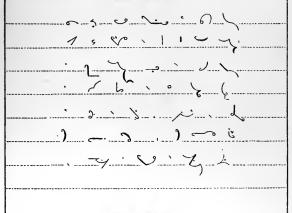
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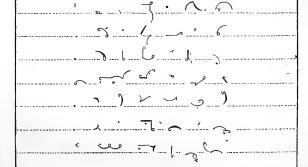
Third Wariter.



Second Wariter.



Fourth Wiriter.



METHOD OF EXECUTION.

In executing the foregoing exercise, let the writers be seated equidistant around a table. It is desirable that the table should not be too large, as the cues may be more readily and certainly passed when the writers are near each other. One about two or three feet square will be found to answer the purpose well. If the paper is held in the hand a table may be dispensed with, and the writers sit or stand in a group.

The paper of each writer should contain an equal number of lines per page, and should be of such width that it will contain not less than ten words to the line. We will suppose a reader is employed to read the poem at the rate of about 400 words per minute, and that each writer is capable of writing, easily and legibly, 100 words per minute. One of the writers, which we will designate the first writer, will commence with the reader, and write the first line. The second writer, or the one sitting to the right of the first, will write the second line, the third will write the third line, and the fourth the fourth line. In this manner the whole

stanza will be written, each writer writing onefourth of it; and, if each can write easily at the rate of 100 words per minute, it is evident they can readily follow the reader at 400 words per minute.

To peruse the notes, place the pages of the different writers adjacent to each other, in the order in which they were written, so that the lines will correspond, and read continuously across the four pages. Each stanza will be expressed by a continuous line across the four pages.

As before remarked, in order that each writer may understand the particular portion of the text assigned to him, it is necessary that there should be a system of signals available, and that consists of each writer repeating the last word of the passage written by his predecessor. example, in the foregoing exercise, the first writer begins with the reader to write the first line. As soon as the reader has completed the first line, the second writer repeats the word laid, which is the first cue, and which the first writer understands will constitute the last word of his passage or line. The second writer, after calling the cue, immediately proceeds with the writing of the second line, and, as soon as the reader has completed the second line, the third writer calls the word *fire*, which is the second cue, and which will be the last word of the line written by the second writer. The third writer immediately proceeds with the writing of the third line; and when the reader has finished the third line, the fourth writer calls the word swayed, which is the third cue. The fourth writer proceeds with writing the fourth line; and when he has finished the stanza, the first writer calls the word lyre, which is the last word of the line written by the fourth writer. The first writer now proceeds with the first line of the second stanza, and each writer succeeds him as before. All the other stanzas are executed in a similar manner.

Although so great a number of writers is not often required in practice, as is represented in the execution of the above exercise, yet any number may be employed to secure the desired speed, be it greater or less. The possibilities of the system are thereby illustrated, and it is seen how a very high speed may be developed, by a number of writers, each writing at a moderate rate.

It is also evident that such writing can be accurately executed, and voweled, if need be, so as to secure entire legibility; and that such

rate may be maintained for an indefinite length of time without excessive mental strain or fatigue.

As before stated, any system of short-hand may be employed, and, where short-hand is not available, long-hand may be used, though the more rapid the system of writing the fewer writers will be necessary to attain a given speed. A rapid long hand writer can write 30 words per minute and upwards. Six or seven such writers, trained to write in concert, can attain a speed that will suffice, many times, for verbatim reporting; with this advantage in favor of long-hand, the original notes, with some attention to punctuation, etc., might serve in place of a transcript of short-hand notes.

TWO ASSOCIATE WRITERS.

A corps of two short-hand writers will generally be found to be the most desirable number, because most easily secured, and because, if competent, they will be able to perform anything that is likely to be required of them. It is also a convenient number for practice.

The mode of procedure is similar to that already described. The writers should sit con-

veniently near each other that the cues may be readily passed. If a table is made use of, a small one is preferable. If the paper is held upon a writing-case, the seats may be placed nearly alongside each other and facing in opposite directions.

The first writer begins with the speaker; and, after he has spoken about ten or fifteen words, the second writer calls a cue for his associate, which cue will be the last word of the passage written by the first writer.

The second writer then proceeds with the words following such cue; but he may, at his option, write the cue of his associate at the beginning of his own take, which is termed "repeating the cue." This is often desirable, for, in perusing the notes, it assists the reader to identify the proper line in passing from page to page.

When the speaker has uttered about ten or fifteen words more, the first writer will have completed his take, and will call a cue for his associate, and the writers will proceed in this way, writing alternate passages. It is not essential that both writers should write at nearly the same speed. One may write at the rate of 75, and the other 150 words per minute.

The calling of cues is the only feature that renders writing in concert more difficult than ordinary writing. To do this properly, will require some practice. The amount assigned in each passage should be such a number of words that it can be easily retained in the memory of the writer, and as will complete a line across the paper. This will generally be about ten words, but will, to a great extent, depend upon the writer and his style of writing.

If the cues are called too often, there will be few words in each take, resulting in a loss of paper, and needless labor in making the calls.

If they are not called sufficiently often, there will be more than can be written on a line, necessitating interlining, or the use of an extra line. That it is well to avoid, as the pages will not correspond so well when placed side by side.

It is better to select for a cue a word which immediately precedes a pause, either grammatical or rhetorical, and words embodying a prominent vowel sound, and not of too great length, are to be preferred.

These suggestions cannot always be carried out, for it is important, also, to select for a cue the word which the speaker uttered just as the writer finished his passage, and which was uttered immediately before the cue was called. For, in case the word is not understood by the associate of the caller, he will know it was the one that the speaker had just uttered when the call was made, and that will assist him in determining the proper word.

If the cue is not understood by the writer, he should write a few more words than is thought to be necessary, so as to be sure the cue is reached. Should he write beyond the cue, it will cause the passages to "lap," but that occasions no difficulty in perusing the notes.

It is not necessary that the cue should be called in a tone of voice so loud as to attract attention, or so that it can be heard by any but the writers. As each is aware that the cue called is the word which has just been pronounced by the speaker, a moderate whisper will generally be sufficient to designate the correct word.

When repeating the cue in writing long-hand, an initial letter or syllable will generally be sufficient. In some cases, other signals, such as a motion of the foot, have been employed in place of a spoken word.

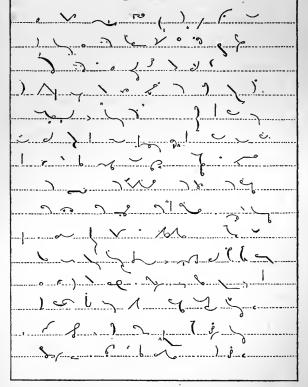
Writing in concert has been practiced during religious services without attracting attention, and the charges of judges have been taken by writers seated at the table with others, who supposed that only ordinary short-hand was being practiced.

A writer who has been in the habit of writing only about 150 words per minute is apt to become confused in attempting to write when the utterance is very rapid. That may be obviated by special practice. It will be found serviceable for him to employ a person to read at the rate of 250 or 300 words per minute, and to take down as nearly as possible each tenth word. The ear will thereby be disciplined to the rapid utterance, and the writer will gradually become accustomed to designate a passage of ten words by hearing it, and without counting the words. A book of prose, containing about ten words per line, will answer, and the list of words taken down may then be compared with the printed page, to ascertain if passages of the required length have been designated.

In the following exercise the number of words assigned in the different takes is quite variable, which in practice would indicate a variable speed in the rate of the speaker. The size of the short-hand characters, too, for the sake of convenience, is reduced about one-third.

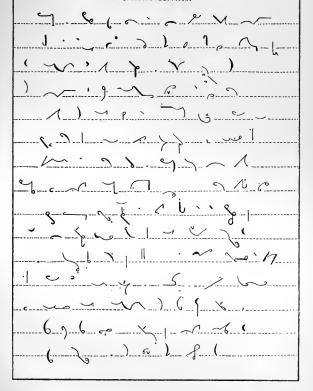
America the Old World.

First Writer.

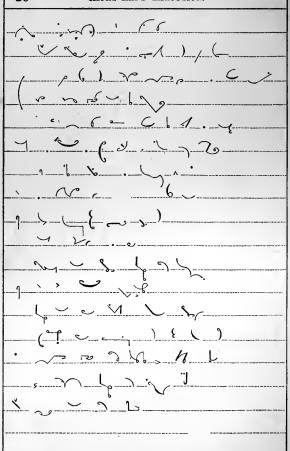


America the Old World.

Second Wiriter.



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WRITING IN CONCERT.	29

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KEY.

AMERICA THE OLD WORLD.

BY LOUIS AGASSIZ.

FIRST-BORN among the continents, though so much later in culture and civilization than some of more recent birth, America, so far as her physical history is concerned, has been falsely denominated the New World. Hers was the first dry land lifted out of the waters, hers the first shores washed by the ocean that enveloped all the earth beside; and, while Europe was represented only by islands rising here and there above the sea, America already stretched an unbroken line of land from Nova Scotia to the far West.

There was a time when our earth was in a state of igneous fusion, when no ocean bathed it, and no atmosphere surrounded it, when no wind blew over it, and no rain fell upon it, but an intense heat held all its materials in solution. In those days, the rocks, which are now the very bones and sinews of our mother earth—her granites, her porphyries, her basalts, her syenites—were melted into a liquid mass.

From artesian wells, from mines, from geysers, from hot springs, a mass of facts has been collected, proving, incontestably, the heated condition of all substances at a certain depth below the earth's surface; and if we need more positive evidence, we have it in the fiery eruptions that even now bear fearful testimony to the molten ocean seething within the globe, and forcing its way out from time to time. The modern progress of geology has led us, by successive and perfectly connected steps, back to a time when what is now only an occasional and rare phenomenon was the normal condition of our earth; when those internal fires were enclosed in an envelop so thin that it opposed but little resistance to their frequent outbreak, and they constantly forced themselves through this crust, pouring out melted materials that subsequently cooled and consolidated on its

surface. So constant were those eruptions, and so slight was the resistance they encountered, that some portions of the earlier rock deposits are perforated with numerous chimneys, narrow tunnels as it were, bored by the liquid masses that poured out through them, and greatly modified their first condition.

There was another element without the globe equally powerful in building it up. Fire and water wrought together in this work, if not always harmoniously, at least with equal force and persistency. Water is a very active agent of destruction, but it works over again the materials it pulls down or wears away, and builds them up anew in other forms.

There is, perhaps, no part of the world—certainly none familiar to science—where the early geological periods can be studied with so much ease and precision as in the United States. Along their northern borders, between Canada and the United States, there runs the low line of hills known as the Laurentian hills. Insignificant in height, nowhere rising more than fifteen hundred or two thousand feet above the

level of the sea, these are, nevertheless, the first mountains that broke the uniform level of the earth's surface, and lifted themselves above the waters. Their low stature, as compared with that of other more lofty mountain ranges, is in accordance with an invariable rule by which the relative ages of mountains may be estimated. The oldest mountains are the lowest, while the younger and more recent ones tower above their elders, and are usually more torn and dislocated also. This is easily understood when we remember that all mountains and mountain chains are the result of upheavals, and that the violence of the outbreak must have been in proportion to the strength of the resistance.

When the crust of the earth was so thin that the heated masses within easily broke through it, they were not thrown to so great a height, and formed comparatively low elevations, such as the Canadian hills or the mountains of Bretagne and Wales. But in later times, when young, vigorous giants, such as the Alps, the Himalayas, or, later still, the Rocky Mountains,

forced their way out from their fiery prisonhouse, the crust of the earth was much thicker, and fearful, indeed, must have been the convulsions which attended their exit.

Such, then, was the earliest American land—a long, narrow island, almost continental in its proportions, since it stretched from the eastern borders of Cauada nearly to the point where now the base of the Rocky Mountains meets the plane of the Mississippi Valley. We may still walk along its ridge, and know that we tread upon the ancient granite that first divided the waters into a northern and southern ocean; and, if our imaginations will carry us so far, we may look down toward its base, and fancy how the sea washed against this earliest shore of a lifeless world.

This is no romance, but the bold, simple truth; for the fact that this granite band was lifted out of the waters so early in the history of the world, and has not since been submerged, has, of course, prevented any subsequent deposits from forming above it. And this is true of all the northern part of the United States.

It has been lifted gradually, the beds deposited in one period being subsequently raised, and forming a shore along which those of the succeeding one collected, so that we have their whole sequence before us.

For this reason the American continent offers facilities to the geologist denied to him in the so-called Old World, where the earlier deposits are comparatively hidden, and the broken character of the land, intersected by mountains in every direction, renders his investigations still more difficult.

TURNING PAGES.

It is intended that both writers will complete their pages at the same time, beginning at the same time, and writing line for line. In this way the lines will correspond which begin and end with the same cue; but when cues are occasionally repeated, no difficulty will arise in perusing the notes, though there may not be a correspondence in lines.

If it should be necessary for one of the writers to use two lines while his associate has used but one, so as to derange the correspondence of the lines on a page, the same should be restored by both beginning the succeeding page at the same time.

It will be seen in the foregoing exercise, that the cues are not always repeated, or written at the beginning of a passage. This is a feature which, like vocalization, may be left to the judgment of the writer. A cue can be repeated as often as determined by experience to be necessary. When they are not repeated, the space allotted to them, near the margin, should be left blank. Their position, and the fact they

are repeated, will distinguish them from other words.

It will be observed, also, in some cases, that the writer has written past the cue. In these cases it is understood that he did not understand the cue, and, as a precaution, kept writing on to the end of the line, so as not to omit any of the text.

WRITING LEFT-HANDED.

EXPERIENCE proves that the left hand is nearly, if not quite, as susceptible of training as the right hand. That is shown by the performances on nearly all modern musical instruments, and those most difficult of execution, the violin, piano, flute, and many others. To exclude the use of the left hand would be to do away with all excellence in musical execution.

The violinist not only holds his instrument with his left hand, but executes with it an essential part in producing the music. The typewriter operator performs nearly half of the labor with his left hand. And in other fields of

labor we see that the left eye, ear, arm, and limb perform an amount nearly, if not quite, equal to that of the right.

These facts suggest, at least, that the left hand of the writer should not be wholly devoted to the passive duty of paper-holding.

There are especial advantages arising to the writer from the possession of a trained left hand.

It serves in case the right hand has been disabled by accident. It can be used to relieve the right hand from excessive labor, lessening and obviating many causes of debility, among which may be mentioned cramp, paralysis, rheumatism, etc.

A greater amount of labor can also be performed than when the use of the left hand is not rendered available.

As before stated, it will not be attempted, in these pages, to give instruction how to write short-hand with the right hand. That is done in all the text-books devoted to the exposition of short-hand. It represents the one method of execution that has been adhered to by all short-hand authors, as well as, for the most part, by both short-hand and long-hand writers. Occasionally the left hand has been employed in

writing, but this has generally been compulsory, on account of the loss of the use of the right hand. The success attending such efforts has usually been quite remarkable, although the practice has been to write the same alphabet, in the same direction, with the left hand, that is written with the right. That puts the left hand at a disadvantage. The left hand should be provided with the same respective alphabet, one corresponding to that of the right, but it should not be the same. The left arm is placed on the left side of the body, as the right arm is on the right side. If the right arm is moved to the right, a corresponding motion of the left arm would be to the left, or in an opposite direction. Accordingly, the movements of the left hand in executing written characters should be opposite those of the right hand.

At the same time it is desirable to avoid the necessity of providing a new and arbitrary alphabet for the left hand, unlike that of the right hand, which would be difficult to learn, and liable to engender confusion.

Happily the difficulties above referred to can be avoided, and an alphabet secured which can be written freely and naturally with the left hand, and the memory is not taxed in committing it, as it is derived from the right-hand alphabet, being a modification of the same. This modification consists, for the most part, in writing it in a reversed position. It thus becomes a separate system that may be written with the left hand independent of the right. It is not only so arranged that it can be written with great facility with the left hand, but our knowledge of writing executed with the right hand is made the "key" by which we can readily and easily acquire a like knowledge of that written with the left hand. If we can write words or sentences in long-hand with the right hand, we can very readily determine the manner of writing the same with the left; and if we can write a word or sentence in short-hand, and correctly vowel the same, we can as correctly write and vowel the same with the left hand. By a kind of reversal, signs, words, or sentences written with the right hand are made to represent those written with the left, thereby avoiding the difficulties incident to providing an arbitrary alphabet for the left hand.

The following will serve as an infallible rule for ascertaining the left form of any sign, word, or phrase which can be written with the right hand: "Write the given sign, word, or phrase on transparent paper with the right hand, then change the paper, end for end, and surface for surface, when the left form of the given sign, word, or phrase will be represented."

For example, write the phrase, "Since that

time," in long-hand, thus:

Since that time.

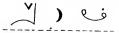
Reversing agreeable to the rule, and we have for the left hand:

Gince that time.

Representing the same by short-hand characters, and we have with the right hand:

ن (ل[∨]

Reversing, and we have for the left hand:



The same effect will be produced, if, instead of reversing the characters written with the right hand, their reflection from a mirror be viewed. That will produce a similar reversal. A small amount of practice only will be necessary to enable the writer to determine the left form of any word or phrase mentally.

From what has now been shown, it can be seen that left signs or words, being similarly reversed, become right words. In this way the various left forms may be verified, and any defects of form more clearly pointed out.

This part of our subject will be more fully illustrated by a stanza written in long-hand and short, with both the right hand and left, and from which a comparison can be made.

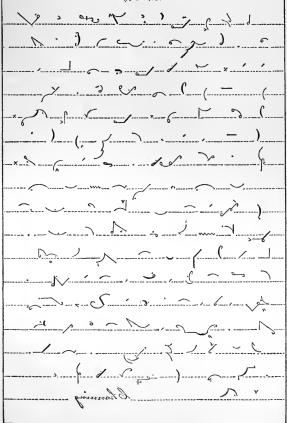
The shortest life is longest if 'tis best;
It's ours to work, to God belongs the rest;
Our lives are measured by the deeds we do,
The thoughts we think, the objects we pursue.
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Agreement & Statement
The shorted life is lengest if 'tis lest;
It's ours to work, to God belongs the ust;
Our lives are measured by the deeds us do,
The thoughts we think, the elfeds we pursue:
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KEY TO OPPOSITE PAGE.

BOOKS.

It is chiefly through books that we enjoy intercourse with superior minds, and these invaluable means of communication are within the reach of all. In the best books great men talk to us-give us their most precious thoughts, and pour their souls into ours. Books are the true levelers. They give to all who will faithfully use them the society, the spiritual presence, of the best and greatest of our race. No matter how poor I am-no matter though the prosperous of my own time will not enter my obscure dwelling-if the sacred writers will enter and take up their abode under my roof, if Milton will cross my threshold to sing to me of Paradise, and Shakespeare to open to me the worlds of imagination and the workings of the human heart, and Franklin to enrich me with his practical wisdom, I shall not pine for intellectual companionship, and I may become a cultivated man, though excluded from the best society where I live.—CHANNING.

Books.



WRITING BOTH-HANDED.

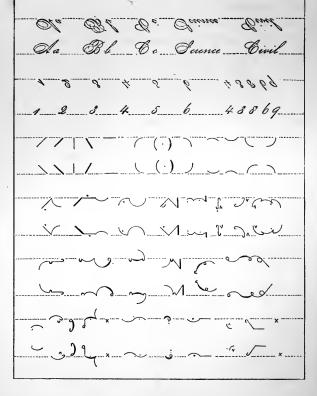
With sufficient practice, a speed of writing with the left hand may be acquired nearly equal to that of the right. The practice necessary, however, is not nearly so great as that at first required to learn to write with the right hand; for, as the mind has been already trained to the required movements, the muscles of the left hand alone have to be educated, and they have only to imitate the movements of the right hand.

But that is of less advantage for rapid writing, unless the capacity of each hand can be made available at the same time. In order to accomplish this, it is necessary that the hands, when extended in writing, shall move in parallel lines, and in the same direction, to allow the pens to be kept in close proximity to each other, that the eye may take cognizance of both. In writing with the right hand, as is well known, the hand moves from left to right; and in writing with the left hand, as has been explained, the hand moves from right to left. In writing both-handed, however, each line of writing is

varied ninety degrees, and made to extend from the writer. The pens will, in executing the respective writing of each, advance in parallel lines, and always be contiguous to each other. The notes may be read with the paper in the same position.

In binding such pages in book form, however, it is often more convenient to so attach them that the lines of writing will appear to extend, with the book held in the usual position, from left to right. This will bring the right-hand line in its ordinary position, and cause the left line to be quite inverted; and the side of the page that was furthest from the writer when writing, will be the right side of the page of the bound book. That is of little consequence to the writer, as the relative position of the writing is not altered. It will be readily understood by reference to the following illustrations, wherein a number of characters, words, and phrases are made to indicate the position of both-handed writing.

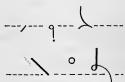
Right & Left Signs Compared.



SIMULTANEOUS WRITING.

HAVING shown how writing may be executed with both hands, upon parallel lines, and in such proximity that the eye can take cognizance of the operation of both pens at the same time, we will now proceed to show how a great gain in speed may be realized by writing with both hands simultaneously, and availing ourselves of the labor of each in executing a single passage. It is evident that if we can write one hundred words per minute with the right hand, and ninety with the left hand, that we can write one hundred and ninety words per minute, provided we can unite the capacities of each hand. That is accomplished by employing each hand to write each alternate word of a passage. For example, take the sentence, "To be contents his natural desire." "To" may be written with either hand, but we will suppose it is written with the left hand. A little in advance "be" will be written with the right hand, and in advance of this, "contents" with the left hand; then "his" with the right hand, "natural" with the

left hand, and "desire" with the right hand, thus:—



Words differ, however, in regard to the length of time required to write them, and, on this account, may be said to be long or short. When it occurs, as it often does, that the words assigned to each hand differ in length, a loss of time will be occasioned by the hand which executed the shorter word remaining idle till the long word is completed. That is obviated by writing a succeeding word, or words, with the hand that executed the shorter word. Take, for example, the phrase, "The violation of law." "The" would be written with the left hand. and "violation" with the right hand. As the former would be completed much sooner than the latter, the remaining time should be employed by the left hand in writing the remaining words of the phrase, thus:-



Spaces may be left to indicate pauses in speaking; and where the words of a phrase are nearly related in sense they may be written more closely together, or grouped, which will render the writing more legible.

Words, in some cases, may be omitted in phrases where they can be supplied by the context; and those of great length, or having parts difficult to join, may be divided, writing different portions with different pens. When that is done, the first half of the word should be written in its proper position, and the final portion near it and directly opposite, thus:



POSITION IN WRITING.

The writer should sit fronting the table, and the paper should be placed parallel with the table, or so that the lines of writing will extend directly from the writer. The pens or pencils should be held so as to point in opposite directions, making an angle of about forty degrees with the horizon, and retained between the first and second fingers, or in a manner to be controlled by the thumb and first finger. But those who prefer may hold them as in ordinary writing. As the arms are advanced in



writing, motion should take place, for the most part, at the elbows, but, to some extent, at the shoulders and wrists; especially should the paper be of considerable width.

The paper can best be retained by having it made up in pads, the edges being secured with an adhesive material, but at the same time so slightly that the sheets can be readily removed. Should the same be necessary, two such pads may be made use of and written on alternately; and the sheets can, in that case, be removed by an attendant so that the writing will not be interrupted.

An ordinary note-book or loose paper is not so convenient, for the reason it is not firmly retained.

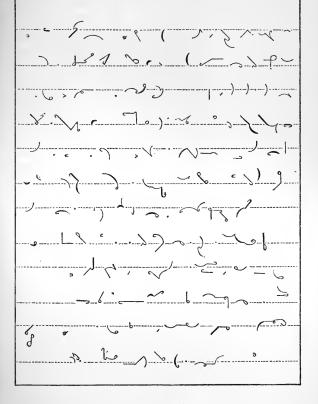
The rulings may be about one quarter of an inch apart, the writer leaving a blank line between the right and left lines; or it may be ruled with lines alternately one-fourth and seven-sixteenths of an inch apart, the writing being executed between the lines of greater width. The writer's habits and style of writing will have much to do with determining the arrangement of these details, and a little experience will demonstrate the more desirable methods; and the writer will be enabled to make any modifications that may be found on trial to be desirable.

KEY TO OPPOSITE PAGE.

What are great and beneficial discoveries in their origin? What is the process which has led to them? They are the work of rational man, operating upon the materials existing in nature, and observing the laws and properties of the physical world. The Creator of the universe has furnished us the material; it is all around us, above us, and beneath us; in the ground under our feet, the air we breathe, the waters of the ocean, and of the foundations of the earth; and in the various subjects of the kingdom of nature. We cannot open our eyes, nor stretch out our hands, nor take a step, but we see and handle and tread upon the things from which the most wonderful and useful discoveries and inventions have been deduced.

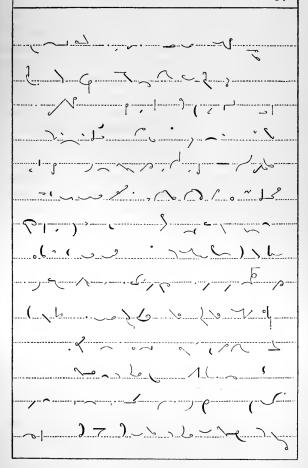
What is gunpowder, which has changed the character of modern warfare? It is a mechanical mixture of some of the most common and least costly substances. What is the art of

Future Increase of Knowledge.

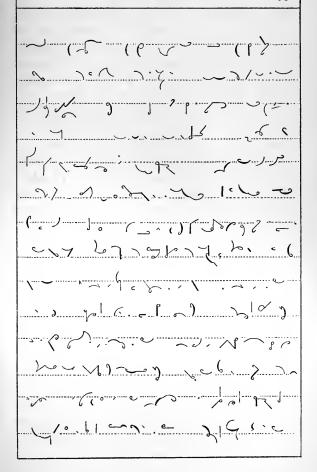


printing? A contrivance less curious as a piece of mechanism than a musical-box. What is vaccination? A trifling ail communicated by a scratch of the lancet, and capable of protecting human life against one of the most terrible maladies to which it is exposed. And are the properties of matter all discovered, its laws all found out, the uses to which they may be applied all detected? I cannot believe it. We cannot doubt that truths now unknown are in reserve to reward the patience and the labors of future lovers of truth, which will go as far beyond the brilliant discoveries of the last generation as these do beyond all that was known to the ancient world. The pages are infinite in that great volume, which was written by the hand Divine, and they are to be gradually turned, perused, and announced to benefited and grateful generations by genius and patience, and especially by patience-by untiring, enthusiastic, self-devoting patience.

The progress which has been made in art and science is, indeed, vast. We are ready to think that a pause must follow; that the goal must be at hand. But there is no goal, and there can be no pause; for art and science are, in themselves, progressive. They are moving powers,



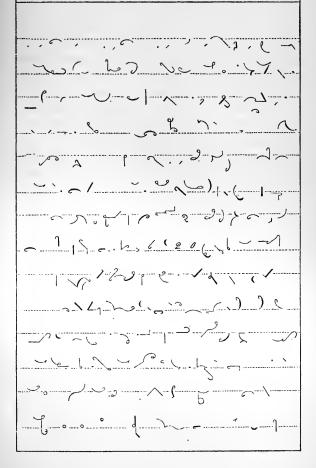
animated principles. They are instinct with They are themselves the intellectual life of man. Nothing can arrest them which does not plunge the entire order of society into barbarism. There is no end to truth, no bound to its discovery and application. And a man might as well think to build a tower from the top of which he could grasp Sirius in his hand, as to prescribe a limit to discovery and invention. Never do we more evince our arrogant ignorance than when we boast our knowledge. True science is modest, for her keen, sagacious eye discerns that there are deep undeveloped mysteries where the vain sciolist sees all plain. We call this an age of improvement, as it is. But the Italians, in the time of Leo X., and with great reason, said the same of their age. The Romans, in the time of Cicero, the same of theirs; and the Assyrians and Egyptians, in the flourishing periods of their ancient monarchies, the same of theirs. In passing from one of these periods to another prodigious strides are often made; and the vanity of the present age is apt to flatter itself that it has climbed to the very summit of invention and skill. A wiser posterity at length finds out that the discovery of one truth, the investigation of one law of na-



ture, the contrivance of one machine, the perfection of one art, instead of narrowing, has widened the field of knowledge still to be acquired, and given to those who come after an ampler space, more numerous data, better instruments, a higher point of observation, and the encouragement of living and acting in the presence of a more intelligent age.

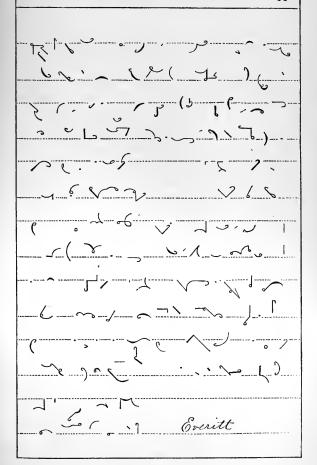
It is not a century since the number of fixed stars was estimated at about three thousand. Newton had counted no more. When Dr. Herschel had completed his great telescope, and turned it to the heavens, he calculated that two hundred and fifty thousand stars passed through its field in one quarter of an hour.

It may not irreverently be conjectured to be the harmonious plan of the universe, that its two grand elements of mind and matter should be accurately adjusted to each other; that there should be full occupation in the physical world, in its laws and properties, and in the social relations connected with it, for the active and contemplative powers of every created intellect. The imperfection of human institutions has, as far as man is concerned, disturbed the pure harmony of this great system. On the one hand, much truth, discoverable even at the present



stage of human improvement, as we have every reason to think, remains undiscovered. On the other hand, thousands and millions of rational minds, for want of education, opportunity, and encouragement, have remained dormant and inactive, though surrounded on every side by those qualities of things, whose action and combination, no doubt, still conceal the sublimest and most beneficial mysteries.

But a portion of the intellect, which has been placed on this goodly theater, is wisely, intently, and successfully active; ripening even on earth into no mean similitude of higher natures. From time to time a chosen hand, sometimes directed by chance, but more commonly guided by reflection, experiment, and research, touches, as it were, a spring, till then unperceived, and through what seemed a blank and impenetrable wall, the barrier to all further progress, a door is thrown open into some before unexplored hall in the sacred temple of truth.



HINTS TO LEARNERS.

The first thing the learner will require is a knowledge of the principles of some system of short-hand. The aid of a teacher, or association with a practical stenographer, will be of great advantage, but it can be mastered without such assistance. The student should, at least, insist on obtaining a thorough knowledge of the theory, and acquiring the ability to write correctly and legibly, at a fair rate, say one hundred words per minute, the faster the better. This will serve for taking memoranda and doing the work of an amanuensis.

Writing in concert, as taught in the pages of this work, may now be undertaken, or even with a less rate of speed than that mentioned above. It is well to select for an associate writer one with whose writing the student is familiar. In fact, it is well to have a "companion in study" from the outset, as the mutual advantages arising in such cases are very great, and success is more certain. When writing in concert, especially, such companionship will render practice highly agreeable and fascinating to both. Concert writing will fit the writers for occasions when great speed is required.

Writing left-handed may be undertaken at any time, without reference to writing with the right hand. Regular practice in both long-hand

and short-hand will be required, similar, though less in amount, to that required in first learning to write with the right hand. It should be continued till the muscles of the hand become strengthened and a facility of execution is attained. When writing, the left side should be placed adjacent to the table, and the writing should proceed from right to left. A little practice in reading the manuscript will render that written with the left hand as legible as that written with the right.

After the student has acquired the ability to write with facility with either hand, both-handed writing may be attempted. This will furnish an ample field for all his tact and eleverness. Simple signs should be selected for first practice, for example, the dot. Let it be written with the right hand, and, a little in advance, on the left line, with the left hand. This practice may be continued till it can be written simultaneously

with ease and facility.

Chay may be taken for a second exercise, and similarly written, executing it slowly and

increasing as speed is attained.

When similar signs can be readily executed, more dissimilar ones for a succeeding exercise may be selected, for example, right, Tee, and

left, Kay.

It is impossible to give directions that can be followed in all cases; but the lessons can be made gradually progressive, till words of difficult outline can be executed simultaneously. A reader may next be employed to read exer-

cises for the student to practice upon. Such exercises should at first embody words of short and simple outline. The first of the ordinary series of school readers will be found desirable, after practicing which, readers of a higher grade may be employed.

All manuscript notes should be deciphered. That should be an invariable rule. As before remarked, it is impossible to give set rules for the guidance of the student at all stages of his progress. Different temperamental conditions

call for varied methods of practice.

It is believed, however, not to be advisable to attempt to conceive the outline of two words simultaneously, but that the form of each word should be determined while the pen is being lifted or passed to a succeeding word. example, the outline of each right word may be conceived while the right pen is being lifted and the left pen completing a preceding word; and the outline of each left word may be conceived while the left pen is being lifted and the right pen is completing a preceding word. relieves the mind from a strain that would be experienced by attempting to conceive the forms of two words simultaneously. This suggestion has more reference to unfamiliar outlines. When the forms have been many times written they may be taken simultaneously as one word. then becomes mechanical, not requiring the exercise of the mind.

In verbatim reporting it should be borne in mind that an acute hearing, as well as familiarity with the subject-matter reported, will be found to be essential, as speed of writing will not enable the short-hand writer to take what he cannot hear, or transcribe correctly technicalities that he does not understand.

WRITING CASE.

As there are occasions when the short-hand writer cannot command the conveniences of seat, light, and desk, the author herewith gives a description of a mechanical device, which he has used successfully in cases where, without it, the report could not have been made. It is serviceable in reporting with a single pen, and well adapted to writing in concert.

Its general mechanical construction will be

understood by reference to Fig. 1.

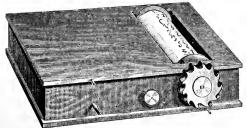


Fig. I.

It is in the form of a parallelopiped, being about six inches in length, by five in width, and two and a half in thickness. The writing is

executed on a scroll of paper, sufficient for from three to six hours' writing. This scroll is coiled upon two cylinders, contained within a case, their axles being provided each with a toothed wheel, which is actuated by the left hand of the The distance between the teeth corresponds with the distance between the lines of writing, so that it is only necessary to turn the wheel the distance of one tooth, to cause the paper to advance sufficiently to bring a new line of writing in position. The axles of the cylinders are provided with a friction brake and set screw, by which they can be adjusted so as to give the paper the proper tension. The writing is executed on the longitudinal central line of the cylinder, a slot being cut in the case to expose the same, and the paper, being under tension, is firm and smooth. The slight convexity of the cylinder affords no inconvenience to the writer, but is advantageous, as it enables him to follow the line of writing with tolerable accuracy, even in the dark, or when his eyes may be turned in some other direction.

When the end of the scroll is reached, the case is reversed. A slot on the opposite side exposes the second cylinder, and as the paper is crossed in passing from one cylinder to the other, the unwritten side will be exposed on the second cylinder. By simply operating the wheel attached to the axle of this cylinder, as already described, the scroll is moved in the opposite direction, so that the paper is made available on both sides for writing.

The scroll can readily be removed from the holder and a new one inserted. It can also be cut in numbered sections for transcription if desired.

The following are some of the advantages

afforded by this case:

1st. It enables the reporter to write from three to six hours continuously, without shifting paper or turning leaves, and on paper that is retained in a firm position and free from wrinkles.

2d. To write standing, with nearly the same ease as when seated at a desk.

3d. To write with facility in almost any position—standing or sitting.

4th. To write out of doors in a stiff breeze or

when storming.

5th. To write without looking at the paper, and when observing other objects, as a procession or boat race.

6th. To write in the dark, as is sometimes necessary in reporting a description of the views of a stereopticon, or a response to a serenade.

The manner of using this case is very simple. It is grasped at the forward end with the thumb and fourth finger of the left hand, and retained by a gentle pressure of the palm of the hand, leaving the first and second fingers free to operate the toothed wheel whenever it is desired to move the paper. When sitting it can very conveniently be rested upon the lap or upon a table.

WRITING IN THE DARK.

When writing in the dark, or when the attention is directed elsewhere, as already described, the writing is executed by what is generally known as the sense of feeling. That this faculty is capable of cultivation is illustrated by the musician in the manipulation of instruments, as well as in the feats performed by the blind. In many instances it is more unerring than the sense of sight. It should be cultivated by the short-hand writer, as in rapid writing the execution of various outlines is more by the sense of feeling than sight. It is also a great aid to uniformity and accuracy in rapid writing. writing case renders writing by feeling practicable; not that it is contemplated to supersede writing by sight, but it extends the scope of short hand, by enabling the writer to work in the dark, should it become necessary.

The greatest difficulties are encountered in voweling short-hand outlines, when this is done by inserting separate characters after the consonants have been written, and those systems which admit of the insertion of vowels without lifting the pen, are, in that respect, superior. At the same time a persevering practice will do much toward obviating the above difficulties.

The following will serve as exercises for the beginner:

Draw horizontal lines one-sixteenth, one-

eighth, and one-fourth of an inch long.

Draw perpendicular and inclined lines corresponding to lengths given above, also circles with diameters corresponding to same.

Draw a circle and place a dot in the center, also perpendicular and horizontal lines passing

through the center of the same.

Draw a dot line across the page correspond-

ing with the ruling.

After the execution of each character they can be viewed, and any inaccuracies noted. In most cases the ability to execute them without

the aid of sight will be rapidly acquired.

Short-hand exercises may next be undertaken. They should be written slowly and carefully at This will tend to promote accuracy of writing when writing by sight.

REPORTING TESTIMONY.

An important application of short-hand writing is in taking testimony. It is a kind of reporting that often involves many difficulties. There is a constant change from one person to another as an examination proceeds, and it may be upon technical and obscure subjects. Frequently, too, the witness and counsel, or court, may be speaking simultaneously. It is often very rapid, owing to the excitement of persons testifying, or to the efforts of counsel to press a witness on cross-examination. Answers are often disconnected and not pertinent to the question, and questions irrelevant to the subject under examination. The most trying ordeal, too, may be encountered at the close of a protracted trial in reporting a rapidly delivered argument or charge, when the stenographer may be exhausted by excessive overwork.

Notwithstanding these difficulties a literal report is always expected, and very desirable. It is impossible to make a condensed report that will include all the essential features that may be developed, from time to time, during the trial.

Writing in concert may be effectively practiced, especially in reporting the charges of courts and the arguments of counsel. It is a service for which it is especially adapted, as the

necessary speed without fatigue is easily attained.

To take testimony in concert more practice and care will be required, for the reason that it is necessary to change so frequently from one person to another. In such cases the cues should be repeated freely, and they may be separated from the rest of the page by a perpendicular line about one-fourth of an inch from the left margin. Answers may be distinguished from questions by a blank space on the left margin, a practice common with many. should be so arranged that the first writer takes the question and the second writer the answer, but there will necessarily be some departures In case the counsel and witfrom that rule. ness speak simultaneously, they should be followed by their respective writers, and if such takes form several lines, it may be indicated by connecting the same by a line drawn through the cue space.

When taking testimony both-handed it will generally be found most convenient, in order to distinguish the question from the answer, to write the first word of questions with the left hand, and the first word of answers with the

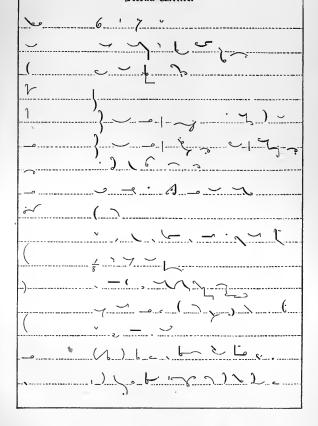
right hand.

A number of inquiries and answers are subjoined, which will illustrate the application of some of the foregoing suggestions.

First Wariter.

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Second Wiriter.



Q. How long, doctor, have you been in this business?

A. Six or seven years.

- Q. How many cases have you been in?
- A. In the neighborhood of a dozen in regard to this matter.

Q. Where were they?

A. One in Woodstock, Vermont.

Q. Was that a murder trial?

A. It was.

Q. Give a list of them, doctor?

A. There was another case at Manchester. The indictment was not for murder in the first degree; but it was a blood-stain case. There was another case at Pittsfield, Mass., one at Northampton, Mass., one at Plymouth, Mass. The others have slipped my mind.

Q. Any other case?

A. None, except the Hayden case in New Hayen.

Q. These corpuscles you have been speaking of are quite small?

A. They are.

Q. How many in a drop of blood one-eighth of an inch in diameter?

A. I should have to figure to give you the number in a drop one-eighth of an inch in diameter.

Q. Figure and tell us.

Counsel for State: A. To give that would in volve a protracted called as an expert mathematical calculation.

[The above answer and objection were spoken simultaneously.]

Q. Is it not at times difficult to tell whether or not certain substances are blood corpuscles?

A. Only in a case where they are badly used

up; and then I would not give an opinion.

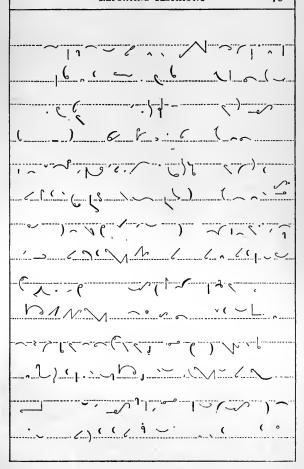
Q. Are there not authorities which say that the analysis is so infinitesimal that it is dan-

gerous to rely on it in a murder case?

A. Authorities say that it is difficult to discriminate between dog's blood and human blood. Some think they cannot tell the difference between the two, but so far as distinguishing corpuscles from other objects there is no difficulty.

KEY TO OPPOSITE PAGE.

- Q. Now at this time didn't you know that my client placed a high value on this property?
- A. I have known it for some time, and think I knew it then.
 - Q. The good-will was valuable?
 - A. Yes, sir.
 - Q. To settle the estate would destroy the good-will?
 - A. I think he made use of the same expression.
- Q. Did he not tell you that hundreds of thousands of dollars had been spent to build up the name of the company, and it would be lost if the estate was settled?
- A. I think he may have made use of that expression on some occasion.
- Q. Was he not very urgent that this property should be returned to him?
 - A. He was.
- Q. He informed you, did he not, that he had a note of one hundred thousand dollars, while urging the return of this property?
- A. My impression is they were not at the same interview.
- Q. Do I understand that he, in talking with you, knowing you were the attorney for the estate, said that he had a note of one hundred thousand dollars which he hadn't considered of any consequence: but if this property was not returned, he should bring suit and collect the note?
- A. He made use of that expression, "that he hadn't considered it of any consequence."
 - Q. Do you mean to convey that impression?
 - A. That was his language.



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