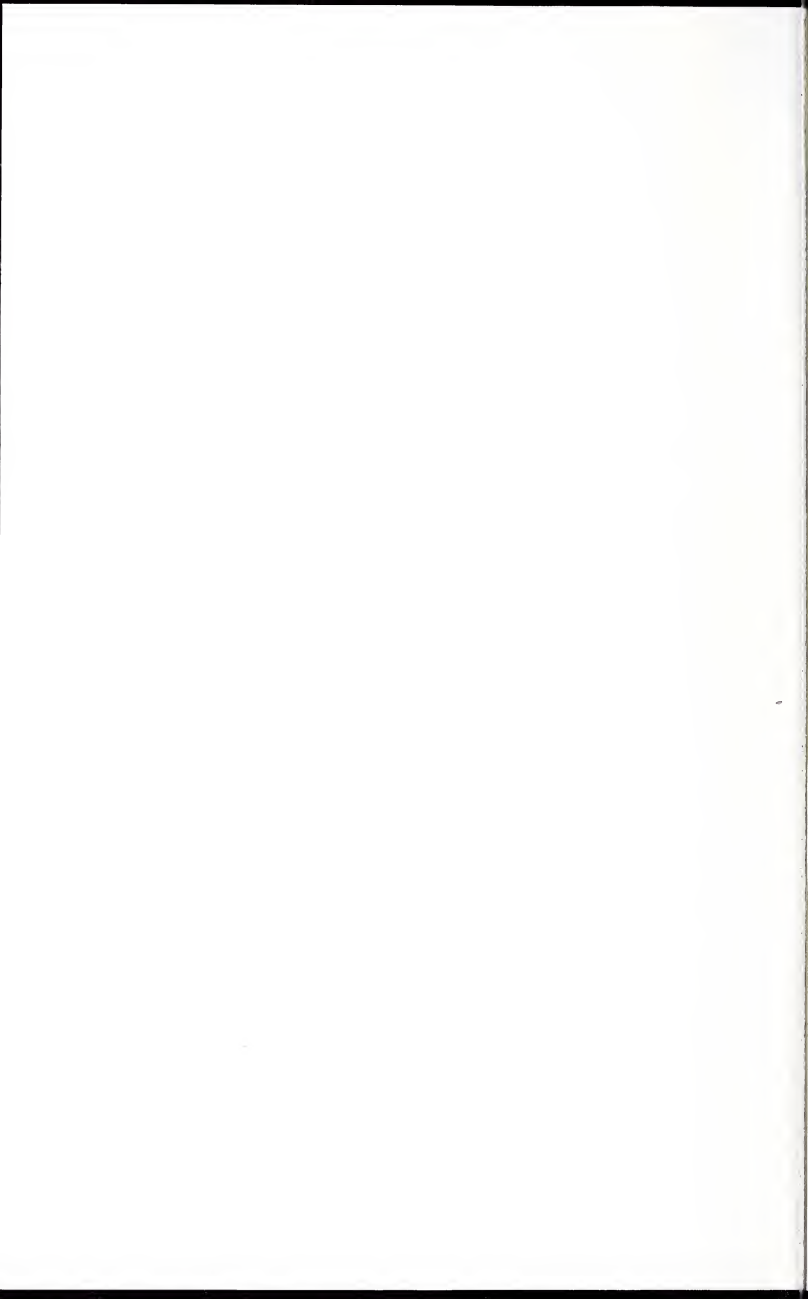


THE BLIND







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THE BLIND;

(FROM THE ENGLISH CYCLOPÆDIA.)

BY

CHARLES BAKER.

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1. CENSUS OF THE BLIND.
 2. EDUCATION OF THE BLIND.
 3. ALPHABETS FOR THE BLIND.
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PRINTED FOR PRIVATE CIRCULATION,
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CENSUS OF THE BLIND.

IN Great Britain and the islands of the British seas (exclusive of Ireland), there were 21,487 totally blind persons at the time of the last census—11,273 males, and 10,214 females. Previous to 1851, no account had been taken of the number of the blind in Great Britain and Ireland, so that there are no means of ascertaining whether their number is increasing or decreasing relatively to the population. The numbers above given furnish a proportion of 1 in 975 in Great Britain, 1 in 979 in England and Wales, 1 in 960 in Scotland, and 1 in 837 in the Channel Islands and the Isle of Man. These proportions vary in different parts of the kingdom: in London the proportion is 1 in 1025, and it is nearly the same in the north midland, the south midland, the northern (including Yorkshire), and the south-eastern divisions of the kingdom; the west midland division presents us with 1 in 906; the eastern, 1 in 888; Wales, 1 in 847; and the south-western, 1 in 758; while the north-western district shows only 1 in 1167; the southern counties of Scotland, 1 in 1065; and the northern counties, 1 in 823.

On comparing these results with those obtained in other countries, we find that in the flat champaigns of Belgium, Hanover, portions of Saxony, Prussia, and some other German states, and the plains of Lombardy and Denmark, the proportion is 1 in 950; in the more elevated portions of Saxony, Prussia, Wurtemberg, Nassau, the duchies of Altenburg and Hesse, and also part of Brunswick, 1 in 1340; in Alpine regions, and countries elevated from 2000 to 8000 feet above the sea-level, as in some of the Swiss cantons, Sardinia, &c., 1 in 1500; while in Norway, according to the returns made in 1845, the proportion was 1 in 482. Thus the level portions of Europe present nearly the same results as Britain, while there are certain discrepancies in the above numbers which cannot at present be accounted for.

It has been thought that blindness has been increased by many of the employments followed in populous manufacturing

towns; but it is clear, from the census returns, that a much larger proportion of blind persons is found in agricultural than in manufacturing and mining counties. For example, in Wilts, Dorset, Devon, Cornwall, and Somerset (south-western division), the average is 1 in 758; in Essex, Suffolk, and Norfolk, 1 in 888; and in the northern counties of Scotland, which include the Highlands, 1 in 823; while the highest proportion, namely, 1 in 665, is observed in Herefordshire. Contrasting these averages with the following manufacturing or mining counties, no unfavourable inference can be drawn as to the physical effects of manufactures on the sense of sight: in the West Riding of Yorkshire the blind are 1 in 1231; in Cheshire and Lancashire, 1 in 1167; in Durham, 1 in 1163; in Staffordshire, 1 in 1082. It should be remembered, that the asylums and schools which have been established for the reception and instruction of those deprived of sight are located in the principal cities and towns. Where, however, the towns are large, the number of inmates of these establishments only slightly affect the proportion which the blind bear to the general population. In London the proportion is 1 in 1025; in Manchester, 1 in 1107; in Liverpool, 1 in 999; in Birmingham, 1 in 1181. Conclusions unfavourable to the rural districts should not however be deduced from a mere comparison of the proportion of the blind to the population of all ages.

Blindness is a common infirmity of old age; and an examination of the ages of the blind shows that nearly one-half of the persons deprived of sight are above 60 years of age. It follows, therefore, that in those localities in which the largest numbers of old men and women are living, the largest proportion of the blind will be found. In the great seats of manufacturing industry the population generally is much younger than in most of the agricultural counties where persons in large numbers, and especially females, are living, in circumstances favourable to longevity, at very advanced ages. Thus, in counties presenting the highest and lowest proportions of blind persons, the influence of age is sufficiently apparent. The proportion of population in Herefordshire aged 60 years and upwards is 10 per cent., while the proportion of blind of the same age is 61 per cent. In Wilts, Dorset, Devon, Cornwall, and Somerset, the proportion aged 60 years and upwards on the whole population is 9 per cent.; on the blind it is 53 per cent. In Essex, Suffolk, and Norfolk, only 8 per cent. of the whole population attain 60 years and upwards, while of the blind in the same locality, 50 per cent. attain this age. In the northern counties of Scotland, 9 per cent. of the population reach the

advanced age specified; while of the blind, 54 per cent. attain the age of 60 and upwards. These four geographical divisions are those in which the highest proportion of blind persons is found. The four divisions in which the lowest proportions prevail present a very striking contrast with the above. In the West Riding of Yorkshire, the proportion per cent. of the population aged 60 years and upwards is only 6, while the proportion of the blind of the same age is 43 per cent. In Cheshire and Lancashire, the proportion on the whole population is 5, that of the blind 31 per cent. In Durham, the proportion on the population is 6 per cent.; on the blind, 52. In Staffordshire the proportion of the population is 6 per cent., and of the blind 42.

In the early ages of life the numbers of the blind are not large. Of the 21,487 blind persons in Great Britain, only 2929, or less than 14 per cent., are under 20 years of age,—a circumstance tending to show that cases of blindness at birth are not common. Between 20 and 60 years of age there are 8456 persons, or about 39 per cent., of the whole number; while 10,102 persons, or 47 per cent., are at the advanced ages above 60. These facts point to the conclusion that blindness, in many cases, may have arisen as a natural infirmity attendant upon old age, and also show the great longevity of the blind, notwithstanding the accidents to which they are liable.

It is clearly shown in one of the tables comprised in the Registrar-General's returns, that this affliction is not confined chiefly to particular classes and trades, but exists amongst all ranks and in a great variety of employments. None of the great branches of manufacturing industry seem to be peculiarly liable to it; indeed, the small numbers returned against cotton, linen, silk, woollen cloth, iron and earthenware, are remarkable when the immense amount of labour employed in these manufactures is considered. Factory workers are however mostly young persons and none would be employed in the midst of machinery with any defect of vision. Among the items which present the largest numbers in the classification of employments, are (in Great Britain); agricultural labourers, 907; labourers not otherwise described, 512; Chelsea pensioners and soldiers, 586; Greenwich pensioners, 70; farmers, 505; domestic servants (chiefly females), 438; weavers, 295; coal-miners, 195; copper, and lead miners, 68; stone and limestone quarriers, 51. Of the class described as "annuitants," and "living on alms," there are 1062; and 2833 blind paupers are returned in workhouses without any statement as to previous occupation. Of the blind following employments presumed to have been acquired after loss of sight, there are: musicians and teachers of music, 535; mat-sacking and net-

makers 127, and knitters, 92. With respect to 2853 males and 5960 females, no returns as to their actual or previous pursuits are made.

Of the persons returned as blind in Great Britain, 11,273 are males and 10,214 females. Accidents and diseases resulting in loss of sight are more likely to arise in the employments followed by males than in those of females. The proportions in England and Wales are 113 males to 100 females; in Scotland the difference is slighter,—a result probably traceable to the preponderance of aged women in that country.

The Census Report of the Commissioners on 'The Status of Disease' in Ireland is one of the most valuable documents ever published in this kingdom on the amount and distribution of disease. The inquiry was conducted with much intelligence, and with such precautions as are not usually manifested in matters of this nature. As a *first* contribution on the permanent maladies to which the inhabitants of a country are liable, its importance can scarcely be over estimated, while it has opened a field for investigation which will hereafter prove a source of lasting benefit to science, and which cannot fail to be a means of directing attention to the afflicted classes whose position it exhibits.

According to the returns made to the Census Commission Office, there were 7587 persons (3588 males and 3999 females) totally deprived of sight resident in Ireland on the 30th March, 1851. Of this number, 1672 were in the civic and 4920 in the rural districts, the former localities including the different asylums and public institutions for the blind; and 995 persons (373 males and 622 females) were in the various workhouses and auxiliary workhouses at the time specified.

Without an accurate medical examination and special inquiry into the circumstances of each case, it would not be possible to define or tabulate the diseases or accidents which produced the large amount of blindness ascertained. How many were born blind there are no means of knowing: congenital cataract, the most frequent cause of blindness from birth, is not very common; loss of sight from purulent ophthalmia and ulceration of the cornea is the most common; and in some districts, particularly in the west of Ireland, internal inflammations of the eyes of a rheumatic character prevail to a great extent, and are a frequent cause of blindness.

The limited space we can devote to this subject prevents us from giving the important tables included in the Report, from which we have drawn the above facts and observations. To that Report all who are interested in the state of the blind in Ireland may be referred. We give the heads of these Tables.

Table I. shows the number of blind in the civic and rural districts and the workhouses, together with the proportion of males to females, and proportion to the population in the several provinces, counties, cities and towns in Ireland.

Table II. shows by ages and sexes the number and previous or present occupations of the blind.

Table III. shows by ages and sexes the state of education and marriage among the blind in workhouses and in the civic and rural districts.

Table IV. shows the number, distribution, means of support, date of erection, and other circumstances relating to the various asylums for the blind in Ireland.

Table V. (taken from the reports of St. Mark's Ophthalmic Hospital, Dublin, from 1844 to 1852) shows the varieties of diseases and accidents of the eye in 11, 233 instances, together with the colour of the eye in 7354 cases.

(Compiled and extracted from the *Official returns of the Census of Great Britain in 1851*, published under the authority of the Registrar General; and from *The Census of Ireland for 1851,—Report on the Status of Disease.*)

EDUCATION OF THE BLIND.

BLINDNESS perhaps meets with more general sympathy than any other calamity. Our most beautiful and correct perceptions are derived through the medium of sight; the want therefore of such a medium is an evil for which no other possession can compensate. Hence it is that we at first consider the blind as an unfortunate race, whose conceptions must not only be confined to that narrow sphere in which they live and move, but, as far as a knowledge of external objects is concerned, must be limited to that imperfect acquaintance which is obtained by the sense of feeling. Looking however further into the subject, we find that the sense of hearing is constantly communicating knowledge to a blind person which helps him to analyse and compare; from which he draws inferences, and arrives at conclusions more or less correct; that constant experience enables him to modify any false impressions which he may have received; that association, memory, and other powers of the mind are active; that the senses of smell and taste are continually contributing some small additions to his stores of knowledge; and that, by these united means, he may become well informed on subjects of ordinary discourse, though labouring under a disadvantage at first appearance insurmountable.

The self-education of a child born blind commences as soon as that of one who sees; and if parents in such cases would give themselves trouble in its instruction, instead of looking upon their case as one of despair, they would be amply rewarded by the improvement, surpassing all expectation, which their child would make. They would find little difficulty in communicating to him the names, shapes, and many other particulars of objects; and indeed language, with the exception of some classes of words denoting colour, or other qualities which can only be known by means of sight, might be as perfectly conveyed to him as to the child possessing all its senses. They would find that they could give correct ideas of numbers to a large amount by means of tangible objects, and of still larger numbers by analogy; that they could also give ideas of time, space, distance; so as to impress him with correct notions of the earth, its size, inhabitants, productions, climates; the occupations, the pleasures, and the pains of mankind. All this is knowledge of a useful and pleasing kind, and many parents would become highly interested in such a work; they would soon find that

they might proceed still farther, and enable their blind child either to attain a certain degree of perfection in some mechanical art, or, by educating his higher faculties, train him to occupy a more intellectual and important station.

The parent who reasons and acts thus upon his child's calamity, will be supported and animated by the knowledge that he is supplying by his own attention the defect of nature, and that he is educating his child to fulfil the duties of his station with the same pleasure to himself that others have who possess a more perfect organisation, and that he is providing a most efficient check to listlessness and mental torpor.

The ear has been happily called "the vestibule of the soul," and the annals of the blind who have become illustrious confirm the remark, for they show that few intellectual studies are inaccessible to them. It has even been said, and has received a kind of universal assent among those who have associated much with them, that in certain branches of study they have a facility which others rarely possess. The blind appear to have immense advantages over the deaf; their intercourse with the outward world, by means of speech, is more direct, and consequently more rapid, and their knowledge of passing events is equal to that of mankind generally. The deaf and dumb *see* indeed all that passes within their immediate sphere; but owing to the circuitous mode of communication which they have to adopt, they can know little beyond it, and enter very partially into the spirit of passing events. In addition to this, finding that they do not always understand perfectly, nor guess rightly, their temper becomes impatient, and their countenance acquires an anxious or irritable expression, which is sometimes mistaken for cleverness. We know of no deaf persons who have attained to any great degree of eminence, even, under circumstances favourable to the development of their powers; but with regard to the blind, they have enriched the arts, the sciences, and literature by their successful pursuits, and not unfrequently under circumstances of extraordinary difficulty. Viewing both these classes of men as devoid of education, dependent upon themselves for support, and for the enjoyment of life, the blind are *physically* greater objects of compassion than the deaf, because, without peculiar modes of education suited to their privation, they cannot obtain a livelihood; but so far as happiness is dependent upon knowledge, and from this source some of the purest enjoyments arise, they are nearly on a level with ordinary men. Through the ear they can acquire knowledge of the highest order, and cannot remain long in any company of their fellow-men without becoming in some degree wiser. The case of the deaf is the

reverse of this; they are not *physically* so dependent as the blind: having the advantage of sight, they may apply themselves to and acquire the simpler imitative arts, and thus earn a subsistence, but *mentally* they are little above brutes; they can know nothing of the things around them, they feel themselves depressed and degraded among men; the language, the customs, the enjoyments of society, where these rise higher than what seems to exist among the more perfect animals, are to them unknown, and by them unregarded; and it requires only a small amount of reflection to perceive that an uneducated deaf person is not morally responsible for his conduct.

These remarks, and the comparison with which we have opened this subject, are not designed to show that the blind are less in need of education than the deaf and dumb; we are advocates for education in its fullest extent among all classes, but more particularly among persons who labour under impediments so distressing as those we have mentioned. Our advice would be to educate such persons as highly as possible, to improve especially those faculties which they appear to possess in a superior degree to mankind generally; but not to waste time and labour in endeavouring to instruct them in arts in which they can never attain to an equality with persons who possess the full enjoyment of their senses.

In this and other countries, some attention has been paid to alleviate the sufferings and diminish the ignorance of the blind; the hand of kindness has been extended to lead them into society, and the voice of sympathy has been heard by them in the midst of their darkness. Asylums in several parts of Great Britain have rescued a few from a life of listlessness and anxious care, who have been instructed in various arts with the view of wholly or partially relieving them from dependence on their friends, their parishes, or the temporary bounty of the benevolent. To all who are entrusted with the charge of the pauper blind, and especially to boards of guardians, the words of Dr. Lettsom, the benevolent advocate of the charities for the indigent blind, may be addressed: "He who enables a blind person, without any excess of labour, to earn his own livelihood, does him more real service than if he had pensioned him for life."

It is invariably found that persons who are deficient in one sense exercises those that are left to them more constantly, and for this reason more accurately; for the senses are improved or educated by exercise. The exquisite fineness of touch and smell in the blind, the quickness in the eyes of the deaf, the accuracy with which a seaman discovers a distant vessel long before it is discernible to the unaccustomed eye of a landsman, and the

acuteness of sight, hearing, and smelling, in many savage tribes, are all to be referred to the same cause, namely, the constant exercise of those organs. Those persons who are deprived of one or other of their senses will, to a great degree, supply the deficiency by the aid of those which they still retain. Hearing and touch are especially cultivated by the blind; by the first they recognise speech, and the endless variations and modifications of sound; by the second they become acquainted with the external form of objects. The chief art of the instructor of the blind therefore consists in supplying through an indirect medium those ideas of which his pupil cannot obtain a conception through the ordinary channels; and in doing this he will act wisely to ascertain what ideas on kindred subjects his pupil possesses, whether such are true or false, and by what process he became possessed of them; to become, in fact, the pupil of his pupil; to draw forth the stock of knowledge already attained, in order to form a ground-work on which to proceed with his future instructions.

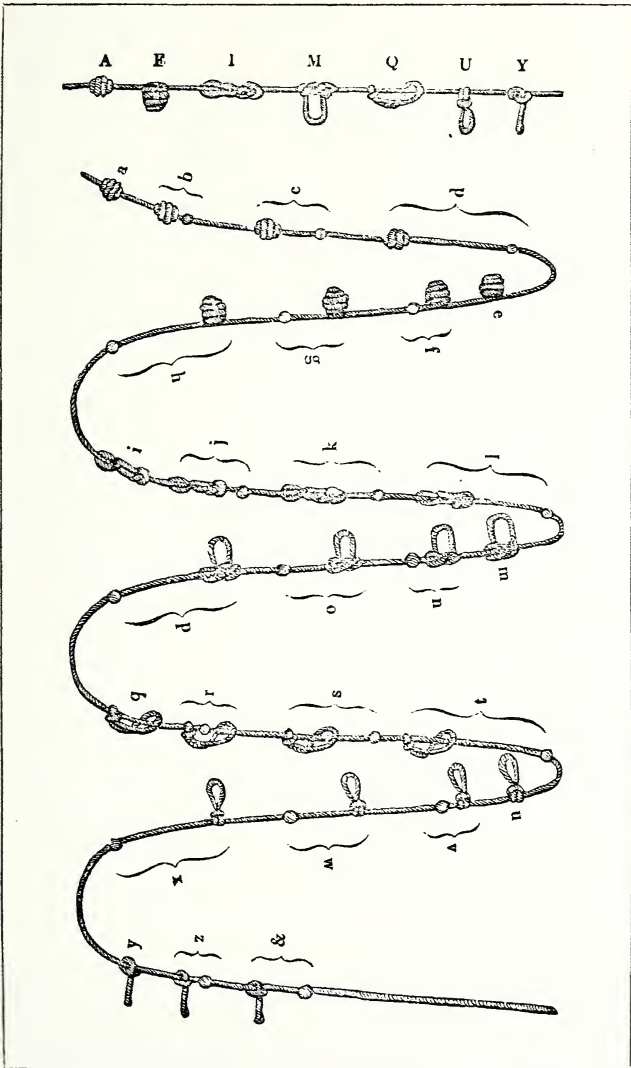
The mode which would probably first occur to a teacher in the intellectual education of the blind would be lessons delivered orally, illustrated by such analogies as would enable them to follow their teacher, taken if necessary, from objects appealing to their senses. At first they would advance by slow degrees in comparison with pupils who see, but this very slowness would be accompanied by a sureness which would amply repay the pains taken to make the lessons understood. It is a fault in ordinary schools that the first steps are taken too rapidly, and one advance too quickly follows upon a former. Such schools might derive a useful lesson from the methods used in the instruction of those who are deprived of one or other of their senses. From oral instruction the transition to a palpable language is natural. Accordingly, we find that the invention of *characters in relief* was among the earliest measures taken for instructing the blind.

An ingenious *string alphabet* was contrived a few years ago, by David Macbeath, a blind teacher in the Edinburgh school, in conjunction with Robert Milne, one of his blind companions. The following is their description of this invention: "The string alphabet is formed by so knotting a cord, that the protuberances made upon it may be qualified, by their shape, size, and situation, for signifying the elements of language. The letters of this alphabet are distributed into seven classes, which are distinguished by certain knots or other marks; each class comprehends four letters, except the last, which comprehends but two. The first, or A class, is distinguished by a large round knot; the second, or

E class, by a knot projecting from the line ; the third, or I class, by the series of links vulgarly called 'the drummer's plait ;' the fourth, or M class, by a simple noose ; the fifth, or Q class, by a noose with a line drawn through it ; the sixth, or U class, by a noose with a net-knot cast on it ; and the seventh or Y class, by a twisted noose. The first letter of each class is denoted by the simple characteristic of its respective class ; the second, by the characteristic and a common knot close to it ; the third, by the characteristic and a common knot half an inch from it ; and the fourth by the characteristic and a common knot an inch from it. Thus, A is simply a large round knot ; B is a large round knot with a common knot close to it ; C is a large round knot with a common knot half an inch from it ; and D is a large round knot with a common knot an inch from it, and so on." The alphabet above described is found by experience to answer completely the purpose for which it was invented. In the Glasgow Asylum, the greater part of the Gospel according to St. Mark, the 119th Psalm, and other passages of Scripture and history have been executed in this alphabet. The knotted string is wound round a vertical frame, which revolves, and passes from the reader as he proceeds.

This alphabet reminds us of the *Quipos*, or knot-records of Peru, in which the history of their country was recorded long before the discovery of America by the Spaniards. Their *quipos* were formed of the intestines of animals, and there is a similar diversity in their symbols with that in the string-alphabet of which we are speaking. An account of these quipos was published in London in 1827. They were purchased by Alexander Strong for ten pounds, from a person who bought them at Buenos Ayres.

In further explanation of the string-alphabet the inventors say, "It must readily occur to every one that the employment of an alphabet composed in the manner which has been explained will ever be necessarily tedious ; but it should be borne in mind that there is no supposable system of tangible figures significant of thought, that is not more or less liable to the same objection. The inventors are aware that among the different methods by which people at a distance might be enabled to hold mutual intercourse through the medium of a language addressed to the touch, there are some that would doubtless be more expeditious than theirs ; but they flatter themselves that, when all the advantages and disadvantages of each particular method are duly considered, the plan which they have been led to adopt will appear, upon the whole, decidedly the best. There can scarcely be any system of tangible signs, which it would be less difficult either to learn or to remember ; since a person of ordinary intellect



may easily acquire a thorough knowledge of the string-alphabet in an hour and retain it for ever. Yet the inventors can assure their readers that it is impossible for the pen or the press to convey ideas with greater precision. Besides the highly important properties of simplicity and accuracy which their scheme unites, and in which it has not been surpassed, it possesses various minor, nor yet in considerable advantages in which it is presumed it cannot be equalled by anything of its kind. For example, its tactile representations of articulate sounds are easily portable—the materials of which they are constructed may always be procured at a trifling expense—and the apparatus necessary for their construction is extremely simple. In addition to the letters of the alphabet, there have been contrived arithmetical figures, which it is hoped will be of great utility, as the remembrance of numbers is often found peculiarly difficult. Palpable commas, semicolons, &c. have likewise been provided to be used, when judged requisite. The inventors have only to add, that sensible of the happy results of the invention to themselves, and commiserating the fate of their fellow-prisoners of darkness, they most earnestly recommend to all intrusted with the education of persons deprived of sight carefully to instruct them in the principles of orthography, as the blind being in general unable to spell is the chief obstacle to their deriving, from the new mode of signifying thought, the much wanted benefit which it is designed to extend to their melancholy circumstances.”

We entirely agree in the views here taken of the string-alphabet; as an auxiliary to the blind in the acquirement and application of language, and in the absence of a tangible writing on paper, we think no invention is superior to it, and we should be glad to have seen it in more common use among the blind in our recent inquiries at various institutions. The advice to instruct the blind carefully in spelling is important; for if this acquirement be not made, they cannot communicate by language with their fellow men otherwise than orally. To those blind persons who have lived together in institutions, and formed friendships which they wish to continue when separated by distance, the string-alphabet offers a mode of correspondence as perfect as our pen, one too which may be intrusted to ordinary persons to convey without any probability of the communication being deciphered.

David Macbeath, one of the inventors, was connected with the Edinburgh Asylum, as pupil and teacher, for twenty-five years. His inventions for teaching were numerous, and applicable to instruction in music, arithmetic, and mathematics. His string-alphabet was fully described in the ‘Edinburgh Philosophical

Journal,' some years ago. He conducted the public examinations of the Edinburgh pupils, where he never failed to excite the interest and attention of those present towards the objects of their solicitude.

In the infancy of the art of teaching the blind, *raised music* was invented in order that they might be enabled to acquire their lessons independent of a master. This invention is at present little used, for the constant practice of those who pursue this branch of study is a continual exercise of the memory, and they are able to learn very long pieces by the ear alone. The reason assigned by Dr. Guillié for the disuse of embossed music is very satisfactory, "the scholar could not read with his fingers and perform at the same time." Thorough bass is however as readily studied by the blind as by the seeing, by means of "Tansure's Musical Board," described in his 'Musical Grammar.' This board is three feet long, about eight or nine inches wide, and has two staves, with ledger lines, above, between, and below. These are raised upon the surface of the board about one-sixteenth of an inch; the top of the stave lines being flat, while that of the ledger lines is round. It is pierced all over with little holes, so as to receive the pins, which represent the notes. We may here mention the invention of Don Jaime Isern, the object of which is to enable a blind composer to transfer his thoughts to paper in the usual musical notation, without the necessity of employing an amanuensis. For this invention the large silver medal of the London Society for the Encouragement of Arts, Manufactures, and Commerce was given to Don J. Isern in 1827. There is a full description of it, with illustrative engravings, in vol. xlv. of the 'Society's Transactions.' In the same volume there is an interesting communication on the subject of types for the blind, by Mr. G. Gibson of Birmingham. This communication is connected with various inventions which we have had the pleasure of inspecting, and of which we shall give a short account, referring our readers who desire to be made perfectly acquainted with the invention to the work above mentioned. Mr. Gibson's aim has been to supply the blind with a mode of writing and keeping their own accounts. "A cube of wood, or of any other convenient material, the size of which will depend on the delicacy of touch in each blind person, is to have raised on one side of it a letter, or figure, or stop, in the manner of a printer's type. On the opposite or lower side of the cube is a representation of the same character as is on the upper side, but formed of needle-points inserted into the wood. If therefore a piece of paper be laid on a cushion, or surface of felt, and the type be pressed down, the points will enter the paper, and form on the under surface of it a raised or embossed representation, by

the projection of the burs where the points have penetrated, and this embossed character may be distinguished, and consequently read by the touch." In its outward appearance, the whole apparatus of Mr. Gibson forms a small piece of cabinet furniture. When the top is thrown open an even surface of cushion presents itself. Upon this there is a flat piece of mahogany about an inch broad, which can be moved from one notch to another, to any part of the desk. This is for the letters to lie against, like the composing-stick of a printer. The letters he uses are a composition of tin and lead; the upper surface is elevated so that he can distinguish the letter, and the under surface has inserted in it needle-points of the shape of the letter on the upper surface. In writing the Lord's Prayer, after the paper is placed, he takes O out of its division, and puts it at the beginning of the line, then U, then R, gently pressing each letter down, as he puts it next the preceding one. At the end of a word he inserts a small mahogany space, and proceeds till his performance is complete; whether it be a copy of anything which he wishes to make, or an original piece of composition. It will be observed that, by putting two or more pieces of paper underneath his pointed types, copies will be multiplied. The letters are in small divisions, which occupy side-drawers in his printing cabinet. The use of this machine implies more knowledge than the uneducated blind possess, as they must know how to spell. However, it is a part of its object to teach spelling. For this communication to the London Society for the Encouragement of Arts, &c., Mr. Gibson was presented with the gold Vulcan medal of the Society. Another of Mr. Gibson's inventions may be here noticed. It forms a drawer of the cabinet above-mentioned, and is intended for working the rules of arithmetic. This Mr. G. calls his slate. It is divided into rows by elevated slips of wood, along which the figures are to slide. Like the types they are formed of metal, but have no needle-points underneath. We have seen him perform examples in multiplication and other rules by this apparatus, which is simply and beautifully conceived. It is obvious that all the elementary operations in arithmetic may be performed by it, and that by the union of this and the writing apparatus, a blind person may write his own letters, and keep his own accounts. We have dwelt upon the subject of reading and writing for the blind, feeling that they are deserving of all the importance which can be attached to them. Lieutenant Holman, the blind traveller, used Wedgwood's apparatus for writing in the dark. A very ingenious instrument of this nature has been invented by the late Mr. Hughes, who was for many years the governor of the School for the Blind at Manchester. We return to the early methods pursued in this art.

Embossed maps and globes for teaching geography would naturally be suggested to those persons who were engaged in teaching reading to the blind by raised figures. M. Weissebourg, a blind man, of Mannheim, appears to have been the first person who made relief-maps; up to which time the instruction given to the blind on geography was merely oral. Various methods for producing maps of this character are now employed.

Palpable methods have also been adopted for making the blind acquainted with different branches of astronomical knowledge, and, in addition to raised maps of the heavens, various ingenious instruments have been contrived to further their progress in the science of astronomy. The application of such apparatus to the purposes of teaching has been attended with encouraging success. We shall detail some of the methods pursued in teaching arithmetic when we speak of the Edinburgh Institution, where the well-known invention of Dr. Saunderson has been so much improved that, by its means, any operation may be readily performed. For a description of the original invention, which was the united work of Dr. Moyes and Dr. Saunderson, we refer to the article 'Blind' in Rees's 'Cyclopædia,' or in the 'Encyclopædia Britannica.' By the improvements which we shall describe, it will be seen how greatly the simplicity of the contrivance has been increased. Previous to these tangible methods of teaching arithmetic the blind were instructed on this subject orally, the process on their part being entirely mental. A publication of late years, which is intended exclusively for the blind, is of a higher character and aim than any that have preceded it, though not one which will generally be considered as equal to many of those mentioned, in point of utility. The work to which we allude is an elementary treatise on mathematics by the Rev. William Taylor of York, called 'The Diagrams of Euclid's Elements of Geometry, arranged according to Simpson's edition in an embossed or tangible form, for the use of blind persons who wish to enter upon the study of that noble science,' York, 1828. As a means of leading to the acquisition of a science for which some blind persons have shown a predilection, this beautifully executed work is of great value, and we hope that the blind generally who show a superior aptitude for the exact sciences, even though instructed in a degree at the public expense, will have all the advantages which works like Mr. Taylor's aided by good instructors can confer. It is stated that some of the pupils of the London School for the Indigent blind worked a few problems for Mr. Taylor, their examiner, at their examination last Christmas.

Institutions of a philanthropic tendency have frequently originated with members, individual or collective, of learned

societies; and such societies have lent their assistance and patronage to various efforts for advancing the condition of mankind, and removing the obstacles to improvement. The attempts of M. Haüy to systematise a plan for the education of the blind are the first which are deserving of especial notice. His methods were submitted to the Academy of Sciences of Paris, where they received all the encouragement he looked for. The commissioners chosen to report upon the means which he proposed to employ suggested to the Academy not only to bestow its approbation upon M. Haüy, but also to invite him to publish his methods, and to assure him of their readiness to receive from him an account of his future progress. It appears that many of the plans recommended by Haüy in his 'Essay on the Education of the Blind,' were not so much his own inventions as adaptations of the ingenious contrivances of individuals, of different ages, and in different countries, who had preceded him in this benevolent work. The celebrity of certain blind individuals, partly the result perhaps of pains-taking teachers, and partly of their own highly gifted minds, had reached the ears of Haüy. By a happy exercise of benevolence and talent, aided by that enthusiasm without which the greatest labour is ineffectual, he formed the outline of a system of instruction, which required only time, and the modifications which discover themselves in every course of rational teaching, to be brought into successful operation. He wished to make the sense of touch do that for the blind which the Abbé de l'Épée had made the sense of sight do for the deaf and dumb. He wished to see the fingers of the blind employed in reading written language, and for this purpose he invented the noble art of printing in relief, which will hand down the name of Valentine Haüy with honour to posterity. Haüy offered to instruct gratuitously the blind children who were under the care of the Philanthropic Society. He commenced his instructions in 1784, and taught his pupils reading, writing, arithmetic, geography, composing types, and printing. In 1786 public exercises were performed by the pupils at Versailles, in the presence of the king; these exercises excited much astonishment, and there seemed to be little doubt of the stability and success of the undertaking. Large funds were subscribed, and the school was filled with pupils; but the commencement had been made on a scale too extensive for its regular maintenance, the warmth of popular feeling cooled, and as the institution was unsupported by government, Haüy never enjoyed the fruits for which he toiled. His school was not however suffered to fall entirely; it was taken up by the Constituent Assembly of the Revolution, and has since been supported at the expense of the government. The establishment of which we are speaking is the School for the Young Blind at Paris.

There are at Paris two celebrated institutions for the blind. The more ancient of these is the Hôpital Royale des Quinze Vingts, founded by St. Louis in 1260, for the reception of such of his soldiers as had lost their sight in the East. At its first establishment, it consisted of *blind* and *seeing* persons, the latter being the conductors of the former. As its name indicates, it receives *fifteen score*, or three hundred blind persons. This noble asylum continues, as it was originally placed, under the government of the grand almoner of France. To obtain admission it is necessary that applicants be blind and indigent; they are admitted from all parts of the kingdom, are lodged in the hospital and receive twenty-four sous (about a shilling) a day for their food and clothing. No instruction is afforded to the inmates of the Quinze Vingts; some of them, however, execute works, which, for their ingenuity, attract and deserve attention. The other Parisian establishment for the blind is the Institution Royale des Jeunes Aveugles, of which Haüy was the founder. It contains about a hundred young persons of both sexes, who are maintained and educated at the expense of the state for eight years. Paying pupils are also admitted. During the last quarter of a century the education of the blind has made great advances, as will be seen when the present state of the various establishments is compared with their actual condition, as described in the article BLIND of the 'Penny Cyclopædia.' The writer of that essay lamented that there was so much that appeared to him censurable, and that called for animadversion in the modes of education pursued in some of the schools for the blind. The article was, however, transmitted to three of these schools previous to its publication, and it was allowed to be a correct statement of facts. A great change for the better has since taken place, not only in the schools referred to, but in others also; new asylums have been established, and the attention of many experienced men has been directed to various branches of education, and especially to the provision of books in raised type, of which an account is given in the article, ALPHABETS FOR THE BLIND.

The first British Asylum for the Blind was established at Liverpool, in the year 1791. This institution has hitherto been liberally supported. During the year 1858, its expenditure was 3000*l.*, its income about 3400*l.*, derived from goods disposed of (the work of its inmates), from the payments made on behalf of the pupils, from legacies, donations, and subscriptions, from dividends, and the pew-rents of its chapel. The sums received for articles manufactured exceeded 900*l.*, but the produce of these labours does not assist the funds of the establishment. The instruction of the blind in manual labour seems to be the primary object with the directors of the institution. The trades

which are taught are those of basket-making, rope-making, weaving, shoemaking, sewing, knitting, and plaiting sash-line. The most profitable of these arts is the rope-making; the locality of the institution contributes to the advantages derived from this trade. The sugar-houses require so vast a supply of cordage, that it can scarcely be furnished in a sufficient quantity. The next most profitable labour is the weaving of carpets, lobby-cloths, and bear-rugs. Masters possessing sight are regularly employed in teaching the various trades; the reasons why the institution derives no pecuniary advantage from the extensive labours carried on are sufficiently obvious when the expense of experienced masters is considered, the waste of materials by the labourers who are chiefly learners, and their quitting the asylum when they can earn enough to maintain themselves.

The total number of persons who have been received into this asylum from its commencement to the publication of the report, January 1859, was 1429. Some very interesting details are given in the same document on the causes of the calamity under which the pupils labour, so far as could be ascertained by the officers of the institution.

LIVERPOOL INSTITUTION, TOTAL NUMBER RECEIVED 1429.

	Totally.	Partially.	Total.
Blind from their birth	70	49	119
" " small-pox	202	48	250
" " inflammation	278	177	455
" " cataract	56	93	149
" " external injury	99	47	146
" " defect in the optic nerve	76	64	140
" " amaurosis	25	15	40
" " imperfect organisation	6	14	20
Lost their sight at sea	8	1	9
" " by gradual decay	5	3	8
" " after fever	14	5	19
" " after measles	8	5	13
" " after convulsions	3	3	6
" " from causes not mentioned, } or imperfectly described }	28	27	55
	878	551	1429

From the reports of the Liverpool Asylum, as well as from others which we have seen, the blind seem to be pretty equally scattered in all parts of the kingdom. Of the 1429 persons who have been inmates of the Liverpool Asylum, 225 have belonged to Liverpool, 294 to other parishes in Lancashire, and 910 to distant parts of the kingdom. A large proportion of the income of the institution is derived from Liverpool and its vicinity. The blind of that district have therefore a just priority of ad-

mission. There are 79 pupils in the Liverpool Asylum; 18 were admitted in 1858, and 21 left. Among those thus admitted, 8 are between fourteen and twenty, 4 are between twenty and thirty years old, 4 are upwards of thirty, and of 2 the ages are not specified. Most of those who have completed their education receive a gratuity of from two to five guineas when they quit the asylum, which sum is intended to assist them in procuring a few tools and materials for commencing the trades they may have been taught. This provision is both benevolent and wise; for there are numerous cases which come under the notice of the directors where poverty accompanies the deprivation of sight, and where, consequently, the instruction imparted would be of no practical benefit were not some means afforded of making it available to provide for their common necessities. The observances of religion appear to be regularly regarded; prayers are read in the chapel morning and evening, and the chaplain attends twice in each week to teach the catechism. The appointed hours for labour in the Liverpool Asylum are from six in the morning to six in the evening, one hour being allowed for breakfast and recreation, and another for dinner. Some of the pupils occupy a large portion of their time in the practice of music, singing, reading, &c. Frere's system of raised type is used, but the superintendent is not prepared to say which of the several series of books is most eligible for the blind. There are no fixed hours for acquiring the art of reading by touch, but instruction is given at such times as the teachers can spare from their other duties. Many of the inmates are middle-aged adults, whose object in entering the institution is expressly to acquire facility in some employment by which they can maintain themselves, and who leave as soon as they have succeeded in learning a trade, some of them only remaining under instruction from six to twelve months. This information has been supplied by the superintendent.

In the year 1792 an Asylum for the Blind was established in Edinburgh. The benevolent Dr. Blacklock, who resided in that city many years, had long anxiously wished that such an establishment should be formed for the education of those persons who, like himself, were deprived of sight. He mentioned his wishes to his friend Mr. David Miller, who was also blind, and was himself an eminent example of what might be effected under the influence of early and judicious instruction. In the year mentioned, it was determined by Mr. Miller and the Rev. Dr. David Johnson, of Leith, that an attempt should be made to provide an asylum, and means were taken to call public attention to the object. Mr. Miller communicated with the Abbé Haüy, and in many ways rendered important services during the

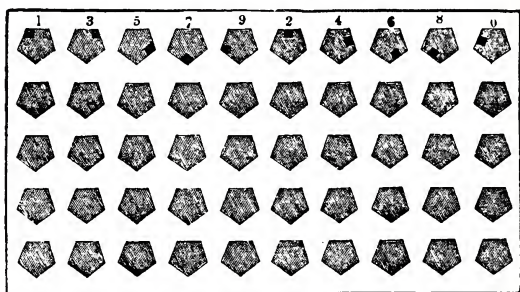
infancy of the institution. The chief end in the formation of the contemplated asylum, next to imparting ordinary instruction (orally, it is presumed), and imbuing the minds of the objects with religious truth, was to place them under such superintendence as should train them in those trades in which the blind "are best fitted to excel;" at the same time rewarding them for their labours according to their progress and proficiency. In later years the directors of the asylum have extended their views, devoting increased attention to the intellectual culture of the pupils; but still the main object appears to be that of training them to habits of manual labour. The economical character of the Edinburgh Asylum must be a striking feature to all who compare its expenditure, considering the amount of good it accomplishes, with that of similar institutions. We have frequently heard of the excellent management of the public charities of Edinburgh; but in none is such management more visible than in this. In 1806 the directors formed a separate establishment for females, and since that time they have opened a school for the instruction of the young blind. It is by early training only that the blind, in common with others, can be brought under an effectual mental and moral discipline. By giving instruction to the young in the higher departments of knowledge, and by thus raising the intellectual character to the elevation of which it is capable, we are of opinion the directors will discover that the arts in which the blind are best fitted to excel are not the ordinary mechanical trades, to which, in our British institutions, and too generally abroad, all higher considerations have been sacrificed. Why are not their mental powers, which are unaffected by their physical calamity, cultivated? Such cultivation will qualify them for occupations in which they may succeed as well as those who possess the advantages of sight. The enlightened policy of the directors of the Edinburgh Institution has placed them in the first rank among the benefactors of the blind: their school for the young is a most interesting section of their establishment; and it may be hoped that many of its pupils will be trained to higher occupations than those of basket-making, weaving, &c. We do not anticipate that all the blind can be exempted from manual labour, any more than that all other men are fitted for employments requiring a high degree of intellectual vigour, and acquirements which even the greater portion of mankind are unable or unwilling to make: but we do not hesitate to affirm that the blind have been systematically trained in arts in which they never can enter into competition with seeing persons; and that they have not been sufficiently educated in that kind of knowledge in which they might have become at least as perfect as those who possess

all their faculties. The former part of our proposition is allowed by the directors of the Edinburgh Asylum, who say that "when they (the blind) become as skilful workmen as their circumstances admit, they still labour under a disadvantage unknown to others." An argument which might with great propriety be used to enforce the advantage of mental cultivation in preference to manual dexterity, is the loss invariably attendant on the manufactures carried on at the asylums. It appears to us from our examination into the expenses of different establishments, that the more extensive the scale on which the manual arts are conducted, the greater the losses, from waste of materials, a succession of learners, &c. On the score of cheapness therefore it is desirable that such operations should be confined within as narrow limits as may seem prudent, and that intellectual education should be extended as widely as the talents and qualifications of the pupils will allow. Instead of the accounts of such institutions showing so great an amount of positive losses, we should not only see this item reduced, but find the pupils qualified for a sphere of usefulness superior to any which they can ever reach by any attainable degree of dexterity in manual occupations.

In the Edinburgh Asylum, the whole machinery seemed to be of a high order; the devoted attention of the different officers is visible in the discipline and happiness of the inmates, and there can be no doubt that the institution is effecting great good. The young blind are instructed in reciting the scriptures, in spelling, in grammar, in vocal and instrumental music, in reading, by the means of the sense of feeling; in writing, arithmetic, mathematics, history, geography, and astronomy. The means by which instruction in these various branches is conveyed have been mentioned; in all institutions of this nature they must be generally the same, varying perhaps in some of their details. Several of the mechanical contrivances for conveying scientific knowledge to the pupils are the inventions of Mr. Johnston, the former secretary (nephew of Dr. Johnston, who was named as one of the founders of the institution), in conjunction with Professor Wallace, a gentleman who was deeply interested in all that concerned the institution. An orrery, a cometarium, and raised maps of the heavens, all so constructed as to convey information by the touch,—while the reasoning powers are at the same time addressed,—are among the inventions of these gentlemen. The map of the world is described as comprising "the eastern and western hemispheres, represented on each side of a circular board. The land is made rough, the seas, lakes, and rivers smooth. Towns are represented by small pins. Mountains are ridged, and boundaries simply raised. Degrees of latitude are marked round the edge of the circle, of longitude along the equator, which is

raised above the surface of the earth. The orrery represents the orbits of the planets by brass circles, and the planets themselves are shown by spheres indicative of their relative dimensions; the spheres slide upon the brass orbits. The ecliptic exhibits raised figures of the signs of the zodiac, the degrees of the circle, and the days of the month, all tangible, and adapted to the learner who has to depend upon touch for his impressions. The *arithmetic board* is 16 inches by 12, and contains 400 pentagonal holes with a space of a quarter of an inch between each. The pin is simply a pentagon, with a projection at one end on an angle,

THE ARITHMETIC BOARD.



A pin showing the projection
on the angle.



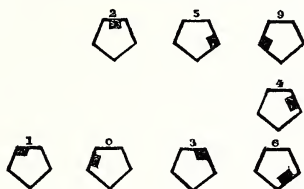
A pin showing the projection
on the side.



and on the other end on the side. Being placed in the board, with a corner projection to the left upper corner of the board, it represents 1; proceeding to the right upper corner it is 3; the next corner in succession is 5; the next 7; and the last 9. In like manner the side projection, by being turned to the sides of the hole, progressively gives 2, 4, 6, 8, 0. The size of the pentagon, and a drawing of the pin, showing the projections on the side and angle, are given with the board above, which is that used in the Glasgow Asylum.

By the use of this board the pupils may be carried to any extent in arithmetical knowledge, and make their calculations with as much satisfaction as those who see. The last improvements in the Arithmetic Board were made by William Lang, at first an inmate of the Edinburgh Asylum, afterwards of that of Glasgow. Further to illustrate its use an example is given below of a sum in multiplication, which will be at once understood on comparing it with the board above; this example shows $259 \times 4 = 1036$. The pentagons represent the pins with their projections as supposed to be in the holes of the Arithmetic Board.

MULTIPLICATION SUM.



We have the testimony of Dr. Guillié, that the blind study the exact sciences under great advantages, and with remarkable success; but we cannot agree with the doctor that the blind, any more than *les clair-voyans* have a natural disposition for mathematical studies. The eminent success of Saunderson, Moyes, Gough, and others, afford sufficient proof that blindness is no great impediment to such pursuits; there may possibly be some advantages consequent on the degree of abstraction which appears necessarily to accompany blindness. On this supposition however we do not lay much stress, because we cannot admit that there is *naturally* any compensative principle by which men who labour under one defect or deprivation, are enabled to exercise the powers which are left to them with greater accuracy than others who have no such deficiency. If a seeing person would cultivate his sense of feeling to the same extent as the blind, his perceptions of touch would be as delicate as those of the blind man. It is not probable that so refined a cultivation will ever be tested by experience, as it would require a greater degree of philosophical curiosity than we ever witnessed or heard of, and be attended with a longer and more painful effort than we think any one would voluntarily undergo for the sake of making the experiment.

The Bristol Asylum for the Blind owed its origin to the benevolent exertions of two members of the Society of Friends,

Messrs. Bath and Fox. It was opened in 1793, in a disused Baptist meeting-house. After attempting several of the trades, basket-making was commenced, and although other occupations are followed, fine and coarse baskets have been the staple manufacture of this asylum to the present time. In 1803 its funds were so greatly increased that the committee of management were enabled to spend 1800*l.* on the purchase of premises in Lower Magdalen Lane, and its operations were there carried on till its removal in 1838 to the present eligible situation at the top of Park Street, where a building was erected in the early English style, with a chapel in architecture of a later character, and became a prominent ornament to the city. This building provides workshops for 100 pupils, and bedrooms for 70. At a subsequent date, rooms were added for washing, baths, and shower-baths, and a more recent purchase of land in Tyndall's Park gives ample room for exercise and amusement. If the utility of the asylum may be deduced from the progressive increment of the sales the conclusion will be satisfactory, as in 1794, its second year, their amount was 18*l.* 8*s.* 6*d.*, and in the year ending 1857 there was received "for baskets, table-mats, flower-stands, hearth-rugs, door-mats, and knitting, 1088*l.* 2*s.* 2*d.*"

The distribution of time in mental occupation and manual labour is as follows:—The pupils rise at 6 a.m., and work or take exercise till breakfast at 8 o'clock; at half-past 8 prayers are read by the master; the school-room is then occupied from 9 to 6, the classes being changed every hour. By this arrangement each pupil receives two hours' instruction daily. One hour in the day is allotted to musical practice, two hours' instruction being given to each pupil every week; the remaining time till 8 o'clock is occupied in manual labour, and as occasion offers, the master or matron reads to the pupils while at work; but three days in the week they read collectively. On two evenings the pupils assemble for practice with the music-master, and the remaining evening they attend the chaplain for religious instruction. Supper is served at half-past 7; immediately after prayers are read by the matron, and the household retires to rest about 10.

Instruction in the Bristol Asylum is conducted by a chaplain; by the master, who teaches reading, arithmetic, geography, and history, and who has a blind assistant of either sex; by a music-master, with similar aid: by a basket-maker for the men, who has also two blind assistants; and by a female basket-maker, with one assistant possessed of sight and one who is blind. Great advantage is thought to be obtained by this employment of blind teachers, especially in the initiation of new pupils. The system

of printing preferred in this asylum is that in the Roman character, by the late Mr. Alston of Glasgow. The books published by that gentleman were introduced in 1837, and have continued in daily use to the present time. A 'Life of James Watt,' an 'Elementary Geography,' 'Our Lord's Sermon on the Mount,' and a 'First Reading Book,' have been published at this institution in Roman capitals and lower case.

The report of the chaplain on the scriptural instruction of the pupils is very satisfactory. The report from which we quote states that nine of the younger ones had received confirmation, five of whom had become communicants. The master's report to the committee on their secular instruction is equally satisfactory: biography, history, arithmetic, grammar, and geography are the subjects of his statement; while the music-master considers the progress of some and the proficiency of others in music and singing as deserving commendation. All who are engaged in the management speak of the pupils as intelligent and well-disposed, and as manifesting a spirit of cheerful obedience. The welfare and conduct of the former pupils is not overlooked in the report of the committee; special instances are recorded of some of the advantages the asylum has conferred on individuals, and it is also stated that satisfactory accounts continue to be received from others, who, from the trades they learned and the industrial habits they acquired while at the asylum, are now earning a living in such a manner as not only to reflect credit upon themselves, but also on the institution. There are in the Bristol Asylum 66 pupils: males, 42; females, 24; upwards of 40 of them are under 20 years of age.

The school for the Indigent Blind in London was established in 1799 by four gentlemen of the metropolis,—Messrs. Ware, Bosanquet, Boddington, and Houlston. At first the pupils were few, and it did not attract any extraordinary share of public attention. About eleven years after its formation, the patronage of the public enabled the managers to take on lease a plot of freehold ground in St. George's Fields, opposite the end of Great Surrey Street, where suitable buildings were erected, within which the institution is still carried on. An Act of Parliament was obtained in 1826, which invests the committee with all the rights and privileges of a corporation, and they then purchased the freehold of the ground on which the buildings had been erected. These buildings were found insufficient for the purposes of the establishment, and the committee purchased an adjoining plot of ground, upon which a new and enlarged building is erected. In 1800 there were only 15 persons in the asylum: the present number of inmates is 154,—78 males and 76 females.

The inmates are "clothed, boarded, lodged, and instructed." The funds of the charity are ample. The receipts have seldom exceeded the expenditure. In addition to its annual subscriptions, donations, and legacies, it possesses a funded capital amounting to above 80,000*l.*, besides other available property. The articles manufactured by the females are, for sale, fine and coarse thread, window sash-line and clothes-line, fine basket-work, ladies' work-bags, and other ornamental works in knitting and netting; for consumption by the pupils, knitted stockings, household linen, and body linen. The occupations of the males are making shoes, hampers, wicker-baskets, cradles, rope-mats, fine mats, and rugs for hearths and carriages. These articles are sold at the institution, and it is said that the window sash-line is highly approved of by builders of the first eminence. The sale of articles manufactured during the year 1857 produced 815*l.*

An extraordinary change has taken place in the educational aspect of this establishment in the lapse of the last twenty-five years; its chief object at that time was instruction in manual labour; a few of the pupils were taught music, but the attempt to teach reading and writing had been abandoned from the unwillingness of the inmates to receive instruction. The recent reports contrast most favourably with those of former years. Not only are the pupils carefully instructed in the principles of the Christian religion, including the Holy Scriptures, and in vocal and instrumental music, but the following secular subjects are also well taught: namely, reading, writing from dictation, history, and geography; the emulating test of half-yearly examinations is also applied to this part of their education, and their inspectors in successive years (the Rev. J. D. Glennie and the Rev. W. Taylor) reported most favourably of the results. The former of these examiners says: "Both boys and girls are carefully and thoroughly instructed in the Holy Scriptures, Church Catechism, and Liturgy of our Church, and they have done justice to the instruction so received." In the boys school, he was "much struck with the accuracy and rapidity with which the arithmetic, as far as Proportion and Practice, were performed." He congratulates the committee on the "efficient and satisfactory state of the school." The Rev. W. Taylor states that, "the first and second classes read steadily and carefully on Alston's system, showing that they did not read from memory, but made out the words as they occurred. The lesson on English history given by the school-mistress was very satisfactory." The examiner of the boys' school, at Christmas last, reported favourably as to their proficiency in reading, religious knowledge, ciphering, embossed writing, English history, and geography; a small class also worked some problems in Euclid for him in very good style. The chap-

lain's classes, held on four days in the week for special religious instruction, comprise some not in daily attendance at the school, and exclude those who have not yet learned the Catechism.

The report states that "few of those who study music attain proficiency as readers or workers, and that great difficulty exists in procuring situations for blind organists. It is therefore most important that before making application for a pupil to receive musical instruction, his friends should well consider whether they have a fair chance for securing for that pupil employment as an organist or teacher of music. If a pupil becomes a good musician and is able to command employment, he may do well, but if from lack of talent, or other causes, he is unable to find employment as a musician, or to gain a living at a trade, he will probably become a burden to his friends."

During the year 1857, a novel and most important feature was introduced into the school, by the formation of a band of about forty instrumental performers, who are instructed in secular as well as sacred music. The band contains about an equal number of wind and stringed instruments, and during last year they gave a concert at the Hanover Square Rooms, which cleared upwards of 120*l.* for the charity, after all the heavy expenses were paid. The report states, "that though an attractive feature of the school, it is difficult to assign the band a higher office than that of supplying to the pupils a most pleasant and welcome recreation in their leisure hours."

One other feature in the operation of this school, derived from the example of a contemporary institution, demands especial notice from the writer of this article, with whom the idea originated, and by whom it has been carried out for many years at the institution with which he is connected, namely, an inquiry at certain intervals as to the after-life of the pupils. Such an inquiry can alone truly show the results of education; it is applicable to all schools, but more especially to those where children are boarded and educated for a series of years, and in whose future welfare, those who have directed their education, known their failings, and their better qualities, cannot but be interested. To all schools of poor-law unions it ought at once to be applied. The managers of the London School for the Blind, have sent out since the year 1854, about 150 forms of inquiry respecting pupils who have left school, and are now at work in the country. The inquiries embrace the following points: their present mode of gaining a livelihood; their average weekly earnings; their power of reading; their knowledge of music, and the use they make of it; and their moral character. The result

of these inquiries is very satisfactory; about ten only have not been answered; the pupils, with rare exceptions, possess good moral characters for steadiness, diligence and Christian principle, for the most part these returns are attested by the minister of the parish. Most of them retain, to a greater or less degree, their power of reading, though many of them are greatly in want of books. Few are able, even with the utmost exertion, to maintain themselves fully; but most of them are doing what they can, and only twelve receive parochial relief. Those able to do most towards their support are workers at baskets and mats, but the greatest difficulty prevails in finding employment for the musical pupils, many of whom having been educated for musicians, are unfitted for work of any other kind, and spend most of their time in idleness. The importance of the industrial work taught in the school is thus clearly established.

The Hospital and School for the Indigent Blind of Norwich was originally established in 1805, first for that city, and subsequently (as the condition of receiving a donation) for the county of Norfolk also; but its doors have been opened to other parts of the kingdom since the year 1819. The blind in the more elevated sphere of society appear not unfrequently to have been the first benefactors of their more indigent brethren. Mr. Tawell, a blind gentleman residing in Norwich, first called the attention of that city and its neighbourhood to the wants of the blind, and with a munificence commensurate with his zeal, he purchased "a large and commodious house, with an adjoining garden of three acres in extent," which he offered as the basis of the institution. The plan of the Norwich Asylum was to unite a school for the young with an hospital for the aged. It designed to admit the young pupils at the age of twelve years, and to keep them in the school till they should have attained a sufficient knowledge of some trade, as far as this could be accomplished within three years, but under no consideration to keep them longer than that time; some however have been kept longer. With respect to the aged, the rules express that none shall be admitted who have not attained the age of sixty-five years. It appears from the account of the institution published up to the end of 1833, that from the establishment of the institution to that date, 153 pupils have been admitted and 48 aged persons: 77 had been discharged qualified to work for themselves; 12 had proved incapable of instruction; 4 had left the asylum without leave, 13 had been discharged for irregularity, and 16 at their own request; 43 had died, and 36 remained on the books. The expenses seem to have averaged about 1100*l.* per annum, and the income about equalled the expenditure. (We can give no more recent account of the Norwich school, as no answer has been received to our inquiries.)

The Asylum for the Blind at Glasgow is pre-eminently a manufacturing establishment, although much attention is also given to the religious and secular education of its inmates. It was founded by John Leitch, Esq., of Glasgow, who was himself partially blind; he bequeathed 5000*l.* towards opening and maintaining the institution. Since the opening of the asylum in 1828 to the commencement of the present year (1859) 334 blind persons have been admitted; of this number 103 are now in the establishment. The manufactures carried on are of sacks and sacking, twine, baskets, mats, mattresses, and knitting. The sales in 1858 produced 5960*l.*, which was about 870*l.* less than the previous year, and the value of the manufactured materials on hand was 2024*l.* The revenue is chiefly derived from the sales, and in this respect the Glasgow asylum differs from every other in the kingdom. It solicits no annual subscriptions, but depends entirely for its support upon donations and legacies; this source is precarious, and sometimes, as during the past year, a deficit occurs. By the system pursued in this asylum the blind are placed, as nearly as circumstances allow, on a level with other workmen. Many of the adults reside with their families in the city, and go to their labour at the asylum like other artisans. The superintendent purchases the raw materials for the manufactures, and keeps an account of the work each person performs, from which a statement of their earnings is made, and they are paid every Saturday. The male adults are allowed the same rate that other workmen have for the same kinds of work; if a man can make five or six shillings a week, he receives that sum for his weekly wages. At the end of every four weeks a statement of his earnings is made up from the work-book, and whatever he has earned over that sum is paid to him, and also an additional shilling a week as a premium upon his industry. If the amount which he ought to earn be not earned, or the work be bad, no premium is allowed. At the monthly settlement some of them will have several shillings to receive in addition to their regular wages and premiums. Ever since the regulations regarding wages have been adopted, a marked improvement has taken place both in the quantity and quality of the work produced. The blind workmen and their families receive the fruits of their labour with much pleasure. A spirit of industry is excited and kept up very different to their former habits, and an opportunity is thus afforded them of enjoying the blessings of home, which could not be cultivated when they were maintained within the establishment. A few elderly females are placed upon the same system; they work in the institution, but reside at their own homes. Females generally, above the age of eighteen years, are admitted as day-workers; they dine at

the asylum and receive regular weekly wages; their apartments are separated from those of the males, and no intercourse is permitted. Boys and girls from ten to sixteen years of age reside in the house, and in addition to attendance on the classes, they are taught to perform light works suitable to their age, till old enough to be removed into the regular workshops. The girls and female adults are under the superintendence of a matron, who also has the management of the sales. Several of the blind men are employed in calling on the customers of the asylum to deliver goods and to solicit orders. It is common for adults who reside in distant parts in the city to go to and from their employment without a guide, and no accident has ever happened to any of them. The usual branches of learning are taught to the young blind of the Glasgow asylum; the time devoted to school by both boys and girls is five hours a day on five days of the week, the chaplain being their teacher. The books used are printed in the Roman alphabet, which was arranged under the superintendence of John Alston, Esq., the former treasurer of the asylum, these books are printed on the premises, and are so numerous as to form a library in raised type. [ALPHABETS FOR THE BLIND.]

There are three Asylums for the Blind in Dublin. The oldest of them, Simpson's Hospital, was opened in 1781; it was founded and endowed by a merchant whose name it bears, who was himself subject to a disorder of the eyes, and was also a martyr to the gout. The design of the hospital is to provide an asylum for blind and gouty men, preference being given to those of good moral character, who have formerly been in affluent circumstances. About fifty persons partake of the benefits of this charity. It was incorporated in 1799, and its income is about 3,000*l.* per annum.

The Richmond National Institution for the Indigent Industrious Blind is supported by subscriptions and donations; it was opened in 1809; the inmates, who are all indigent, are instructed in the trades ordinarily taught to the blind. At present the institution contains forty men and youths, who are lodged, maintained, and clothed there.

The Molineux Asylum is supported by subscriptions, by the profits of a chapel, and by charity sermons; it is solely for the reception of females, who are admitted at all ages. Those above fifty have here a permanent abode. The younger section of the establishment are lodged, clothed, and fed; and for a certain number of years receive instruction in those employments by which it is intended they shall earn their living. This asylum was opened in 1815, in the mansion of Sir Charles Molineux, Bart. This family has been among its most liberal benefactors.

In 1835, the Ulster Institution for the Deaf and Dumb, established at Belfast in 1831, admitted blind pupils also. The union of the two classes is a specialty in which this establishment does not stand quite alone. Between the two classes of inmates there is nothing in common, so far as their education is concerned; different senses being addressed, the process of instruction is essentially different, but when a medium of intercourse has been established between them by means of the manual alphabet, their being associated together is not without some points of interest.

On subjects of instruction the first place is given to religious training, and as a result of this, some of the blind pupils have become devoted and efficient city missionaries; one of them occupies an important position as one of the ministers at Brooklyn, New York. The other common branches of an English education also receive attention, and all who have voice and ear practise vocal music. About six hours daily are devoted to school, and two and a-half hours to manual labour. A large amount of the instruction conveyed is given orally, but the relief books printed at Glasgow, and those produced at Bristol also, are used by the pupils. Ninety-one deaf and dumb, and thirteen blind, are now in this institution.

The Limerick Asylum for Blind Females was established in 1835, chiefly through the instrumentality of the Dean of Waterford. It is capable of accommodating twenty inmates, but the funds of the institution do not afford support to this number.

The Yorkshire School for the Blind was instituted at York in memory of the late William Wilberforce. Its design is not so much to provide maintenance for the blind as to give them such instruction as may help them to gain a livelihood for themselves, attention being at the same time paid to their moral and religious instruction; their friends or parishes therefore contribute towards their support while they are in the institution. Those persons are only admissible who have lost their sight to such a degree as to be able at most only to distinguish light from darkness—those who have a capacity for instruction—those who are free from any dangerous or communicable disease—and those who have no vicious habits.

It is found from recent reports of the Yorkshire school that less time is devoted to manual labour than in these asylums generally; but it must be remembered that the inmates are young. Music is much cultivated, and affords satisfactory evidence of its utility. With the view of forming a correct opinion on this subject, inquiries were instituted in 1856, as to

the condition of the pupils who have left school. It was found that eleven had obtained situations as organists, and were enabled to maintain themselves fully; four others were engaged in teaching music and tuning instruments, and thus maintained themselves to a great extent. In addition to those who had left school, there were six male adults and one female resident in the school who were filling organists' situations. The result of these inquiries as to other industrial pursuits were less satisfactory, and the inference drawn was, that music was the only really remunerative pursuit for the blind, under the present arrangements of the Yorkshire School.

Another hint of considerable value may be drawn from the series of reports of the Yorkshire school. A year or two ago, a sergeant was engaged to drill the pupils, and it has been found of the most essential benefit to them. One of the pupils remarked that he walked with much greater confidence since these exercises had been practised, and this feeling will be one of general experience; it may therefore be commended to the attention of other establishments for the blind. The superintendent of the Yorkshire School is W. D. Littledale, Esq., who is himself blind, and whose whole heart seems to be given to the improvement of the school. The general branches of education are taught, and books in the Roman type are preferred. The Rev. W. Taylor, author of the 'Tangible Euclid,' formerly devoted to the interests of this school has left York; his attention, however, is still directed to the welfare of the blind. The number of pupils in the York school is sixty.

Henshaw's Blind Asylum, at Manchester, was opened for the admission of inmates in 1838. An endowment of 20,000*l.* was left in the year 1810 for the support of such an asylum, by the will of Thomas Henshaw, formerly of Oldham. Notwithstanding the large accumulations arising from this source, no part of Mr. Henshaw's bequest could be appropriated to the purchase of land for such asylum, nor for the erection of a suitable building; and the sum of 10,000*l.* was subscribed by the inhabitants of Manchester for these objects. The building, together with one in exact correspondence, for the education of the deaf and dumb, was erected at Old Trafford, and the approximation of the two charities was rendered closer by a subsequent agreement of the respective committees for the erection of a chapel in the space between the two buildings, thus connecting them as consistent parts of one uniform structure, in the English Academic style of architecture. The object of the asylum is not only to afford a home to the impotent and aged blind, but also "to maintain and afford such instruction to the indigent blind of both sexes

capable of employment, as will enable them to provide, either wholly or in part, for their own subsistence, and to promote the employment of, or to employ, blind persons." The training of the inmates is therefore both intellectual and industrial, but it is not stated in the last report how the school instruction is carried on. It may be inferred that the books in Roman type are used; the late governor, Mr. Hughes, emphatically says, "I would discourage all systems of embossing which could not be read and taught by seeing persons." The articles manufactured are more various than in the generality of these asylums. The number of inmates in 1858 was seventy-five.

The Royal Victoria Asylum for the Blind, at Newcastle-upon-Tyne, was founded in the year 1838, to commemorate the coronation of Her Most Gracious Majesty the Queen; its object as expressed in its first regulation, "being, to afford to the blind an elementary education, and instruction in those branches of trade and manufacture which shall be found suited to their capacity," as well as to afford them spiritual instruction. During the existence of the asylum, 115 pupils have been received into it, of whom 37 are now under its care, 22 of whom are males, and 15 females. Pupils are received into it from the four northern counties of England. The works of the inmates are of the usual kinds; the forenoon of each day is given to manual labour, the afternoon to music and general education. The relief books in Roman capitals are preferred.

The West of England Institution for the Blind was established at Exeter in 1839. It contains twenty-five inmates of the two sexes, all of whom are taught the usual branches of education, including music, and some to make baskets, mats, rugs, sash-line, &c. Sixty-two of its boarders and forty-one day pupils have quitted since its commencement. Its income is derived from the usual sources, namely, subscriptions, donations, board of pupils, and sale of work. Lucas's raised alphabet is used, and it is one of the regulations of the committee that "the system of teaching to read shall be that by means of the raised stenographic character."

An Institution for the Blind and Deaf and Dumb was formed at Bath about the year 1840. A considerable number of pupils of both these classes have been instructed under its care; and at the date of the last report (1858) it contained fifty-one boarders, of whom twenty-eight were deaf and dumb, twenty blind, and three partially blind and deaf and dumb; it also extends its benefits to day and sunday scholars, of whom it numbers twelve deaf and dumb, and four blind. Miss Elwin, of Bath, has

taken a benevolent oversight of this establishment, from its first commencement to its present mature condition. A "Home" for blind girls has also been formed, for those who, having passed the allotted period of five years' instruction, have no friends able to provide them with a suitable place of residence. The training which the blind children receive is both intellectual and industrial; the former comprehends reading, on Lucas's system, arithmetic, geography, music, and singing; the latter is confined to basket-making. The morning hours are devoted to labour; the afternoon to mental and religious instruction. In the "Home," the greater part of the day is spent in basket-making, which contributes in part to the support of the establishment, and the inmates are frequently read to while they are at work.

An asylum for the young blind was established in Brighton in 1841, the pupils not to be under six, nor exceeding twelve years of age. It is designed for the town of Brighton and the diocese of Chichester, with power to the committee to receive candidates from other localities. This school is under the management of Mr. Moon, one of the inventors of raised characters, to whose system attention is directed in the article, ALPHABETS FOR THE BLIND. The school contains twenty-one pupils.

The Midland Institution for the Blind is situated at Nottingham, and comprehends the counties of Nottingham, Derby, Leicester, Lincoln, and Rutland. Its chief object is the education and training of the younger part of the blind community. The age of the inmates varies from nine to twenty-four. The usual intellectual and religious instruction is imparted, and the trades are much the same as those followed in other establishments; it is thought some new trades might be profitably commenced, and, among others, brush-making. No male pupils are allowed to commence work till they can read; but the female pupils, from the day of their admission, spend half the day in their work-room, to be instructed by the governess in sewing and knitting, and the other half in school. The teachers, except the governess, are all blind. Lucas's system of raised type is generally adopted, but some of the pupils can read Moon's and the Roman books. The schoolmaster, who is blind, reads books on six different systems, but gives the preference to that of Lucas. In arithmetic the pupils are considerably advanced, and can work and comprehend fractions and decimals; the arithmetical board and pegs differs from that used in the institutions of Scotland. The admission of day-pupils *free* on the recommendation of a governor is a good feature in this establishment,

though it is not confined to it. Such pupils may remain as long as there is room for them; and when they have acquired a trade, so as to make articles sufficiently well for sale, they are employed and paid journeyman's wages.

The General Institution for the Blind, at Edgbaston, near Birmingham, was commenced in 1846 by private benevolence, and adopted by the public the following year. Its income is derived from the usual sources, namely, subscriptions, legacies, donations, payments on behalf of pupils, sale of work, &c. The present number of pupils is fifty-nine, and they are classified both for school and labour, so as to give all the advantages suitable for their age. The school teaching comprehends reading, spelling, arithmetic (peg and mental), geography with the aid of globes and maps, and object lessons. There are upwards of sixty maps, and one is used by every two pupils. These maps are made by friends of the superintendent, and have been much admired by the conductors of different institutions. In music the pupils practise from one to three hours a day, according to their progress and talent. Church music only is taught. Four of the pupils, from sixteen to eighteen years of age, have obtained situations as organists, at salaries varying from 20*l.* to 30*l.* a year. In reading by the touch, Moon's system is used. This institution has the advantage of an indefatigable treasurer, Thomas Goodman, Esq., whose exertions for this and other charities which have for their object the relief of human suffering, are beyond all praise.

The title of the next institution to be noticed would lead to the supposition that a new sphere of operations was to be brought under observation. It is called "The London Society for Teaching the Blind to Read." It is situated in Avenue Street, Regent's Park, and it has been in existence twenty years. The indications of its distinctiveness are few, and chiefly relate to its plan of admitting pupils, and its adhesion to Lucas's system of reading in which it has published the whole of the Scriptures and many other works. The usual kinds of school-instruction and of labour are taught to the pupils, of whom there were sixty in the institution in 1858. As an auxiliary in the cause of the blind, it must prove beneficial. According to its rules, it receives free boarders on the nomination of donors of 250*l.* in one sum, and by election of subscribers for three years; indigent boarders on payment of 15*l.* per annum; music being an extra charge of two guineas per annum. Male adults are not lodged in the house, and have to pay 2*s.* a week for lodgings in the neighbourhood. Day pupils are admitted free on the recommendation of a subscriber.

The establishments of which some account has been given are not the only means carried on in these days for alleviating the condition of the blind, and increasing their means of happiness. Other appliances are also in action. Although blindness cannot be considered as the heaviest of human calamities, it is one which claims the most immediate sympathy and prompts the universal desire for its relief. Societies have been established for teaching the adult blind to read; many of which are connected with Moon's system. Mr. Moon, himself blind, commenced his printing labours at Brighton more than ten years ago; his books are not only largely used in that place, but in many other provincial towns, which have been supplied with home teachers, and in which lending libraries have been established. One of these societies has been formed in London: from it have emanated two lending libraries of Moon's books; and its first report (1857) states that in eighteen months 236 blind pupils had, for longer or shorter periods, been under instruction; of these 117 had learned to read, of which number 53 were above 50 years of age, and 8 were from 70 to 75. It would be very ungracious to cast a shade of doubt on the statements put forth of the rapidity with which the art of reading was acquired by these aged persons through the medium of touch; yet there must be some fallacy, the facilities given by a previous knowledge of reading and spelling must have existed, for even aged persons with all their senses cannot learn to read *in three lessons!* if they could read and spell before they lost their sight, or if they had learned to read on some other system previously, the wonder ceases to some extent. The work is a good work, and requires nothing marvellous to sustain it. The London depository for the books on Moon's system is at 25, King William Street, Trafalgar Square.

In Euston Road, near St. Pancras Church, a thoroughly practical work is going forward for the amelioration of the condition of the industrious blind. It is known as "The Association for promoting the General Welfare" of this class of people. It has been in operation about five years; it provides means of industrial employment for those who have not been so fortunate as to obtain admission, and consequently instruction, in asylums; it supplements the education of those who have had this advantage; it teaches trades to those who have learned none, and finds a market for the work, thus enabling many of the adults so taught to support their families; it supplies regular work to many at their own homes; it finds workshops for others within the precincts of its own humble establishment. At present it affords employment to sixty-seven blind men and women.

some of whom have been withdrawn from begging and destitution, and it has a list of upwards of ninety candidates, who desire to be put into a similar mode of earning their bread, and who will be gratified in their desire when the public favour to the establishment demands more articles than the present workers can supply. The town traveller and the porter of the establishment are both blind, yet they traverse crowded thoroughfares, and walk long distances, self-dependent, or trusting on the good-will of strangers for information and direction. Blind agents are also employed in selling the goods manufactured in several towns in different parts of the kingdom. This society is assisted by subscriptions and donations, for from the waste of materials and the slowness of the learners it cannot be self-supporting. The foundress of this truly beneficent association is Miss Gilbert, a daughter of the bishop of Chichester, herself blind and a contributor of 2000*l.* to its endowment fund; for more than a year she worked the plan alone. Its control is now made over to a committee of influential men, and it may be hoped that the practical wisdom which devised its plans will be carried out with that ability which will ensure success commensurate with its object. The above account of this excellent charity is abridged from an article in 'Household Words.'

Charities for the blind also exist which grant annuities under certain conditions. The oldest of these is Hetherington's, it was established in 1774; the other is the Blind Man's Friend, established by Mr. Day; in October 1858 there were 2500 applicants waiting for this charity.

It appears that voluntary benevolence, together with the provision made under the Poor Law Act, by which the blind may be maintained during education in the asylums established, will in the course of time provide for the training in industrial pursuits of all the blind who require such aid. Great has been the progress towards this end during the last twenty-five years. The intellectual training will doubtless keep pace with the industrial, now that the public are aware how much can be done. The increase of books is also certain, with so many competitors for public favour in the field. It has been already stated that the Scriptures are published in four distinct systems. Attention should now be directed to the publication of a good reading-book on secular knowledge, the subjects of which should be consecutive, progressive, and systematic. The republication of some existing schoolbook is more desirable than the preparation of an original work for many reasons; but it should not be a miscellaneous collection of lessons without plan or arrangement

on every variety of topic in succession, tending to bewilder and excite rather than to satisfy the mind. The moral tone of the inmates of the various schools is a subject of special mention in many of the accounts we have received, yet it is thought some advantages would arise from a stricter classification, so as to prevent the young blind from mingling with the adults and the aged. In the workshop the restraint necessary for the young is irksome to the older inmates, and the exercise of all their good principles is requisite to prevent the rising of a rebellious spirit. Separate establishments for children and adults, or an entire separation in the same building seems desirable. At Norwich there is such a provision. The inmates of Henshaw's asylum, at Manchester, are not restricted as to age, and are in for life, but the old are not separated from the young, consequently they cannot have that quietude which age and infirmity require. In one or two of the establishments drill and gymnastics receive attention. These physical exercises are highly commended by Dr. Blacklock, as giving confidence, and they should be universally cultivated among the young blind. It is a question worthy of some consideration by the managers of our asylums, as to what extent blind teachers can be eligibly employed in the various departments. As far as the communication and transmission of ideas are concerned, the blind teacher may possess some advantages over the seeing one, yet circumstances arise in which the evils attendant on the want of sight counterbalance these advantages. In the *school-room* we find bad habits and positions of the body; in the *workshop*, badly shaped articles and waste of materials; in the *musical department* wrong positions of the hands, and a bad system of fingering, with an awkward attitude and distortion of the countenance in singing. It cannot be expected that blind teachers should be aware of these things. An exact record of the after-life of all the pupils should be kept in every asylum for the blind. Such records show the result of the care and attention of teachers, and of the application and attainments of pupils, and the blind themselves should know that such an account of their future course will be recorded, and published for the satisfaction of those who generously support these establishments for their benefit.

The number of blind men who have become eminent is large; for some account of them we must refer to the work of Dr. Guillié on the 'Instruction of the Blind,' to blind James Wilson's 'Biography of the Blind,' to the first volume of the 'Pursuit of Knowledge under Difficulties;' and to Dr. Kitto's 'Lost Senses—Blindness;' in these works we read of philosophers, mathematicians, divines, musicians, rhetoricians, lawyers,

historians, poets, naturalists, road surveyors, mechanics, travellers, and even sculptors, who laboured under the infirmity of blindness.

The addition of deafness to blindness seems almost to shut out a human being from the external world. It is difficult to conceive how the mind of a deaf, dumb, and blind person can be occupied—much more difficult to say how it can be improved and educated. Yet there are many cases of this three-fold deprivation known, and there are always one or more such instances undergoing instruction in our blind or deaf and dumb institutions. The case of *James Mitchell*, the son of a Scotch clergyman, which was investigated by Dugald Stewart, Mr. Wardrop, and Dr. Spurzheim, is the best known; *Julia Bruce*, a pupil in the asylum for the deaf and dumb at Hartford, Connecticut, is another instance of the same kind; *Victorine Morisseau*, a pupil in the Imperial Institution for the deaf and dumb of Paris, was another sufferer under this accumulated calamity; *Laura Bridgeman*, a pupil of Dr. Howe, in the Boston asylum for the blind, is not only defective in these senses, but also in that of smell. She has had companions in the same affliction in *Oliver Cuswell* and *Lucy Reed*. *Edward Meystre*, of Lausanne, is another case of the kind. He too has met with an instructor. Each of these instances is a history in itself of a mind sealed up, but unsealed by the indefatigable zeal and skill of their respective teachers. Space is not allowed us to go into the manifold processes which patience and enterprise invented for conquering the difficulties which interposed between these minds and the world without. The results are not merely satisfactory, they are marvellous.

The blind are not a moody or a discontented class—fun, frolic and mischief are as inherent in them as in others. We extract a few anecdotes from an interesting pamphlet published some years back by Mr. Anderson, who passed many years of his life as teacher and superintendent in the several asylums of Edinburgh, York and Manchester, which show their vivacious habits.

“Romping, jumping, laughing, and screaming, are as delightful to them as with boys and girls who see. The cross-bow, bow and arrow, trundling each other in a wheelbarrow, spinning tops, and to those who have a glimmer of light, called ‘blinkers,’ marbles, and a kind of cricket, all afford ample amusement, while there is no want of the usual boyish plotting and mischief. The girls also enjoy their play-hours very much, and contrive to stand in as much need of the needle as their more favoured sisters of sight.

"A girl at York took up a book lying beside me, turned up her face toward the gaslight above my head, and playfully observed, as she whirled over the leaves, 'Dear me, sir, what bad gas this is, I can't see to read a word by it!' The same girl standing near the fire, heard a companion trying to decipher some of the letters of the book in relief, 'Let me see,' said the latter, 'what's this—bit, ter; bit—what does that mean?' 'Sit a little nearer the light, my dear,' said her fireside companion, 'I know you don't see very well, Jane.' The tone of this indicated genuine playful mischief.

A young man at the Edinburgh asylum, born blind, was at all times the essence of cheerfulness. He was one of our most correct 'messengers,' and a good collector of accounts, of which from the amount of our annual sales, we had many. He as well as several others, could easily take from four to eight of these at a time. Coming along the passage whistling—he was always whistling—he began to grope about for his hat, which, not finding on its usual peg, he cried to a companion, whose foot he heard not far off, 'Willie, come here, man, and look for my hat, ye see better than me.' The one was as blind as the other.

"It is a remarkable fact that the blind scarcely ever hurt themselves, either against furniture, or in play. At Edinburgh they were constantly walking about the crowded streets. There were four or five 'messengers,' whose business it was to carry home all the goods sold—baskets, mattresses, rope-mats; and not only did they do this with the greatest exactness, but they were daily in the habit of going to all parts of the city, Leith, Portobello, and environs, to take measurements for bedding. I have many times had the dimensions of two, and even three beds brought to me—all on memory—with a precision not exceeded by the most expert workman, including the exact allowance of so many inches to be cut out for the bed-posts.

"I had occasion one evening, at Edinburgh, to send out one of these blind men with a mattress. I gave him the bill with it, that he might receive payment. He returned with the account and the mattress too. 'I've brought baith back, ye see, sir,' said he. 'How so?' 'Indeed, sir, I didna like t'leave't yonder, else I'm sure we wad ne'er see the siller—there's no a stick of furnitur' within the door!' 'How do you come to know that?' 'Oh, sir, twa taps on the floor wi' my stick soon tell't me that!' Having to send the same man to Portobello, toward evening, I warned him, (rather inadvertently!) that if he

did not make haste it would get dark. 'My word sir,' said he laughing, 'I wish I had a shillin' for ilka time I've been in Portobello 'i the dark.'

"As a body, the blind are the most habitually cheerful of mankind. How it comes to be so I cannot tell, and I have no wish to theorise. I cannot designate the blind, as is almost universally done, 'the unhappy,' 'melancholy,' 'pitiable,' and so on. I know nothing more erroneous, or more opposed to the feelings of by far the greater majority." So says Mr. Anderson in his 'Observations on the Employment, Education, and Habits of the Blind,' and he was a man of large experience among them.

ALPHABETS FOR THE BLIND.

The early instructors of the blind felt the irksomeness of oral instruction, and the dependent condition of their pupils. Without being aware what results might follow they early made the first step towards tangible printing, by the invention of letters in relief, from which the alphabet might be taught—letters put together to form words, and these arranged in sentences. In the first attempt thus made, the letters chosen were those of the Illyrian or Sclavonian alphabet modified. This alphabet was doubtless preferred on account of the square form of the letters, which it was thought would make them more obvious to the touch than ours. (*‘Essai sur l’Instruction des Aveugles,’* &c., par le Docteur Guillié, p. 134, 2nd edition.) The principle of square or angular letters was afterwards abandoned, as “not offering greater advantages than common characters.”

Moveable letters were next invented, which were placed on small tablets of wood, and were made to slide in grooves, on a similar plan to some of the toys which are used for the purpose of inducing children to learn their letters, spelling, &c. It was with similar letters that Usher, archbishop of Armagh, was taught by his two aunts who were both blind; but this process was found defective for teaching blind persons. Moveable leaden characters were afterwards cast for the use of the blind, by Pierre Moreau, a notary of Paris; but the work was attended with difficulties and expense which he was not prepared to encounter. Large pin-cushions were also brought into use for the blind, on which the characters were figured with ‘inverted needles.’ The relief caused by the heads of pins would have been more eligible. Various other attempts were made in wood and metal till the time of Haiiy, who invented the art of printing in relief for the blind, and thus devised a plan by which the blind man might acquire knowledge, and derive amusement during his solitary hours independent of a teacher or an attendant. The invention of printing in relief is said to have arisen from the sight and feeling of a proof of common printing fresh from the press.

Previous to the time of M. Haiiy no success had been obtained in the art of printing for the blind, though it had been attempted in a variety of ways, and by different persons. Letters were engraved in wood, not cut in relief, but in the ordinary manner of wood-cutting. The configurations of the letters were found to

be difficult to trace, possessing none of the advantages which letters in relief afford. Haiiy's was a bolder invention than any other offered to the public. Not only has it never been superseded, but from it have arisen all the modern efforts to teach the blind reading by means of relief characters.

Various attempts were made in our own country to produce tangible alphabets, and embossed books for the blind. An impetus was given to them in 1832, in consequence of the Society of Arts in Scotland offering their gold medal, value twenty sovereigns, for the best alphabet and method of printing for the use of the blind. Twenty-one alphabets were submitted to the committee appointed on this occasion, fourteen for competition and seven for non-competition. Of all these, *four* only, with or without modifications, have survived while two additional systems have come into use. All these will be presently examined. The character which the French schools had adopted was an upright script, widened, as was falsely thought, to render it more obvious to the touch. Two alphabets were also employed, one of capitals and another of small letters. To these two errors in the outset may be attributed the failure of the attempts in France to make the blind readers, and to furnish them with books. The wide and complicated forms of script letters detained the finger in tracing their shape. The acquisition of fifty-two letters instead of a single alphabet doubled the amount of time required to become familiar with them, to say nothing of the complicated mental operations to be at the same time carried on by the readers. For two or three years previous to the wise and liberal offer of the Edinburgh Society of Arts, James Gall of Edinburgh was the sole labourer in the cause of printing for the blind. He adopted a modification of the Roman alphabet, in which he

GALL'S ALPHABET.

◊ ◊ ◊ ◊ ◊ ◊ ◊ ◊ ◊
 j k l m n o p q r
 s t v v w x y z .

excluded curves and circles, and substituted straight lines and angles. He also abolished the capital letters, and thus reduced the number of characters to be acquired to twenty-six. He

succeeded in producing beautiful and enduring workmanship on good paper. He printed several preparatory books which the blind read with ease; and he offered to print the whole of the Gospel of St. John as soon as a sufficient number of subscribers should be obtained, at a guinea a copy. The immense cost of a single gospel acted as a great discouragement to his plans, and before he could remedy it other labourers were in the field and his market was in the possession of other producers. Great merit is however due to Gall, and he must be looked upon as the forerunner of that success which has followed the labours of others. He had removed some difficulties. The works of the French were bulky and expensive; by Gall's angular alphabet much economy in space was gained, and experience proved that it possessed merits of tangibility not to be found in the French alphabets.

The character which found the greatest favour with the committee appointed to award the gold medal of the society, was the Roman letter of Dr. Fry, to which the prize was finally awarded. But the committee, before deciding, called in the aid of several experienced men to assist them in coming to a right judgment; among others, the Rev. W. Taylor, a gentleman who had been practically engaged in inventions for, and in the instruction of the blind for many years. He was an honorary member of their society, and at the time when his opinion was sought, he was at the head of the recently established School for the Blind at York. Better aid the society could not have procured. To him all the alphabets and communications were submitted, and upon them he made a very copious and able report. Mr. Taylor sets out with saying there does not appear to him "*sufficient* reason for departing from the *common Roman letter*." He then mentions a few modifications which he would introduce in Dr. Fry's san-serif Roman capital, and speaks decidedly against any merely arbitrary character. It is unnecessary to go into Mr. Taylor's report in all its details. The practical part of the subject was taken up by the late Mr. Alston, then the Treasurer of the Asylum for the Blind in Glasgow; he found the letters of Dr. Fry too broad in the relief, and increased their tangibility by having them made sharper; some other slight alterations were also introduced by his skill and experience. The encouraging approval of his efforts by many of the schools for the blind, together with the pecuniary aid they and the various Bible Societies afforded by the purchase of his books, enabled him to print the entire Scriptures in the course of a few years, as well as some elementary books, and others of more general interest. The Society of Arts for Scotland did not leave

his efforts unrewarded, but gratified him and encouraged him to persevere by presenting him with the silver medal of the society in 1838, for his Fables with wood-cut illustrations, printed in relief, and subsequently with three honorary medals for his continued exertions on behalf of the blind.

The decision of the committee of the Society of Arts in 1837, is worthy of being recorded. For five years the subject had been under consideration, and the aid of the most intelligent and practical teachers in the kingdom had been obtained. It appeared to that committee: "1. That although an arbitrary character might possess in itself superior advantages in simplicity and tangibility, yet there would be great, and in many cases insuperable obstacles to the blind generally acquiring a knowledge of any character not familiar to those possessed of sight, and consequently, such an alphabet would not be generally adopted throughout Europe and America. 2. That the same objection applies, although perhaps in a less degree, to Mr. Gall's angular modification of the Roman alphabet; and while the want of capitals and the difficulty of tracing the lines are said to be also serious objections to the use of his character, it does not in other respects seem to offer sufficient reasons for its adoption in preference to the Roman alphabet slightly modified. 3. That from being almost universally known both in Europe and America, and taking all other circumstances into consideration, the common Roman capital alphabet, as represented by the late

ALSTON'S ALPHABET.

A B C D E F G H I J K L M N O

P Q R S T U V W X Y Z &.

1 2 3 4 5 6 7 8 9 0 , ; : . - ! ? ()

Dr. Fry * * * seems not only the best adapted for teaching the blind to read, but also as a medium of written correspondence. Hence, there is every reason to believe, that it would be sooner brought into general use than any of the other characters in competition—that books printed with it would be more in demand—and, consequently, that their expense would be greatly diminished." The committee guard themselves against the one or two inherent defects in Dr. Fry's alphabet by further stating, that in proposing his communication as best entitled to the society's premium, they "do not wish it to be understood that

they consider his modification of the Roman alphabet as *now* in every respect the best adapted for teaching the blind, but only that it was superior to any of the others given in to the society for competition, and remitted to the committee for consideration,' and they then allude to the improvements on it since proposed and partly carried into effect by the Rev. Mr. Taylor, Mr. Anderson, of York, and Mr. Alston, of Glasgow.

One of the alphabets submitted for competition, was of stenographic characters, the invention of Mr. T. M. Lucas, of Bristol. As this alphabet has many adherents it claims respectful notice, premising that it was in use some years before the Society of Arts arrived at its decision, and that its claims were very ably advocated by the late Rev. Dr. Carpenter, LL.D., of Bristol, whose letter addressed to the society, contains many valuable suggestions on printing for the blind. Mr. Lucas has himself stated that the 'Penny Cyclopædia' contained a fair exposition of his principles, which we are glad to reproduce:—"The characters are employed for reading, writing, arithmetic, and music; and they are so simple, that to any book for the blind, not more than half the number of types are required that are necessary to print the same for those who are blessed with sight. Should the event prove as successful as is intimated in the above announcement, and so great a barrier to the improvement of the blind be removed, it will be desirable that the different

LUCAS'S ALPHABET.

•	∪	∪	∪	∪	∪	∪	∪	∪	∪
A	B	C	D	E	F	G	H	I	
∪	∪	∪	∪	∪	∪	∪	∪	∪	∪
J	K	L	M	N	O	P	Q	R	
∪	∪	∪	∪	∪	∪	∪	∪	∪	∪
S	T	U	V	W	X	Y	Z		
LL	SS	FF	TH	SH	PH	CH	NG	WH	GH &c.
∪	∪	∪	∪	∪	∪	∪	∪	∪	∪
1	2	3	4	5	6	7	8	9	0

institutions should unite their exertions, and set apart a common fund to supply their pupils, as well as other blind persons, with so powerful an auxiliary to their progress in knowledge. The

alphabet is composed of thirteen simple characters, and thirteen formed from the roots of these with a crotchet-head to each. There are ten double letters from the same roots, distinguished also by the crotchet-head: these also represent the nine figures and the cypher, whether used as numerals or ordinals. In all thirty-six characters are employed. The advantages attending the use of stenographic characters seem to be in the saving of types, paper, and labour, thus materially diminishing the cost of books for the blind. The disadvantages attending the system we are speaking of appear to consist chiefly in the confusion which the learner must feel in having but one character employed in several offices, as in the double letters, numerals, and ordinals, and in the necessity that every person should be a stenographer who communicates with the blind by writing. These difficulties are not very great for persons to overcome who have never been accustomed to a written language.

The manner in which the characters of Mr. Lucas are employed may be seen in the following commencement of St. John's Gospel, only that we give the extract in Roman letters instead of using the stenographic character.

t gosp l b st jon, chap: 1.

in t bgini ws t wrd a t w ws w g, a t w ws g. t sam ws n t bgini
w g. l thins wr mad b hm, a wo hm ws nt athin mad tht ws
mad. in hm ws lif a t l ws t lit f mn.

“It will be observed that the repetition of numerous letters is avoided; particles are represented in most instances by their initial letter, and when a word, having been once mentioned, recurs immediately, or frequently, it is represented by its initial letter also.”

An undoubted defect in Lucas's system is the confusion which must arise from having double letters and figures, whether cardinal or ordinal represented by the same stenographic signs; thus the signs for th, ch, and ll also represent 471. The contractions are very numerous, many words are expressed by a single character, and other words are contracted by the omission both of vowels and consonants. The value of full spelling is great, especially to the young blind; those who have already learned to read while possessing sight, would, in time, get over the difficulties the system presents.

The next system which came into use in point of time was Frere's, also stenographic, founded on Gurney's shorthand, as Lucas's was on Byrom's. This system is phonetic, and is formed on the “combination of elementary sounds.” It professes to be

composed of twenty-nine signs, to be extremely simple, and to have only four descriptions of signs which represent thirty-two different sounds. Its distinctive principle, compared with Lucas's, is the phonetic one, the powers or vocal sounds of the letters rather than their name-sounds being taught, "each word being embossed according to its actual pronunciation, the names of the characters combined, or sounded together, give the word." The 'Memoria Technica' which accompanies the lessons is most burdensome, and the twelve rules in verse for supplying the omitted vowels could never be regarded by blind or other readers who had to commit them to memory, in any light but as a distasteful task. We learn, however, that their employment is *optional*, though the system would be incomplete without them! The twelfth of these rules is:—

"Whene'er the proper rule don't yield you satisfaction,
On trial you will find the word is a contraction."

"A fair knowledge of the system may be acquired *by those who have sight* in three or four hours." Two things are noteworthy in this agreeable announcement. 1. That a system of stenographic reading can be acquired in three or four hours. 2. That stenographic systems require ordinary readers to learn them before they can assist their blind brethren in the acquisition of the art of reading.

The last system to be described is Moon's; although it is not stenographic in one sense, its characters have sufficiently the appearance of stenography to be taken as such; and again, although it claims to be the common alphabet simplified, it is certainly arbitrary enough for a first observer to recognise no similarity between it and the forms to which he has been accustomed. Mr. Moon, like Mr. Frere, is himself a blind man, and he has laboured hard to establish a system which he believes is destined to supersede all others. If all that he says in its favour could be taken for granted, no further question could arise as to the best alphabet for the blind. The judgment and experience of those who have means and opportunities for deciding, at least equal to Mr. Moon's, but whose zeal, enthusiasm, and interest are not fettered by partial views, do not bear out his statements.

"Moon's system is adapted to the cottage, *because anybody can teach it.*" This statement is more than questionable. Anybody of moderate intelligence can doubtless acquire it if they can already read. The same may be said of Alston's books and herein consists their superiority—anyone who can read may at once be a teacher of reading to the blind. "It is adapted to

the dull finger of the labourer, because it is *very plain to the touch.*" This is no exclusive advantage in Moon's letters. "It is suited to the aged, the sick, and the ignorant, because it is so *easy to be understood.*" This is a benefit compared with Lucas's and Frere's, but in this respect Alston's is certainly more deserving of praise. "The words are spelt at full length," and "full spelling is essential to accuracy." Granted, so are Alston's, which system does not employ even the few contractions Moon introduces; in this respect Moon's books are superior to Frere's or Lucas's, but inferior to Alston's. Moon's alphabet consists of "the *common letters simplified,* and therefore is easily learnt and taught by all who know their a b c." But, Alston's consists of the common letters themselves. We have doubts about the easy recognition of the transformed letters, though none as to the increased tactile power of the new forms in comparison with the certainly more intricate forms of the ordinary alphabet. "Six of the Roman letters are retained *unaltered;* twelve others have parts left out so as to be left open to the touch, and yet be easily remembered as half of a well-known letter." Of these twelve, none would be recognised from any similarity they bear to the letter they represent; they must therefore be regarded as arbitrary characters. "Five or six new and very simple forms complete the alphabet." These are arbitrary; so that this system of the "common letters simplified" is in fact composed of six of the Roman letters unaltered and eighteen arbitrary characters. Most certainly Moon's alphabet does not possess the superiorities over others to which it lays claim. That it is a *good* arbitrary character for the blind no one who has paid the least attention to the subject can deny. The question, however, has yet to be settled whether an arbitrary or an alphabetical character is the best for the blind. And on this point evidence must be adduced.

MOON'S ALPHABET.

Λ	∩	C	∪	Γ	∩	∩	○	
A	B	C	D	E	F	G	H	I
J	<	L	∩	N	○	∩	∩	\
J	K	L	M	N	O	P	Q	R
/	—	∪	V	∩	>	∩	Z	Σ
S	T	U	V	W	X	Y	Z	&

We find the schools for the blind in London, Glasgow, Newcastle, Manchester, and York, use the books in Alston's Roman characters; those of Bristol and Belfast also use these books, and in addition some printed at Bristol with lower-case letters as well as capitals. (Several of the parties competent to form a judgment on the matter, advocate the use of capitals.) We find Lucas's stenographic system in use at Bath, where the defective orthography is considered objectionable for young readers; the Roman alphabet has also been used in some cases; while for adults generally Moon's system is considered the best. At the Nottingham school, Lucas's system is generally adopted, some of the pupils read Moon's books, and also those in the Roman characters. The schoolmaster, who is blind, reads on six systems but gives a decided preference to Lucas's. The pupils read quite as rapidly as is necessary, and as correctly as others of the same age with sight. The superintendent of this school says "Lucas's books are less bulky than those in the Roman type and consequently cheaper." The statement received from Birmingham is similar to the above, "All the pupils read on Lucas's system, it is much liked by them, and preferred to any other; the value of a full orthography is understood, but the bulk and expense are considered objectionable. The Roman type is not generally considered readable." (Whether Alston's or the American Roman type is here referred to is not stated.) The Exeter school furnishes the following information. "Lucas's books are used here, and with but one or two exceptions, all have been able to read the scriptures. Our pupils have tried several systems; all of which they could learn, but they find Lucas's the easier to read." "The London Society for teaching the blind to read," situated in Avenue Road, Regent's Park, has become the head-quarters of Lucas's system. This society has published the whole of the Bible, which is sold in separate books or portions, the Liturgy, and several elementary works. This system has been revised and improved under the superintendence of the Rev. J. W. Gowring, Mr. Moon's printing establishment is at Brighton, but it has agencies at work in London, Birmingham, Edinburgh, and many other places for the introduction of the books. Moon's system has been well received by the blind and extensively adopted; it is used in the schools of Brighton and Edinburgh. The testimony of Thomas Campbell in the name of the inmates of the asylum in the latter-mentioned city, speaks of Moon's books as superior to all others; his letter traces the efforts made in that asylum with respect to Gall's, Alston's, the American, and Lucas's systems, and his conclusions are entitled to consideration, for they are the results of experience strongly supported by facts which are adduced. He emphatically states

“that, Mr. Moon’s system is not only the best ever devised, but that it is the only one capable of imparting lasting benefits to the working blind.” In the various publications advocating the use of this system great stress is laid on its adaptability for the aged, the nervous, and the working blind—those generally in whom the sense of feeling is less than ordinarily acute. It is clear that as a system it can afford to stand on its own merits, and that its adherents need not depreciate other plans while they support its peculiar claims to public favour. This observation is made with reference to the disparaging remarks on other systems in Moon’s ‘Blind Readers and their Books.’ Frere’s publications are used in the Liverpool asylum; a society was also established at Blackheath some years ago for teaching the blind to read on Frere’s system.

The price of these comparatively expensive books is a consideration which must not be lost sight of in any estimate of their respective claims on public notice. In another part of this article it is stated that a guinea was the sum proposed by Gall for a copy of the gospel of St. John; this, however, was the fancy price of an article new in itself, and for which there was no known market. All this is changed, as will be seen by a comparison of the prices annexed. The Gospel of St. John is now charged 4s. in Lucas’s stenographic character; 4s. 6d. in Alston’s Roman capitals: 8s. in Moon’s arbitrary character. The book of Genesis is 8s. in Lucas’s; 10s. in Alston’s; 21s. in Moon’s. The New Testament is charged 1l. 16s. in Lucas’s; 2l. in Alston’s; 4l. 17s. in Moon’s. The Old Testament, 8l. 1s. 4d. in Lucas’s; 7l. 15s. in Alston’s; and 11l. 11s. in Moon’s, without the books of Leviticus, Numbers, and 2 Chronicles; the addition of these will make the cost not less than 13l. 10s. This discrepancy in price is very great, and it is clear that Mr. Moon must reduce his prices to obtain that favour which he doubtless desires. How strange it is, however, that Alston’s Old Testament in Roman capitals, without signs or contractions, can be had for less money than Lucas’s with the aid of stenography and its very numerous contractions! Does stenography actually increase the bulk and expense of the books for the blind? The American books are much lower in price than any of the above; the letters are capitals and lower case, but so small that, in this country, they are considered unreadable by the blind. We have four systems in England, the Scriptures in each, besides many other books. And another character is projected. Mr. Littledale, himself blind, and the present superintendent of the school at York, proposes to bring out a “selected alphabet,” made up of capitals and lower case letters, readable by any seeing instructor of a blind

child; his strong impression being that the Roman character ought not to be set aside for one less universally known, and that no stenographic, or otherwise arbitrary alphabet, will meet the requirements of both children and adults for reading, writing, and accounts.

The writer of this article is not connected with any school for the blind; he does not wish to appear as a partisan of any system of typography for them, he has endeavoured to set forth the excellences and the defects of existing systems of printing, and to show the results as given by their respective advocates, while his wish is to see the superiority of a single system established, in order that the united efforts of all who are now engaged on methods so diverse may be combined for the production of good and cheap books for the blind. Enormous expenses have been incurred, chiefly by the benevolent public in the purchase of the numerous founts of type, and in the establishment of several printing offices, where one would have sufficed if unanimity had prevailed. Each system has its adherents, but little good has been accomplished compared with such results as would have arisen from unity of purpose and willing co-operation. There cannot be a remunerating sale for the books produced on all the different systems. Zeal and benevolence may commence a good work of this nature, but it can only become an enduring benefit on the commercial principle. When this principle cannot be applied, zeal and benevolence will fail in providing heart-work and funds which must be so largely wasted. It may be a hard thing for men to sacrifice wishes long indulged and to forget objects for which they have lived and striven, but if the interests of the community, or of a class, require it, men of ardent and kindly feeling will not be backward in making such sacrifices. A conference should be held, partly composed of intelligent blind men, to ascertain whether it is possible to unite all parties in the prosecution of one system of printing, or whether all should persevere in a course which divides the friends of the blind and injures their cause. There are men living who have devoted years to the consideration of the question, and who would be glad to consider it by the lights of science and experience.







