SCIENCE

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THE INTERMARRIAGE OF THE DEAF, AND THEIR EDUCATION.

AN intimate acquaintance with deaf-mutes for more than fifty years, and active labors among them as a teacher for nearly thirty-five years, may, perhaps, justify me in asking to be allowed to take part in the discussion concerning the deaf to which *Science* has recently opened its columns; and the two points on which I have a word to say are (1) the intermarriage of the deaf, and (2) their education.

I think that in considering the first point an important fact has been overlooked; namely, that with a large proportion of the persons commonly spoken of as "deaf-mutes" there is no more likelihood of giving the legacy of deafness to offspring than with perfectly normal people. Professor Bell, who stands as the most pronounced opponent of deaf-mute intermarriages, makes this clear in his testimony before the Royal Commission (*Minutes of Evidence*, p. 817). "No one," he says, "desires to bring misfortune on his offspring, and, if the deaf were so classified as to distinguish those who would be likely to transmit their defect from those who would not, many of the more intelligent of our pupils might avoid forming unions that would increase the chances of their having deaf children." Dr. Bell then gives in a footnote the following classification:—

Classification of the Deaf into Four Groups as a Guide to Marriage.

Period of Life when the Deafness occurred.	Character of the Deafness.	
	Sporadic deafness.	Family deafness.
Before birth (congenital).	2	4
After birth (non-congenital).	1	3

And he says, very truly, that "persons belonging to Class 1 do not manifest a tendency to transmit the defect to their children." This class consists of those who, born normal infants, and having no deaf-mute relatives, are made deaf by some one of the many diseases which affect the auditory organs, or become deaf through accident. It is not easy to determine absolutely the proportion this class bears to the whole number of deaf-mutes, but it is undoubtedly over fifty per cent; for our statistics show that sixty per cent of the whole number of deaf-mutes are known to have lost hearing from disease or accident, and there is a strong presumption that many reported as born deaf became so after birth at so early an age as to lead parents to suppose erroneously that they were born deaf. Making due allowance, then, for the cases believed to be comparatively few in number, classified by Dr. Bell under "Family Deafness after Birth," which could not be regarded as normal, it is safe to say that fully one-half of the deaf and dumb (to use a term now regarded as old-fashioned by many), have, according to Dr. Bell himself, no tendency to transmit their defect to their children. Among this half, therefore, intermarriages may occur without fear that deaf offspring will appear in any greater proportion than in the community at large; and those who oppose the marriage of the deaf among themselves should give due consideration to this very important fact. On the other hand, those who favor the unrestricted intermarriage of the deaf, most prominent among whom is your latest contributor in this discussion, Dr. Gillett of Illinois, should, I think, give more weight than they seem disposed to do to the acknowledged facts that marriages between two persons belonging to Dr. Bell's Class 4 are likely to result in a very large proportion of deaf children; that in marriages between persons belonging to Classes 2, 3, and 4 this tendency is decided; and that even in a marriage of persons belonging to Classes 1 and 2 this tendency is greater than among the general population. With many of Dr. Gillett's views, recently expressed in *Science*, I agree, and I honor him as one who has given a life of effective and unselfish labor to the cause of the deaf; but I think he errs radically in characterizing total deafness as "only a serious inconvenience;" and I am sure few hard-of-hearing persons even, much less those absolutely without hearing, will allow him to classify their infirmity with baldness or near-sightedness.

Deafness is certainly a grave misfortune, and those in whose person or in whose family it inheres are bound by altruistic considerations to take care that by no selfish act or course of theirs the aggregate of this misfortune in the world shall be increased. The deaf-mutes resident in the vicinity of Boston have lately discussed the subject of marriage, and have protested publicly against the attitude taken by Dr. Bell. They have disputed his claim that among the offspring of such marriages a large proportion of deaf children will be found; and one of their number, Mr. E. W. Frisbee,—an intelligent and worthy young man,—has taken pains to gather and publish statistics which he thinks sustain the views held by the Boston deaf-mutes. But unfortunately Mr. Frisbee is "hoist with his own petard:" for he says (in the *Deaf-Mute's Journal*, New York, Nov. 6), that, "among 103 children born of deaf-mute parents in Boston and vicinity, *only* 14 are deaf-mutes," naïvely ignorant that he is giving Dr. Bell heavy and effective ammunition.

But even with this unexpected aid from the opposing side, I do not think Dr. Bell's views are to be accepted as those which should govern the deaf, in all cases, in their choice of partners for life. Much less do I approve of the wholesale encouragement to deaf-mute intermarriages given by Dr. Gillett.

Were my advice sought by a young deaf-mute, heart-free, and untrammelled by any engagement, I should say that if he or she could marry, on a basis of sincere affection, one possessed of hearing, such a union would be far more to be desired than one with a deaf partner. Such a marriage as I would recommend first would do much towards taking the deaf partner out of the narrow circle of deaf-mute society, with which the deaf are too apt to be content; it would bring a most important element of comfort and practical assistance to the married pair; it would furnish an essential advantage in the training of the children and in the management of the household. But no argument ought to be necessary to prove that a family where one parent can hear has great advantages over one where both parents are deaf; and in the last analysis the interest of the family must take the precedence over that of the individual, for it is the family, and not the individual, that constitutes the unit of society. Many deaf-mutes think more happiness is to be found in a marriage with a deaf person than with one who hears; but this is by no means as certain as Dr. Gillett, or the deaf themselves, suppose, for it involves a question that has not yet been settled, and may never be. I have known some intermarriages of the deaf to result in wretched unhappiness, but I do not for that reason conclude that such marriages must always, or even often, be unhappy. It is undoubtedly true that some marriages of deaf people with those who hear have turned out badly, but Dr. Gillett's admission that he has known "most beautiful and happy unions of this kind" is a sufficient answer to all objection to such unions; and to his admission I may be permitted to add the testimony from experience, of both a son and a brother, that marriage between the deaf and the hearing may be entirely happy and essentially successful.

But I would not have my deaf friends who have intermarried feel that I am putting them under a wholesale condemnation by urging the union of the deaf with the hearing as the ideal marriage for them. I am perfectly aware that circumstances may arise under which it becomes extremely difficult for a deaf person *not* to take a deaf partner. I am old-fashioned enough to believe in falling in love, even in this mercantile age, and in remaining in love through long years of happy married life; and I should be the last to lay a rude hand on a tie that had grown up between two deaf young people which seemed likely to ultimate in that greatest of Heaven's boons, a marriage of sincere affection. In such a case my friendly advice would be to look well into the causes which made the young people deaf, and ascertain whether there was a family tendency towards the disability or not; and if it appeared that no such tendency existed, or that it was very slight, I certainly should not "forbid the bans."

If, on the other hand, such a condition in the families was disclosed as to render the birth of deaf children probable, a reason for hesitation would surely be recognized which every truly benevolent and unselfish mind would regard as serious.

I have several personal friends who have remained unmarried because of the existence in their families of certain mental or physical defects likely to descend to offspring; and as I honor them for their unselfishness, so would I rank high in my esteem a deaf person who lived single for a similar reason. But the consideration of this aspect of the question need not be extended: it can be dismissed with the advice to all young deaf people to look carefully into the matter of "family deafness" before their hearts become entangled with any one, and govern themselves accordingly, remembering all the time that their ideal marriage, because best for the family, is with one who hears.

Turning now to the second point proposed for consideration in this article, the education of the deaf, I desire to direct attention to several errors which have of late attained popularity and credence, as supposed truths, with many people: —

1. That the oral teaching of the deaf is a new method.
2. That all deaf children can be successfully taught to speak.
3. That under the oral method deaf children can be taught the vernacular use of language more easily and perfectly than under the manual method.
4. That the use of the sign-language is a hinderance to the best results in teaching the deaf.
5. That signs can and ought to be dispensed with in educating the deaf.
6. That the sign-language obtained a foothold in this country merely through accident.
7. That it is now dying out.
8. That the oral method is greatly superior to the manual, and is rapidly supplanting it.

So far from its being through accident that the sign-language obtained a foothold in this country, the facts are, that the founder of deaf-mute instruction in America, Thomas Hopkins Gallaudet, sought for many months in England to gain a knowledge of English methods of teaching the deaf which made little use of signs; that the schools of Great Britain were closed against him; that, while he stood patiently knocking at their doors, he met in London the distinguished French teacher of the deaf, the Abbé Sicard, and his talented pupil, Laurent Clerc; that on Sicard's invitation Mr. Gallaudet repaired to Paris, where he found the manual method of De l'Epée, which made free use of the sign-language, in most successful operation; that he acquired a knowledge of that method, believing, with good reason, that it was well adapted to secure the education of all the deaf; that he introduced that method into America, where it has been preserved from 1817 to the present time, with results to thousands of deaf children more beneficent and satisfactory, on the whole, than have attended the education of the deaf in any other country under any method.

The sign-language, far from dying out in this country, is to-day made use of in a greater number of schools, and with a larger number of pupils, than it has been in any year since its introduction seventy-three years ago.

The first oral school in America in which it was undertaken to dispense with signs was established in 1867, when the number of schools for the deaf was thirty. Since that time fifty-one schools have been established in the United States and Canada, having 2,157 pupils. In thirty-five of

these the sign-language is constantly and freely used as a means of instruction. In sixteen, the oral schools, with 777 pupils, the sign-language is said to be dispensed with in teaching, but is known to be largely used by the pupils when not under the surveillance of instructors or officers. In not one of the thirty schools existing previous to 1867, in which 5,869 pupils are now taught, has the use of the sign-language been abandoned. These thirty schools in 1867 had less than 3,000 pupils.

The latest statistics report 9,325 deaf children under instruction in the United States and Canada in eighty-one schools. The number of oral schools from which it is attempted, with partial success only, to exclude the sign-language, is eighteen, with 1,113 pupils,—less than one-fourth of the schools, and less than one-eighth of the pupils.

These facts certainly lead to other conclusions than that the sign-language is dying out in America, and that the oral method is supplanting the manual.

No error can be greater than the supposition that the judicious use of the sign-language is a hinderance to the best results in teaching the deaf. Proofs to the contrary abound in the history of the manual schools of America. The sign-language, far from being a hinderance, is a most important, valuable, and sometimes even an indispensable, adjunct in teaching; and, where well-trained and competent instructors are employed, the results are far more satisfactory than under the method which rigidly excludes signs; and it is not alone under the manual method or by manual teachers that the value of signs is recognized.

But before bringing forward the testimony of one of the world's most famous oral teachers of the deaf in favor of the use of signs, even in oral schools, I wish to direct attention to, and emphasize, the fact that those who are loudest in traducing the language of signs and in demanding its abolition from schools for the deaf, who assume to discourse learnedly as to its baneful effects, have never even attempted to learn it, and could not hold five minutes' conversation in it to save their lives; and yet their pupils know and use this language, and may insult or ridicule them in it under their very noses with impunity.

If one as ignorant of French or German as these critics are of the sign language should undertake to enlighten the world as to the effect on mental development of studying and using the language of France or Germany, I think the world would be apt to be amused.

In 1867 I made an extensive examination of the prominent schools for the deaf in Europe. Among others, I visited the renowned establishment at Weissenfels, an hour's ride from Leipzig, where the first oral school for the deaf was established, in 1772. At the head of this school I found Frederick Moritz Hill, then in his sixty-second year, and in the thirty-seventh year of his service as a teacher of the deaf under the oral method. As a writer of works relating to the education of the deaf, as a teacher of deaf children, and as a trainer of teachers, Hill occupies a place second to none among the instructors of the present century. In 1866 he published his most important work, "Der gegenwärtige Zustand des Faubstummen Bildungswesen in Deutschland," to which he called my attention as expressing views he had formed after nearly forty years of teaching.

From this work I will make a few extracts, giving the opinions as to the value of signs in the instruction of the deaf of a high priest of oral teaching in the land where oralism came into being, and where it has been universally upheld and practised, with all the success of which it is capable, to this day.

Speaking of those who pretend that in the "German method" every species of pantomimic language is proscribed, Hill says,—

"Such an idea must be attributed to malevolence or to unpardonable levity. This pretence is contrary to nature, and repugnant to the rules of sound educational science.

"If this system were put into execution, the moral life, the intellectual development, of the deaf and dumb, would be inhumanly hampered. It would be acting contrary to nature to forbid the deaf-mute a means of expression employed by even hearing and speaking persons. . . . It is nonsense to dream of depriving him of this means until he is in a position to express himself orally [p. 88]. . . . Even in teaching itself we cannot lay aside the language of gestures (with the exception of that which consists in artificial signs and in the manual alphabet, two elements proscribed by the German school),—the language which the deaf-mute brings with him to school, and which ought to serve as a basis for his education. To banish the language of natural signs from the school-room, and limit ourselves to articulation, is like employing a gold key which does not fit the lock of the door we would open, and refusing to use the iron one made for it. . . . At the best, it would be *drilling* the deaf-mute, but not *moulding* him intellectually or morally. Where is the teacher who can conscientiously declare that he has discharged his duty in postponing moral and religious education until he can impart it by means of articulation? Although the use of the language of pantomime acts in several respects in an unfavorable manner on the teaching of articulation, it ought to be remembered that institutions for the deaf and dumb are not created solely to impart this latter kind of instruction: their object is much more extensive, and they have to meet wants which depend on education taken in its entirety. It would therefore be a fault to exclude prematurely the language of natural signs [pp. 89, 90].

"I have always expressed myself thus when giving my exposition of the value and mode of applying, as a means of instruction, this language which we possess; and I have done this, I believe, without equivocation. I acknowledge in this language of natural signs —

"1. One of the two universally intelligible innate forms of expression granted by God to mankind,—a form which is in reality more or less employed by every human being.

"2. The only form of expression which by the deaf-and-dumb child can be fashioned without the aid of extraordinary practice, just as his mother-tongue suffices to the hearing child, eventually arranging itself into forms of thought, and unfolding itself into spoken language.

"3. The reflex of actual experiences.

"4. The element in which the mental life of the deaf-mute begins to germinate and grow,—the only means whereby he, on his admission to the school, may express his thoughts, feelings, and wishes.

"5. A very imperfect natural production, because it remains for the most part abandoned to a limited sphere of haphazard culture.

"6. A valuable mirror for the teacher, in which the intellectual standpoint of his pupil is exhibited to him.

"7. At first the only, and consequently indispensable, means of comprehension between teacher and pupil, but not a language which we merely need to translate into ours in order to induct him into the latter tongue.

"8. An instrument of mental development and substantial instruction, made use of in the intercourse of the pupils with each other; for example, the well-known beneficial influences which result from the association of the new pupils with the more advanced.

"9. A means, but not the only one, whereby to supply a lack of clearness in other methods of communication, and leading back, in extraordinary cases, to the real object, or to its representation in drawing or model.

"10. The most convenient, quick, and certain means, in many cases, of making one's self understood by deaf-mutes, whether during tuition or out of school hours, and therefore also employed, perhaps, very often without need, even without volition.

"11. A very welcome means of revisal and correction when articulation brings into use, for example, an ambiguous word.

"12. A most efficacious means of assisting even pupils in the higher degrees of school training, giving light, warmth, animation, to spoken language, which, for some time after its introduction, continues dull and insipid.

"13. A practicable means of communication with others beyond the walls of the deaf-and-dumb institution, whether it be used by itself or in connection with articulation."

Then, after extending somewhat the train of thought suggested by these clearly stated points, the author thus concludes what he has to say in this part of his book on the use of signs:—

"But it is particularly in the teaching of religion that the language of pantomime plays an important part, especially when it is not only necessary to instruct but to operate on sentiment and will, either because here this language is indispensable to express the moral state of man, his thoughts, and his actions, or that the word alone *makes too little impression on the eye of the mute* to produce, without the aid of pantomime, the desired effect in a manner sure and sufficient."

The only comments necessary on Hill's conclusive argument in favor of the sign-language are (1) that his single criticism in Paragraph 5 loses its weight altogether when manual or combined schools are considered; for in these the sign-language, far from being "abandoned to a limited sphere of haphazard culture," as is the case in the oral schools where it is used at all, has had a century and a half of careful and often scientific development, and now serves as a medium for expressing and receiving abstract ideas, the reckless statements of ignorant critics to the contrary notwithstanding; and (2) if "the imperfect natural production" employed in the German schools as sign-language deserves the high approval given it by Hill, what must be the value of the perfected ideographic language now used in the manual and combined schools, and among thousands of the deaf in this country, with great profit and the keenest pleasure?

The limits of this paper forbid even the briefest mention of the many reasons in favor of the use of the sign-language in the teaching of the deaf, which might be added to Hill's, from the points of view of the manualist instructor.

It remains only to allude to the very great error, that all deaf children can be successfully taught to speak, and then to add a few words concerning the system of instruction which includes all that is good in all methods.

That all, or nearly all, deaf children can be taught to speak, is not denied; but this is precisely as all normal children can be taught to draw or to sing. All normal children possess the power of producing musical tones, and of delineating the outlines of an object with a pencil. So all deaf children have the organs of speech and the power of producing articulate sounds.

Now, it is well known that very many normal children cannot succeed as artists or vocalists; and few would advise the teaching of art or music to such after it became clear that the talent for these accomplishments was lacking. Success in these lines does not come without effort, and seldom without long and severe training; while success in speaking comes to every normal child by mere association with his fellows, without effort and without special training.

To the totally deaf child success in speaking is attained under conditions not unlike those which attend normal children in their development of the art faculty. When this is absent, or present in a hopelessly weak degree, effort and training will yield only painful and disappointing results; and it is precisely so with certain deaf children who lack a faculty, to which no name has as yet been attached, the existence of which in others insures success in speech, to the joy of their teachers and the pride and delight of admiring friends.

In considering the case of the deaf learning to speak, it must never be forgotten that under no circumstances can they do this as normal children do, by association and without effort, but that in every case speech is an acquisition only possible with great and sustained effort on the part of the pupil, assisted by the skill, patience, and perseverance of able and competent teachers. If one will attempt to master the pronunciation of a foreign tongue, without ever hearing a word of the language spoken by another, he will appreciate, though only in a limited degree, the difficulties attending the acquisition of speech by the totally deaf.

In point of fact, a large proportion of the deaf children educated in oral schools utterly fail of any thing that can be called success in speech; and the value to such, of this imperfect utterance, always painful and often utterly without meaning to listeners, is as nothing when the labor, time, and expense of attaining it are considered.

But, worst of all, the claim that all the deaf can be successfully taught to speak is often flatly refuted by the conduct of those who make it. Cases have come under my own knowledge where admission to prominent oral schools has been denied to certain uneducated deaf children for the reason, given to their parents, that they would be unlikely to succeed in speech, and I have known these very children to be taught to speak in schools conducted under the combined system. Such inconsistency on the part of oral teachers, when known, cannot fail to impair confidence in every thing they may do or say. And this is not the only point in which the attitude of some of the most prominent promoters of oralism is open to condemnation.

Not long since, I received an application for the admission to our college of a young lady whose previous training had been in an oral school of good standing. Her preparation for college was not quite complete, and I suggested that she return to her school and secure the needed preparatory training, which could easily be given her there. Much to my surprise, the principal of this school, on learning of the purpose of the young lady's friends to send her to the college at Washington, not only refused to give any aid in preparing her to enter, but declared he would do every thing in his power to prevent her going to college; and the reason for this was simply because in the college the finger alphabet and signs are made use of, and speech (understood to be fully acquired in the schools) is not taught. Thus this principal of a great school was willing to sacrifice the only chance his "very bright pupil" (as he himself characterized her) had for securing the higher education, because of his hostility to the use of a language which his great master, Hill, regards as "a most efficacious means of assisting even pupils in the higher degrees of school-training."

I have alluded several times to the combined-system schools, in which more than seven-eighths of the deaf children now under instruction in America are to be found. In these schools the principle is recognized and acted on that no one method is suited to the conditions of all the deaf. With many the oral method fails; with some it succeeds; for a large proportion the manual method does not meet all requirements, nor develop all the powers; with a few the aural method is to be preferred to the oral or manual.

Those who sustain the combined system acknowledge the value of all these methods in their proper place, and in the institutions they promote endeavor to give to each method every possible opportunity for success. They advise that every deaf child should have a fair opportunity to learn to speak,—as in the community at large every child should have a chance to learn to draw and to sing,—but they advise with equal earnestness that time should not be wasted in trying to force birds to sing to whom nature has given only the ability to caw or to scream.

Ten years ago there was held at Milan an international convention of instructors of the deaf, at which were presented some notable results of oral teaching in the schools of Milan. The convention was wholly in the hands of partisans of the oral method, and they succeeded in securing the passage of certain resolutions giving a preference for the oral method, which were trumpeted over Europe, and were not without influence even in this country. The effect of this was revolutionary in France and Great Britain, and the cause of oralism made rapid advances during the first half of the decade just closed. In England, however, the progress of oral teaching has received a decided check.

In 1885 the Queen of England appointed a commission, with the Duke of Westminster at its head, who was later succeeded by Lord Egerton of Tatton, with such men upon it as Sir Lyon Playfair, Mr. Mundella, Drs. Armitage and Campbell, and others less known in America, but of equal distinction in their own country, whose duty it was to inquire carefully into the methods of educating the deaf, the blind, and the idiotic, with a view of securing much needed parliamentary aid.

The labors of this commission covered a period of more than four years, during which time the promoters of oralism brought every possible influence to bear to secure the approval of their method and the condemnation of all others. They failed in this. While the commission recommended giving every deaf child an opportunity to learn to speak, they recognized fully that many would not succeed, and that for these other methods of teaching must be employed.

But a more decided support to the combined system comes from England as recently as the last month. Benevolent persons interested in securing the establishment of a new school for the deaf at Preston, for north and east Lancashire, formed a commission of four able men, who examined very carefully the most prominent schools in England of all methods. This commission in their report, made Oct. 8, 1890, recommend most strongly a dual or combined system, declaring that "pure oralism is an idea, not a reality; a useless task to dull pupils; unsatisfactory for a large number of pupils; entirely successful only in exceptional cases and under conditions that are generally impracticable and often impossible."

Such opinions, reached after the careful and impartial examination of intelligent men, interested to arrive only at the truth, ought, it would seem, to be accepted as conclusive.

EDWARD M. GALLAUDET.

WORK AT THE NEW YORK STATE AGRICULTURAL EXPERIMENT STATION.[1]

THE work now in charge of the first assistant is as follows:—

1. *Experiments with Swine.*—So soon as enough skim milk, etc., is available, it is expected to conduct the pig-feeding in connection with the dairy cattle experiments, and comparison of the different breeds of swine will be made. For the present the experiments are confined principally to feeding of various coarse foods that have been used and recommended for swine; e.g., corn-ensilage, sorghum, prickly comfrey, beets, clover and clover ensilage, etc.

2. *Experiments with Poultry.*—Feeding-experiments with rations more and less nitrogenous have been made with young and mature laying stock; and these experiments extend always throughout the whole laying season, some of both large and small breeds being used. Feeding-experiments are being made, and have been, with capons and cockerels. Experiments have been made with home-made and inexpensive incubators and brooders, and it is expected to continue them. Preparations are now nearly completed for breeding-experiments with tested individuals of several breeds. Considerable chemical work has been done, and experiments are now (although temporarily interrupted) in progress to answer the question definitely whether inorganic material, as stone, oyster-shells, etc , can supply lime for the egg shell. Experiments to ascertain the cost of production and value of product, in rearing chicks of different market breeds from the shell, under different foods and methods of hatching and brooding, are expected to be undertaken.

3. *Soil Experiments.*—The laboratory work on soils has been for the present discontinued, but only from pressure of more immediately necessary work. In the field, application of several cheap chemicals has been made; viz., sulphate of soda, sulphate of lime, sulphate of magnesia, sulphate of iron, carbonate of lime, common salt. The effect on the crop and soil is studied. These have only been applied one season, but it is intended to repeat the application several years on the same strips of soil under different crops.

4. *The Investigation, Selection, and Acclimatizing of Sorghums.*—Of the two or three hundred samples of seed, representing a hundred and fifty or more varieties that have been grown during the last three seasons, less than a dozen have been selected for

[1] From the Geneva Gazette, Nov. 14, 1890.