WORLD BRAILLE USAGE

A survey of efforts towards uniformity of Braille notation

by

Sir Clutha MACKENZIE
Chairman, World Braille Council

UNESCO

CORRIGENDUM

Page

28 In Braille table, sign for DEVANAGARI T should read 1-2-3-4-6.

82-84 : *AFRICAN TRIBAL LANGUAGES.*

The following phonetic symbols should be inserted:

In the SHONA column

Opposite sign No. 3 ..... ɓ
" " 22 ..... ɲ
" " 27 ..... ʂ
Opposite sign No. 29..... ʋ
" " 35..... ʐ
" " 42..... ɔ

In the MUNDANG column

Opposite sign No. 46 ..... ɛ
Opposite sign No. 50..... ɔ

86 : *AMHARIC BRAILLE.* In 1st Form column,

Braille sign for kha should read 1-3-4-6,
Braille sign for wa should read ..... 2-4-5-6.

93 : *BURMESE BRAILLE.*

Burmese letter for ja (second sign of right-hand column), is ⠏⠃

103 : *FINNISH BRAILLE.*

Dots 1-6 are used for å, instead of unaccented a as shown.

120 : *MALTESE BRAILLE.*

The following letters of the Maltese alphabet should be accented as shown:

Braille sign 1-6 ..... ċ
" " 1-2-6 ..... għ
" " 1-3-5-6..... ż
Braille sign 2-4-5 ..... ġ
" " 1-5-6 ..... ħ

123 : *POLISH BRAILLE.*

The following contractions should be shown with accented letters, as shown:

Braille sign 1-3-4-6 ..... dź Braille sign 1-2-5-6 .....dż

136 : *WELSH BRAILLE.*

The Braille sign for h should read 1-2-5
" " " " i " " ..... 2-4.

156 : *SPANISH COMPOUND TERMINATIONS.*

The Braille sign for ección should read ..... 1-5/3-4-5-6.

166-167 : *PORTUGUESE GRADE 2 TRIPLE SIGNS.*

The Braille sign for algum should read 1/1-2-4-5/1-3-4
" " " " exterior '" " 1-3-4-6/2-3-4-5/1-2-3-5.

WORLD BRAILLE USAGE

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FOREWORD

This reference book compiled by Sir Clutha Mackenzie, one of the ablest leaders of the blind and himself without sight, is far more than the history of Braille, the dot system used by the blind in reading and writing—and that is an impressive task. In its work since 1949 *Unesco has lifted it from a jungle of punctographic codes to a universal medium that can be adapted to all the languages, and has assembled in this book the Braille charts of many tongues. This is surely as difficult, and requires as much painstaking work as writing a dictionary.*

Braille has been in existence since 1825 *when its inventor, Louis Braille, set up his alphabet of raised dots as a lighthouse to pierce the darkness of the blind. The embossed Roman letters and other systems for tactile reading used before that date had proved unsatisfactory. Instruction of the sightless in literature and music was largely oral, and tangible writing was virtually impossible. But Louis Braille's alphabet could be easily felt by the finger, and the arrangement of dots in different positions to represent individual letters and letter groupings gave the education of the blind an order and a stability it had not earlier possessed. His conviction was that his method was suitable for universal application—to any language, longhand or shorthand, to music and to mathematics. As has been proved, it was adequate for all purposes.*

Unfortunately, however, there existed no central agency to achieve and preserve world-wide uniformity in Braille, and pioneers in work for the blind of other lands like China or India had to make their own adaptations of Braille to the language in which they were to teach. Thus they unintentionally created for future generations of the blind a chaos of dissimilar Braille prints. It is only in the last few years that any serious effort has been made to evolve a universally acceptable plan for the application of Braille symbols to all languages.

It has taken the compelling influence of Unesco through its Braille consultant, Sir Clutha Mackenzie, to provide the means of satisfying the common needs of the blind throughout the globe in education and intellectual pursuits and to encourage their ever growing unity. Sir Clutha Mackenzie and those Braille experts from many lands who have attended Unesco conferences in Paris, London, Beirut and Montevideo deserve warmest gratitude for their patience and willingness to debate the countless points of difference in Braille systems until they could harmonize them to the satisfaction of everyone concerned. Truly, in this book a magnificent monument has been raised to Louis Braille, from whose life-dream has been wrought the mental and spiritual emancipation of the blind in every land.

HELEN KELLER,
Westport, Connecticut.

CONTENTS

UNESCO'S SERVICES TO ORTHOGRAPHIC BRAILLE

The one hundred and twenty years between the publication of Louis Braille's system, in 1829, and the request to Unesco, in 1949, to lend its services to rationalize Braille usage in many parts of the world, divide readily into two main phases. The first fifty years was that of the die-hard retreat of the cumbersome old forms of embossings which the blind could not write; then seventy years throughout which the original Braille had to compete with many reconstructed forms of itself.

The defeat of the old embossings was inevitable, a victory in which the declaration by the blind that Braille answered their need far better than the old types, played a major part, although, by common consent one of the old forms, Moon, still survives to play a useful and complementary role, that of providing a clear bold type for older people whose touch is not good enough for reading Braille.

The seventy years of civil war between the numerous adaptations of Braille was probably equally inevitable—the divergences embodied theoretical improvements, and they had to be tried out before their authors realised that, while a new form offered local advantages in readability or economy of space, these were outweighed by wider cultural considerations. And thus the earlier divergent systems, introduced in German, American, Modern Greek and Hebrew Brailles duly yielded to a return to the original French.

In Asia, because of the added factor of varied scripts, Braille history had been even more erratic and consequently the experimentation phase more prolonged.

Decisions taken in Paris in 1878 recommended that everywhere the symbols should retain the same letter values as in the original French Braille. Outside Europe this practical advice was often neglected and, in the absence of any recognized symbols for letter-sounds not embraced by the Latin alphabet, Asian and African languages had been compelled to make arbitrary allocations. Throughout the 1940's the movements towards the establishment of single Braille systems for the three important areas of the Perso-Arabic, the Indo-Aryan and the Chinese languages gained momentum. Governments were beginning to consider linking the education of the blind to that for seeing children and, in doing so were coming to realize how chaotic Braille was in their countries. Clearly, before organized education could be properly founded, single systems must be established and, more than that, established on a sound basis. These were, in fact, the circumstances which, in April 1949, led to the Joint Secretary for Education, Government of India, Dr. Humayun Kabir, writing to the Director General of Unesco, Dr. Jaime Torres Bodet, as follows:

"Sir,

"I have the honour to draw your attention to a problem, the solution of which would help to lighten the burden of the blind in all countries of the world. I need not dilate on the handicaps from which they suffer, nor the steps taken till now in helping them to become useful citizens. One of the foremost of these is the invention of the Braille Script through which unsighted persons have been enabled to read and write. Unfortunately, however, the advantages of this great discovery have been minimized on account of the different ways in which the same Braille symbols are used for different sounds in different languages.

"The number of the blind in any country is small and it is obvious that the State can spend only a fraction of its resources for their education. Production of literature in Braille is at the same time difficult and expensive. The fact that the scripts differ from country to country has prevented the production of literature in Braille on a sufficiently large scale and thus added to the cost of an already expensive process. It is surprising, but till 1932, *even English-speaking countries did not have a uniform system of Braille.*

"In India, with its ten or eleven major languages, the problem of different Braille scripts has been one of the main obstacles to the provision of larger facilities for the education of the blind. The Government of India, therefore, appointed in 1941 *a Committee to investigate the possibility of evolving a uniform system of Braille for the whole country. This Committee included among its members distinguished linguists and phoneticians and, after six years' work, evolved a system known as Uniform Indian Braille to cover all Indian languages. Some idea of the difficulties the Committee had to face and the measure of success achieved may be obtained from the fact that these Indian scripts are derived from the sources so different as the Sanskritic, the*

Arabic, the Dravidian and, in the case of some of the tribal languages, the Roman. The Government of India has accepted the recommendations of that Committee and we have now taken in hand plans for setting up a Press for printing suitable literature in all the Indian languages in one Uniform Braille script.

"Sir Clutha Mackenzie, who is a distinguished expert on Braille, has drawn our attention to the desirability of trying to extend this process of unification still further. He suggests that there is a greater possibility of evolving an international script in the case of Braille than in the case of visual scripts. He has pointed out that in Braille, the Slavonic scripts have been affiliated to the Roman. Our experience in India shows that even Sanskritic and Arabic scripts can be brought within one uniform system. The Government of India feel that if such a uniform international Braille can be evolved by agreement in the same way as English Braille was standardized in 1932 *by agreement between the English-speaking countries of the world, it will not only mark a great step towards the unification of the world but also prove of immense advantage to the blind of all countries.*

"As I have stated above, the Government of India are now proceeding with preparations for setting up a Press in order to produce the necessary literature in Uniform Indian Braille. The preliminary work in this connection is likely to take a year or so. Once, however, the process of printing in Uniform Indian Braille has begun, it would be difficult and involve financial wastage if we had to switch on to a different script. I am informed that there is also a move in the Arabic-speaking world to evolve one uniform Braille for all the Arab countries. The Government of India, therefore, feel that now is the time, before these new systems have been brought into vogue, to take up the question of one uniform Braille for the whole world.

"I would, therefore, request you to examine whether it would be possible to have the question of uniform world Braille considered at the time of the next General Conference of Unesco in September this year...

"As I view the problem, the question of world Braille reduces to the preparation of a Braille which will satisfy the needs of the Roman, the Slavonic, the Arabic, the Indian and the Chinese scripts... I may add that as far as I can judge, adoption of such a scheme would not impose any extra burden of expenditure on Unesco. Unesco's role, as I see it, would be to act as the clearing house and perhaps also as the catalytic agency, but the actual cost of production of literature in the world Braille, when evolved, would be the responsibility of the countries concerned.

"You are perhaps aware that the National Institute for the Blind, London, are now preparing for a ten-day international conference on blind welfare in Oxford during August this year. The Conference is restricted to representatives from Europe and North America, but I have written to Sir Clutha Mackenzie to examine whether it would be possible to associate with the conference at least three experts of the Perso-Arabic languages, the Chinese group and India in order to have a preliminary discussion on world Braille. I, however, feel that the initiative in this matter must come from Unesco, though obviously Unesco would, for the purpose, request the co-operation of national organizations like the Foundation for the Blind in America, the National Institute for the Blind in England, the Ministry of Education, Government of India and other similar organizations elsewhere."

Yours faithfully,
(signed) HUMAYUN KABIR,
Joint Secretary to the Government of India.

The Director-General placed this request before the Executive Board of Unesco. It recognized the problem as an international one to which it was competent for Unesco to lend its services in contributing to a solution which would be satisfactory to the governments and to the blind throughout the world. Accordingly Unesco accepted the task.

The following is a chronicle of the steps taken under Unesco auspices between the beginning of the work on July 1st, 1949 and its close on December 31st, 1951.

July 1st 1949. Sir Clutha Mackenzie accepted an appointment as consultant to "study the world Braille situation as it stood and to advise Unesco on Braille systems".

September 20th 1949. The Consultant's "Survey on World Braille Problems" was submitted by the Director-General to the Fourth Session of the General Conference of Unesco at which the Director-General was "instructed to study the world Braille situation and, with the advice of a competent committee, to organize an international conference with a view to agreeing on certain international principles which would allow the greatest degree of uniformity in Braille and would improve its rationalization and develop its extention. Such regional discussions as may later prove necessary should subsequently be organized by the Secretariat."

December 15-21st 1949. The Advisory Committee on Braille Problems met at Unesco House, Paris, to consider the Consultant's report and to make

recommendations and draft an agenda for an International Meeting on Braille Uniformity to be held later. The Advisory Committee had the following membership:

Mr. Nicola BASSILI *(Arabic)*, Professor at the School for the Blind, Cairo; Member of the Egyptian Braille Committee.

Captain Sharia BEKHRADNIA *(Persian)*, war-blinded Persian officer.

Professor Suniti KUMAR CHATTERJI *(linguistics and Indian languages)*, Head of the Department of Comparative Philology, University of Calcutta (vice-chairman).

Mr. Pierre HENRI *(French)*, Professor of the Institut National des Jeunes Aveugles, Paris.

Miss Marjorie HOOPER *(Braille publishing)*, Braille Editor, American Printing House for the Blind, Louisville, U.S.A.

Mr. John JARVIS *(English)*, Braille Secretary and International Correspondent, National Institute for the Blind, London (chairman).

Mr. Alejandro MEZA *(Spanish)*, Professor of the Colegio Héroes de Churubusco, Mexico.

Sir Clutha MACKENZIE *(Rapporteur)*, Unesco Consultant on Braille.

March 20-29*th* 1950. The International Meeting on Braille Uniformity met in Paris. Its recommendations are given on page 141. In consultation with their governments the following ladies and gentlemen were invited to attend as representatives of Braillists in their linguistic areas or as linguists, educators of the blind or publishers of Braille literature:

Mr. Lal ADVANI *(Indian languages)*, Blind Welfare Section, Ministry of Education, New Delhi.

Mr. P. M. ADVANI *(Indian languages)*, Member of the Indian Uniform Braille Committee.

Mr. Mohamed RAMZAN *(Urdu)*, Superintendent of the Emerson School for the Blind, Lahore.

Mr. Nicola BASSILI *(Arabic)*, Professor at the School for the Blind, Cairo, Member of the Egyptian Braille Committee.

Major D. R. BRIDGES *(Malayan languages)*, Blind Welfare Officer, Department of Social Welfare, Kuala Lumpur.

Mr. J. M. CARAZO *(Spanish)*, Director of the Institut Roman Rosell, Buenos Aires.

Professor Suniti KUMAR CHATTERJI *(linguistics and Indian languages)*, Head of the Department of Comparative Philology, University of Calcutta (vice-chairman).

Mr. S. T. DAJANI *(Arabic)*, Principal of the School for the Blind, Ramallah, Hashemite Jordan (vice-chairman).

Mr. Kingsley C. DASSANAIKE *(Sinhalese)*, Principal of the School for the Blind, Mount Lavinia, Ceylon.

Dr. W. S. FLOWERS *(Chinese)*, Former Adviser on Blind Welfare to the Government of China.

Dr. Michael GEFFNER *(Hebrew)*, Assistant Editor, Jewish Braille Institute of America, New York.

Mr. Pierre HENRI *(French)*, Professor of the Institut National des Jeunes Aveugles, Paris.

Miss Marjorie HOOPER *(Braille publishing)*, Braille Editor, American Printing House for the Blind, Louisville, U.S.A.

Mr. John JARVIS *(English)*, Braille Secretary and International Correspondent, National Institute for the Blind, London (chairman).

Mr. Emmanuel KEFAKIS *(Greek)*, Educational Director of the Blind Veterans ; Trustee of the Lighthouse, Athens.

Mr. LIU WEN PIAO *(Chinese)*, Expert blind Chinese Braillist, Institute for the Chinese Blind, Shanghai.

Mr. Gustave MEILLON *(Viet-Namese)*, Professor of the Ecole Nationale des Langues Vivantes Orientales, Paris.

Mr. Kyotaro NAKAMURA *(Japanese)*, Head of the Braille Publications Department, Lighthouse for the Blind, Tokyo.

Miss Regina PIRAJA *(Portuguese)*, Braille Editor, Fundaçao para o Livro do Cego no Brasil, Sao Paulo.

Mr. John WILSON *(African Tribal languages)*, Secretary, British Empire Society for the Blind, United Kingdom.

Mr. K. V. PADMANABHAN *(Indian languages)*, First Secretary of the Indian Embassy, Paris (Observer on behalf of the Government of India).

Sir Clutha MACKENZIE, *(Rapporteur)*, Unesco Consultant on Braille.

June 1950. The Director-General of Unesco submitted the recommendations of the International Meeting on Braille Uniformity to the Fifth Session of the General Conference of Unesco in Florence, which resolved:

"To convene two regional conferences for the standardization of Braille script; one for the regions which use the Arabic alphabet and one for Spanish or Portuguese-speaking regions; to assist in the establishment of a world Braille Council; to compile a world Braille chart; to publish, or promote the publication of a reference book on Braille uniformity and to disseminate it among educational and blind welfare organizations."

July 17*th* 1950. Study made of the linking of Braille symbols with those of the International Phonetic Association and discussed with Professor Daniel Jones, M.A., Dr. Phil., Professor Emeritus of Phonetics in the University of

London. This document appears in Chapter 10, page 49.

July 19th 1950. The informal committee on the Uniform Adaptation of Braille to the Tribal languages of Africa met in London. Its report is embodied in Chapter 8, page 41.

February 12-17*th* 1951. The Regional Conference on Braille Uniformity (Middle East, India and South East Asia), met in Beirut, Lebanon, to consider the establishment of Braille uniformity between these territories. Those who attended were:

Mr. Lal ADVANI *(Indian languages)*, Blind Welfare Section, Ministry of Education, New Delhi.

Mr. R. M. ALPAIWALLA *(Indian languages)*, Chairman of the Standing Committee of Education, New Delhi.

Mr. Nicola BASSILI *(Arabic)*, Professor of the School for the Blind, Cairo; Member of the Egyptian Braille Committee.

Major D. R. BRIDGES *(Malayan languages)*, Blind Welfare Officer, Department of Social Welfare, Kuala Lumpur.

Professor Suniti KUMAR CHATTERJI *(linguistics and Indian languages)*, Head of the Department of Comparative Philology, University of Calcutta (vice-chairman).

Mr. S. T. DAJANI *(Arabic)*, Principal of the School for the Blind, Ramallah, Hashemite Jordan (chairman).

Mr. Kingsley C. DASSANAIKE *(Sinhalese)*, Principal of the School for the Blind, Mount Lavinia, Ceylon.

Professor G. K. DARAB *(Persian)*, Lecturer in Persian, School of Oriental and African Studies, University of London.

Mr. Sayed A. FATTAH *(Arabic)*, Inspector General of Schools for the Blind and Deaf, Ministry of Education, Cairo.

Mr. Ibrahim M. GHASSEEBAH *(Arabic)*, Principal of the Queen Huzeima Institute, Sa'down Park, Baghdad.

Mr. Mohamed RAMZAN *(Urdu)*, Superintendent, Emerson School for the Blind, Lahore.

Lt. Pierre TALOU *(French and Arabic)*, Association des Amis des Aveugles, Casablanca.

Mr. Salim P. GARBUSHIAN *(Armenian)*, Principal of the School for the Blind, British Syrian Lebanese Mission.

Mr. Al MASRI *(Arabic)*, Ministry of Foreign Affairs, Syria.

Miss POLADIAN *(Armenian and Arabic)*, Observer from Beirut.

Sir Clutha MACKENZIE *(Rapporteur)*, Unesco Consultant on Braille.

The report of the conference appears on page 147.

November 26-2*nd December* 1951. The Regional Conference on Spanish and Portuguese Braille was convened in Montevideo, Uruguay. Those who attended were:

Mr. A. PEGARARO, Professor of Braille, Escuela Normal de Maestros para Ciegos, Buenos Aires, Argentina (vice-president).

Mrs. D. de GOUVEA NOWILL, Vice-President of the Fundaçao para o Livro do Cego no Brasil, Sao Paulo, Brazil.

Dr. H. Brito CONDE, Director of the Instituto Benjamin Constant, Rio de Janeiro, Brazil.

Mr. Santander FERNANDEZ, Director of the Instituto Nacional de Ciegos, La Paz, Bolivia.

Mr. P. Fajardo MOYA, Director of the Escuela de Ciegos y Sordomudos, Santiago, Chile.

Mr. J. Pardo OSPINA, Director of the Federacion Nacional de Ciegos y Sordomudos, Bogota, Colombia (president).

Mr. J. EZQUERRA, Director of the Organizacion Nacional de Ciegos, Madrid, Spain (vice-president).

Mr. A. MEZA, Professor of the Colegio Héroes de Churubusco, Mexico (vice-president).

Miss D. OTERO, Director of the Imprenta Braille del Instituto Nacional de Ciegos, Lima, Peru.

Mr. V. PARES COLLAZO, 28 San Mateo Santurce, Puerto Rico, Puerto Rico.

Mr. J. ALBUQUERQUE E CASTRO, Professor of the Instituto de Cegos S. Manuel, Porto, Portugal (vice-president).

Mr. A. GARCIA ARES, Technical Director of the Instituto de Ciegos General Artigas, Montevideo, Uruguay.

Miss O. ANA SANT'ANA, Fundaçao para o Livro do Cego no Brasil, Sao Paulo, Brazil (observer).

Mr. F. L. HERNANDEZ, Director of the Escuela de Ciegos y Sordomudos, Medellin, Colombia (observer).

Mr. L. BLANCO VALDEPEREZ, Vocal del Consejo Superior de Ciegos, Madrid, Spain (observer).

Professor R. ABADIE SORIANO, Representative of the Government of Uruguay as host to the conference.

Miss M. E. DOMINGUEZ, Instituto Nacional de Ciegos General Artigas, Montevideo (observer).

Miss G. ALVAREZ, Instituto Nacional de Ciegos General Artigas, Montevideo (observer).

Mr. J. J. SILVEIRA MARQUEZ, Melo, Dpto de Cerro Largo, Uruguay (observer).

Mrs. D. B. de ALONSO, Progreso 885, Montevideo (observer).

Mr. M. VELAZQUEZ, Biblioteca Pedagogica, Montevideo (observer).

Mr. FROILAN LACRUZ, Darwin 3279, Montevideo (observer).

Sir Clutha MACKENZIE (Rapporteur), Unesco Consultant on Braille.

The report of the conference appears on page 151.

December 10-12*th* 1951. The Director-General called a meeting in Paris of representatives of a number of linguistic areas, Braille committees and Braille publishers, as a "Consultative Committee for the Creation of a World Braille Council". Those who attended were:

Professor Suniti KUMAR CHATTERJI, Head of the Department of Comparative Philology, University of Calcutta (chairman).

Bey MITAT Enç, Professor of the Teacher Training College, Ankara, Turkey.

Mr. J. EZQUERRA, Director of the Organizacion Nacional de Ciegos, Madrid.

Mr. Sayed A. FATTAH, Inspector General of Schools for the Blind and Deaf, Ministry of Education, Cairo.

Mr. Ibrahim M. GHASSEEBAH, Principal of the Queen Huzeima Institute, Baghdad.

Mr. Pierre HENRI, Professor of the Institut National des Jeunes Aveugles, Paris (vice-chairman).

Mr. John JARVIS, Braille Secretary and International Correspondent, National Institute for the Blind, London.

Mr. Paul LANGAN, Superintendent, Kentucky School for the Blind, Louisville, U. S. A.

Mr. Milos LICINA, Vice-President of the Association des Aveugles de Yougoslavie, Belgrade.

Mr. J. Pardo OSPINA, Director of the Federacion Nacional de Ciegos y Sordomudos, Bogota, Colombia.

The Rev. Luke PO-KAI, Superintendent, School for the Blind, Kemmendine, Burma.

Mr. George L. RAVERAT, European Director of the American Foundation for Overseas Blind, Paris.

Mr. V. H. VAUGHAN, Principal of the Boy's School for the Physically Handicapped, Kimberley, Union of South Africa.

Mr. John WILSON, Secretary of the British Empire Society for the Blind, London.

Mr. T. YOSHIMOTO, former President of the Japanese Federation of the Blind, Japan.

Sir Clutha MACKENZIE, Unesco Secretariat.

The Committee's report was duly submitted to the Director-General, who with the approval of the Executive Board of Unesco brought the Council into official existence in July 1952. A detailed account of the evolution of the Council is given in Chapter 14, page 168.

LOUIS BRAILLE AND HIS SYSTEM

The Braille system consists of sixty-three symbols, being actually sixty-three of the sixty-four permutations of the dots forming the domino six. To facilitate the description of individual symbols, the dots are conventionally numbered, those of the left-hand column being numbered 1-2-3 from top to bottom and those of the right-hand, 4-5-6.

Letter "A" is Dot 1; "B", Dots 1-2; "C", Dots 1-4 and so on. The first ten letters are formed from the top four dots, the second ten letters comprise the first ten repeated plus Dot 3, a similar symmetry continues the division of the sixty-three symbols until seven groups of symbols have been formed.

In Roman Braille, the alphabet absorbs twenty-six of the signs, ten are devoted to international punctuation marks, while the remaining twenty-seven are used variously to meet the special needs of individual languages or for abridgment.

Numbers are represented by the first ten letters preceded by a numeral sign.

For a number of languages, two "Grades" of Braille have been established. In Grade 1, all words are fully spelt, letter for letter with the visual script. Grade 2 is the everyday form used for general purposes, Braille periodicals, books and letter-writing. It embraces a greater or lesser range of abridged signs for the expression of conjunctions, prepositions, pronouns, prefixes, suffixes, frequently recurring groups of letters and common words. Its primary purpose is to reduce the bulkiness of Braille books which means a saving in the cost of production (always expensive) as well as in storage space and costs of distribution. It also saves the Braillist some of the effort involved in reading and writing.

A few languages have established very highly abridged systems, usually considered as "Grade 3" Braille, in which the original full text is scarcely recognizable and which border on a true shorthand. These are too complex for readers who are not endowed with three qualifications—an extensive command of the language, a good memory and a highly sensitive touch.

Touch, indeed, is a governing factor in the extent to which Braille is used. A fairly sharp distinction in capacity divides the readers to whom, as children in a school for the blind, Braille comes almost as second nature, from those who, losing their vision as adults, must switch over their method of reading, from sight to touch. The latter are almost invariably slow readers and the older people are, the more difficult it is for them to master Braille.

Commercial Braille shorthands have come into use in most European languages; and stenography and typewriting is one of the established occuptions for the blind. A trend in recent years, notably in Germany and Belgium, has been towards shorthand systems employing a seventh and even an eighth dot to add both to the range of symbols and to the speed of reporting speech.

From the beginning Louis Braille applied his system to the expression of music. Other countries adopted his notation, but gradually differences grew up. In 1929, an international conference in Paris, under the auspices of the American Foundation for Overseas Blind, brought general agreement on a uniform notation. Divergences in presentation, however, still persist, and a number of countries have voiced the wish that a fresh attempt should be made to restore and extend uniformity in music in every part of the world.

Braille is applied to various other practical purposes—the expression of mathematical and chemical symbols, the marking of the faces of watches, meters, gauges, thermometers and playing cards, and adapted too, to the outlining of geographical maps and plans of cities and buildings.

The process of Braille printing is expensive and almost all of it is done by voluntary organizations, often with the aid of State subsidies. The Braille text is stereotyped on soft metal plates by hand or power-driven machines. These plates are set up on a flat or rotary press which embosses the dots on strong thick paper usually dampened to facilitate the printing of smooth dots without rupturing the paper.

Many single copies of books, such as those required by the student of higher studies or by the more intellectual reader, are Brailled by hand by voluntary sighted transcribers, whose efforts have resulted in the building up of valuable libraries of reference works.

The Universal Postal Union, under a long-standing agreement, extends special concession for the carriage of Braille by post, which greatly facilitates correspondence between blind people

and the circulation of Braille magazines and library books, while exemption from customs duties appears to be universal.

PRE-BRAILLE METHODS OF TOUCH READING.

Braille was not the first, or by any means the only method of touch reading. The earnest desire of the blind to find access to literature and of their sighted friends to open the door for them, led to many experiments in a variety of media. Even after Braille's invention, other forms of embossed symbols were planned and used—some employing lines and dots, others having the form of simplified Roman capitals.

At an International Conference on Blind Welfare in Cairo, in 1911, one of the delegates, Dr. Eloui Pasha, gave an account of what was typical of early efforts of this nature. He had come across records in a library in Istanbul of a distinguished blind Arab professor, Zain-Din Al Amidi by name, of the University of Moustansiryeh, Iraq, who, in the 14th Century, improvised a method by which he identified his books and summarized certain information.

Although Zain-Din Al Amidi became blind soon after his birth, he led a studious life, interesting himself particularly in jurisprudence and foreign languages, notably Turkish, Persian and Greek. In his large library he knew the place occupied by each book and on receiving a request for information could find the exact volume without assistance. He knew the price of every book, because for each new volume, he took a piece of fine paper, rolled it tightly between his fingers and bent the coil in the contours of the Arabic characters, thus showing the price paid. He gummed these to the inside of the cover, making a surrounding frame of the same thickness of paper to prevent the raised characters becoming flattened, thereby preserving them indefinitely.

The following account of other efforts to create scripts is given in Dr. Harry Best's book, *The Blind*, published in the United States of America.

"The first recorded attempt was made about 1517, by Francisco Lucas, of Saragossa, Spain, who contrived a set of letters carved in thin tablets of wood. This was brought to Italy about 1575 and improved by Rampansetto of Rome, who used larger blocks, but in-cut instead of raised. Both systems failed because of the difficulty of reading them. In 1651, George Harsdorffer of Nuremberg revived the classical method of a wax-covered tablet in which letters could be cut with a stylus. About 1676, Padre Terzi devised a kind of cipher code based on a system of dots enclosed in square and other figures and also an arrangement of knots tied in strings. Jacques Bernouilli is said to have used this system, as well as incised tablets, in teaching a blind child to read in Geneva in 1711.

"In 1640, Pierre Moreau, a notary of Paris, had brought out a system of movable raised letters in lead, and about the same time Scholberger, of Königsberg, used letters made of tin, and a century later, Le Notre du Puisseau, who lived near Paris, cast metal letters. These systems suffered from two main defects; the letters were rough to the touch and they were hard to make out.

"Other devices were employed. For example, Maria Theresa von Paradis, who did so much to encourage Haüy was instructed by the aid of pins stuck in cushions. In his *Lettre sur les Aveugles* Diderot tells of a blind woman, Mlle de Salignac, born in 1741, who had been taught to read from letters cut out of paper.

"When Valentin Haüy founded his school in Paris in 1784, his pupil Lesueur found by accident that he could feel the outlines of an "O" which had been strongly impressed on a sheet of paper. Haüy at once set about embossing books and experimented with certain types. Embossed literature had been invented, but the old difficulty of a script which could be easily read by touch remained. It was the evolution of this script by Louis Braille in 1829 which completed the system under which the blind read to-day.

"It was not, however, until some fifty years later that the Braille system was universally adopted and, in the mean time, numerous other forms of embossed type were devised on the continent of Europe, in Great Britain and in America. Perhaps the chief of these were the systems of James Gall of Edinburgh, whose works were the first to appear in relief type in the English language; of John Alston of Glasgow and of Dr. Moon of Brighton."

THE GENESIS OF BRAILLE

One of the members of the conferences which Unesco convened to advise on the rationalization of Braille, was Mr. Pierre Henri, himself blind and holder of the same post in the same school which Louis Braille filled a century earlier. He has made the life and work of his famous predecessor his special study, and in connection with Unesco's services in this field, contributed an article to *Cahiers Français d'Information*, Paris. It is an admirable account of the man and of the evolution of his system; and we are deeply indebted to Mr. Henri and the publishers for their courteous permission to quote it extensively here.

"When Valentin Haüy opened the first of all

schools for the blind in Paris in 1784, his foremost concern was to discover some way of teaching his pupils to read. The story goes that the solution to this problem was provided by Lesueur, the blind beggar-lad whom Haüy found in a doorway of Saint-Germain-des-Prés and took home with him, and who would only submit to education on condition that his purse was filled everyday by his master.

"We are told that one day, when Lesueur was fumbling among some papers on a table, he came across an invitation card, printed in embossed letters which stood out in such high relief that the blind boy could trace each one separately with his finger.

"This, it is said, sufficed to give Valentin Haüy the notion that the blind could be taught to read by means of ordinary large type, printed in relief. I, myself, am inclined to wonder whether he did not get the idea from an Addendum to the then recent reprint (1783) of Diderot's celebrated *Lettre sur les Aveugles à l'usage de ceux qui voient*, in which the author related that a Parisian printer, Prault, had produced a book printed in relief for the use of a distinguished blind girl, Mlle de Salignac, who had died at an early age some twenty years before.

"But that is a minor point of history ; whatever may be the truth of the matter, it was by this somewhat primitive method that, for more than forty years the pupils of the school founded by Haüy had to acquire their education. Tests being virtually unknown in those days, no information has come down to us as to how many words a minute the blind children could read in this way. But everything goes to suggest that the reading of the big, relief-printed folios of those heroic days must have been very slow work. Writing was an even more laborious affair, since the only way in which the pupils could express their ideas was by setting them up in type.

"The school founded by Haüy was nationalized by the Constituent Assembly and under the Restoration it received the title of Institution Royale des Jeunes Aveugles de Paris. In 1821, it was visited by a curious personage, Charles Marie Barbier de la Serre, a former Captain of Artillery. Barbier was one of those Utopian idealists who scatter ideas far and wide—ideas which, when modified, stabilized and reduced to practical proportions, often serve as the basis for some valuable invention. Some ten years previously, he had worked out a system of "night writing", which he claimed for instance, would enable soldiers in the field to communicate with each other during the hours of darkness.

"Barbier's system was based on a table of 36 squares, each relating to a speech sound. Each sound on the board was represented by a parallelogram of dots. The number of dots in its left-hand column indicated the position of the horizontal line on the board where the sound in question was represented, while the number of dots in the right-hand column indicated the position of the sound in that line.

"Thus "Q", for example, would be expressed by a symbol containing four dots in its left-hand column and three in its right.

"This was a system only for conveying sounds, for Barbier maintained that for the masses, at any rate, spelling was a superfluous refinement. What gave him the idea of applying his invention to the blind? This is another historical question which we cannot solve here. In any case, despite official scepticism, the method seems to have been fairly popular with the pupils of the Royal Institution. It would probably be read more rapidly than the ordinary raised print of the Valentin Haüy system ; and it could be written too, for Barbier devised a metal frame which enabled his signs to be stamped in relief on paper with a pointed instrument. But it was not an altogether satisfactory system.

"In 1819, two years before Barbier submitted his invention to the Royal Institution, a blind boy named Louis Braille had entered it as a pupil. Born on the 4th February, 1809, he was the son of a saddler at Coupvray, a prosperous village in the district of Meaux. He lost his sight as the result of an accident when he was three years old. He was in his father's workshop amusing himself by cutting pieces of leather with a pruning-knife. The knife slipped on the tough leather and entered his eye ; and, no doubt as a result of sympathetic ophthalmia, he soon became totally blind in both eyes.

"At the special school, Louis made rapid progress. His outstanding qualities were a capacity for concentration, a methodical mind, and a constructive imagination. He soon distinguished himself. He was first made a monitor and then, when still well under twenty-one years old, became an assistant master. He taught geometry and algebra—his favourite subjects—and music. He was also employed as organist in several Paris churches. Unhappily, tuberculosis undermined his strengh and ultimately caused his death at the early age of forty-three on the 6th of January, 1852. Ill-health often had kept him away from his work and his pupils, whom he loved, and who had a deep veneration for him.

"Louis Braille early mastered the sound-writing system invented by Captain Barbier, which had been accepted by the Institute as a "supplementary method of teaching". But despite the inge-

nuity of the process, it did not satisfy young Braille. Contemporary evidence shows that others were equally dissatisfied with it, and were experimenting with modifications. But Braille alone had the mental gifts to design a really brilliant invention. By 1825—he was then only sixteen, which gives further proof of his genius—his system of writing for the blind, destined to be universally adopted, was more or less complete.

"The Braille system undoubtedly derives to some extent from Barbier's sound-writing. Braille, who was the soul of honour, paid tribute to his predecessor in the "Avertissement" which introduces the first edition of his book, where he says: 'Though we have pointed out the advantages possessed by our process as compared with that of this inventor (Charles Barbier), we must say, in his honour, that it was from his method that we derived the first idea of our own.'

"In his second edition he is even more definite: 'If we are so fortunate as to have been of some service to our companions in misfortune, we shall never weary of repeating that our gratitude is due to Mr. Barbier, who was the first to invent a system of writing by means of dots, for the use of the blind.'

"Charles Barbier, for his part, wrote to Louis Braille on the 31st March, 1833, with a touch of condescension, perhaps, but in the tone of one who realises that he has been outstripped: ' I have read with great interest the method of writing that you have invented for the special use of persons who are deprived of sight. No praise can be too high for the benevolent feelings which inspire you to render service to those who share your misfortune... It is a fine thing, at your age, to enter upon such a course, and much may be expected from the enlightened sentiments by which you are guided. '

"On the 15th May in the same year, Barbier pays another well-deserved tribute: 'Mr. Louis Braille, now an Assistant Master at the Royal Institute in Paris, was the first to conceive the happy idea of writing the dots with the aid of a small sliding strip of metal pierced by three parallel lines. The letters take up less space and are easier to read ; in both these respects we owe him gratitude for an essential service... Mr. Braille has, moreover, made use of his method in other ways, which are sufficient to ensure its acceptance in an establishment devoted to all that concerns the education of the blind. '

"It has been said that the reason why Louis Braille's system has proved superior to all other forms of writing for the blind is that it bore the stamp of genius. To put matters more simply, it results from a combination of skill with patient and methodical labour. Braille himself was blind, and only a blind man could have arranged dots in groups which exactly correspond to the requirements of the sense of touch. Reduce the number of dots and the available signs become obviously insufficient ; add to their number, and the signs can no longer be covered by the finger-tip, nor so easily read... Mathematically, six dots permit of sixty-four combinations, including the combination zero.

"Braille did not rest content with giving an alphabet to the blind. From the outset, by allotting double or triple values to each sign, he presented a system of musical notation, a set of elementary mathematical symbols and a system of shorthand—so that the blind could satisfy not only their desire for culture, but also their professional requirements.

"Before pronouncing on the value of Braille's work and criticizing such aspects as his not choosing the simplest combinations for the most frequently used letters (for example the é which though it occurs a great deal in French, is represented by all six dots), one must take two facts into consideration, first, that we are dealing here with a system to be applied to subjects so varied as literature, music and the sciences, and that to alter even one sign without allowing for this multiplicity of standpoints would be to endanger the balance of the entire construction ; secondly, that the sign which appears to be the simplest —for instance, the one with the fewest dots—is not necessarily the easiest to read by touch. Modern psychological research has confirmed Braille's intuition in this respect. It is a mistake to suppose that reading by touch is a strictly analytical process, and that a blind man counts the dots when he reads—just as it is an error to imagine that he counts his steps when walking.

"Despite its many advantages (ability to express music as well as words, simplicity, rapidity of reading and adaptability for writing), the Braille system took a long time to win its place, especially in foreign countries. There has been a great deal of exaggeration regarding the so-called "eclipse of the Braille system" in France itself. It has been asserted, even in print, that for the twenty-five years following its invention in 1829, it was ostracized by the competent officials, who preferred the Valentin Haüy typography —said by that time to have been improved and made more legible—because it was easier for them to read. A few dates will suffice to prove that this is an overstatement. To begin with, it is not quite correct to say that the Braille script was invented in 1829. As already mentioned, there is good reason to believe that its main lines had been laid down by Louis Braille as early as 1825.

Extracts from the *Grammaire des Grammaires* were printed in Braille in 1827, followed in 1829 by the *Grammaire de Noël et Chapsal.*

"The reason why 1829 is usually regarded as the year in which Braille made its appearance is that in that year the governors of the Institution Royale des Jeunes Aveugles de Paris arranged for the publication of the first official description of the system, under the title of *Method of Writing Words, Music and Plainsong by means of dots, for the use of the Blind and arranged by them*—and did so with the definite intention of making it widely known. A second edition of this book, in which the Braille alphabet appears in its final form, was issued in 1837, again under the auspices of the Royal Institution, and simultaneously with a *Précis d'Histoire de France,* printed unabridged in Braille, in three large volumes. There seems, therefore, to be no justification for saying that the Braille system suffered an eclipse in the very establishment which had witnessed its inception.

"It is, however, true that in 1840, Dufau, the Director of the Institute gave official preference to the system of Roman characters printed in relief, he himself having introduced certain changes, which, he thought, made those characters easier to read by touch. This state of things continued until 1849, when the Institute returned to the printing of Braille. Even during that period, however, the Braille system was not entirely set aside in its original home. For one thing, it remained the official method of printing music, which could not be transcribed by the Dufau system. Moreover, the blind masters and pupils used it for writing their own notes. It has been said that this was done in secret, but that seems unlikely, considering the esteem in which Louis Braille was held by the school governors. Besides, in 1850, Dufau, with a very handsome gesture of intellectual honesty, publicly declared that Braille's system was better than his own.

"In other countries, Braille took longer to gain its ascendancy. There too it was the blind—the people chiefly concerned—who in the long run insisted upon its adoption."

THE EVOLUTION OF BRAILLE

Braille was more compact than any system which preceded or followed it. It was outstandingly versatile, equally able to express the languages and scripts of Europe, Asia and Africa, and, as we have seen, readily adaptable to mathematics, musical notation and other purposes. Its main advantages, however, lay in the fact that, unlike the other embossed types, it could be simply and easily written by the blind. Here at last was a remarkably practical script, perfected by a blind man, which opened wide the gates to knowledge, literary enjoyment, the ease to correspond privately with blind friends and the wider opportunities for employment for which the blind longed.

Despite its manifest advantages, the general adoption of Braille was a slow process. As Mr. Henri has shown, even in France official recognition did not come until 1854, two years after Braille's death. The rest of Europe was equally conservative, the protagonists of other types fighting the new system to the last ditch.

In the end, however, the merits of Braille carried the day; and during the 1860's and '70's it was adopted throughout Europe in the original form except for such modifications as were required to meet differences in the visual alphabets. By common consent one of the older forms of embossed types has remained in use down to the present time. It too, was the invention of a blind man, Dr. Moon of England, and it fills the special needs of those who lose their sight in middle or late life and whose touch is not sensitive enough for the reading of Braille.

Nevertheless, stormy times for the new script were far from over. The many symmetrical possibilities which lurked within the domino six was the real source of the trouble. Symmetries which helped to link together letters of the same phonetic class, and even symmetries which appealed to the designer just because they were symmetrical. Louis Braille himself yielded to their temptation, and, by doing so, unwittingly prepared the ground for coming controversy. Under his arrangement, the first ten letters of the Roman alphabet were composed solely from the upper four dots. The second ten were formed by adding dot 3 to each of the first ten, the third line is again the same as the first, but this time with dots 3-6 added, while the fourth group of ten was once more the original line with dot 6 added. The fifth group was a repetition of the first line, but formed from the bottom four dots of the domino instead of the top four. The remaining thirteen signs were composed of righthand and bottom dots.

Under the teaching methods of those days, this arrangement aided the teacher a great deal and for the most part he kept firmly to it. But it was the source of three kinds of trouble. Firstly, to a number of educators of the blind Louis Braille's sequence acquired a special sanctity. Whatever happened, the serial order of the signs must never be changed. But the world had alphabets, the strict sequence of which was rooted in religious tradition, and their order could not be disarranged just to meet the convenience of Braille. We shall find instances in Asia, notably with Arabic and Devanagari scripts, where both Braille and the alphabet concerned adhered to their conventional sequence, with unhappy results.

Secondly, Louis Braille's symmetry entailed his saddling such frequently recurring letters as N, R and T with the rather more difficult signs while endowing less frequent letters such as K, V and X with the more readable. A number of critics regarded this as a weakness, and it led to their considering rearrangements of the signs and to the establishment of such seriously divergent systems as "American Braille" and "German Braille", based on the principle of allotting the signs with the fewest dots to the most frequently recurring letters.

Thirdly, the original symmetry inspired experiments in ultra-symmetry, of which we give an example here. From the point of view of the modern Braille reader the account of the basis of their system given by its authors, Messrs. Knowles and Garthwaite, would scarcely be worth recording were it not for the fact that it was taken seriously at the time— to such an extent, indeed, that it rent Braille in India asunder for fifty years.

Their system, issued in 1901, was designed as a uniform one for "All Oriental Languages". In explaining it they said:—

"In this arrangement the leading ideas are:

a) to take the combinations in pairs, and

b) to take first the pairs with one dot, then those with two, three, four or five dots. Then the one six-dot combination.

"The signs are thus divided into left and right-hand combinations. Those on the right-hand are called right-hand combinations, those on the left are called left-hand combinations.

"We find that there are twenty-eight pairs of combinations, and that there are:—

3 pairs with one dot; 6 pairs with 2 dots;
10 pairs with 3 dots; 6 pairs with 4 dots and 3 pairs with 5 dots.

"There are, besides, three combinations of two dots, which differ only by position, viz., two dots in upper line, two in middle line and two in lower line. Also four combinations which have no pairs, three with four dots, and one with six dots. This exhausts the sixty-three possible combinations.

"Another chessboard-like arrangement of the combinations is also shown... From this it will be seen that the combinations may be arranged in sets of four, the two upper in each sub-division-square being pairs, and the two lower ones being these pairs turned upside down, or the lower two combinations being the complementary combinations of the upper.

"The combinations may be considered also with reference to the lines on which the dots are placed, and we have the following:

"There are fifteen combinations with only upper, middle, or upper and middle dots. Three have upper dots only, three middle dots only.

"There are thirty-six combinations having both upper and lower dots. Of these twenty-seven also have middle dots, nine have no middle dots.

"There are twelve combinations with middle and lower, or only lower dots. Of these three have lower dots only..."

Messrs. Knowles and Garthwaite described this maze as "the principle of reversal of pairs". Curiously enough, however, the authors were apparently not entirely clear as to what purpose this elaborate symmetry served, for they added:—"It cannot be too strongly impressed upon anyone who may read these notes, that it is not at all necessary, or even advisable, that an attempt should be made to set before the uneducated pupil the explanation, or even a statement, of the classifications or the reasons for the signs as given here".

The British and Foreign Bible Society, in publishing the manual, cautiously appended the note:—"It must be understood that the Society is not responsible for all the opinions of its advocates".

In those days educators of the blind, and not the blind readers, made most of the decisions on matters of embossed type. They stressed symmetry because it not only made teaching simpler, but also because they believed it helped the blind reader more than was actually the case. The blind pupil speedily ceased to concern his mind with the composition of the signs, quickly associating a form, felt by the finger, with a sound, just as the sighted child similarly associated a visual form. Learning the signs is neither a difficult nor a lengthy process, and once passed, the reader looks at Braille signs from only one point of view —are they difficult or easy to read? If you ask him what dots compose a certain letter, or what is its position in the original sequence, he will almost certainly hesitate and make a mental effort before he answers.

The blind reader is conservative by nature. Once he has learnt to associate with Braille signs particular sound values, he dislikes change, whether for his own language or when he chooses to learn a foreign one, beyond, of course, accustoming himself to the normal adjustment as between one tongue and another.

Under modern teaching methods, Braille symmetry has lost its old status. The child no longer begins his literary education by learning his alphabet "A, B, C" fashion, but starts with simple words, learning to recognize the form of the letters which make them up whatever order they come in. But the teaching methods of the mid-Twentieth Century had not been thought of in the Nineteenth, nor had the blind for the most part been able to formulate views on Braille based on experience. Indeed, it seems that the era of experiment was inevitable, made a little more protracted perhaps by the readiness with which the system lent itself to re-designing.

BRAILLE IN BRITAIN

While it is generally held that Braille was introduced into Britain by an able blind man, Dr. Thomas R. Armitage, the Royal London Society for Teaching and Training the Blind (London) states in its Annual Report of 1950-1951 that—"The Braille system was first introduced into the School by Professor Hippolyte Van Landagen of the Belgian Institution in 1861 and Braille Musical Notation was introduced in 1877". Dr. Armitage in his book *The Education and Employment of the Blind*, written in 1886, expressed the following view of the bitter controversies which had waged over types for the blind during the 1860's and 1870's.

"The two main causes of this lamentable state of things seemed to be that inventors of systems and managers of institutions generally had their sight, and, misled by this sense, they could not understand or enter into the real wants of the blind. It is a curious and instructive fact that

the two systems which are now most in favour with the blind themselves and which have most vitality in them, are due to two blind men, Mr. Braille and Dr. Moon... Among the more intelligent of the blind the opinion has long been gaining ground that for any good results to be obtained, the question must not be settled *FOR* the blind, but *BY* the blind themselves... The relative merits of the various methods of education through the sense of touch should be decided by those and those only who have to rely upon this sense."

Dr. Armitage had put this policy into effect in 1868 when he collected a group of intelligent and educated blind men who studied the various British types—the Bible at that time was printed in no fewer than five systems. They examined Braille and considered the ways in which it might be adapted to English and came to the sound decision that the interests of the blind would be best served by accepting Braille as being unquestionably superior and by copying the French arrangement exactly as it stood.

This committee founded the British and Foreign Blind Association, later renamed the National Institute for the Blind, a body which has played no small part in the pioneering and printing of Braille for use throughout the world. Under its influence Braille soon became the educational medium of the British blind.

BRAILLE IN AMERICA

Braille did not fare so well in America. One group took the French arrangement as Britain had done. Another modified many of the signs on the principle of giving those with the fewest dots to the most frequently recurring letters; while a third group made an extremely radical change, turning the axis of the Braille rectangle from the vertical to the horizontal. Its signs were two dots high and from two to four dots wide.

All three systems had their virtues. The first, with the exception noted in the following paragraph, maintained uniformity of script with England, France and with the Brailles of most of the European countries. The second (American Braille) achieved economy of dots and thereby eased the task of writing under the old dot by dot method. The last (New York Point) effected a reduction in space and claimed greater ease of reading. These individual virtues, however, were heavily outweighed by the catastrophe of having three different scripts for the English-speaking world and within the United States, a situation which would be paralleled if one third of sighted Americans to-day spelt WASHINGTON in the ordinary English way; another third spelt it PXFTOQWSAQ; and the remainder expressed it thus ⠅⠓⠚⠎⠁⠭⠊⠍⠽⠭

The exception, noted above, is recorded in Dr. Armitage's book, he says:—"The little Braille that has been used in America has not been pure Braille, for W has been placed in its regular position in the alphabet as the 23rd letter, whereas in the French Braille X is the 23rd letter, and this position is universally adhered to in Europe. The alteration in position adopted by the Americans necessitated the change of meaning in the last four signs in the alphabet, French X becoming W; French Y becoming X; French Z becoming Y and the French ç becoming Z. It is easy to understand what confusion this small change in the position of W has caused.

School textbooks, the Bible and all Braille works had to be expensively printed three times over. The blind, educated in one school, could not exchange letters with those of another. Everyone recognized the futility of this unhappy state of things, but none would give way; and so matters went on for thirty or forty years. Only in 1918, after a committee had laboured for fifteen years was unity restored. This committee agreed to a return to the original French Braille, a decision which brought uniformity not only within the United States, but also between it and Europe.

Before the introduction of Braille into America, considerable experiment had been made in that country in other forms of embossing. The following excerpt is taken from the Proceedings of the American Association of Workers for the Blind, 1933:—

"The first book embossed in this country was the Gospel of Mark, printed in connection with the Philadelphia school. As this type was not legible, the effort to produce a legible type resulted next in the development of the "Philadelphia Line Type" and the "Boston Line Type". Experience and experimentation with many varieties of line type, conducted here and abroad, led to the ultimate adoption of a dot type. Without doubt, William B. Wait's experiments at the New York Institute did more than any others to establish the fact that a dot type is not only serviceable for classroom instruction but more legible than any form of line type that has been devised."

While the American decision of 1918 restored uniformity between the uncontracted Braille of Europe and America, a further fourteen years passed before, in 1932, common agreement between the United Kingdom and the United States established "Standard English Braille" as the contracted form for everyday use throughout the English-speaking world.

BRAILLE IN GERMANY

At a conference in Vienna in 1873, some years after Germany had adopted the original French Braille, it was decided to introduce a German adaptation in which the letters recurring most frequently in German were given the simplest signs. It will be noted from the report of a conference in Berlin in 1879, that this divergence lasted only six years. We quote the report in some detail because both the reasons which prompted the experiment and the considerations which led to a return to the original French signs have been common to most Braille divergences whether in the Old World or the New. A wider knowledge of this phase of trial and error during the latter half of last Century may be a help both in remedying the remaining disunities and in preventing the growth of new ones.

"Opening this Conference Director Mecker (Düren) expressed great disappointment at the continued disagreement between the supporters of the original Braille and those of the new German Braille. He had taken a vote from thirty-three schools; nineteen of these supported the original Braille (fourteen insisted on keeping it, whatever happened) and ten voted for the new German Braille.

"He quoted a letter from the Director of the St. Marie School, the father of the new German Braille alphabet, who stated that although he was the proposer of the new system at the Congress in Vienna six years before, he was now most anxious that some agreement should be reached, because the blind were suffering so greatly from the discord which it had created. He was prepared, therefore, to submit to the decision of the present Berlin Congress. His first objection to the French Braille system had been that figures such as 4 and 6, 5 and 9, 8 and 0 could easily be confused and it had therefore been his intention to introduce the simplest possible signs for these figures, making such confusion impossible. Added to this was of course the idea of giving the simplest possible signs to those letters which recurred most frequently in the German language. However, his proposals had been overruled and considered unimportant, in view of which he was fully prepared to withdraw the project of a new German Braille. Moreover, he had had the Report of the British and Foreign Blind Association, London, according to which the British had, as a result of the decision taken at the Paris International Congress of 1878, agreed to French Braille as an international system with contractions.

"Director Mecker then quoted a letter from Dr. Armitage of London, as follows:—'You have asked me to give you my opinion regarding the question of whether Germany should use the old or the new Braille system. I am happy to reply to this, especially as the whole question was thoroughly studied by our Blind Association a few years ago in respect of the comparison between Braille and the New York system. At that time we felt that although the New York system meant a gain of space of 22%, the general losses would be regrettable, above all in respect to music. In view of this we decided to retain the old Braille. There are other reasons. The new German Braille does not offer any gain of space and the increase of speed does not appear of sufficient importance to override the overall losses. Such experiments are often made when a new method of teaching is being introduced. I, myself, made a similar experiment with the English language ten years ago, but was soon convinced that it would be far better for the English blind to adhere to the same writing and printing methods adopted by the blind of other countries, even if the writing should take a little longer. Added to this is the fact that we, in England, employ many contractions, mainly consisting of groups of letters which appear frequently in our language, which are represented by one sign. If the Braille system becomes general in Germany, such contractions will no doubt also be introduced, which will result in the proportion of frequency of recurrence of such letters being considerably altered.'

"Director Mecker concluded, 'Our only possible decision can be to agree upon the original Braille system, even if we were convinced that the new German Braille would have some internal advantage.'

"He then moved that although:—

The German method, as compared with French Braille, had the advantage of writing rapidity (approx. 15 %), reading rapidity (approx. 5 %) and space economy (approx. 5 %);

it had the disadvantages:—

that it had no figure signs which could be employed internationally and was not at all suitable for writing music;

that it was not universal in character and could not be applied to any other language;

that all works of German literature printed in this method would have difficulty in finding a market outside Germany, and that foreign literary works printed in Braille would become inaccessible to those persons practising the German method;

that moreover, no books existed as yet, printed in this German system;

while French Braille, adapted to German had the merits:—

that the original Braille system had figure signs usable everywhere, and was most suitable for writing music;

that in orthography it could be adapted to every language;
that after many years of use, it had proved successful everywhere and wherever any other system had appeared, offering saving of time and space, as did the German system, the system Cordon in France and New York Point in America, it had soon been dethroned;
that in this system countless works of literature in many languages, including numerous German works, as well as a great number of musical scores were already printed; and that the original Braille system was in use in all European countries.

"It was therefore decided that:—
The German Braille System be rejected and the French Braille System be accepted."

"Director Meyer (England) said he had been present at the Paris Congress. He pointed out that the Universal Braille was now in use from the north of England to the Eastern Mediterranean and that he had just received a fine example of Braille writing from Mexico. He appealed to those present to follow the principle of unity, not for Germany to isolate herself from the rest.

"The resolution was then put to the vote; thirty-five voted in favour, while twenty-seven abstained.

"Director Meyer said they were fortunate in having among them a number of blind persons who had exercised their votes, saying that they were the most competent people to judge this matter. It was noted that of the twelve blind members present, nine had voted for the original French Braille, three abstaining from voting."

THE FIRST PROPOSAL FOR INTERNATIONAL BRAILLE

The tendencies in America and Germany to re-arrange the Braille alphabet, allotting different values to the symbols gave rise to a vigorous discussion at the International Congress on Work for the Blind which took place in Paris in 1878. The Congress decided, firstly, that Braille was incontestably superior to all other forms of embossed type and, secondly, that it should be adopted as the universal script for all the blind with the values of its symbols unaltered from those of the original French. We have extracted the following from the proceedings:—

"Mr. Smith of Boston, in a carefully studied memorandum, proposed to modify the Braille system, by choosing signs most quickly formed for the letters which occurred most frequently in each language. This idea, he was told, had already been applied without success, and the congress felt that although the care and the calculation which Mr. Smith had given to the study lent weight to his argument and perhaps would convince those who had doubts, it did not persuade those who used it. The Congress considered that the conclusions come to by Mr. Smith were in opposition to the desire for unification which had brought about the present meeting. As a result, though appreciating the hard work and time which Mr. Smith had given to his study, the Congress declared that they would not adopt his conclusions.

"Mr. Koechlin, Director of a school for the blind in Ilzach, read a note to the Congress on the unification of the system. This blind authority had experimented with the relief types most in use and had no hesitation in pronouncing the Braille system as the best. The Commission thanked Mr. Koechlin for his excellent work and declared his expert opinion to be the general view.

"Speaking on behalf of a number of English workers for the blind, Mr. Johnson said that in spite of certain advantages which he recognized in the Braille system, it should not be adopted to the exclusion of all other systems, which had rendered excellent service to the blind. The Braille system was conventional and special, separating the blind from the seeing, and he and his friends thought that first place should be given to the consideration of a type in raised Roman letters. A large number of books were published in this type; the Moon system was derived from it and much appreciated by those who used it. In England it was feared that if too great importance were placed on unification, it would render obsolete the numerous and costly works in raised Roman and Moon types.

"Mr. Meyer said that none of the members of the Commission would ignore the great service given by the embossed books in Roman type and its derivatives from London, Worcester, Philadelphia, Vienna and elsewhere. Nobody wished to discredit these numerous works but only to consider the special suitability of the writing and printing invented by Braille as applied to orthography, to stenography, to mathematics and to music. He proposed that, before its incontestable advantages, it was impossible not to proclaim the superiority of this system invented by the blind French teacher.

"Mr. Meyer continued, 'We have studied with care numerous documents sent to us. We have examined successively all the systems, and have weighed their merits. As the Braille system has been adopted by Germany, Austria, France, Belgium, Holland, partly in England, Italy and even Egypt, we must recognize that the trend of the world is towards Braille.

" 'The Commission proposes that you should adopt the existing Braille as it stands because it embraces both reading and writing and because

it fulfills the two principal needs of the intelligence of mankind. It is not enough for the blind man to know how to read, it is also necessary that he should be able to convey his thoughts by writing and this he can only do by writing Braille... In proposing the adoption of the Braille system we would make it clear that the *unmodified* system of Braille is understood, the French Braille and none other.'

"M. le President... 'Will those who are of the opinion that the present Braille system unaltered represents the best method for teaching the blind reading and writing and that there is need for it to be used universally until a better method is discovered, please raise their hands?' The Congress pronounced itself by a large majority in favour of the "generalisation" of the existing Braille system."

Even so, suggestions for changing the system continued to be made, and twice again at succeeding international Congresses—Brussells in 1902 and Cairo in 1911—the Paris policy was re-considered and convincingly reaffirmed. While this constituted the authoritative opinion of the responsible bodies in blind welfare, it was not binding on individual countries; and it is probable that, as in those days co-ordination of blind welfare was almost non-existent, many workers for the blind remained unaware that any such policy had been laid down. Nevertheless, full European uniformity in uncontracted Braille was achieved in due course.

BRAILLE IN ASIA

The first adaptations of Braille to non-European languages appear to date from the 1870's. Mention was made of an Arabic Braille at the Paris Congress in 1878; and the Hill-Murray Braille of Peking was designed about the same time. Palamcottah or Askwith Braille for Tamil (South India) and Shirreff Braille for Urdu and Hindi (North India) were designed in the 1890's. Marathi Braille (Poona), Nilkantrai Braille for Marathi, Gujrati and Hindi (Western India), Oriental Braille (for all Oriental languages) and Shah Braille (Bengal), came into being about the turn of the Century or soon afterwards. At the same time independent mission workers in China were creating further adaptations for that language—Cantonese, Foochow, Kien-Ning and other codes. The Japanese adaptation was made in 1887. Other languages followed rapidly—Sinhalese, Burmese, Siamese, Korean, Persian, Armenian, Turkish and so on.

Lesser known tongues, many of them without visual scripts of their own, were being adapted to Braille. We have come across Braille forms for languages in which, as far as we can discover, no teaching of the blind is now done, such for example as a Berber dialect of Northern Africa and Araucanian, an Indian language of the Chilian Andes. In the Chad territory of French Africa Braille has been adapted to Mundang, which counts at the present time one earnest reader.

Most of the credit for pioneering Braille in Asia, Africa and the remote places of the earth belongs to the missionary bodies of Europe and America. Working in their distant outposts, they took pity on helpless blind children and gathering them into the missionary compounds, discovered almost without realizing it, that they had founded pioneer schools for the blind. Adaptations of Braille to the local vernaculars had to be made before systematic education could begin, and these they designed as best they could.

Fired by this example, local voluntary committees established other schools, and in due course education departments granted some assistance. Nationals of many countries, Arabs, Indians, Chinese, Japanese, joined in the work. Thus the way was slowly paved for the education of the blind and their general welfare to ripen one day into a national service. Although Europeans planned most of the Braille adaptations, others were designed by people of the countries concerned. The Nilkantrai Braille of Western India, the Shah Braille of Bengal, the Advani Braille of Sindh were the work of Indians. The interesting Braille used in Japan was the creation of an able blind man, Mr. Kuraji Ishikawa.

These were magnificent achievements, gallant pioneer work, promising the opening of the door to literature and independence to millions of blind people. An unhappy circumstance, however, has hitherto stood in the way of its full realization. The spread of Braille to non-European languages has been a haphazard process, conforming to no plan and with no central point of reference from which advice could be sought.

Indeed, it could scarcely have been otherwise. Until 1918 parts of the West itself were in sharp conflict as to the form Braille should take. In Eastern Asia the Braille pioneer had to use great ingenuity to compress long alphabets or express thousands of ideographs within the compass of sixty-three symbols. The pioneer too, was a busy person and attending to the many needs of his remote station he was often unaware of Braille developments in other parts of his continent. They have earned the gratitude of history and the fact that many conflicting systems came into being is chargeable solely to contemporary circumstances.

In the absence of a single established principle, they necessarily followed a variety of courses, which except in the case of the ideographic scripts, fell into the following broad categories:—

1. *Traditional Braille.*

Under this principle the signs originally given to Roman letters retained the same letter or sound values in other scripts and tongues. To most of the pioneers this seemed to be the obvious and practical course. Dr. Nilkantrai's Braille for Indian languages, for example, gave the European Braille symbols to Devanagari letters with same or similar values, A, B, D, E, G, H and so on. This was effective as far as the scope of the Roman alphabet allowed, but, as most Asian and African languages contain more letters or sounds than Roman had equivalents for, they had to find some way of representing them. Most of the design-

ers of Braille spoke English and some of them turned to the contractions of English Braille to find signs which would provide precedents for local letter values, finding them in such contractions as CH, GH, SH, TH, OU and OW. These and other signs fairly consistently maintain these values in for example, Armenian, Hebrew, Gujrati, Marathi (Nilkantrai), Burmese and Swahili.

But beyond these again, many non-European alphabets included letters for which no Braille precedent had been created. Arbitrary signs had to be allotted to them, with the consequence that even throughout these traditional Brailles only limited uniformity was achieved.

2. *Concurrent Sequences.*

The necessity, felt by some, both to adhere strictly to Louis Braille's original sequence of symbols and to retain the conventional order of such ancient scripts as Arabic and Devanagari, resulted in a form of adaptation which ruled out all possibility of uniformity between the Braille of one script and that of another. Under this method, one simply took the first sign in the Braille sequence and gave it to the first letter of the oriental alphabet, and so on. As the lengths of alphabets, even within the same script, as well as the distribution of letters varied tremendously, the rigid application of this principle totally destroyed the value of Braille as an international script.

In the passage on page 22 quoted from Dr. Armitage, the fact is recorded that the old American Braille applied this principle to the English alphabet, giving the French Braille X to the letter W, with the corresponding changes to the Braille signs for X, Y and Z. In the same way, because Arabic does not employ the Persian letters, Cheh, Peh and Gaf, these two closely related languages, sharing almost the same visual script, would be divided in Braille by totally different alphabets. Again when the Arab student endeavoured to learn French or English, he found that Braille letters with which he was familiar represented completely different sounds in these languages. The Uniform Indian Braille of 1943 followed this same principle, maintaining at the same time the orthodox sequence of the Devanagari syllabary and that of the original Braille.

As an illustration of how matters stood in these important linguistic areas at the time Unesco was asked to undertake its study, we give a table of the signs employed by Arabic, Persian, Indian and the original European Braille for the same letter sounds. Both the Arabic and the Indian codes had been designed on the principle of concurrent sequences, but the Persian had followed traditional Braille values to a considerable extent.

LETTER	ARABIC	PERSIAN	DEVANAGARI (Uniform Indian 1943)	ORIGINAL BRAILLE
B				
D				
J				
I				
M				
T				

It is probable that the designers of some, at least, of the concurrent sequences were unaware of the policy laid down by the early international conferences and that they had in mind what seemed to them a simple way of providing an alphabet. Another factor, however, influenced the authors of the Devanagari adaptation, namely the coincidence that its syllabary ran symmetrically in groups of five letters, and that these fitted conveniently into the groupings of ten which marked the original Braille sequence.

3. *Signs with Fewest Dots to the Most Frequently Recurring Letters.*

The experiments with Braille based on this principle in America and Germany have already been described. As logical as the plan is when considered in respect to only one language, it destroys the possibility of Braille uniformity between one language and another, because frequencies vary so greatly. Many of the blind too, hold that

the signs with the fewest dots are not necessarily those which make for the easiest reading.

4. *Principle of Reversal of Pairs.*

This principle which reached its apex in Oriental Braille has already been described. In a number of languages it has been used to a small extent to couple pairs of letters. For example, in Hebrew, T is dots 2-3-4-5, and a second form of T, dots 1-2-5-6 ; one form of U uses dots 1-3-6 and another dots 3-4-6 ; while two S's are paired with dots 2-3-4 and dots 1-5-6. Serbo-Croatian and Czech pair two S's and two Z's in a similar manner. It may be said of this form of symmetry, as of other forms, that its usefulness is limited to the brief learning stage, and that therefore, it should not be employed to the detriment of the more important factors of either readability or uniformity.

It is not surprising that the circumstances related in this chapter led to each of the three great linguistic areas, China, India and the Perso-Arabic countries, falling heir to eight or more conflicting adaptations. Again while lesser languages had but one Braille apiece, they were divided from one another by their having been designed on diverse principles.

BRAILLE IN INDIA.

In the course of its Braille history, India re-enacted most of the experiments and controversies of the west. The first two adaptations made in the 1890's followed traditional Braille ; one designed by Miss Askwith at Palamcottah, for Tamil (Southern India), and the other by Mrs. Shirreff, for Urdu and Hindi (Northern India). Marathi Braille, planned a little later by the Church of Scotland Mission, Poona, followed the principle of concurrent sequences. Then Messrs. Knowles and Garthwaite in 1902 published their famous Oriental Braille with its "Reversal of Pairs" ; and about the same time Dr. Nilkantrai of Bombay designed a third traditional system, intended for all Indian languages.

Oriental Braille gained some vogue, but survived until recently only in an American Mission School in the Telegu country and in a school in Bombay. Bengal adopted it, but, not liking it, Dr. Shah, blind founder of the Calcutta School, made his own adaptation for Bengali. In the meantime Mysore Braille, apparently adapted from Dr. Nilkantrai's system, came into existence. For some years India gave birth to no new codes. Then in 1922, Mr. P. M. Advani, in Karachi, planned Sindhi Braille for the speakers of that language in the Province of Sindh. It too, followed its own lines.

India now owned eight distinct systems. Shirreff, Askwith (Palamcottah), Nilkantrai and Mysore, following traditional Braille as far as it went, had something in common, both between themselves and with Europe, but the rest differed as much from one another as they did from foreign Brailles.

India early realized that this multiplicity of systems would hinder both the printing of books and the progress of the blind. The Rev. G. Knowles and Dr. Nilkantrai each constituted himself a champion of unity, but as uncompromising advocates of their own systems. History has awarded its verdict to the latter. It is indeed striking that in 1901, he already held the wide conception of Braille which, after another half century of experience, the Unesco conferences were to endorse. He wrote :—

"I think a Universal Braille would form the most common platform from which one can look at all the languages of the East and the West. It must be granted that slight changes will have to be made in the original Braille to suit the departures of each language ; but all the common sounds in all the languages being expressed by common signs in each, there will be such a facility in learning other languages, that the blind will feel their physical defect greatly removed when they will see that even as they stand with the life-boat of the Braille type they can sail in all the oceans of languages whether they be rough or smooth. A universal Braille will be a common tie uniting the blind of the whole world who are otherwise divided from their fellow sufferers by prejudices of casts and religious customs and manners, etc. In doing so, we should be attending to the greatest good of the greatest number.

"The experts, who ought to be consulted for such purposes, must be besides the sympathizing sighted, a large number of the blind themselves of various nationalities. The qualification of previous training ought to be a standard for such selection. Without meaning any harm, it must be said that, however sympathetic the sighted be towards their fellow sufferers, and however much they might help to relieve their condition by large donations and gifts, they cannot be as nice judges of the wants of the blind as the blind themselves. No party question, no racial prejudice, no religious bias, no political nor national opposition ought to weigh anything in considering the all important question of having a universal notation for the blind. It must be God's work and must be done because God is pleased by honest, sincere and conscientious work."

Mr. Knowles was an enthusiast. His writings reveal that he planned a revolutionary line and angle script for the sighted people of the world

as well as his universal Braille. Unluckily he demanded that the latter be built not on Louis Braille's Braille, but on Mr. Knowles'. If only he had supported Dr. Nilkantrai's instead of losing himself in the morass of his reversible pairs, India would almost certainly have reached a sound solution long ago. As it was, controversy continued intermittently down through the years. From time to time conferences met and asked the Central Government to facilitate a solution.

At last, in 1940, Sir John Sargent, Educational Commissioner to the Government of India, called a representative conference. This laid down the principles to be followed by a "Uniform Indian Braille"; and the Government then appointed an expert Committee to put the recommendations into effect. Their report, issued in 1943, advocated the system mentioned above based on the principle of concurrent sequences similar to the Marathi Braille of half a century earlier. This decision aroused considerable criticism, aided by the circumstance that no member of the committee was blind. The chief opposition came from those who favoured a traditional Braille which would maintain the closest possible uniformity between India and European Braille.

Consequently India remained divided. Something could be said for both sides. On the one hand lay the practical advantages of international uniformity, while on the other, the harmony of rhythm between the Devanagari groupings of five letters and the Braille groupings of ten made a very real appeal to Sanskritic scholars.

In 1949, the Government of India, alive to the difficulty of reaching accord within India, asked Unesco to study the whole problem on an international level.

BRAILLE IN CHINA.

The first school for the blind in China was founded in Peking in 1876 by Mr. Andrew Murray of the Scottish Bible Society. He was faced with the complex task of adapting Braille to the ideographic script, so strikingly different from the Roman writing of Europe. He invented a rather intricate system, involving the serial numbering of its signs from 1 to 408. The following account is taken from an unknown source.

"The first thing for the pupil to do is to learn by heart these 408 sounds, and the number corresponding to each tenth sound. For instance, he must remember that 390 is YEN, that 160 is K'UAN, and so on. Mr. Murray makes this comparatively easy by a system of mnemonics, which I shall now explain.

"In Table A, at the beginning of each line, and forming a separate column, are placed the characters SSU, TI, NI, MI, etc. (Of course these Chinese characters are only for the use of the teacher, from whose lips the illiterate pupil learns the sound represented). These are the mnemonic sounds, and stand for numbers.

"In Table B, I give the mnemonic sounds in ten squares. The sounds in the first square, TAN, TI etc. all represent One; NI, NA, NAN in the second square all stand for Two, and so on. Those in the tenth square, HSU, SSU, SUAN, all stand for the zero in 200, 300 etc.

"The pupil first learns Table B thoroughly, so that if the teacher says 5, the pupil at once repeats LAI, LI etc. or if the teacher says 8, the pupil answers, FEN, FA, etc. or if the teacher says LING, the pupil answers HSU, SSU, SUAN; and vice versa if the teacher says PAI, the pupil answers 9.

"The pupil begins by learning the mnemonic sound coupled with the first sound in each row of ten, as SSU A (1). TI CHAN (10). NI CHENG (20), MI CHIEH (30) JU CHUEH (40), TA SUAN HUAN (100). JE SSU-YUNG (400). Nearly all of these have meanings which help to fix them in the memory."

It has been said that a method used by the telegraph company, to transmit Chinese monosyllables by numbers rather than by Roman transliteration, inspired Mr. Murray's unique plan. It would appear to entail a considerable feat of memory on the part of his pupils, although possibly a smaller effort than that which mastering over forty thousand ideographs demands from the sighted scholar. Peking Braille is still used today in that city and in Mukden.

Writing of the difficulty of designing a satisfactory Braille for languages which do not use the Roman script, Mr. John Shadwell, member of the Executive Council of the British and Foreign Blind Association, said in 1895:—"The most difficult case for consideration seems to be that of the Chinese language. Here we have a well-established method of representing words, totally different from that used in Europe. As the Chinese use two hundred and forty-three signs where we use only twenty-six, and as Braille's alphabet only admits of sixty-three signs, we encounter a serious difficulty at the very outset. This has been surmounted by Mr. Murray in a very ingenious way. He has simply numbered the signs, and represents each by a number consisting of three digits, for which he uses Braille's signs. Thus, each sign required three letters to express it; but, as each sign represents a word, there is not much waste of space."

In 1898, Mr. E. G. Hillier, himself blind, manager of the Peking Branch of the Hong Kong and Shanghai Bank, designed a code of fifty-seven characters and together with a number of friends he opened a public blind school there in 1917.

Schools were established in Hankow and Canton in 1888 and 1889; Foochow in 1898, and the first in Hong Kong in 1901. These and many more were founded by British, American, German, Danish and Norwegian missionary societies and a number of them made Braille adaptations to local dialects in accordance with their own ideas.

About forty years ago a single system was planned for the Mandarin-speaking districts, comprising about two-thirds of all China, which, it was hoped would in due course replace the conflicting local codes.

We have records at Unesco of five of these systems; Mr. Murray's Peking code, Foochow, Kien-ning, Union Mandarin and Cantonese. The last two, both of which are still considerably used, are printed on pages 95 to 99.

Foochow is made up of fifty-three signs, comprising 14 initial, 34 final and 5 tone marks. Kien-ning's 49 signs are divided into 14 initial, 35 final and 5 tone marks. Cantonese has 81 symbols, made up of 22 initials, 53 finals and 6 tone marks. Mandarin has 54 signs and possibly 4 tone marks.

Beyond a few coincidental signs, these codes have nothing in common and only to the extent of five Mandarin and fifteen Cantonese letters is there any link between them and traditional Braille. Except for a few books of the Bible and some hand-transcribed works, almost no literature exists in any of the codes. Before printing on a large scale begins, therefore, it would be well if a final study were made and a single National System agreed upon. It would clearly be best to base any change on the existing Mandarin, linking to it such modified systems as particular dialects or territories might require. We have included in the table of Mandarin Braille a list of suggested changes which would bring it into close accord with World Braille if that were the wish of the Chinese blind.

BRAILLE IN JAPAN

The following account of the beginning of Japanese Braille appeared in the *Outlook for the Blind*, New York, March 1951:—

"In 1887, Nobuhachi Konishi, a teacher at the school for the blind (later principal), recognized the importance of the Braille system and encouraged his fellow-teacher, Kuraji Ishikawa to study it. Mr. Ishikawa studied very hard how to adapt the Braille system to the Japanese language, and succeeded in completing his own Japanese Braille system, now used almost exclusively in the education of the blind in Japan. Now, various kinds of embossed letters which had been used in the education of the blind were given up. This was a change of immense importance in the system of both reading and writing."

The system which Mr. Ishikawa designed for the Kana script of Japan is an ingenious and compact form of Braille. Kana is expressed in a syllabary of forty-two syllables of consonant and vowel, five vowels and a nasalization mark. In expressing this in Braille, each of seven consonants combines with the vowels, A, I, U, E and O. Each of these five vowels is formed by permutations of dots 1-2-4. The consonants K, S, T, N, H, M and R are formed from the pemutations of dots 3-5-6; and what is interesting is that these are combined with the vowel signs in the same cells, so that each syllable is expressed, not in two symbols, but in one. Take "SO" for example; S is dots 5-6; O is 2-4, SO, therefore, is 2-4-5-6. The W syllables are represented by the vowel signs in the lower part of the cell; while the three Y syllables are irregular.

It is probable that, while the synthetic construction of these syllabic signs is of assistance to teacher and pupil in the earliest stages of learning, the latter quickly associates each sign directly with its syllable without calling on his mental processes to analyse its component parts. To memorise the signs for forty-eight syllables and vowels is no very difficult task.

It is stated that English is a regular course in all Japanese schools for the blind and the Braille presses print a limited amount of literature in Romanized Japanese. It is a matter for speculation as to whether under these circumstances, there might not have been some advantage in giving the international Braille signs to the five vowels as well as to the syllables KA, NA, MA, TA, SA, etc. An important factor, however, needs to be taken into account in considering any modification in this direction. Unlike other Asian and African languages, Japanese has been extensively printed in Braille for many years, and most of the younger blind have been educated in it. Changes, therefore, could not be embarked upon lightly, and it will be noted in due course that the main Unesco conference on Braille recognized that "the special characteristics of the Japanese syllabary, and the ingenious adaptation of Braille to it, create a special position and that therefore, there is no justification for any departure from the present system."

OTHER ASIAN BRAILLES

An adaptation to the difficult Korean script was made a number of years ago and is in active use to-day in the schools for the blind of that country. Braille systems which adhered to the traditional signs of Europe as far as was then possible were arranged for Annamese and Viet-Namese about 1897 by Mr. N.Y. Chi, director

of the school for the blind, Cholon, (Cochin-China); for Burmese about 1914, by Father Jackson, a blind priest and for Siamese about 1938 by Miss G. Caulfield, a blind American lady. These complex languages and their scripts and tones present some special problems. Siamese, for example, has forty-three consonants, twenty-eight vowels and seven tones, under which circumstances traditional Braille signs were soon exhausted.

The first adaptation to Sinhalese in 1917 followed the pattern of Miss Askwith's Palamcottah Braille of South India, but Ceylon later went over to the Knowles and Garthwaite system. This was found unsuitable and in 1940 Sinhalese returned to traditional Braille, modifying the earlier adaptation to bring it more closely into line with Standard English Braille.

Pastor Christoffel, of the German Lutheran Mission, adapted Braille to Persian in the 1920's; while Turkish Braille, for its new Roman script, came into being about 1930. The Armenian form is of unknown date. Hebrew Braille appears to have had a somewhat confused history, several rather inconsistent forms being evolved by Jewish communities in various European countries. These, and a now obsolete Yiddish Braille, read from right to left and were linked in no way with the original French values. An International Hebrew Braille Committee went to work in the 1930's and designed a new form reading from left to right and in tune with international Braille.

The history of Perso-Arabic Brailles and the considerations involved in bringing about uniformity form the subject of the next chapter, while the problem of Urdu Braille is considered in Chapter 6.

It might be appropriate to say here that my first encounter with the Braille conflicts in Asia occurred when I was inspecting schools for the blind in the Bombay Presidency in 1940. I found that the children of one school in the city of Bombay could not read the Braille of another, for the first adhered to the Oriental system and the second, to the Nilkantrai. Two posts which I filled later on brought me into much more direct contact. One of these tasks was that of reporting to the Indian Government on the considerable problem presented by blindness in that country which then embraced Pakistan, and the other, that of rehabilitating the war-blinded of India, Pakistan and South East Asia. At this rehabilitation centre were many vigorous young men, speaking some eighteen mother-tongues, who were anxious to learn Braille. Among them were Pashtu, Sindhi and Urdu-speakers of the Perso-Arabic north; Hindi, Marathi, Gujrati, Bengali and Oriya men with their Devanagari script and Sikhs with the Gurmukhi; Tamil, Malayalam and Telugu men from the Dravidian south; and, to add to this babel of tongues, were Napalese, using a variety of dialects verging into Tibetan; a Koren-speaker from Burma; a Goanese of Portuguese speech; West Africans of several tongues and British troops besides.

Teaching Braille to those who had even only an elementary education in their mother-tongue and script, presented no great difficulty in itself; but the question was, what form of Braille should it be. India alone, as we know, had eight conflicting systems and no printed literature beyond a few of the Gospels and Psalms. These codes, too, were in the melting pot, for the Government committee was at work on its new Uniform Indian Braille. There could not have been a better research laboratory than this centre for the war-blinded, and from among them a group of intelligent literate men, some of them speaking three or four languages, came together to express their views as to the best solution. In 1947, the duties of reporting on blindness to the Governments of China and Malaya gave me the experience of parallel situations in those countries. This made it clear that the problem was widespread and that its solution called for an urgent and concerted effort if the many blind of these regions were to reap the full value of Braille and to gain a normal place in their communities.

PERSO-ARABIC BRAILLE

Arabic Braille has passed through the same sort of vicissitudes as Indian, Chinese and some European Brailles and from similar causes. Its situation was briefly reviewed in 1948 in the Report of the British Colonial Office and the National Institute for the Blind, London, on "Blindness in British African and Middle East Territories", which said:—"We understand that the Egyptian Government is planning to establish a Braille printing press in Cairo. Everything should be done to foster a maximum interchange of Braille Arabic literature between Egypt and the British colonies. The difficulty in this connection is that at least five codes of Arabic Braille have been devised, each differing slightly from the others and, until agreement has been reached on a standard code, full co-operation cannot be attained. To solve this difficulty, we recommend that the Palestine Government and the Egyptian Government should each nominate two Braille experts to meet as a committee under an independent chairman to discuss these conflicting codes and endeavour to reach agreement, after consultation with other countries interested in the development of a single Arabic Braille Code. It should be added that no Braille code can be considered satisfactory unless it accords with international usage, and this principle should be accepted as an axiom by any committee which is appointed."

In the course of our investigations we secured details of not five, but nine different adaptations, supplied to us by:—The Government of Egypt, the Government of India; the Government of Malaya; the National Institute for the Blind, London; the Association Valentin Haüy, Paris, the Ala-iya School for the Blind, Hashemite Jordan; the Fédération des Aveugles d'Afrique du Nord, Algiers; the Association des Amis des Aveugles, Casablanca and the British and Foreign Bible Society, London. These were:—

1. Lovell Braille, Egypt.
2. Modern Official Egyptian Braille.
3. Dajani Braille, Hashemite Jordan.
4. Vienot Bourgin Braille, Morocco.
5. Pères Carmes, Iraq.
6. International Arabic, édition de la Roue, Moghreb.
7. German adaptation.
8. Uniform Indian Braille (Arabic alphabet).
9. Standard Indian Braille (Arabic alphabet).

CHARACTERISTICS OF THE VARIOUS SYSTEMS

Four—Lovell Egyptian, Official Egyptian, Hashemite Jordan and Morocco Brailles—were read from right to left; five—Iraq, Moghreb, German, Uniform and Standard Indian Brailles—from left to right.

Four of the foregoing, i.e. the Iraq, Moghreb, German and Standard Indian Braille (as used in Malaya) were based on international sound values.

The numerals and punctuation marks of the Iraq, Moghreb, German, Uniform and Standard Indian Brailles were international. The numerals of Lovell, Official Egyptian, Hashemite Jordan and Morocco Brailles were international in reverse.

Uniform Indian Braille (Arabic alphabet) had no sound nor Braille relationship to other Arabic Brailles.

The Lovell, Official Egyptian, Hashemite Jordan and Morocco codes retained the principle of concurrent sequences between Louis Braille's original and the Arabic alphabet, but the Braille letters were reversed and were read from right to left. The differences in their signs were limited chiefly to vowels and contractions. Several of the nine systems had been little used but their existence threatened to aggravate the disunity.

To this confusion of Arabic adaptations must be added those made for other languages which to a greater or lesser extent used Arabic script—Persian, Urdu, Swahili, the old Turkish Arabic and others.

The first Arabic Braille appears to have been the work of an English missionary, Miss Lovell, probably in the 1870's, for it was stated at the International Congress in Paris in 1878 that Braille had then extended "even to Egypt". It was built on the principle of concurrent sequences, described in Chapter 4 (page 27). Miss Lovell's Braille was largely imitated in three later adaptations, all comparatively recent : Mr. Dajani's in Hashemite Jordan, the Official Egyptian, evolved by a committee in 1941, and Mr. Vienot Bourgin's

Morocco system. In spite, however, of their adhering to the same principle, they were not uniform.

In its report on Arabic Braille, the Advisory Committee on Braille Problems (Unesco House, Paris, December 1949) said, inter alia—"The Committee desires to pay a warm tribute to Professor Nicola Bassili of Egypt for the clear and able manner in which he presented the Arabic point of view and the opinions of the Arabic Braille Committee (Egypt 1941). With this added knowledge the Committee went to work to see whether a way could not be found which would as far as possible preserve in Braille the characteristics and great traditions of the Arabic script and language, while at the same time preserving to the blind the high value of their unique possession, a single world script. We believe that to a great extent both objectives can be achieved to the lasting benefit of the blind of all lands. We submit this special memorandum for the consideration of all governments, societies and individuals concerned for their detailed study.

"In the course of our meetings we gave special consideration to questions of Arabic Braille and to views expressed by workers for the blind, educationists, philologists and others from Iraq, Syria, Hashemite Jordan, Egypt, the Sudan, Algeria, India, Malaya, Paris and London." (The countries where Arabic Braille had been taught for many years included Egypt, Hashemite Jordan, Israel, Lebanon and Iraq while it is also used for the Malay language, the script of which is Arabic.) "We noted that at the present time three factors hinder progress in Arabic Braille and the development of uniformity between most of the Arabic adaptations and the World Braille system. These are:—

"a) Multiplicity of Arabic Braille adaptations. The Committee emphasized the desirability of uniformity in Braille within the Arab world in accordance with international practice, and recommends that leading Braillists and linguists of Arabic-speaking countries should be consulted. We realize of course that there is no need to say more on this subject, for the advantages of a single Braille system for each linguistic area are abundantly clear and the evidence before us shows that all Arabic Braillists are fully alive to them. We believe that, once main principles are agreed upon, a regional conference on Arabic Braille would be the most practical way to reach a solution acceptable throughout the whole Arabic world, and we hope, too, one which would embrace within the unified system those languages which for many centuries have had close religious and cultural ties with Arabic.

"No technical difficulty of course lies in the way of a single Arabic Braille. Fortunately, because of the multiplicity of systems no appreciable printing of Arabic Braille books nor the setting up of libraries has yet been embarked upon; so that the creation of a single uniform system will not entail such a sacrifice as America had to make in attaining the same goal.

"b) The principle of concurrent sequences. The system under which an alphabet in its serial order received Braille signs in the same serial order as the original French Braille, makes uniformity between the Braille of one language and that of another impossible...

"c) The writing of several Arabic adaptations from left to right and the reading of them from right to left. We would say at once that we are fully aware of the old and strong tradition of writing and reading visual Arabic from right to left. This has, of course, a religious basis and no change should therefore be made without the full assent of the Arabic-speaking blind themselves. It would be very regrettable if Arabic Braille were not of the family of World Braille, but we realize that sometimes circumstances exist in which religious beliefs must have precedence over material values and practical considerations.

"As, however, the International Braille Conference is likely to lay down a policy that will be valid for many years, we think it is best to draw attention to the following aspects of the situation:—

"1. The alphabets of all neighbouring languages adhere to World Braille—Turkish, Armenian, Hebrew, Persian, Swahili and Hausa, and also the various European languages spoken throughout this region.

"2. The script of every language is both written and read in a traditional direction —Chinese from top to bottom of the page, Persian, Urdu and Hebrew from right to left, Roman, Greek and Devanagari from left to right. Braille is traditionally read from left to right, and the Brailles of Japanese, Korean, Chinese, Malay, Urdu, Persian and Hebrew conform, not to the conventions of their visual scripts, but to the Braille convention. Without uniformity in the direction of reading, Braille uniformity in the fullest sense is impossible.

"The extent of the Arabic world, embracing as it does many sovereign states and integrating also with the languages of other countries, has been a contributory factor to the present uncoordinated Braille situation. Adaptations were necessarily considered in their relation to the

local needs of pioneer schools for the blind; but within this rapidly changing world, with increased communications, with wider horizons and with international organizations, independent of local considerations, able to view educational, scientific and cultural matters in a universal setting, the time has come when together we can discuss and plan matters such as Braille on a world basis, not just for to-day, but for a long time to come."

SPECIAL COMMITTEE ON PERSO-ARABIC PROBLEMS

A memorandum summarizing the Perso-Arabic situation and the foregoing views of the Advisory Committee was circulated to interested governments, societies and workers for the blind in the early part of 1950. The International Meeting on Braille Uniformity in March of that year nominated a special committee to consider problems affecting the Perso-Arabic languages, of which the members were:—Mr. S.T. Dajani (Hashemite Jordan) chairman; Professor N. Bassili (Egypt); Dr. M. Akrawi (Iraq); Mr. Mohamed Ramzan (Pakistan); Major D.R. Bridges (Malaya); Mr. J. Wilson (African Tribal Languages); Dr. M. Geffner (Hebrew); Mr. P. Henri (French); Mr. J. Jarvis (as Chairman of the Conference) and myself as Rapporteur and Unesco Consultant on Braille. In its report this committee said:—

"The Rapporteur submitted a memorandum from Mr. André Balliste, Fédération des Aveugles d'Afrique du Nord, stating that his Fédération believed that Arabic Braille should be read from right to left and that it should be built on the principle of concurrent sequences.

"The Chairman then summarized the Arabic Braille position as he saw it in the light of the earlier discussions at the main meeting; first, as to the direction of reading; second, as to uniformity between Arabic and the proposed World Braille; and thirdly, as to the procedure by which all those concerned with uniformity within the Perso-Arabic area, could be given the opportunity to agree.

"He said that the building up and testing out of the Arabic Braille used in his school had taken over twelve years of study and effort, but he had given great thought to the wider aspects now presented and he agreed that the interests of all blind people lay in following the united course now open to them. To him this meant a great sacrifice, but he knew it was right to make it.

"He asked whether, in the interests of Perso-Arabic and world uniformity all were agreed that Braille for Perso-Arabic languages should read from left to right. Mr. Mohamed Ramzan, Dr. Geffner and Major Bridges said that in their linguistic areas Braille, expressing Arabic or Hebrew scripts, was read from left to right and that no difficulty was experienced as a result. The Rapporteur submitted a letter from Captain Sharia Bekhradnia, the Persian member of the Advisory Committee, saying that Persian Braille had always read in this direction and that it was built on the principle of sound association with traditional Braille values. Persia wished to continue these principles. It was agreed unanimously that the direction of reading and writing Perso-Arabic Brailles should conform to World Braille practice, i.e. reading from left to right.

"The Committee also agreed unanimously that Perso-Arabic Brailles should be built on the closest practicable sound and letter association with World Braille, subject to the full needs of each alphabet being met.

"Mr. Mohamed Ramzan, Mr. Bassili and Major Bridges each stated that their countries were ready to compromise and sacrifice much of their past systems in order to achieve the closest uniformity. They would follow the example of the Chairman.

"It was decided that the present meeting should prepare a draft of Braille alphabets for Arabic, Persian and Urdu for submission with the Report to Unesco's General Conference, that the proposals should be circulated to all interested countries and that it be recommended to Unesco that a regional conference be held finally to secure general agreement.

"The Chairman then took up the matter of working out draft alphabets for the three languages and proposed that the meeting should discuss them letter by letter. A draft chart had been prepared by the Unesco Secretariat. Many of the signs had been in use in Persian and Urdu Brailles for a number of years while others had been chosen from Mr. Dajani's and the Egyptian codes.

"The Chairman questioned the representatives of each associated language in turn as to their opinions for or against each selection, and agreements and compromises were arrived at in a spirit of understanding and good will."

The Committee's Report was accepted by the main conference and later by the Fifth Session of the General Conference of Unesco, Florence, June 1950.

AGREEMENT REACHED AT BEIRUT REGIONAL CONFERENCE

The Report of the Special Committee and a copy of the Arabic-Persian-Urdu chart were, as directed, circulated to all interested governments, socie-

ties and individuals. The Regional Conference, which it recommended, was convened in Beirut in February, 1951, as already noted in Chapter 1.

In the course of detailed discussions on the Braille signs which should be allotted to Arabic characters, Professor Anis Mackdessi, American University, Beirut and Professor A. Gullaume, Chair of Arabic, University of London, attended to give technical advice.

The unanimous agreement arrived at was expressed in the following resolution:

"The Conference expresses satisfaction at the excellent degree of uniformity arrived at between Arabic and Persian Brailles and between these and World Braille. It recommends that this close uniformity be maintained and that, if in practice any points of disunity be found, every effort should be made to remove them.

"The Conference recommends that the Arabic and Persian Braille systems, as framed by the Conference, should be officially adopted by governments in the region as well as by non-governmental agencies engaged in blind welfare.

"The Conference recommends that Persia should adopt the Braille alphabet designed by the Perso-Arabic Sub-Committee, for the Holy Koran and devotional literature, as well as for initial education, and that a Grade 2 Contracted Braille, in conformity with World Braille principles, should be designed for the simplification of advanced education for the blind of Persia."

The Beirut decisions were circulated to interested governments and workers for the blind throughout the wide territories concerned. In the course of correspondence a few modifications in respect to individual signs, which would facilitate closer uniformity between certain of the languages, were agreed to; and by the close of 1951 official acceptances had been received from the Governments of Egypt and Malaya and from schools for the blind in Morocco, Lebanon, and Iraq. Acceptance was also notified from a number of the neighbouring languages, whose alphabets were affected by the Beirut decisions, namely the languages of India and Ceylon, Bahasa Indonesia (the form of Malay now established as the official language of Indonesia), Turkish, Armenian, Amharic, Hausa and Swahili. Discussions had also begun with representatives of Egypt and Iraq on the question of a small range of contractions for Arabic.

THE PROBLEM OF URDU

The evolution of a new Urdu Braille which would retain close uniformity with the Brailles of all three of its related languages, was one of the most difficult problems which faced the Unesco conferences. To some extent the complexity of the task may be gauged from the following account of Urdu or Hindustani by Professor J. R. Firth in his *Introduction to Colloquial Hindustani* (1943).

"Hindi, written from left to right in the Devanagari or Sanskrit alphabet, borrows largely from Sanskrit. Urdu, written from right to left in an adapted form of the Persi-Arabic script brought by the Muslim invaders from over the North-West frontier, is naturally full of loan words from Persian and Arabic. Still, Urdu and Hindi are 'of one language' with Hindustani and the other Sanskritic languages of India. Through the well-known relationship of Sanskrit, Persian, Greek and Latin, they belong, with most of the languages of Europe, to the great linguistic family usually called Indo-European.

"The everyday speech of well over fifty million people of all communities in the North of India is the expression of a common language, Hindustani. This language is shared at different levels and in varying degrees by about fifty million more in the North, in Hyderabad Deccan, and in all parts of India. Growing steadily, the vast language community of close on a hundred million people is the third largest in the world, coming next after Chinese and English.

"People who speak Hindustani may read and write Urdu in the adapted Persian character, or Hindi in the Devanagari (Sanskrit) character, or indeed, both. But the cultural specialization of the two languages emphasized by the two different scripts divides people whenever the common social life is either predominantly Muslim, or predominantly Hindu. In such circumstances one highly specialized form of spoken Hindustani would, if written down, normally appear in the Urdu script, another in the Hindi script. The speakers quite naturally would claim to be speaking Urdu or speaking Hindi. The simple, common speech of everyday life, however, might equally well appear in either script. The truth is that the basic common language of many millions of Indians of Hindustani speech has no written form common to all."

Professor Firth's last sentence calls for a significant qualification; while there is no visual script common to all, a single Braille form has actually been shared by Urdu, Hindustani and Hindi, for over half a century. It was designed by Mrs. Shirreff for the early schools for the blind in Northern India.

Her Urdu alphabet was a simplified one, providing only the traditional Braille Z for the four Urdu letters having that sound, and the traditional Braille S for the three S letters. The two Arabic H's and the two Arabic T's she treated similarly.

Her alphabet contained forty-nine Braille letters made up of ten vowels and thirty-nine consonants. Seventeen of these adhered to traditional Braille, but for most of the others, usage had not by then created traditional signs. For some unexplained reason, her alphabet made some strange and seemingly needless departures from tradition, notably M which received dots 2-3-6 and U, dots 1-3-4.

Commentators, writing to us from Pakistan, say that they regard Shirreff Braille as not being entirely satisfactory, but not specifying its shortcomings in detail.

Probably they regard it as inadequate to express their religious and classical works in full literary form. Shirreff Braille stood in a similar position in relation to the full Devanagari script and although it was an excellent system for the two great written forms of the language in the early days of the education of the blind, it is natural that with the passage of time the need for a more elaborate alphabet has been felt.

In considering the adaptation of their Oriental Braille to Urdu, Messrs. Knowles and Garthwaite provided a full literary alphabet for those who needed it, but favoured a simpler one for general use. They said:—

"In regard to the question of the necessity for the various S and Z letters being represented by different signs, it may be noted:—

1) It is confessed by all, that, with possibly one exception they are sounded alike, S or Z.
2) Oriental scholars have urged and Associations passed resolutions that in transliterating Urdu the various S and Z letters should be carefully distinguished. This is presumably on historical or etymological grounds. In Oriental Braille provision has been made

for the difficulty which thus arises by allowing the use in Urdu of various sibilant signs, representing in other languages slight differences of sound, but in Urdu having no difference of sound. Of course, it is open for those who wish to do so to follow the course often adopted in Romanic transliteration of using only one S and one Z. The above provision has only been made so that Oriental Braille shall be able accurately to transliterate letter for letter if this is thought necessary. The course is not otherwise recommended."

We share the view that the most practical solution is that there should be a simplified form for elementary education, correspondence and the common run of literature, while a full alphabet expressing every character of the classical script, should be available to serve the needs of the scholar and the student of religion.

The latter course, however, does not of itself yield perfect uniformity between Urdu, Hindi, Persian and Arabic. One advantage of the simplified alphabet is that it makes such uniformity a great deal easier, for the more precisely that Urdu, Devanagari and Arabic Braille express every literary convention, the more difficult the task becomes. A full Urdu alphabet has also its technical disadvantages. Its total of fifty-nine characters, plus punctuation, composition and numeral signs are more than our sixty-three Braille symbols can confortably accommodate, so that recourse must be had to using the difficult right-hand signs, to pressing others to do double duty and to creating compound signs.

Another complexity is that several of the Arabic letters, which Urdu employs, have lost their original values; and these values, are now expressed by characters allied to the Devanagari script. For example, Urdu has two Arabic T's, a simple T and the Arabic emphatic T, but in Urdu both are pronounced as a simple T. Urdu's third T is the strong Devanagari T and is pronounced as such. Thus the puzzling question arises, should the Braille emphatic T go to the Arabic character pronounced as a simple T, or, to the Devanagari strong T?

While few people are willing to agree positively to changes in familiar old scripts, change does in time develop of itself. This is the more so in this restless world with its typewriters, its telegraphs, its newspapers rushing out hot "stop press", which tend to shear off literary trimmings and streamline the more complex scripts. The Government of Pakistan has informed us that it has set up a committee to consider, *inter alia*, the simplification of the Urdu alphabet, and possibly its findings may provide us with a clearly defined basis on which to build a permanent Braille form.

In the meantime, our efforts have been directed to the creation of what appears to be the most satisfactory compromise, one which will enable the blind of the third most spoken language of the world, be it called Urdu, Hindustani or Hindi, to share the same Braille books should they wish to do so. At the same time they will command a script by which, with the adjustments customary to the student of the classics, they can gain access to the treasures of Persian and Arabic literature.

It will be noted that the Beirut Conference, finding the solution of the Urdu problem somewhat beyond its immediate powers, passed the following resolution:

"In view of the peculiar difficulties presented by Urdu, the Conference refers the drafting of its Braille to the representative from Pakistan and the Rapporteur. It is further stressed that in considering the Urdu problem every effort should be made to secure the greatest degree of uniformity between it and Arabic Braille, particularly in the direction of arranging single cell signs for all initial characters."

Accordingly, the Pakistan representative, Mr. Mohamed Ramzan, and I conferred together and drafted an alphabet within the limitations set up. While this draft might conform to the prescribed principles, it was as a Braille anything but satisfactory. Studies and consultations carried on by Unesco since then have led us to recommend to the Government of Pakistan the policy of the two forms of Braille, but as yet no decision has been taken on this suggestion.

NOTE. *In the period which has elapsed between the writing of this book and its publication, the problem of Urdu Braille has been dealt with by a special conference called by the Government of Pakistan between* 29 *and* 31 *December* 1952. *The details of this meeting and the two grades of Braille which were drafted at it are to be found on page* 131.

AGREEMENT ON UNIFORM BRAILLE FOR THE LANGUAGES OF INDIA AND CEYLON

From the beginning of the Unesco studies, the Uniform Braille Committee of the Government of India and the representatives it sent to the successive conferences made outstanding contributions towards the solution of the many linguistic and Braille problems both within and outside India. Particularly notable was the valuable advice given by Professor S. K. Chatterji, who holds the Chair of Comparative Philology in the University of Calcutta.

Mr. Kingsley Dassanaike, representative of Ceylon, was similarly constructive, interpreting the policy of his country as the attainment of the maximum uniformity both with the traditional Braille of Europe and that to be established in India. This latter was a material factor because Sinhalese was itself of the Indo-Aryan family, while the Tamil of Southern India and English were also important languages in Ceylon.

On June 29th, 1950, the Government of India notified Unesco that it had accepted the recommendations of its Braille Committee, which, after studying the Report of the International Meeting on Braille Uniformity, expressed its general agreement with the proposals contained therein.

Although this satisfactory decision meant a wide extension of the area of Braille uniformity in the world, the details of the signs for many letters in Indian and other languages remained to be determined. The Unesco programme of work for 1951 included provision for the desired Perso-Arabic conference; and the Government of India raised the question as to whether it and Ceylon might not also participate so that simultaneous agreement could be reached on such letter-sounds which several large linguistic families shared in common. It urged that, if possible, finality should be reached by the end of 1950. India had established a modern Braille printing plant and was anxious to proceed with the publication of sorely needed school textbooks and other works. Braille presses were also in course of erection in other parts of Asia and Africa. Schools, too, were pressing for decision in view of the fact that uncertainty as to the duration of existing Braille was unsettling to teachers and children.

Accordingly, representatives attended from both these countries, which materially widened the usefulness of the conference and of the area it served. Its results, as presented in the resolutions given on page 147 laid the foundation for complete uniformity between all the languages within India and between them and those of Ceylon, while at the same time securing the maximum affinity with the Braille systems designed for the Perso-Arabic and African languages and the old traditional Braille of Europe.

Thus was achieved the final solution of the problem which had for so many years been of deep concern to workers for the blind in India; but the circumstances under which it was solved brought into being a much wider uniformity, the possibility of which the Government of India had foreseen.

BRAILLE IN AFRICA

In the past years Braille alphabets were arranged for at least a dozen tribal tongues, including Swahili, Kikuyu, Kikamba, Malgache (Madagascar) Bemba, Chinyanja, Nyanja, Xosa, Shona, Hausa, Mundang, Ibo, Twi and Kabili which also appears to have had an alphabet, but evidence that it is still in use is lacking.

Missionaries were their chief authors, although more recently other voluntary organizations in co-operation with Departments of Education and Social Welfare have been increasingly active. The British and Foreign Bible Society had published parts of the Bible in Swahili, Hausa and Nyanja; the Norwegian Bible Society, in Malgache; while the School for the Blind, Worcester, South Africa, has printed works in Nyanja, Xosa and Shona. The American Bible Society also published some of the Scriptures in Hausa. The recently formed British Empire Society for the Blind, sponsored by the British Colonial Office and the National Institute for the Blind, London, is now carrying out a vigorous policy of extending educational provisions for the blind of British colonial territories.

With the exception of Madagascar and the French Cameroons (Mundang), no Braille adaptations appear to have been made for the tribal languages spoken in French, Belgian and Portuguese territories. A school for the blind, however, has recently opened in Casablanca where Arabic Braille is taught, and a small voluntary society there also teaches Arabic Braille.

Mention must be made of three languages, which although neither tribal nor linguistically African are used in Africa and have their Braille forms. They are Arabic, to which Braille was adapted about seventy years ago; Amharic, with a Braille of comparatively recent date, used in the American Mission, Western Ethiopia; and Afrikaans, to which the first adaptation was made in 1923. Cairo once possessed a Braille printing press, but probably the only one at present in the African Continent is that at the Worcester School for the Blind, in South Africa.

No extensive systems of contractions have as yet been applied to the tribal languages, although a beginning has been made.

With the exception of Arabic and Amharic, all the Brailles of Africa were built from the traditional European symbols; but, as the adaptations were made variously from English, French, Norwegian and Dutch backgrounds, and, still further, as the Latin alphabets created for tribal writing followed different phonetic patterns, complete uniformity between them was lacking. As uniformity was desirable within the existing Braille and among those likely to be built in the future, the Unesco International Meeting on Braille Uniformity, March 1950, made the recommendation contained on page 141.

To put this recommendation into effect in the field of African tribal languages, an informal committee met in London on July 19th, 1950, under the auspices of Unesco. It was attended by:

Dr. Malcolm GUTHRIE, Ph.D., B.Sc (Eng.), Head of the Department of Africa, School of Oriental Studies, and Reader in Bantu languages, University of London.

Dr. A.N. TUCKER, D.Litt, Ph.D., M.A., Reader in Bantu and Eastern Sudanic languages, University of London.

Mr. J. BERRY, M.A., Lecturer in West African languages, University of London.

Mr. J.F.WILSON, Secretary, British Empire Society for the Blind and representative of Tribal languages to the Unesco International Meeting on Braille Uniformity.

Sir Clutha MACKENZIE, Consultant on Braille, Unesco.

The first question discussed was whether the letter-for-letter transliterations into Braille of the existing Roman transcriptions of tribal languages furnished a satisfactory basis for a uniform African Braille. The linguists of the Committee said that this definitely would not be the case. The Roman alphabet was inadequate to express the sounds simply and within reasonable space. Further, they were mainly the work of Europeans in days before a consistent form of transcription had been established or the structures of the languages adequately studied. In consequence, the representation of similar sounds differed from language to language. For example, the sound CH, as in CHURCH, was rendered by CH in one language, C in another, C with a diacritical mark in a third and KY in a fourth. The same vowel sound appeared as UI in one language and OE in a neighbouring language.

Only a few languages, Swahili, for example,

could be easily expressed by the normal Roman letters. Most of them required additional letters or symbols; and these were variously improvised:

a) by adding diacritical marks to Roman letters to indicate modifications of their sound values,

b) by introducing symbols from the International Phonetic Alphabet, and

c) by giving new sound values to surplus Roman letters not required by a language for their customary values. For example, Zulu did not require "C", "Q" and "X", which were, therefore, used to represent the Zulu clicks.

Another factor was that the question of reforming these transcriptions was constantly under review and the present alphabets of many must be regarded as transient.

In the opinion of the Committee, therefore, their direct transliteration into Braille, could yield neither a uniform, stable nor satisfactory system.

Mr. Wilson pointed out that Departments of Education would expect blind children to spell in the same way as sighted children and that they might ultimately use ordinary typewriters for correspondence. Grade 1 Braille, he thought, should be a letter-for-letter representation of the visual alphabet as recommended in Resolution 2 paragraph C, sub-para *b*, International Meeting on Braille Uniformity.

Sir Clutha Mackenzie said that under modern methods, the English-speaking blind child was taught contractions from the earliest stage, e.g. the single signs which stood for such words as "THE" and "AND". In due course, the child learnt that these were the abbreviations for T-H-E and A-N-D. Adjustment to full spelling and to typewriting, he thought, presented no problem to the English child, and probably the African child would not differ in this respect.

It was agreed that two Grades of Braille should eventually be designed for each language, and that Grade 1 should provide a sign for every visual letter. Unless any strong reason existed to the contrary, the traditional Braille sign should be given to each normal Roman letter, but where a letter had been modified by a diacritical mark or a phonetic letter introduced, it should be given the sign for the sound it represented.

The Committee felt, however, that in practice most African adaptations would tend towards being more in the nature of what was termed "Grade 1 ½", embracing a number of single Braille signs for sounds for which the visual text employed two or more letters. The existing African Brailles already showed this trend.

In Swahili, Hausa, Twi, Ibo and Nyanja, the traditional single Braille signs for the sounds CH, TH, SH and GH had been introduced where they applied, and in some of them provision had been made for NG and other digraphs.

Grade 1 ½ promised greater scope for real Braille uniformity and for a more satisfactory phonetic expression of the tribal languages. Indeed, while the Roman transcriptions had to be taken into account, the Committee's task was fundamentally one of uniform Braillization.

The Committee examined the "Comparative Table of International Phonetic Association Symbols and World Braille Signs" as prepared by Unesco, and decided that it formed a practical foundation upon which to build the African Chart. It designed a table of Braille symbols which in its opinion should meet the major needs of all the African tongues.

The African Committee's table provides for forty-two consonants, ten vowels, three tones, a nasalization mark and three clicks (See page 80). Not all the signs will be required by any one language and some of them may be needed but rarely. Occasionally a language may call for additional signs for sounds peculiar to itself and these should be improvised from surplus signs consistent with the Rules given below.

The Committee recommended that where a language does not employ all the sounds of the simple Roman letters (Bemba for instance, which has no need for H, Q, V, X and Z), their Braille signs should not in general be employed for other sounds but should be left free for their normal values in second languages which many African students might be expected to learn. In acquiring other languages, students, sighted or blind, have to adjust themselves to modifications in letter values, but observation of this recommendation would keep this adjustment to the minimum.

The Committee felt that in general the designing of Grade 2 systems should be delayed until Grades 1 and 1 ½ were well established.

In regard to Amharic Braille, Dr. Tucker said he could find no satisfactory explanation for the form of its present adaptation. In his view, it should be built on sound association with the values of Arabic characters to which it was linguistically related. He submitted a draft he had prepared based on this association which was also in tune with the recommendations of the International Meeting on Braille Uniformity.

It was recommended that, before a Braille adaptation for a language is officially established or alterations made, proposals should be forwarded to the World Braille Council, through a leading organization for the blind in order that they may

be studied in their relation to other adaptations. This would give an opportunity for the discussion of any point which might give rise to a break in uniformity or which might be of disadvantage to the language concerned.

RULES FOR THE APPLICATION OF UNIFORM AFRICAN BRAILLE TO INDIVIDUAL LANGUAGES

GRADE I

1. Each visual letter should be represented by a Braille sign.
2. The essential sound value of each Braille sign is that of the sound (or letter) of the language which it represents. (This is stated here because it is sometimes thought that the sound value of the sign must always be the same as that on the chart. It will often be the same, but the chart is only a general guide, and, where minor variations do exist between chart and language value, the latter is the true value for the alphabet concerned.)
3. The blind child, in reciting the Braille alphabet or naming the letters, will give them the same names as the sighted child who uses the same mother tongue.
4. If a visual letter carries the common European sound, it should be represented by the traditional Braille sign for that letter.
5. If a visual letter of a tribal alphabet carries a sound radically different from its ordinary European value (irrespective of whether this is indicated by a diacritical mark or a phonetic symbol), careful consideration should be given as to whether this letter should be allotted the usual Braille sign for that letter or whether it should have the customary sign for the sound it represents. Usually, when a departure is radical, it is preferable that in the selection of the sign, sound should be the deciding factor.
6. It will be noted that two or three Braille forms are provided for B, D, F, K, L, N, R, S, T and Z. If, however, a language employs only one form of a consonant and if its variation from normal sound value is not great, the common Braille sign and not the alternative should be selected.
7. If a language does not employ all the sounds of the common Roman letters, the Braille signs for these should be, as far as possible, kept free to be used in their customary values by students learning a second language.

GRADE 1 1/2

8. No unduly rigid rules can be suggested at this stage as to the number of contractions which might be included in Grade 1 ½. The structure of each language needs to be taken into account. It is recommended that as experience is gained, the World Braille Council might discuss, with those concerned, the question of establishing a uniform table of contractions, so far as differences between languages make this practicable.
9. It is accepted that at the appropriate stage of education, children will be taught which letters of Grade 1 go to make up the contracted signs of Grade 1 ½.

OTHER WORK IN AFRICA

Before and since the meeting of the African Committee, we were and have remained in correspondence with the schools and workers for the blind throughout the Continent and we are much indebted to them for their help and advice. In the middle of 1951 Miss H. MacGeery visited us in Paris; and with the combined advice given us by her and Dr. Tucker, a simpler and more compact Amharic Braille was designed.

In December 1951, Mr. V.H. Vaughan, who has played a leading part in the creation of Afrikaans Braille and is a member of the present Bantu Braille Committee, attended one of the Unesco Braille Conferences in Paris; and with his help the broad policy of uniformity for tribal languages was clarified and expanded. As a result of these various steps a firm foundation now seems to have been laid for uniform Braille expansion throughout the Continent.

ASPECTS OF THE BRAILLE STUDY

In the course of our survey of Braille usage throughout the world, while preparing the ground for the Unesco conferences, we found that the designers of 71 of the 88 existing alphabets had employed international Braille values or partly so, as far as circumstances at that time had allowed them to do so. Although divergent systems arose from time to time, only 17 of them were in actual use when our work began.

Although Braille was used in Barcelona in 1840, we do not know to what extent Louis Braille himself conceived of the institution of Braille as an international script for the blind, adapted on some concerted principle to the world's major languages. It is clear, however, that this was a constant aim from the 1860's onwards; and the terms "universal", "international", "généralisation", "uniform" and "standard" are scattered over the pages of its later history. Dr. Armitage used the first of these terms in a book published in 1886; and we have already recorded the series of international congresses in 1878, 1902 and 1911 which proclaimed and re-emphasized the policy of single traditional values as a universal system.

In Europe and America the stabilization of Braille was followed by the setting up of substantial Braille printing presses and of large libraries of Braille works. Blind education progressed rapidly and Braille readers began to make heavy demands on the new libraries. We collected much information as to the extent of Braille publication in the year 1947-48. Among the outstanding facts were that American library stocks totalled 469,250 volumes, and the magazines, published that year by the American Printing House, reached the figure of 514,682 copies. Volumes in London libraries ran to 299,705; while the National Institute for the Blind in that city published 492,001 copies of magazines, newspapers and pamphlets. In 1951 Petronella Moens, in Breda, Holland, issued in both ink-print and Braille, a catalogue of all known Braille, Moon type and ink-print periodicals published throughout the world for blind readers. Braille periodicals numbered approximately 300 and in the Moon type 7.

With the exception of Japanese, practically no machine printing had been done in non-European languages. Such tiny school libraries as existed in China, India and Perso-Arabic countries consisted almost entirely of parts of the Bible, printed in the vernacular by the Bible Societies of Europe and America, and books and magazines in English Braille. Devoted voluntary helpers had hand-transcribed a few books for school use and general reading, but these from long service in warm climates were sadly dogeared and flattened.

Everyone was aware of this sorry state of things, and plans were afoot in India, Egypt, Hashemite Jordan, Malaya and elsewhere for the erection of printing plants, but hanging over them has been the uncertainty of the Braille situation.

BRAILLE THE ONLY SCRIPT THE BLIND HAVE

Sighted people, considering any problem of world scripts, naturally call to mind the extraordinary variety of symbols, curves, strokes and dots inscribed from right to left, left to right, or top to bottom of the paper, which the world employs to record the spoken word. It may be no easy matter for them to realize that the blind, be their language Italian, Arabic, Tamil or Chinese, have but one script—Braille and only Braille—that in fact the blind are the sole possessors of a single world script in everyday use. Our problem required consideration in this light and all that it implied.

PARALLEL BETWEEN VISUAL SCRIPTS AND BRAILLE

Apart from the facts that seeing people have many scripts and the blind but one, and that the former read by sight and the latter by touch, there is no fundamental difference between a written and an embossed script.

What was written by Mr. J. Peile in the 9th Edition of the *Encyclopaedia Britannica* has been typical also of the main trend in the spread of Braille: "The Phœnicians could only become acquainted with the Egyptian symbol and sound together, the one would naturally suggest the other; and we should expect that they would first take the symbols belonging to those sounds which exactly corresponded in Egyptian and

Phœnician, then the symbols which did not exactly correspond to their own, but which seemed in each case the most analogous to them ; but that there would never be any violent rupture between the symbol and its old sound."

In the 14th Edition, Dr. B. F. C. Atkinson wrote:—"The name alphabet... denotes a set of characters, or, as we call them, letters, each of which represents a given sound or sounds. This representation is necessarily rough and of quite a general character. This is easily seen in the case of the first letter of the English alphabet, for example, which represents different sounds in the words fAther, mAn and tAke. But even in cases where a letter is regarded as representing a single sound, it does so roughly, taking no account of differences in intonation, tone or pitch, nor of stress, nor of slight variations of pronunciation which vary not only between one individual speaker and another, but also, from time to time in the case of an individual in accordance with the position of a given sound in a word, of a word in a phrase, or with the nature of the phrase to which he is giving utterance. In this connection writing stands in much the same relationship to speech as speech does to thought ; if language is not a sufficiently delicate instrument to express the nuances of human thought, writing is a less delicate instrument still, and any attempt to multiply signs and characters to keep pace with the subtle variations of the human voice would only impair their usefulness.

"An alphabet is a highly developed, artificial form of writing. The connexion between sound and character is conventional and not essential."

Although several enthusiasts among Braillists advocate a truly phonetic Braille, we felt that it was wiser for us to attempt no more than visual scripts succeed in doing. With Braille symbols also "to multiply signs and characters to keep pace with the subtle variances of the human voice would only impair their usefulness." Dr. Atkinson continued:—"The alphabet then is the form of writing that to those people who have developed, borrowed or adopted it, has been found the most convenient and adaptable. Its use is acquired in childhood with ease... It may also be passed from one language to another without difficulty."

The same can equally well be said of Braille, and as our studies have shown, Braille symbols have strongly resisted various attempts to alter their broad values. There is, in fact, nothing new in the concerted effort under Unesco to bring back straying Braille forms to the traditional fold, although it can be regarded, perhaps, as the culmination of a continuous process. Braille history had already witnessed two major divergences in America, and others in Germany and Ceylon, which after more or less stormy existences, gave place to a return of the original form. Hebrew, and Modern Greek Brailles, too, founded from the beginning on independent lines, had also of their own initiative changed to the traditional ; and thus it can be said that the present work of Unesco is no more than a positive acceleration of a trend which had long marked the evolution not only of Braille, but of all forms of script. In fact, it is now a little difficult for us to grasp why anyone should ever have expected methods of adaptation to survive which asked, for example, that the letter P of an established Braille script should stand for the letter G of another. It is hardly credible that the same person, if he were transliterating the G (gaf) of the Persian into visual Roman, would have expressed it with the letter P.

FULL EXPRESSION OF ALPHABETS AND SYLLABARIES

Having regard to the characteristics of visual script and to the lessons we have learnt during the evolutionary stages of Braille, we felt that the following considerations should guide our work:—

It seemed fundamental that, except where ideographic scripts made it impracticable, Grade 1 Braille should express every character and mark of the visual script concerned. In order that education in schools for the blind, examinations and inspections by officers of Education Departments, could be carried out in accordance with the standards called for in sighted schools, it was essential that Braille textbooks should be identical with those used in the sighted schools and expressed in a parallel literary medium. For other purposes—the study of classical or religious literature, and to enable the blind correctly to use the ordinary typewriter—it was imperative that Braille should be fully representative of the visual script.

As explained elsewhere, the everyday Braille literature of many countries is expressed in a Grade 2 Braille which embodies a number of contractions for common words, combinations of letters, prefixes, suffixes, etc. These abbreviations usually are, or should be, precise in their values and representative of the fully written text.

Although it might appear to be obvious, it seemed desirable to state clearly that while we laid down universal or regional Braille values, this constituted no attempt to influence the exact sounds of alphabetical letters in each mother-tongue. These might well be identical with those of World Braille, but, wherever variations existed between World and mother-tongue, the

latter would always be their true sounds in the language concerned. No language would lose its own essential character and the blind child's approach to learning would continue to be through his own mother-tongue. Braille would, indeed, be only his country's literature in a form he could feel instead of a form he could see. This point has to be stated specifically because some commentators knowing that traditional Braille grew from the Roman alphabet of France, have expressed the fear that in adopting a universal Braille, their language might be in some way Romanized.

Another point, which it seemed advisable to be precise upon, was that the blind child would give the same names to his Braille letters as his sighted fellow school children gave to theirs.

FACILITATING THE READING OF FOREIGN LANGUAGES.

It is accepted, of course, that a universal Braille does not of itself teach a blind student a second language. It does, however, give him a script, the letters of which in the second language carry the same or similar sounds to his own. He needs to learn the variations in sound values, which the new language gives to his letters ; and he has, of course, to learn the language in the usual way. In the past state of Braille he had often to adjust himself to complete changes in sign values, such as his Braille M having to serve as U, his L becoming CH and so forth.

One of the simplest examples of the practical application of World Braille can be illustrated in the fact that four consonants, K, L, M and N, despite the buffetings which script has suffered throughout the centuries, maintain an almost unaltered sequence in many alphabets. The only change in the following languages had been the interpolation of the letter GAF between KAF and LAM in Persian and Urdu. Braille signs are shown only where they are not in accord with tradition.

ROMAN	GREEK	ARABIC	PERSIAN	URDU	HEBREW
K	kappa	kaf	kaf	kaf	kaf
L	lambda	lam	lam	lam	lamed
M	mu	meem	mim	mim	mem
N	nu	noon	noon	noon	nun

SUMMARY OF AIMS

The primary purpose of Braille has of course always been to provide a form of reading and writing which will serve blind people in their education, employment, intercourse and literary enjoyment. More specifically it sets out in fully written form every class of literature of each mother-tongue, or, if so desired, expresses it in an abbreviated form representative of the full text.

The object of uniformity is to furnish the blind student with the easiest written medium to learn, read and communicate in other languages than his own. This is a cultural and practical advantage everywhere in the world, but more especially so in certain areas where educated and even uneducated people are bi- or tri-lingual, where children of several languages may be gathered in the same school, where higher education is given in a different language from the child's mother-tongue, or, again, where the language of religion differs from that of daily use.

In the earlier stages of the movements towards unity in China, India and the Perso-Arabic countries, each was primarily concerned with attaining a single adaptation within its own linguistic group. During the past thirty years in India, however, conferences of the blind made recommendations to the effect that the single Braille when planned should be linked by sound relationship with Standard English Braille, creating in fact an Indo-European Braille. As a logical corollary, thought was given to the possibility of resolving the Chinese, the Indian and the Arabic problems, not as separate entities, but as one. While, in the past, Braille in India had been concerned with Indian languages and the reading of English Braille from British and American presses, it seemed just as important to establish close Braille association between the Arabic countries and India, India and China and so forth. Although Braille had emanated from Europe, the day could not be far distant when its use throughout Asia and Africa would be as general as it had already become in Europe

and America. This in turn raised the issue as to whether a general spring-cleaning of Braille usage, wherever it was unsatisfactory, might not be attempted, and carried out in accordance with the main principle which had already marked its adaptation to seventy-two languages.

Translating the Indian Government's request into action, appeared to call for discussions with the following aims:

(i) Agreement on a single Braille for Chinese;

(ii) Agreement on a single Braille system for the many languages of India;

(iii) Agreement on a single Braille for Arabic and other languages employing Arabic script;

(iv) Agreement on modifications to the Braille alphabets of such countries as Burma, Thailand, Korea, etc., to bring them into uniformity with neighbouring systems and with World Braille;

(v) Agreement between the representatives of the foregoing linguistic areas upon a Braille system which, while it fully met their own needs, would maintain and extend the "universal" policy laid down by workers for the blind at the international congresses in 1878, 1902 and 1911.

THE ASSOCIATION OF PHONETIC SYMBOLS WITH BRAILLE SIGNS

In the course of our discussions, several ardent scholars suggested that a World Braille should be built on the principle of a phonetic alphabet expressing the sounds of human speech. This would be possible, although, in order to accommodate the full range of sounds, many compound signs would have to be added to the sixty-three single ones; and this would make cumbersome and difficult reading. Nor, in the present state of the world's languages and scripts, is this the function which Braille is asked to fill.

To aid blind people in the study of the science of phonetics, an excellent piece of work has been done by Messrs. Merrick and Pothoff in designing a Braille version of the International Phonetic Association's Alphabet, and this has been published by the National Institute for the Blind, London.

What is at present wanted is that Braille should represent in raised form the full alphabet of each script; and it is within this necessary limitation that we require to frame the maximum uniformity. Despite this limitation, however, Braille is already a truly, if imperfect, international script, trending towards the idealist's goal, and is flexible enough to accommodate itself with little difficulty to such advances as the visual scripts of the world may make towards phonetic uniformity. A study of the proposed World Braille signs vis-à-vis the symbols of the International Phonetic Association Alphabet shows that a great deal is to be gained by linking the former to the latter as far as the different purposes of the two systems allow. The memorandum which Unesco drafted on this subject, and which was afterwards read and approved by Professor Daniel Jones, M.A. Dr. Phil., Professor Emeritus of Phonetics in the University of London, is given here.

COMPARATIVE TABLE OF INTERNATIONAL PHONETIC ASSOCIATION SYMBOLS AND WORLD BRAILLE SIGNS

The purposes of the I.P.A. alphabet of phonetic symbols and of uniform World Braille differ to the extent that the former was designed as a standard yardstick for the scientific expression of the sounds employed in human speech; the latter, for the uniform drafting of Braille alphabets which will be counterparts of the visual alphabets of existing languages. The phonetic alphabet represents the sounds of speech; World Braille, the sounds of letters. Despite this distinction, they have much ground in common, the extent of which is illustrated in the following analysis. It forms indeed a valuable guide to the rationalization of Braille usage. The I.P.A. alphabet, given on pages 8-16 of *Principles of International Phonetic Association* (1949), and Professor Daniel Jones *Chart of English Speech Sounds* (1924), form the foundation of this study.

REF. N°	PHONETIC SYMBOL	PHONETIC SOUND	BRAILLE SIGN	APPLICATION TO BRAILLE
1.	p	Common European value		Traditional World Braille Sign
2.	b	Common European value		Traditional World Braille Sign
3.	t	Common European value		Traditional World Braille Sign
4.	d	Common European value		Traditional World Braille Sign
5.	k	Common European value		Traditional World Braille Sign

REF. N°	PHONETIC SYMBOL	PHONETIC SOUND	BRAILLE SIGN	APPLICATION TO BRAILLE
6.	m	Common European value		Traditional World Braille Sign
7.	n	Common European value		Traditional World Braille Sign
8.	l	Common European value		Traditional World Braille Sign
9.	f	Common European value		Traditional World Braille Sign
10.	h	Common European value		Traditional World Braille Sign
11.	g	As in Eng: "get"		Used everywhere for Roman G and for this sound in other scripts.
12.	j	Y in "you"		In Braille this sign is used for the Roman J in its various European values; for the Perso-Arabic "jim" & elsewhere for the broad sound of J in "jay".
13.	r	For the various purposes described in I.P.A.		It fills similar functions in Braille.
14.	s	As in Eng: "see", French "son"		It fills similar functions in Braille.
15.	v	V in Eng: French & Italian; W in German		Braille for Roman V and V sound in non-Roman scripts.
16.	w	As in Eng: "will" & "ou" in French "ouate"		Braille W and W sound elsewhere.
17.	z	As in Eng: "zeal", French "zèle"		Braille Z in Roman scripts & Z sound elsewhere.
18.	ʈ	Hindi ṭ		Required in Indian, Perso-Arabic & African languages wherever a 2nd T is required.
19.	ɖ	Hindi ḍ		Required for Indian, Perso-Arabic & African languages wherever a 2nd D is required.
20.	c	Cardinal value as in dialectal French pronunciation of "quai"		In Braille this is required to represent the Roman letter C but is available for other purposes in many non-European scripts.
21.	ɟ	Cardinal value as in dialectal Fr: pronunciation of "guêpe"		Not required in Braille.
22.	q	Arabic "qaf" etc.		Braille sign for Roman Q, for "qaf" in Perso-Arabic and Q or KW sounds elsewhere.
23.	G	Corresponding voiced sound to 22. One value of Persian "qaf"		Same as 22, only a variation in pronunciation of a visual character.
24.	ʔ	As in N. Ger: "verein", Arabic "hamzeh"		Required in Perso-Arabic, Malay, & some African languages.
25.	ɱ	Ital: N in "invidia", Span: N in "anfora"		Required for Indian & Sinhalese *NOTE* It is a little difficult to distinguish which of the N and NG sounds should be associated with the N letters of various languages. Nos 25-29 are N's of various kinds, which, with the cardinal N makes six types altogether. The table of Indian scripts gives five different N's, plus an M/N. Some have been accommodated by special signs from the Braille pool, but for general Braille purposes, two standard Braille signs for additional N sound may suffice. (See 27 & 28)
26.	ɳ	Marathi ṇ as in "anna"		Special to Indian & Sinhalese.
27.	ɲ	GN as in French "montagne"		Required in Indian languages. Eng: Braille "in"; Arabic "Tanweer Kasra"; Chinese syllable "in" etc. Another sign may be necessary where 3-5 is required for a 2nd I vowel.

REF. Nº	PHONETIC SYMBOL	PHONETIC SOUND	BRAILLE SIGN	APPLICATION TO BRAILLE
28.	ŋ	Eng: NG in "sing" Ger: NG in "ding" Span: N in "Cinco"	⠒⠛	ṅ in Indian, and NG with varying pronunciations occurring in many non-European languages.
29.	N	As in Eskimo "enina"		Not required in Braille.
30.	ɬ	Eng: L in "table"		Not required in Braille.
31.	ɮ	Welsh LL in "LLangollen"		Not required in Braille, the script double L seems to cover this sound.
32.	ɮ	Zulu DHL in "dhla"		No 42. will serve this purpose
33.	ɭ	Marathi L̤	⠒⠂	Required for Indian languages.
34.	ʎ	Ital: GL in "egli" Span: LL in "alla"		Spanish Braille 1-2-3-4-5-6. Not required for general use.
35.	ɾ	Czech ř		Czech Braille uses 2-4-5-6. Not required for general use.
36.	ɾ	Span: R in "pero"		Not required in Braille. Span: uses 1-2-3-5.
37.	ɽ	Hindi R; the thick L in Norwegian "ola"	⠶	Required for Indian & other languages for R or other 2nd R
38.	R	One variety of Parisian Fr: R		The 2nd R, provided under 37 above will meet most Braille needs.
39.	ɸ	Frequent Ger: pronunciation of W in "schwester"; Tswana F; Japanese H before U in Fuji		If needed this would call for a special sign.
40.	β	Span: B as in "saber"; Mid Ger: W		Not required in Braille. Span: uses 1-2.
41.	θ	Eng: TH in "thing"	⠹	Required for this sound in Perso-Arabic, Indian and many other languages.
42.	ð	Eng: TH in "this"	⠮	Required for TH/DH sounds in many languages.
43.	ɹ	S. Eng: R in "dry"		Not required in Braille. See no 37.
44.	ʂ	Marathi ṡ; Pekinese variety of SH before vowels	⠩	The palatal S in Indian languages; the emphatic S of Perso-Arabic & for 2nd form or S where required.
45.	ʐ	Pekinese variety of Z in "zen"		1-2-3-5-6 is used for Shona and this sign might be used where this sound occurs.
46.	ʃ	Eng: SH; Fr: CH; Ger: SCH	⠳	Required for cerebral or retroflex SH. Perso Arabic SHIN.
47.	ʒ	As S in Eng: "measure"; Fr. "jour"	⠬	Required for "jheh" in Persian & JH in Indian languages.
48.	ɧ	In occasional pronunciation of Eng: "hue"		To be given a special sign if needed.
49.	ɕ	Polish ś		See no 44. Polish uses 2-3-4-6
50.	ʑ	Polish ź in "zle"		Where a language employs an additional Z a special sign would be needed.
51.	x	Scottish CH in "loch"; Ger: CH in "ach"	⠭	Perso-Arabic KHA etc.
52.	ɣ	Span: G in "luego"; Arabic "ghein"	⠣	Used for Perso-Arabic "ghein" & for GH sounds in non-European languages.

REF. Nº	PHONETIC SYMBOL	PHONETIC SOUND	BRAILLE SIGN	APPLICATION TO BRAILLE
53.	χ	Variety of Arabic "kha"		In script "kha" and its sound variations employ but one character. Not required in Braille.
54.	ħ	Arabic strong H		Perso-Arabic, Maltese, Hausa etc.
55.	ɣ	Variety of Arabic "ghein"		Not required in Braille.
56.	ʕ	Arabic "ain"		Special to Perso-Arabic & Hebrew.
57.	ʃ	Voiced H as in "behave"; Arabic "ta maboutah"		Special sign required in Arabic. Not required otherwise.
58.	ɥ	Fr: non-syllabic U in "nuit"		Not required in Braille.
59.	ʋ	Dutch W; Hindi V		Indian Braille gives V as adequate. No other sign needed.
		VOWELS		
60.	i	As in Fr: "si"; Ger: "wie", with value more remote from cardinal in Eng: "see"		Cardinal I. If a Braille alphabet has both a short & a long I, it is recommended that 3-5 should be used for the second I.
61.	e	As in Fr: "thé" Eng: "red"; Ger: "mehr"		Cardinal E.
62.	ɛ	As in N. Eng: "pen" Fr: "mettre or maître"; Ger: "bett"		If in a Braille alphabet two E vowels are required, it is recommended that 2-6 should be used for the 2nd E.
63.	a	A as in N. Eng. "back"; Parisian Fr: "patte"		Cardinal A.
64.	ɑ	A in frequent S. Eng: "father"; Parisian Fr: "pas"		Used in Braille where a language requires a sign for a long A distinct from a short A and for other variations of the vowel.
65.	ɔ	O as in Eng: "long" Fr: "porte"		Cardinal O
66.	o	As in Scot: "coat" Fr: "beau"		Cardinal O
67.	u	As in Fr: "tout"; Eng: "too"		Cardinal U
68.	y	As in Fr: "lune"; Ger: "über"		Used in Braille for usual value of Y as vowel or consonant. German Braille ü is 1-2-5-6.
69.	ø	As in Fr: "peu" Ger: "schon"		Not required in Braille.
70.	œ	As in Fr: "œuf"		2-4-6 is used by Fr: for the diphthong œ, and in other Brailles for variations of O and U vowels.
71.	ɒ	As in S. Eng: "hot" but I.P.A. expresses doubts as to its necessity.		Braille would use 1-3-5
72.	ʌ	U as in Eng: "much"		Braille would use the standard U, 1-3-6
73.	ɣ	The sound of a Shan vowel		Not required in Braille.
74.	ɯ	As in Shan word for "hand"		As for 73.
75.	ɨ	Russian vowel sound		As for 73.
76.	ʉ	Norwegian "hus" frequent pronunciation of 00 in Scottish.		As for 73.

REF. N°	PHONETIC SYMBOL	PHONETIC SOUND	BRAILLE SIGN	APPLICATION TO BRAILLE
77.	ɪ	As in Eng: "bit" I.P.A. says it can often be written with I.		The same applies to Braille unless the alphabet contains two I vowels. See no. 60.
78.	ʊ	As in S.Eng: "book" Ger: "hund". I.P.A. says it can often be written with U		The same applies in Braille.
79.	Y	As in Ger: "glück" I.P.A. says it can generally be written with "y" in broad transcription		German Braille uses 1-2-5-6. Also used in Braille for variations of O and U vowels.
80.	æ	Common S.Eng.: variety of short A as in "cat". I.P.A. says it can generally be written with "a"		Dot 1 in Braille.
81.	ɵ	As in Swedish "dun" also written O		Dots 2-4-6 are used for this in Swedish Braille.
82.	ə	As A in Eng: "about" (see I.P.A. for details of variations)		Dot 1 in Braille.
83.	ɐ	As A in common Eng: pronunciation of "sofa"		Dot 1 in Braille.

Summary

Out of 59 consonant symbols, Braille can be directly or closely associated with a substantial number. The remainder do not seem to be required for general Braille purposes, as they are usually expressed in script either by digraphs or simple consonants.

Ten Braille signs appear to be broadly associated with 19 of the 24 I.P.A. vowels. If in addition to the ordinary vowels, an alphabet contains letters representing any of the remaining phonetic vowels, special Braille signs would need to be arranged. This also applies to additional consonants. A number of languages, the Indo-Aryan, for example, call for a single Braille sign for the diphthong "ai" and where this is so, the French contraction "ai", dots 3-4, has been given.

Other letters (Para. 28, Principles of the International Phonetic Association)

Under this heading the I.P.A. gives details and suggested ways of representing a number of special sounds occurring in Russian, Arabic, Sindhi, Bantu, Shona, Twi, Zulu, Japanese, etc. If there are visual letters for these special sounds, Braille will require to provide special signs which will need to be drawn from the reserve Braille pool in respect to each language.

Digraphs (Para. 29. Principles of the International Phonetic Association)

I.P.A. suggests that "in order to keep the number of letters in the phonetic alphabet within reasonable limits" the occasional use of digraphs is recommended, i.e. "a sequence of two letters to represent single sounds. The chief cases in which digraphs may be employed with advantage, are given. This is, of course, somewhat paralleled in Braille by the occasional employment of compound signs, a practice to be avoided if possible, in the interests of simplicity and economy of space.

Tones (Para. 32, Principles of the International Phonetic Association)

I.P.A. recommends the use of signs to give some indication of the musical values of tones employed in Chinese and other languages. It lists eight tones. Cantonese Braille has made provision for nine tones, Union Mandarin for four, Burmese for three, etc.

Of seven of the Cantonese tones apparently two are marked by the blank space between words and seven by single dot signs, two sharing the same sign. They follow a pattern in keeping with I.P.A., namely dots 1 and 4 show the higher tones, dots 3 and 6 the lower.

Pool of Reserve Signs

For allotting Braille signs to less common letters used by a few languages we can draw upon a reserve pool of Braille signs composed of:—

a) Those which have not been used in the foregoing comparative table;

b) Those in the foregoing chart which are not required by a language in their original value and which can therefore be applied to a special purpose;

c) Those not required by certain languages for punctuation purposes and therefore free to fill other functions;

d) Those normally used for punctuation, but which, by being applied to letters appearing *only* as initials, as medials or as finals would not be confused with punctuation marks; and

e) Such compound Braille signs as might be justified under exceptional circumstances.

Loan-words

The Braille signs in paragraph (b) of the Pool should be used with caution. So many foreign, scientific and technical terms are now used as loan-words in many languages that letters are often required to express them. Several Arabic Braille lists, for example, have recommended that although the traditional Braille signs for P, C and CH were not required in Arabic, they would prefer not to use them for any other Arabic letter or sign but to keep them for Persian and other loan-words which they might need to include in Arabic texts and also because they felt that for blind Arabs learning other languages it would be less confusing if these signs retained only their traditional values.

CONTRACTIONS AND ABBREVIATIONS

In some linguistic areas cleavages over systems of contractions gave rise to as much disruption to Braille uniformity as did differences of view over matters of alphabet. Several of these conflicts were resolved by mutual agreement, notably the Anglo-American concord of 1932 and that of Dutch-Flemish Braille in 1947. When Unesco began its work in 1949, its attention was drawn to the different systems existing in Spanish-speaking countries and similarly in Portuguese-speaking areas which were hindering the full development of Braille literature and usage throughout these wide and important territories. Considering this situation the International Meeting on Braille Uniformity, Unesco House, Paris, 1950, made the following recommendation:

"It is strongly recommended that consultation between Braillists of different parts of the world who use the same language should be established to formulate and adopt a uniform system of contracted Braille for each language, and a wider interchange of views for a similar objective between Braillists using languages of the same group. In this context the Conference notes in particular the problem created by the conflicting systems of contractions in Spanish and Portuguese-speaking areas, and strongly recommends that steps be taken to eliminate these divergencies in order to achieve greater economy in production and a wider interchange of literature. The Conference recommends that any future systems of contracted Braille should take into account the needs of both Braillists of a comparatively limited education, and those who lose their sight in adult life, by keeping the number of contractions within reasonable limits. At the same time due regard should be paid to economy of space."

The delegates wanted to stress the need for a moderate policy. The extent to which Brailles have been contracted varies greatly from language to language. Many still use "Full Braille", that is, using a Braille letter for every letter of the visual script; some introduce only a few abbreviations which the reader can soon master; while others reduce their systems almost to cyphers in which the form of the original text is hardly recognizable.

English Braille has four "grades". Grade 1 is fully spelt; Grade 1½, with 44 contractions is an American simplification of Grade 2 Standard English Braille which has 185 contractions. Grade 3 is highly contracted, almost a shorthand and, being too difficult for all save the expert, few books are printed in it.

The first French abbreviated system was that designed by Mr. de la Sizeranne in 1883 and contained some 263 contractions. A committee in 1924 brought the number up to 740 and between 1949 and 1951 proposals were made to add about another 340. Spain designed a stenographic system in 1885 and this was revised in 1925 and again in 1939. A substantially different form was designed in Buenos Aires in 1936 and was considerably enlarged in 1944, when the number of abbreviations was increased to close upon 2,000. In 1951, Mr. Umberto Trani designed the first contracted Italian Braille containing about 550.

The contrast between the simple and the more complex forms appears to be a reflex of the differing capacities of reading groups and particularly of the people responsible for designing them. Braille is the only literary medium of those who lose sight in infancy. It is truly at their fingertips, and reading it becomes second nature. Later as college students they tend to condense their lecture notes into ever briefer compass; so that in the course of time the fuller forms of literary Braille seem to them unnecessarily spun out. When a group of men, sharing this high Braille aptitude, gathers to compose a contracted system, the result is inclined to be one that is excessively abbreviated.

The content of the Braille reading community varies from country to country according to the extent of the educational services to the blind. In most countries, blind education still means only the education of blind children. In others, the opportunity to learn Braille is offered to all newly blind people except the elderly. In one territory, therefore, we find that almost all the readers have learnt Braille as schoolchildren, to many of whom a highly condensed system presents little difficulty. In another territory, this group is balanced by equal or greater numbers of slower readers who have lost sight after school-leaving age.

It is desirable, therefore, that every committee set up to consider Braille questions should be fully representative of these two distinct groups. This is the more so in the coming era of blind welfare in which governments and voluntary organizations are planning wide extensions to their educational services. A balanced committee should include

in its numbers representatives of Braille publishing, the science of education and the philological aspects of the language who will act as advisers to the Braillist members, for it is they as the users of the system, who should be entitled to make the final decisions.

What is the middle course? In the U.S.A. a number of readers of Grade 1½ English Braille, with its 44 contractions, hold that Grade 2, with its 185 is too difficult. Teachers and readers in many Spanish-speaking countries regarded the Argentine 1944 system with its nearly 2,000 abbreviations, as being well beyond the powers of many children and newly blind adults. This is said also of the modern French abridged system which for this reason is scarcely used by the French-Swiss.

Another factor in the readability of contractions, especially to less intelligent children or to older people with their poorer touch and memories, is the nature of the contractions. The adult finds a mass of arbitrary signs quite beyond his capacity. In struggling both to feel the elusive dots and to remember what they mean, he loses the thread of the story, and reluctantly abandons the attempt to read.

There are ways in which a contracted system can be made comparatively easy to learn and remember. The use of the mnemonic principle is among the most helpful. In English, in the class of contractions of "words represented by a single sign", we find B for BUT, C for CAN, D for DO, N for NOT, P for PEOPLE and so forth; in French, B for BIEN, F for FAIRE and P for POUR.

These alliterative possibilities, however, are limited and some recourse must be had to arbitrary signs. A number of common conjunctions and prepositions, are provided with their own special signs, which will be noted in the English Braille table, covering such words as AND, FOR, OF, THE, WITH, IN, etc. They also represent these letter groups when they occur within a word, as, for example, in "NOTWITHSTANDING".

GUIDING CONSIDERATIONS OF A CONTRACTED SYSTEM

The secrets of a good contracted system seem to be:

a. The greatest possible use being made of the mnemonic principle;

b. Each sign to have as few meanings as possible;

c. The rules, governing the use of contractions, to be few and clear;

d. The text not to be so transmuted that little remains of the context to hint to the reader the basic form of the word. The main stem of all but the commonest words should retain some semblance of their original selves; and

e. The system to be such that without undue mental effort children can learn it by the end of their primary education and newly blind adults in from two to four months. From the end of the primary stage with children this is important because their education is greatly stimulated if they have ready access to general literature.

The mnemonic principle can be extended a good deal beyond the B for BUT, D for DO alliteration. The IN and EN contractions, shared by French, Spanish, Portuguese, English and a few other languages, are represented by I and E in the lower part of the cell, often being referred to as "lower I" and "lower E". Similarly, the prefixes CON and COM in the same four languages are represented by "middle C" and "lower C".

Again, when words are condensed into two or three letters, logical abbreviations, such as CD for COULD or in Spanish for CADA, easily fix themselves in the mind of the Braille reader.

The mnemonic principle is extended to another form of compound contractions which, while not so easy as the types already mentioned, if not carried to unusual words or creating complex dot pattern, is within the grasp of the general reader. These are effected by placing a qualifying dot from the righthand column before a letter to indicate a word. The English dot 5/M for MOTHER; the Argentine, 5/P for POCO are examples. The English contractions of this type are also employed in forming words. SMOTHER, for example, is S/dot 5/M but this system is not followed to any great extent on the Continent.

English Braille achieves a certain amount of economy of space by its system of representing the consonants B, C, D, F, and G when doubled within a word by the corresponding "lower B", "lower D", etc. These are easy reading.

The mnemonic principle can also be applied to the abbreviation of terminations. The Spanish C for CIA and M for MENTE are examples.

It can safely be said that, as long as a contracted system is kept within the types of condensation shown above, it will present no difficulty to the ordinary reader while at the same time, if well designed, it will reduce very considerably the size of books and the tasks of reading and writing.

Let us consider next what can be reasonably achieved in the field of arbitrary signs, i.e., those which bear no relation to the alphabetical form of what they represent.

The English signs for AND, FOR, etc. are in essence arbitrary, but, carrying these values wherever they appear, they pass out of the class of the arbitrary into the mnemonic. Most of the

signs not required for the twenty-six Roman letters can be used in this way; and, provided that their values are constant both as words and as groups of letters, such a use is satisfactory. Some of the signs, too, whose primary function is that of punctuation, can conveniently be assigned to represent, when standing alone, common words, for example dots 2-3 (semicolon) as used for the English word BE and dots 2-5-6 (full stop) for DEL in the Argentine and Madrid Brailles.

Another arbitrary group is that formed from the extra-alphabetical signs given to frequently recurring groups of letters, such as the CH, TH and ER of English, and the FR, FL, and GR of French, and the AN, ES and BR of Spanish. When these signs are restricted to single functions within words and, when standing alone, are used mnemonically to represent words, such as CH for CHILD and TH for THIS, reading still remains within the reach of the moderate reader.

SOURCES OF DIFFICULTIES

Let us consider now what are the most difficult practices used in contracted systems. We have said that one of the aids to easy reading is that, as far as possible, a contracted sign should have a single fixed value. Here is an example of what should be avoided—dots 2-5 filling all the following functions in the one system—CON, CR, IC, UER and COLON.

Equally confusing to all but the educated expert must be a custom followed in some systems of representing the same basic group or the same termination in several different ways. For example in the Argentine 1944 system were the following:

acción	A /3-4-5-6
vación	4-5 /V
uación	4-5 /N
elación	5 /E
itación	6 /I
iación	5 /hyphen

Recourse is sometimes had to expressing groups of letters or terminations with signs composed of righthand dots. This is apt to trip up the unwary or inexpert reader either because the gap created between it and the previous letter is so wide that he anticipates the beginning of a new word or because he thinks the righthand dots combine with an A, B, K or L to form a totally different letter from that intended. Incidentally, the capital and italic signs are apt to be frequent offenders in this way.

It is strongly recommended that wherever possible, righthand dots should not themselves represent letters or letter groups. Their legitimate use is in combination with standard letters or contraction signs to express a word, a syllable or a termination. If they are strictly reserved for this purpose, the reader can depend upon it that they do not combine with the sign which follows. Applied as qualifying dots in this way, they can give valuable service. The expression of the genders in the 1950 Portuguese system of terminations is a good example: MENTO, 4 /M; MENTA, 5 /M; MENTE, 5-6 /M.

Let us examine now another group of contractions, that of abbreviated words. We have touched on this in its simple form, that of the alliterative B for BUT, B for the French BIEN, CD for COULD, etc. The range of such abbreviations varies enormously from a score or so of words in some languages to many hundred in others and from the simple prepositions, conjunctions and the commonest of words to lengthy nouns and adjectives which might be scarcely familiar to many humbler readers. The Madrid 1950 system had a list of about 442 such words; Italian about 400 and the 1944 Argentine system, approximately 1,900. The following are examples of some of the less familiar words:—

auténtico	2-4-5-6 /c	(Argentine)
conjectura	2-5 /jt	(Argentine)
desarrollo	2-4-6 /ll	(Argentine)
desenvolimiento	2-4-6 /vm	(Argentine)
outrageux	T /3-5-6 /g /1-3-4-6	(French)
proportionnellement	2-3-5 /plm	(French)
extrémité	1-3-4-6 /3-5-6 /m	(French)
observación	ob	(Madrid)
bondadosamente	bdm	(Madrid)
inimizade	imz	(Portugal)

As an additional complication the method of abbreviation often runs counter to the way in which groups of letters, prefixes and terminations are contracted in the same system. The following is an example:—

al	1-3
alguien	1-3 /n
algo	1-3 /o
algun	5 /1-3
alguno	1 /o

Confusing, too, is the practice of employing punctuation signs as contractions. EN in Spanish has a high frequency, but, as it occurs both at the beginning and end of words either it would have

to be fully spelt or else a "break sign", dot 6, has to be interpolated to show that it is a mark of interrogation. This, of course, entails the loss of some of the economy of space the contraction would otherwise effect, particularly as in Spanish, the query is shown both at the beginning and end of a question.

ASSESSMENT OF COMPLEX SYSTEMS

It is stated in some school syllabi that the full system of contractions is not taught during the years of primary education, apparently for the reason that it is too difficult. While the whole purpose of condensation has its undoubted importance, does this justify the creation of cyphers so intricate that they cannot be mastered by a normal blind child before his thirteenth or fourteenth year? Again, if a child with his keen touch and memory cannot master them within these years, what hope is there for an adult? If either his memory, his touch or his education is only moderate, he will find the task of reading such systems beyond his power, while the long list of contractions must constantly puzzle him.

Such has, indeed, been found to be the case. Even compositors, in setting up Braille plates for printing books, lose themselves in the maze of rules and wander into inconsistencies. Although, because of factors mentioned earlier, the movement is not yet general, there appears to be a definite trend in a number of countries back towards simpler forms. Such complex systems as the modern French, the Buenos Aires and others of similar type are coming to be considered as belonging to the same class as the Standard English Grade 3 Braille—regarded as filling a useful function for the taking of notes by the expert student, for keeping private records, and possibly for printing a few highly technical works which would be required only by scholars with high Braille aptitude. The key note of the general Braille system for the common run of literature, it is felt, should be simplicity.

Several Braillists in Britain have recently been considering the question of modifying English contractions. They favour even fewer than the present 185, on the grounds that a number are too infrequent to be retained or, alternatively, that they be replaced by new ones of higher recurrence. Some of the signs, those for LORD and SPIRIT, for example, are relics of the day when Braille literature and religious literature were almost synonymous terms.

In some complex systems the saving of space appears to have been gained by much travail. This is demonstrated in the frequent overlapping of many of the contractions. One of the pre-Montevideo Spanish systems, for instance, provides separate contractions for OM, COM and COMO; for AR, ER, UER, IER, IR, IRRE, RE, RR, PR, BR, FR, DR, TR, OR, ENTRE and INTER. While one of these letter-groups may have a high frequency, it soon loses much of it because other contractions partly or wholly over-lap and embrace it. Again, a sign for a letter-group is not allowed to represent it wherever it occurs, but only in certain positions. It takes on another meaning in a different position and a rule has to be drafted to distinguish the separate uses.

A study of frequencies suggests that many contractions are unjustified. Their introduction into some languages has unquestionably been due to the desire of maintaining uniformity with the French system. While this should always be so when frequency justifies it, it should not be extended to combinations seldom occurring in the language.

READABILITY OF SIGNS

Comments on Aspects of Standard English Braille

In the course of our Unesco studies we asked a number of recognized authorities to express their personal views on the extent to which Braille should be contracted and the types of contractions which they considered most readable and serviceable to the general run of readers, having in mind both those who learn Braille as children and those who do so after losing sight in adult life. Space does not permit of our printing their replies in full, but we give below the questions asked and some of the views expressed which are of considerable value, although it will be noted that on some of the points opinions differ.

1. For Braille works of a general character, fiction, history, periodicals, poetry, etc. what Grade of Braille, i.e. what number of contractions, do you regard as the most acceptable for the mass of readers, varying as they do, from the intelligent child who has grown up on Braille to the halting, plodding reader who learns Braille in his "thirties" or "forties" ?

2. At what age do you think the average blind pupil in school can fully master the range of contractions which you recommend in question 1?

3. Do you find or believe that more than a certain number of contractions discourages or actually precludes newly-blind adults from learning and enjoying Braille reading?

4. Have you any views as to the number of contractions which should be provided for in countries where for the next two decades the majority of

blind requiring instruction may be drawn chiefly from a more or less illiterate peasantry?

5. Have you any views as to the relative readability of Braille signs and compound signs; if so, could you provide us with your classification of those which you consider very easy, easy, medium, difficult and unsatisfactory?

6. Have you views as to the best principles to be followed in planning contractions, such as alliterative association, a symmetrical form to each type of contraction, etc?

7. Have you any other comment to offer on this aspect of Braille?

Mr. H. M. LOCHEAD (blind), Headmaster of the Royal School for the Blind, Edinburgh, Scotland: "1. In my view it would be a mistake to rush into contractions prematurely. Most countries except Britain used Uncontracted Braille for a long time. When contractions are found advisable, a few very good ones should be adopted, such as THE and AND. Phonic signs, such as SH and TH, are extremely useful and are readily understood. Contractions such as SION and TION are of a doubtful value and are difficult for the reader of low intellect.

"Before any contractions are chosen, careful frequency tests ought to be made. Experience has shown that many Standard English Braille contractions have very low frequency value. The aim should also be rather the saving of reading time than the saving of space. If a language is eventually to have a complicated contracted system such as ours, it would be wise to make general plans in advance for the whole system, even though only a part of it were contemplated as a first start.

"2. I do not think that age is of much importance in this question. Very young children, if reasonably smart, can use contractions and appreciate them provided they are properly taught. I consider that the teaching of Grade 2 from the start is extremely bad teaching. Children should gradually acquire the use of new signs mainly in connexion with their phonic development —CH, GH, SH, etc. At the same time, they should gradually pick up the words represented by single or double letters—HAVE, NOT, COULD, HIM, etc. Their vocabulary does not require the final contractions like TION. In two years or less, they should be reading fully Contracted Braille as far as their vocabulary can utilize such contractions.

"3. I am convinced that large numbers of contractions discourage elderly people from learning Braille. Most wise teachers keep quiet about contractions in the initial stages until the learner has gained confidence. Many learners appreciate the frequently used contractions but have difficulty in remembering the less used compound signs and comparatively uncommon abbreviated words. In my view, Standard English Braille could shed one hundred or more rather useless contractions, adopt a dozen frequently used new ones and thus present to the adult learner a system which would be easier to learn, quicker to read and which would not occupy much extra space. The way would then be clear for an advanced system for the good readers. I would urge a basic system as the present target.

4. "I assume that these readers will primarily want simple books of no great length. There is much to be said for Uncontracted Braille, but a few simple and easily understood contractions make reading easier and quicker. These should be for words or groups of letters which occur frequently. They should not be hedged about with rules and prohibitions.

"5. This is a difficult question, as readers vary tremendously. Referring to the rather slow adult reader, I would say that the single and double-letter word signs such as BUT and SAID are the easiest signs. AND, FOR, THE, etc., as separate words, are also easy, but not quite as easy in the middle of words. GH, TH, WH, etc. are generally soon mastered, but there are a number of awkward words which hold up the reader well after the learning stage is passed—THOUGH, SHOWER, STARTLING, STANDARD, etc. GH, WH and AR are often confused in the early stages. The compound signs, when used as single words, are fairly useful if they are frequent. They are more difficult as parts of words.

"I would classify as unsatisfactory our contractions for DECEIVE, DECLARE, REJOICE, CHARACTER, UPON, WORD, LESS, SION, FUL, etc. They have low frequency value and hinder more than they help.

"6. Principles there should be, but I think they are best kept in the background. A system of contractions is not a philosophy of life. The first test should be frequency. Unless the contraction is going to occur often, do not have it. Beware of making the system look tidy. The contractions for HIMSELF, MYSELF, ITSELF, may be useful, but THYSELF and ONESELF, certainly are not. Alliterative suggestion is useful but should not be overdone, and should not be valued too highly. Many quite experienced readers say FOR when they meet the letter F, instead of saying FROM. A medial sound is in my opinion often more useful. For instance, I think the ER sign would have made an ideal contraction for WERE. I would say that if

there is a useful alliterative association, it should be used, but not otherwise. The contraction for KNOWLEDGE is simply a passenger. The contraction for IT causes no difficulty, and it would have been much sounder to have used the letter K for IS. I do not think lower signs are a difficulty, but I strongly question the belief that a low F naturally suggests double F.

"7. I am not a linguist, but I should think it unlikely that contractions, apart from phonic signs, could be common to several distinct languages, and I rather suspect that an attempt to form an international system would only mean bad contracted systems in all languages.

"Once a contraction is decided upon, let it be used always, and not be restricted by a number of petty rules."

Mr. J. LORIMER (blind), Master, Birmingham Royal Institution for the Blind, England.

« I think it is difficult to answer this question with certainty. Not many blind people appear to have definite opinions on this matter, and the few who have them differ fairly widely among themselves. I have the impression, however, that a moderate number of additions to Grade 2 Braille, coupled with a revision of some of the contractions already in use, would be acceptable to many and perhaps to most readers. The number of contractions and word signs could, I think, be increased to about 220 with advantage to the good reader, provided that the new signs, of which there would be some 35 or 40, did not lead to difficulties in readability or to a multiplication of rules. I think that both children and adults who are reasonably competent users of Grade 2 would soon become accustomed to this larger number of signs. The plodders, especially those who have learnt Braille in adult life, would probably find 220 signs too many to cope with. I think they would be happier with a simpler, less highly contracted grade, containing say 100-120 carefully chosen contractions.

"I believe there is a need for these two new grades of Contracted Braille, but it would mean that many books would have to be published in two editions, and the printing houses might consider this impracticable.

"I think that the question as to the ideal number of contractions for everyday Braille for all types of readers can be considered adequately without taking into account the space-saving value and the readability of the signs involved. It does not necessarily follow that a moderately contracted grade would be more acceptable to the plodder, or less acceptable to the good reader, than a more highly contracted grade. The opposite could be the case. For example, a thoroughly revised grade 2 employing no more than its present number of 185 signs might be more acceptable to good readers than a grade using 220 signs, some of which were difficult to feel or to interpret.

"I do not think that more than 220 signs should be used in a more advanced grade. I fear that loss of readibility would inevitably result from the use of a larger number, and many readers might find the gain in space-saving not worth this loss.

"Braille is taught to children gradually over a period of years, and it is taught as English, not as a subject separate from English. For this reason many slow children will succeed with Braille at school, whereas they would probably have failed had they attempted to master it in adult life when learning conditions are less favourable. They may partly explain some adult failures."

Mr. Lorimer considers that average blind children should master sufficient of an advanced grade of 220 contractions by the age of ten and have it completely mastered two years later.

"I have found that intelligent adults whose reading technique and vocabulary with print are good, and who are capable of a persistent effort, are able to learn fully contracted Braille and to derive enjoyment from using it. The task is naturally harder for them than it would have been had they become blind during school life, but it is by no means beyond them.

"On the other hand, people with only moderate reading abilities and learning capacity seem to find grade 2 very discouraging, and some find it too much for them. Nevertheless, many of these are capable of learning to use Braille and, given an easier grade, they would probably do quite well with it. Provided that Braille and nothing else, e.g., factors of health, temperament touch, etc., is the only obstacle to overcome, the success or failure of adults depends primarily not on the number of contractions with which they are faced, but on whether or not they can learn to read Uncontracted Braille. If learning capacity, reading ability from print and the general effort are good enough to enable an adult to learn to read simple Uncontracted Braille, he will usually be able to master one or other of the two grades suggested above.

"Learning to use Braille is a difficult business for any adult; for many of them it amounts to having to learn to read all over again, as distinct from merely transferring to Braille an ability already acquired from reading print. Such people, even though they may have been competent readers of print, tend to find the task too hard or

too disheartening, and this, I suggest is the root cause of a good many failures.

"As to the readability of simple contracted Braille signs, I list below only those signs which my experience suggests most readers find easy, or somewhat troublesome or difficult.

"(a) *Easy Signs.* The letters A, B, C, G, K, L, O, P, S, V and X; the signs for BUT, CAN, GO, LIKE, NOT, PEOPLE, SO, VERY, IT, FOR, and THE; the signs for DIS, EA, CC, and GG; the signs for TO and INTO when preceded by a space, and the signs for BE when used at the beginning of a word and preceded by a space.

"I would also describe as easy signs all the initial word signs, e.g. those noted below, and all abbreviated words which do not occupy more than three spaces. These two groups of signs are easy when not in contact with other signs.

"(b) *Signs which are somewhat troublesome.* These include the pairs of reversed signs, especially the letters D and F, E and I, H and J; and the signs for CH and ST, GH and AR, OF and WITH, SH and M, ED and N, AND and Y. Interpretation is the difficulty with most of these signs. In the same category are the contractions for THESE and THOSE and for THERE and THEIR, as well as the signs for CON and COM.

"Because of similarity in shape, the following are sometimes difficult to distinguish from each other; SH and M, especially when these signs stand for words, the contraction for LORD and the letter W; and ONE and KNOW when the latter is followed by a comma.

"Lower word signs, especially when they occur in sequence at the beginning of a line, are apt to be mistaken for higher signs.

"Some signs occasionally lead to touch difficulties when used in certain sequences in words. When the letters B or L precede one of the contractions formed with the aid of dot 5, the letters are sometimes read as separate words, thus BONE may be read as BUT ONE. I have also heard dot 5 plus E, followed by A, e.g. in the word SEVERAL, read as II. The contraction for CHARACTER, in the word CHARACTERISTIC produces a dot formation which is very confusing to some readers.

"The touch difficulties illustrated in the last paragraph are sometimes largely due to unsatisfactory spacing between signs and between the component dots of signs. Some of the Braille produced by one of our publishing houses is particularly faulty in this regard. This is a matter which could very usefully be investigated. Complete standardization of dots and spacing would, I feel sure, do something towards improving the readability of Braille.

"(c) *Difficult Signs.* Some of the word signs are difficult to interpret. Among these are KNOWLEDGE, CHARACTER, DECLARE, DECLARING, CONCEIVE, CONCEIVING, REJOICE, REJOICING. They are encountered so seldom that they are apt to be forgotten, and it is not easy to guess their meaning from their form. Other signs which are doubtful are those for LORD, WHOSE, SPIRIT, ACCORDING, ALREADY, ALTOGETHER.

"The Capital Sign, when used, and the Accent Sign, produce confused word patterns. The Double Italics Sign tends to have the same effect.

"I consider that the least satisfactory of all Braille signs are the final contractions. With the possible exception of ENCE, they are all clear to the touch, but many readers have found them very difficult to learn and to remember. I think this is due to their consisting of the final letters of the sequence they represent; letters which, in the cases of ENCE and ANCE, are silent more often than not. A further weakness is that this group contains pairs of signs which are very similar in appearance. Two of these pairs, ENCE and ANCE, TION and SION, are particularly confusing, as each represents groups of letters whose sound values and spelling are much alike.

"Briefly, the following are the principles which I think should be borne in mind in planning contractions which will be easy to learn, easy to read and efficient in the saving of space:

"(a) The choice of words and letter sequences to be contracted should be determined by the results of a frequency test. Short words of frequent occurrence which are usually easy to read in uncontracted form are not necessarily better space savers than longer words which occur less often.

"(b) No word or sequence of letters should be represented by its final letter or by the contraction for a final sound.

"(c) Signs which are similar in form should not carry meanings which are similar in sound, e.g. THERE and THEIR, SION and TION, COM and CON. At the same time, close resemblance between the shapes of contractions should be avoided where possible. Similarity of shape is liable to cause confusion in interpretation.

"(d) Word signs are more easily learned and read if their forms suggest the words they represent. Words which occur often, both separately and as parts of other words, are, I think, best expressed by two-spaced initial signs. Single space signs and abbreviations seem more suitable for longer words and for short words which seldom occur as parts of other words.

"(e) There are certain combinations of dots

which are difficult to the touch and should not be used in contractions. In two-space word signs, dots 4, 5 and 6 should not be used in combination with the letters A, B, K and L. Dot 4 and dot 6 are not good when used with the remaining letters of the alphabet. None of these dots should be used in conjunction with lower signs which stand alone. With the above exceptions, dot 5 and dots 4-5-6 should be used in preference to dots 4-5 and dots 5-6 to form two-space word signs; the former produce more readable shapes than do the latter."

ACHIEVEMENT OF UNIFORM CONTRACTED BRAILLE FOR THE SPANISH AND PORTUGUESE-SPEAKING WORLDS

Soon after Unesco began its work on Braille in 1949, several Latin-American countries drew the Director-General's attention to the conflict of contracted systems as between Spain and Spanish-America and similarly between Portugal and Brazil. It was the old story of unco-ordinated action, of countries going their own individual ways with the consequent confusion, duplicated effort, restricted production and inability to exchange books. This was reminiscent of the old days of divisions in English Braille in England and the various schools of thought in the United States.

Braille was introduced into Barcelona at a particularly early date, sometime between the years 1837 and 1840, by Professor Don Bruno Berenguer of the Municipal School for the Blind, who had learnt of the system on a visit to Paris, but it was officially supplanted in 1856 by a system of embossed characters based on Roman forms for reading and writing which was designed by a teacher of the same school. Braille was not re-established in Barcelona until 1918.

Madrid, too, early interested itself in Braille, for after 1842, when the National College for the Blind was established, its founder brought back details of the system from a number of visits he paid to Paris. Adapted to Spanish, it was used uncontracted for a number of years and it first appears to have been abbreviated in 1885 but this was little used prior to 1898. It was modified and re-published in 1925 and no further changes were made until 1939; in 1940 a committee, representing the national organizations for the blind, published a revised manual. In the Braille magazine *Cultura* (1950), published by the National Braille Press, Madrid, the 1940 system does not appear to have been wholly employed, for the table of contractions states that:—"The abbreviations contained in these tables are, for the most part, taken from the *Anteproyecto de Estenografia Ortografica de la Lengua Espanola* which was elaborated in 1940".

The first Braille used in Argentine appears to have been the French, taught in Buenos Aires early in the century. An Argentine contracted Braille came into being in 1927, a system which was substantially expanded in 1936 and again in 1944, when its contractions and abbreviated words reached the record number of approximately two thousand. In that year a conference of Braillists from Spanish-speaking territories was convened in Buenos Aires for the purpose of reaching agreement on a single contracted system for all Spanish countries; but unfortunately both war conditions and the limited financial resources of most schools for the blind prevented a fully representative attendance. An earlier effort to bring unity had been made in Vienna, in 1929, under the auspices of the American Foundation for Overseas Blind, but this also had been unsuccessful.

Both the Argentine system of 1944 and that of Madrid, 1950, had their roots in the original contracted form, designed in Spain; but at their successive revisionary stages, had increasingly diverged from one another. By 1949, they were so far apart that without considerable study a blind person accustomed to one could not read the other.

This situation placed the schools and local printing presses of other Latin-American countries in a difficult position. Should they follow Spain or Argentine? They would like to avail themselves of the literature of both. Some introduced parts of the Argentine system, others the whole of it, while many schools continued to teach only uncontracted Braille.

PORTUGUESE BRAILLE

It is thought that Braille was adapted to Portuguese in Portugal about the year 1880, while the first contracted system was introduced in 1905. In 1937, Professor Jose Ferrera de Albuquerque e Castro, a blind master at the school in Oporto, enlarged this and made further slight modifications in 1948 to bring it into conformity with changes in the visual orthography agreed to between the governments of Portugal and Brazil. It was published officially in that year by the Asilo Escola Antonio Feliciano de Castilho, Lisbon.

Two independent centres of Braille publication developed in Brazil, the older being the Instituto Benjamin Constant, established in Rio de Janeiro in 1856 and which later set up a press. We do not know when Braille was first introduced into

Brazil, but it was used in uncontracted form until 1945, when under the authority of the Ministry of Education and Health an "Official Braille for the Language of Brazil" came into force. This embraced about 226 contractions, more than half of which differed radically from the system used in Portugal.

The second centre was the Fundaçao para o Livro do Cego no Brasil, founded in Sao Paulo in 1946. It did most of its printing in uncontracted Braille although more recently it was gradually introducing the contractions of Portugal into its Braille magazine. The Fundaçao was deeply concerned at the increasing rift between the systems of Portugal and Brazil.

Such then were the Braille positions of these two important languages when, in 1950, the Fifth Session of the General Conference of Unesco authorized the Director-General, to convene a regional conference "for Spanish or Portuguese-speaking regions" as part of the 1951 programme.

Early that year we circulated questionnaires to educators of the blind, leading Braillists, Braille publishers and librarians throughout these areas, seeking their ideas on the possibility of reaching agreements and the lines on which they thought these could be best achieved. Their replies, which were characterised by moderation and practical common sense, provided a most satisfactory basis for an extended study of all the factors involved; and with this aid we prepared a series of documents which we circulated in advance as basis for discussion when we should meet in conference.

Particularly promising of success in the Spanish field were the generous offers to make sacrifices contained in letters from the responsible governmental authorities in Spain and Argentina. Mr. José Ezquerra, Director of the National Organisation for the Blind, Madrid, wrote:—"I am most anxious that an agreement should be reached which may serve as a basis for the progressive unification of the contracted systems used in Spain and Spanish-American countries... I am in entire agreement with the proposal to secure the adoption of a common system of Braille contractions for all Spanish-speaking countries, on the basis of agreement between the countries concerned, preferably through a Congress, it being evident that its conclusions cannot fail to benefit all sightless persons of the same mother-tongue..."

Dr. Samuel Barbara, Acting Director of the Ministry of Labour and Social Welfare, Argentina, wrote:—"We understand that in taking into account the ever increasing cost of printing material in all countries and the difficulty which exists in many of them in obtaining the necessary material, even at high prices, it would be convenient to have a contracted system, which, while it should be simplified to the maximum extent possible in accord with what seems to be the general tendency, should not lose its character to such an extent as to deprive it of its true value of economy of space and greater speed of writing... We are ready to accept modifications in our method in order to achieve unification..."

All those consulted were unanimous in their wish for a single system for each language, and they were almost equally unanimous in expressing the view that whatever systems were established, they should be simpler in character and freer of complex rules than those in existence.

The Conference met in Montevideo from 26th November to 2nd December with the Government of Uruguay as host. Representatives and a number of observers attended from the following countries:—Argentine, Bolivia, Brazil (Rio de Janeiro and Sao Paulo), Chile, Colombia, Mexico, Peru, Portugal, Puerto Rico, Spain and Uruguay.

Unfortunately some of the experts invited were unable to attend owing to illness and the conference expressed its sympathy with Mr. O. Sanchez (Cuba), Miss E. Cortes Ramos (Mexico), Mr. A. de Sa Marques de Figueiredo and Professor Nunes Pinto (Portugal), Mr. E. Mirando (Puerto Rico) and Mr. M. Florentin (Venezuela).

Mr. Pardo Ospina (Colombia) was nominated President and the following were nominated as vice-presidents:—Mr. Ezquerra (Spain), Professor Albuquerque e Castro (Portugal), Professor Meza (Mexico) and Mr. Pegararo (Argentine). Sir Clutha Mackenzie (Unesco) was nominated as Rapporteur.

The Conference was formally opened by the Deputy Director of Public Instruction, Professor Javier Gomensoro. Dr. Establier, Director of the Unesco Centre of Science Co-operation in Montevideo, read a message from the Director General of Unesco, Dr. Jaime Torres Bodet, which was received with warm applause.

The Conference received the various documents prepared by Unesco as a groundwork for discussions and then proceeded to consider the main principles which should lie behind a Grade 2 system for everyday use. Among the views which had been put forward in various papers by educators and Braillists, the following were accepted by the conference :

1. The minimum of arbitrary signs to be employed.
2. As far as possible, each sign to have but one meaning.
3. The maximum use to be made of the mnemonic principle.
4. The number of signs to be small and groups of letters of low recurrence not to be abbreviated.

5. Rules to be few and simple.
6. Special abbreviations for words to be strictly limited in their range and number.
7. Orthography to be respected.
8. The needs of the general mass of blind readers of the future to be the main objective.
9. Right-hand signs not to be employed to represent a contraction. They should be reserved for forming compound signs.

The Conference then considered a "Survey of the symbols common to the stenographic Brailles of Spain and Argentina", and agreed that all those now shared by both should be retained in the new single form.

On the motion of Professor Albuquerque the Conference then nominated three commissions as follows:—

No. 1 Spanish Commission—to consider details of contractions for Standard Spanish Braille, Grade 2: Mr. Pegararo, Mr. Ezquerra Professor Meza and Miss Otero (Rapporteur).

No. 2 Portuguese Commission—to consider details of contractions for Standard Portuguese Braille, Grade 2: Mrs. Nowill, Professor Albuquerque and Miss Sant'Ana (Rapporteur).

No. 3 Commission —to consider rules for stenography, the grades to be provided, questions of punctuation, the lay-out of books and periodicals, the construction of a World Braille Council and of Regional Councils and the rational geographical distribution of Braille printing presses. Its members comprised Mr. Ospina, Mr. Garcia Ares, Mr. Moya and Mr. Fernandez (Rapporteur).

As Unesco Rapporteur Sir Clutha Mackenzie was ex-officio member of all three commissions.

These commissions proceeded to an intense study of their subjects and in due course their reports were accepted unanimously after modifications by plenary sessions, the final decisions being expressed in the series of resolutions given on page 151 and in the Spanish and Portuguese Grade 2 Brailles.

In presenting the report of the Spanish commission, Miss Otero said: —"At the meeting of the Spanish and Portuguese commissions a comparison of the tables of contractions for these two languages has shown that many signs are now common to both. Although we regret that complete uniformity has not proved possible owing to the orthographic differences between the two languages, it is a most satisfactory result that such a high degree of uniformity has been achieved."

When the report of the Portuguese commission was presented, Dr. Brito Conde, Rio de Janeiro, submitted the following written statement:—

"As director of the Institute Benjamin Constant of Rio de Janeiro, officially established for the prevention of blindness and assistance to the sightless of Brazil (Law 6066 *dated* 3-12-43), *I undertake to promote to the Ministry of Education and Health of Brazil, the revision of the laws passed by this Ministry regarding stenographic Braille in Brazil, in favour of the adoption of the decisions passed to-day by this Regional Conference on Spanish and Portuguese Braille.*

Montevideo 29 *November*, 1951."

Professor Albuquerque warmly welcomed this statesmanlike declaration and said that the delegates from Portugal and Brazil soon had reached agreement regarding the way their work should be done. For his part, he was very happy to say that this agreement was almost totally due to the high spirit of collaboration shown by the Brazilian delegation. They had decided to take the contracted system as it existed in Portugal as the basis for their work. It was a pleasure for them to see that in the documents submitted by Unesco there were many points which coincided with this system; so that there was little which they had been unable to accept. The work done by the delegate from Sao Paulo, Mrs. Nowill, had really been praiseworthy. In concluding, he said "I now want to ask Sir Clutha Mackenzie to convey to Unesco the thanks of my country for the magnificent opportunity which has been offered to us to bring about this agreement between Portugal and Brazil which will undoubtedly contribute to the culture of the blind, their independence and their great literary enjoyment in the future."

The Conference warmly applauded this satisfactory completion of the Commission's task.

Except in matters of detail the Commissions had arrived at unanimous agreements on the main framework of single systems for both languages by the fourth morning of the conference. Delegates asked that once the conference was over, the decisions should be published widely as soon as possible. Most of the delegates said that they had been officially authorized to act on behalf of their governments and they did not anticipate any difficulty in getting the new Braille officially accepted in their countries. The Rapporteur, on behalf of Unesco, said that he would circulate the report of the conference and the new manuals in inkprint. Mr. Ezquerra then said that the decisions of the Commission on Spanish Braille would be accepted in Spain and that his organization would have pleasure in printing a Braille edition of the new manual for general circulation, an offer

which was greeted with enthusiasm. Mrs. Nowill, on behalf of the press in Sao Paulo and Dr. Brito Conde in regard to his press in Rio de Janeiro, made similar offers in respect to the Portuguese manual.

The remaining days were devoted to the settlement of details and the discussion of associated subjects. Delegates, in a series of speeches, warmly welcomed the agreements as marking an historic day among the blind of these two great linguistic areas. Montevideo and the work of Unesco would never be forgotten.

PUNCTUATION SIGNS

Early in the Unesco studies the Government of India asked that uniformity in punctuation signs should also be considered because of the need to choose between following the original French signs and those used in Standard English Braille.

Our studies have revealed that on the whole there was a high degree of uniformity throughout the existing systems, the main divergences being confined to three signs—the capital sign, italics and query marks. Most of the languages which have derived their Braille from the French Braille use dots 4-6 for capital; 4-5-6 for italics and 2-6 for query, while those designed on the Standard English pattern use dot 6 for capital, 4-6 for italics and 2-3-6 for query mark.

While it is undoubtedly necessary for educational purposes to employ a capital sign to ensure that the student can use the typewriter correctly, many practical Braillists are of the opinion that this sign is unnecessary in everyday Braille and that as a matter of general policy there is no need to insist on telling the blind reader how visual text is presented to catch the eye of sighted readers. For example, the names of newspapers and magazines are set out in bold capitals to catch the attention of people passing bookstalls or for selecting a paper quickly from a bundle. Chapter and section headings are printed in capitals, in heavy block type, in italics or underlined the easier for the all-embracing eye to glance quickly over the pages to select what it wants or gauge the broad nature of the contents. It is really no service to the Braille reader to tell him how these things are done in ink-print for optical convenience if it means giving him signs which are not necessary to the sense of the text and which may only distract him from it. Both dots 4-6 and dot 6 are equally retarding because, in combination with a number of letters, they present ambiguous dot patterns. If ink-print custom were to be exactly followed, it could only be done by printing headings in double sized Braille signs. For the average reader, the fewer extraneous dots introduced, the easier for him; and the best policy these days seems to be to make what use of composition marks is necessary in scholastic books to train the student in correct orthographic practice, while everyday general literature is freed of all surplus dots.

The query mark presents another problem. In French, English, Spanish, Portuguese and a number of other languages dots 2-6 are used to represent the digraph EN, in Indian languages and Sinhales a second E vowel and in some African tribal languages variations of N. It is possible that the departure from the use of dots 2-6 for the query mark by Anglo-American Braille may have been dictated by the frequency with which the EN occurs as a termination in English, -ben, -den, -fen, -hen, -ken, -men, -pen, -ten, then, when, seen, green, been, between, seven, eleven, thirteen, fourteen and so on. If English Braille reverted to the French query, all these finals would need to be fully written, thereby entailing an increase in the space occupied.

Both the American and British Uniform Type Committees are considering these problems and we give on page 137 the existing signs for the various punctuation marks in both French and Standard English systems.

THE ESTABLISHMENT OF A WORLD BRAILLE COUNCIL

In the "Report on the Braille Situation", September, 1949, I wrote: "Finally consideration might be directed towards the question of setting up a small Braille Council, associated with some international organization for the blind, or other appropriate authority, to correlate future Braille development and to advise on such problems of Braille usage as might be referred to it from time to time."

This proposal was expanded in a document which was prepared for the meeting of the Advisory Committee on Braille Problems, December 1949:— "While the International conferences of 1878, 1902 and 1911 made major decisions as to policy, no small co-ordinating body nor clearing-house was provided for, which would act in an advisory capacity in the carrying out of their policy. Europe as a whole fell into line in the early stages of Braille history—likewise the United States of America after her period of divergent Braille. Cyrillic languages also adhered to the Braille signs for those of their characters which corresponded to the Roman.

"It is possible that, had there been a co-ordinating body to assist in adapting Braille to non-European languages, our present problems might not have arisen. Missionaries and other early pioneers, worked under grave difficulties and without clear guidance. If the outcome of our present labours is the establishment of a general policy, there must still remain many minor points for subsequent decision or even the old difficulties might arise once more through people, from excellent motives, again re-designing Braille. The Committee might care to consider this suggestion and also feel disposed to express views upon the type of committee which might be appointed to watch over Braille usage within each linguistic area."

Both the Advisory Committee on Braille Problems (December 1949) and the International Meeting on Braille Uniformity (March 1950) examined this statement and the latter expressed their views in the following resolution:—

"The Conference wishes to repeat with greater emphasis and in greater detail the resolution on the subject of a World Braille Council passed by the Advisory Committee in December 1949. It concurs with the view that much of the lack of uniformity in many parts of the world is due to the absence of a co-ordinated plan or authoritative guidance. The Conference, therefore, recommends the establishment of a small World Braille Council, associated with the appropriate organ of the United Nations. It is not intended that this Council should be a policy-making body. The Conference wishes to stress that if this development takes place it is still of paramount importance that Unesco should continue to play a vital role in the Braille problem in view of its educational and cultural commitments. A liaison should thus be maintained permanently with Unesco. The World Braille Council, it is thought, should be closely linked with already existing uniform Braille committees, such as those in Great Britain, France and India. Where linguistic areas lack such committees the Conference recommends that they should be established as soon as possible. The organization of the Council should be built up gradually and it is not proposed that it should meet at regular intervals.

"The activities of the Council, based upon the resolution of the Advisory Committee should be:—

(a) *To act in an advisory capacity on the interpretation and application of Braille principles.* While lines of general policy have been laid down, they will need to be applied in individual cases. Confusion over interpretation has, in fact, been one of the major causes which made the present Conference so essential. At present no competent body exists and authoritative interpretations are required from time to time.

(b) *To co-ordinate future Braille developments.* The Conference believes that simultaneous development in a number of areas is necessary, and also that there should be some link between each linguistic region. Although the Conference in 1878 achieved good results it only succeeded in developing uniformity for the European languages. This was a great step forward and is one of the main dates in Braille history, but the maximum of co-ordination throughout the world was not achieved.

(c) *To advise on such Braille problems as might be referred to it from time to time.* The Conference wishes here to underline the problems facing people whose language has no authentic Braille code. As an example, a Braille alphabet for the Bemba language of

Central Africa is now being considered and the existence of a World Braille Council would greatly facilitate its preparation.

(d) *To act as a centre for the collection and exchange of information on Braille.* The Conference has noted that three excellent centres of information on Braille exist—the Musée Valentin Haüy in Paris, the Information Department of the National Institute for the Blind in London and the American Foundation for the Blind in New York. It is not intended to duplicate the thorough work carried out by these libraries. No international catalogue of Braille publications, however, is yet available nor any index of documents on Braille questions. This work would be a later and logical development.

"The aim is to create a body, which, while carrying out the foregoing activities, would not involve a large amount of financial support. So essential is the World Braille Council that its creation immediately even on a small scale is more vital than attempts to give it at once the importance it may assume in the future. The membership of the Council should be limited to a maximum figure, but providing for at least one representative of each major linguistic area. Members should be either linguists or blind Braillists. An excellent nucleus for its membership has been established by the delegates to the present Conference and to the Advisory Committee in December.

"Where linguistic areas lack such committees, the Conference recommends that they should be established as soon as possible under the auspices of the government or goverments concerned, or other competent bodies. These committees would carry out the same functions on a regional basis as the World Braille Council, and in close liaison with it, so that changes in Braille usage would not be put into effect before their relationship to the Brailles of other languages had been taken into consideration. In addition, such regional committees should ensure the rational and economical publication of Braille literature, and should keep Braille printing and library services in their areas under review."

The Director-General submitted this recommendation to the Fifth Session of the General Conference of Unesco, June 1950, which in detailing the 1951 programme stated:—"The Director-General is authorized to assist in the establishment of a World Braille Council".

In the Unesco Secretariat we began our discussions as to ways and means of setting up the council in the summer of 1951. The legal and constitutional problems involved were by no means easy of solution. An autonomous organization, representative of the world's scripts and languages and financed by member states was easy enough to plan on paper; but it would be large, expensive and difficult to administer. All previous attempts to establish international associations for the blind had failed because subscription from member states had not been forthcoming.

The better course seemed to be, as the March resolution had suggested, to associate the council directly with Unesco as an advisory body, at the same time giving it a constitution which would allow of the widest expression of views in the nomination of the members of the council and in the submission of opinions on Braille matters from every part of the world. This meant breaking new ground and creating precedents, but the Director-General decided to submit the outline of a constitution of this nature as a basis for discussion to the Consultative Committee for the Creation of a World Braille Council, which met at Unesco House, Paris, from December 10th to 12th, 1951. (See page 168.)

With minor amendments the conference endorsed the Unesco plan. It provides for a structure of which national Braille councils form the foundation. These will be co-ordinated in zones under regional Braille councils, which, in turn, will be responsible to the World Braille Council.

This body will consist of nine members, not less than six of whom will represent zones, while three will be technicians, one a specialist in Braille musical notation, one in the expression of mathematics and scientific symbols, and the third as a technical co-ordinator. The world has been divided broadly into the following zones:

1. European languages, or those derived from them, using Roman, Cyrillic and Greek scripts.
2. Languages using scripts of Indian origin.
3. Languages using Semitic scripts.
4. The ideographic languages of Eastern Asia.
5. The indigenous languages of Africa.
6. Non-European languages employing the Roman script.

As the cost of bringing members together for frequent meetings would be beyond the power of foreseeable resources, it is proposed that most of the business should be carried on by correspondence, secretariat service being provided by Unesco in Paris. Where tradition or the decisions of international conferences have already established world Braille usage, enquiries will be answered in accordance with these without putting the members of the Council to needless trouble; but wherever questions are raised, in respect to which

no policy or principle has already been laid down, members will be consulted and recommendations on which to base a reply will be made to the Director-General of Unesco.

The Consultative Committee for the Creation of a World Braille Council submitted to the Director-General the names of persons whom it considered well qualified to form the foundation members of the council. In order to contribute to continuity of policy three of these initial members will serve for three years, three for five and three for seven, while their successors will all be nominated for three-year terms. In making re-appointments, the Director-General will be advised by the council, by other international organizations for the blind and by the regional councils. Membership will pass by rotation among the main languages of each regional zone, although some preference may be shown in respect to such languages or groups of languages as might at that time have pressing problems in need of solution.

This guardian body came into being from the begining of 1952. Its success will depend on the harmonious co-operation given by Braillists throughout the world, for the Council does not, nor would wish to wield any arbitrary authority. Its moral influence, for this is all it possesses, is conferred by the fact that it has been created by the common wish of many nations and that the principles it advocates have been built up from the foundation laid by Louis Braille, strengthened by tradition, expounded by international conferences in the past and now enlarged and re-defined by the series of international and regional consultations held under the auspices of Unesco. The Council begins well. Reason, justice, practical common sense and the avoidance of extremes, will hold the Council in high respect. In short, all it has to do is to sustain that spirit of generous concession and mutual understanding which has marked the tidying up of Braille usage throughout the world, begun under Unesco's auspices in 1949.

BRAILLE CHARTS

WORLD BRAILLE CHART

BRAILLE ORDER	MAIN BROAD SOUND VALUE IN WORLD BRAILLE	FRENCH	ENGLISH	GREEK		RUSSIAN	
	a	a	a	Α α	alpha	А а	a
	common European value	b	b	Β β	beta	Б б	b
	Roman C, Italian CH	c	c		—	Ц ц	ts
	common European value	d	d	Δ δ	delta	Д д	d
	e	e	e	Ε ε	epsilon	Е е	e
	common European value	f	f	Φ φ	phi	Ф ф	f
	common European value	g	g	Γ γ	gamma	Г г	g
	common European value	h	h	Χ χ	chi	Х х	ch (loCH)
	i	i	i	Ι ι	iota	И и	i
	J in Jay, & various European sounds, Perso-Arabic JIM	j	j	Ω ω	omega	Ж ж	j (French J)
	common European value	k	k	Κ κ	kappa	К к	k
	common European value	l	l	Λ λ	lambda	Л л	l
	common European value	m	m	Μ μ	mu	М м	m
	common European value	n	n	Ν ν	nu	Н н	n
	o	o	o	Ο ο	omikron	О о	o
	common European value	p	p	Π π	pi	П п	p
	Roman Q, Perso-Arabic QAF and Q or KW elsewhere	q	q		—	Ч ч	ch (CHurCH)
	common European value	r	r	Ρ ρ	rho	Р р	r
	common European value	s	s	Σ σ	sigma	С с	s

Reference was made at various stages of the Unesco discussions to the setting up of a World Braille Chart. Because of the wide variety of scripts with their variations in length and serial order and because of the size required for such a chart, it is not provided here as a single document.

We find, therefore, that it is more practical to give the Braille system for each language separately. Nevertheless, we give below a table of nine Braille systems as a broad indication of how the full chart would appear.

ARABIC		HEBREW		DEVANAGARI		SWAHILI	INDONESIAN
ا	alif	א	alef	अ	ă	a	a
ب	ba	ב	bet	ब	b	b	b
چ	cheh (Persian)	◌ַ	patah	च	c	—	c
د	dal	ד	dalet	द	d	d	d
◌ِ	kasra	◌ֶ	segol	ए	ē	e	e
ف	fa	פ	fé		—	f	f
گ	gaf (Persian)	ג	gimmel	ग	g	g	g
ه	ha	ה	hé	ह	h	h	h
ي	ya	◌ִ	hireq	इ	ĭ	i	i
ج	jim	י	yod	ज	j	j	j
ک	kaf	כ	kaf	क	k	k	k
ل	lam	ל	lamed	ल	l	l	l
م	mim	ם	mem	म	m	m	m
ن	nun	נ	nun	न	n	n	n
◌ٰ	alif maqsourah	◌ֹ	holom	ओ	ō	o	o
پ	pe (Persian)	פ	pé	प	p	p	p
ق	qaf	ק	qof	क्ष	kṣ	kw	q
ر	ra	ר	resh	र	r	r	r
س	sin	ס	sameh	स	s	s	s

BRAILLE ORDER	MAIN BROAD SOUND VALUE IN WORLD BRAILLE	FRENCH	ENGLISH	GREEK		RUSSIAN	
⠞	common European value	t	t	Τ τ	tau	*Т т*	t
⠥	u	u	u	ου	omikron ypsilon	*У у*	u
⠧	V in Very	v	v		—		—
⠭	KH in Scottish loCH	x	x	Ξ ξ	xi	*Щ щ*	shch
⠽	Y, vowel or consonant	y	y	Υ υ	ypsilon		—
⠵	Z in Zeal	z	z	Ζ ζ	zeta	*З з*	z
⠯	emphatic or 2nd S	ç	—	Ψ ψ	psi	*Ъ ъ*	y
⠿		é	—		—		—
⠷		à	—		—		—
⠮	TH in THis	è	—		—	*Ы ы*	y (rhYthm)
⠾	emphatic or 2nd T	ù	—		—		—
⠩	CH in CHurCH	â	ch	αυ	alpha ypsilon	*Е е*	o
⠣	GH and GHEIN	ê	gh	αι	alpha iota		—
⠻	SH in SHall	î	sh	ει	epsilon iota		—
⠹	TH in THing	ô	th	Θ θ	theta		—
⠳	emphatic or 2nd H	û	wh	ευ	epsilon ypsilon	*Ш ш*	s (Sure)
⠫	emphatic or 2nd D	ë	ed		—	*Я я*	ya
⠗	emphatic or 2nd R	ï	er	*yu*	ypsilon iota		—
⠬	2nd U vowel where required	ü	ou	ηυ	eta ypsilon	*Ю ю*	you
⠪	2nd O vowel where needed or AU/OW	œ	ow	οι	omikron iota	*Э э*	e (mEt)
⠺	W in Will	w	w		—	*В в*	v
⠂	comma	comma	comma		comma		comma
⠆	semi-colon	semi-colon	semi-colon		semi-colon		semi-colon
⠒	colon	colon	colon		colon		colon
⠲	full stop	full stop	full stop		full stop		full stop

ARABIC		HEBREW		DEVANAGARI		SWAHILI	INDONESIAN
ت	ta	ט	tet	त	t	t	t
ُ	dammeh	אֻ	qubbuts	उ	u	u	u
ﻻ	lam alif	ב	vet	व	v/w	v	v
خ	kha	ח	ḥet	ఠ	ŏ (Dravidian)	—	x
ئ	ya hamzeh		—	य	y	y	y
ز	zai	ז	zayin		—	z	z
ص	ssad		—	ष	ś	—	—
ظ	dha		—	ढ	ḍh	—	—
ع	ain		—	ळ्ह	ḷ	—	—
ذ	thal	צ	tasde	ध	dh	dh	—
ط	ta		—	ट	ṭ	—	—
ة	ta marboutah	כ	ḥaf	छ	ch	ch	ch
غ	ghein	אָ	qamats	घ	gh	gh	—
ش	shin	שׁ	shin	श	ṣ	sh	sj (sh sound)
ث	tha	ת	sav	थ	th	th	—
ح	ha	שׂ	sin	ः	ḥ	tw	—
ض	ddad	ע	ayin	ड	ḍ	nd	—
	—		—	ड़	ṛ	ny	—
ؤ	waw hamzeh	ת	tav	ऊ	ū	uu	—
أ	alef hamzeh waw	אוֹ	ḥolom vav	औ	au	oo	au
و	waw	ו	vav	ठ	ṭh	w	w
ً	fatha		comma		comma	comma	comma
ٍ	tanwin fatha		semi-colon		semi-colon	semi-colon	semi-colon
ْ	sukun	אַ	ḥataf patah		ñ ; colon	colon	colon
	full stop		full stop		full stop	full stop	full stop

BRAILLE ORDER	MAIN BROAD SOUND VALUE IN WORLD BRAILLE	FRENCH	ENGLISH	GREEK	RUSSIAN
⠱	2nd E vowel where required	query mark	en	query mark	query
⠖	exclamation mark	exclamation mark	exclamation mark	exclamation mark	exclamation mark
⠶	brackets	brackets	brackets	brackets	brackets
⠦	open quotation mark	open quotation	open quotation	open quotation	open quotation
⠔	2nd I vowel where required	in	in	—	—
⠴	JH as S in meaSure, close quotation mark	close quotation	close quotation	close quotation	close quotation
⠡	AI vowel where required	ai	st	—	—
⠻	NG in siNG	on	ing	—	—
⠼	numeral sign	numeral sign	numeral sign	numeral sign	numeral sign
⠮	long A, and poetry line sign	poetry sign	poetry sign and ar	H η eta	poetry sign
⠄	apostrophe	apostrophe	apostrophe	apostrophe	apostrophe
⠤	hyphen	hyphen	hyphen	hyphen	hyphen
⠜	—	ar	accent	—	—
⠬	—	—	—	—	—
⠰	2nd L	italics, LL	—	italics	—
⠈	—	—	—	—	—
⠠	—	capital sign	italics	capital sign	—
⠨	—	—	—	—	—
⠘	—	—	capital sign	accent	—

ARABIC		HEBREW		DEVANAGARI	SWAHILI	INDONESIAN
ٌ	tanwin dammeh	ֳ	ḥataf segol	ऍ	ĕ	ee	query mark
	exclamation mark		exclamation mark		exclamation mark	exclamation mark	exclamation mark
	brackets		brackets		brackets	brackets	brackets
	open quotation & query mark		open quotation & query mark		open quotation & query mark	open quotation & query mark	open quotation
ٍ	tanwin kasra	ִ	ḥireq yod	ई	ī	ii	—
	close quotation		close quotation		jh; close quotation	close quotation	close quotation
أ	alef hamzeh	ֵ	tsere	ऐ	ai	—	ai
	—	ׇ	shureq	ङ	ṅ	ng'	ng
	numeral sign		numeral sign		ṇ; numeral sign	numeral sign	numeral sign
آ	alif maddeh	ֲ	ḥataf qamats	आ	ā poetry sign	aa poetry sign	poetry sign
ء	hamzeh	ְ	sh'va	ॐ	chandra bindu	—	—
	hyphen		hyphen		hyphen	hyphen	hyphen
	accent		—	्	virama	—	—
	—		—	भ	bh	—	—
	foreign word sign		—	ळ	!	—	—
	comma		—		—	—	—
	underlining		—	ख	kh	—	capital sign
	semi-colon		—	ञ	n̄ & anuswara	—	—
ّ	shaddeh		—	००	h̲ (Tamil)	—	—

UNIFORM BRAILLE FOR AFRICAN TRIBAL LANGUAGES

As designed by the informal African Braille Committee, London, July 1950, *after consultation with workers for the blind throughout the African Continent.*
The Beirut Conference, February 1951, *recommended certain modifications which have been embodied in it.*

CONSONANTS

BRAILLE SIGN	PHONETIC SYMBOL	
	b	B.
	none	BH and implosive B in Hausa, Ibo, etc.
	β	B as in Spanish "saBer".
	c	It is recommended that this sign should be reserved for the "C" in European languages and not given to the "CH" sound unless two forms of "CH" sound occur in the same language.
	d	D.
	ɗ	For emphatic D in Hausa, etc.
	f	F.
	Φ	Tswana F. For a second F or for PH.
	g	G as in Get.
	h	H.
	ħ	Arabic "strong" H. For use where a second H is required.
	j	J as in Jay.
	ʒ	For the sounds JH and ZH, S in English meaSure and French Jour.
	k	K.
	q	Roman Q and QAF of Arabic.
	ɢ	KH or K.
	l	L.
	ɭ	For a second L sound where required.
	m	M.
	n	N.
	ɲ	GN as in French montaGNe. If these dots are required for a second I vowel, dots 2-6 may be used providing there is no second E vowel.

BRAILLE SIGN	PHONETIC SYMBOL	
	ŋ	NG as in siNG.
	p	P.
	r	R.
	ɾ	For use where a second R sound is needed.
	s	S.
	ʂ	For use where an additional S sound is required.
	t	T.
	ʈ	For second T where needed.
	v	V.
	w	W as in Walk.
	j	Y as in Yet.
	ɥ	If this 3rd U vowel is needed it should be represented by 
	z	Z as in Zeal.
	ʐ	For a second Z sound when required.
	tʃ	CH as in CHurCH.
	ɣ	GH and Arabic GHEIN.
	ʃ	SH as in SHore, Arabic SHIN.
	θ	TH as in THing.
	ð	TH as in THis, THAL in Arabic and used for DH elsewhere.
	x	CH as in loCH and German aCH, Arabic KHA.
	ʕ	Arabic HAMZEH, required in Hausa, etc.

VOWELS

The Committee considers that ten vowels are sufficient to meet most of the needs of the tribal languages. These comprise the traditional Braille signs for the Cardinal A, E, I, O, U and a second form of each of these vowels.

BRAILLE SIGN	PHONETIC SYMBOL	
	a	Cardinal A.
	ɑ	For long A as in fAther if it is necessary to show a long A in contrast to a short A, or for another form of A if required.
	e	Cardinal E.
	ɛ	For use where a second E is needed or for a diphthong of AI or EI.
	i	Cardinal I, usually with the value of French SI and English sEE.
	ɪ	If both a long and a short I are required, this sign should be used for the alternative.
	o	Cardinal O.
	œ	For Œ diphthong. OW or AU sounds or where a second O is required.
	u	Cardinal U.
	y	Where a different form of U is required.

DOUBLING

In a number of visual transcriptions it is the practice to indicate a long vowel by doubling the letter; this can be imitated in Braille, but it is suggested that provided a language contains only the five cardinal vowels, long vowels could be more economically shown by using the second vowel sign in each case.

TONES AND NASALIZATION SIGNS

Provision may be needed in some languages for the representation of up to three tones. Some languages too require a nasalization sign which may at times have to be indicated in conjunction with a tone mark.

The following signs are provided.

Tone 1, the common tone. No Braille sign.

Tone 2, Dot 4.

Tone 3, Dot 5.

Nasalization, Dot 6. This sign should be used in the same cell as the tone sign, thus:

Tone 1, with nasalization, would be represented by Dot 6.

Tone 2, with nasalization, by Dots 4-6, unless the second form of K (4-6) occurs in a language using this tone.

Tone 3, with nasalization, by Dots 5-6. These signs should precede the vowels they modify.

The Committee recommends that the international punctuation marks should be adhered to and that, of the alternative of Dots 2-6 and 2-3-6 for the query mark, the latter should be chosen. It recommends that the capital letter sign, Dot 6, should be employed only in elementary books to illustrate the rules of capitalization, and that, for simplicity of reading and economy of space, it should be omitted in general literature.

The Committee recommends the adoption of the international Braille numerals and the numeral sign, Dots 3-4-5-6.

Application of the African Tribal Braille

Chart to typical languages

The figure (1 ½) indicates that the Braille sign concerned represents two letters of the visual alphabet, i.e., the Grade 1 ½ referred to in Rules 8 and 9, Chapter 8. The Braille authorities of each language will use their discretion in deciding whether these contractions should be taught from the beginning of the childrens' education or left until a slightly later stage.

CONSONANTS

BRAILLE SIGN		SWAHILI (East Africa)	MALGACHE (Madagascar)	HAUSA (Northern Nigeria)	ZULU (South Africa)	SHONA	MUNDANG (French Cameroons)	CHINYANJA (Northern Rhodesia)	MAORI (Polynesia)
1	⠃	b	b	b	b	b	b	b	
2	⠉								
3	⠙			'b(implosive)	b (imp.)				
4	⠑			c (ejective)	Note 1	c			
5	⠋	d	d	d	d	d	d	d	
6	⠛	nd (1 ½)		'd (imp.)					
7	⠓	f	f	f	f	f	f	f	
8	⠊					ph			
9	⠚	g	g	g	g	g	g	g	g
10	⠅	h	h	h	h	h	h	h	h
11	⠇	tw (1 ½)							
12	⠍	j	j (dz)	j	j	j	j	j	
13	⠝								
14	⠏	k	k	k	k	k	k	k	k
15	⠟	kw (1 ½)		kw (1 ½)	Note 2	kw			
16	⠗			k'					
17	⠎	l	l	l	l	l (Bantu)	l	l	
18	⠞								
19	⠥	m	m	m	m	m	m	m	m
20	⠧	n	n	n	n	n	n	n	n

BRAILLE SIGN		SWAHILI (East Africa)	MALGACHE (Madagascar)	HAUSA (Northern Nigeria)	ZULU (South Africa)	SHONA	MUNDANG (French Cameroons)	CHINYANJA (Northern Rhodesia)	MAORI (Polynesia)
21						ny			
22		ng' (1 ½)		ng (1 ½)			(ng)	ng	
23		p	p	p	p	p	p	p	p
24		r	r	r	r	r	r	r	r
25		ny (1 ½)							
26		s	s	s	s	s	s	s	
27								ndi (1 ½)	
28		t	t	t	t	t	t	t	t
29				t'					
30		v	v		v	v	v		
31		w		w	w	w	w	w	w
32		y	y (final i)	y	y	y	y	y	
33									
34		z	z	z	z	z	z	z	
35									
36		c (ch, 1 ½)		c (ch)		ts	ch	ch	
37		gh (ghain, 1 ½)			Note 3	gw			
38		sh (1 ½)		sh (1 ½)		sh			
39		th (1 ½)						th (1 ½)	
40		dh (1 ½)				dz			
41					Note 4				
42				'y		(m plus nasal n)			

VOWELS

BRAILLE SIGN		SWAHILI (East Africa)	MALGACHE (Madagascar)	HAUSA (Northern Nigeria)	ZULU (South Africa)	SHONA	MUNDANG (French Cameroons)	CHINYANJA (Northern Rhodesia)	MAORI (Polynesia)
43		a	a	a	a	a	a	a	a
44		aa (1 ½)							
45		e	e	e	e	e	e	e	e
46		ee (1 ½)				(g)			
47		i	i	i	i		i	i	i
48		ii (1 ½)				(ny)			
49		o	o	o	o	o	o	o	o
50		oo (1 ½)	ao (1 ½)	au (1 ½)					
51		u		u	u	u	u	u	u
52		uu (1 ½)				(dy)	ö		
				EXTRA SIGNS					
		st (1½)	ai (1½)	ts (1½)					
						d (imp)			

Zulu: Notes 1, 2, 3 and 4. In visual Zulu the Roman letters C, Q, X and GQ are used to express the Zulu clicks: 1, Radical dental click; 2, Radical palato-alveolar click; 3, Voiced palato-alveolar click; and 4, Radical lateral click.

Swahili. This code has been modified in consultation with Major E.C. Osborne, Salvation Army Institute for the Blind, Thika, Kenya. *The Standard Swahili-English Dictionary* (Frederick Johnson, Oxford University Press, 1945), has been used as a work of reference.

Hausa. The *Hausa-English Dictionary* (prepared for the Government of Nigeria by Mr. Bargery, Oxford University Press, 1934) has been used as a work of reference in the modification of this alphabet.

Malgache. This alphabet was prepared by the Norwegian Mission in Madagascar, about 1909 for use in their classes for the blind. It has not been modified in any way.

Chinyanja. This alphabet has been in use in the Dutch Reformed Church Mission, Fort Jameson, for twenty-five years, and no modification has been made to it.

Mundang. This alphabet was designed about 1939. Two modifications have been made to it.

Zulu and Shona. These alphabets were prepared at Unesco, the *Zulu-English Dictionary* (C.M. Doke, Witwatersrand University Press, 1948) being used as a reference work and modifications have since been made in consultation with Mr. V.H. Vaughan, Bantu Braille Committee. Only Grade 1 signs are shown as the Bantu Braille Committee has not yet finished its work, and the Unesco suggestions for Grade 1 ½ have been submitted to them for their consideration.

AFRIKAANSE BRAILLE

Received from the School for the Blind, Worcester, South Africa.

	a		e		i		m		q (ig)		u		y
	b		f		j		n		r		v		z
	c		g		k		o		s		x		w
	d		h		l		p		t				

Punctuation marks: These follow the general international pattern. The query mark is dots 2-3-6.

Numeral sign & numbers: These are also the internationally established signs.

Simple contractions & punctuation signs: The following table shows the use made in Afrikaanse Braille of the 37 signs not required for the simple alphabet.

	AN		OE		WAS
	GE		comma; AA		numeral sign; EL
	OF		semi-colon; BE		poetry-line sign; UI
	DIE		colon; ON		apostrophe
	MET		full stop; DEUR		hyphen
	SK		EN		accent
	AAN		exclamation; TE		circumflex; contraction
	EI		brackets; OO		used to form a contraction sign
	IE		open quotes; query		used to form a contraction
	EE		IN		italics
	AL		asterisk ·		used to form a contraction
	ER		close quotes; BY		capital
	OU		fraction sign; ST		

History: The first Afrikaanse Braille was designed and used at the Worcester School for the Blind, South Africa in 1923. In 1932 small changes were made to bring this code more into line with the Braille used by Britain and America. In 1934, at Paris (Orange Free State) a committee met to discuss this new system and in October of that year the magazine the *New Pioneer* printed the first article in this system. In 1936 and 1937 further small changes were made and finally in 1938 the Worcester School published a revised form called Standard Afrikaanse Braille. It embraces both a Grade I and Grade II system and an instructional primer. The contractions are similar in their general pattern to those of Standard English Braille. An increasing number of works is being published in this system.

AMHARIC BRAILLE

1st FORM *Short A as in French "le"*		2nd FORM *Long U as in "rule"*		3rd FORM *Long I as in "marine"*		4th FORM *Long A as U in "gun"*	
ሀ	ha	ሁ	hu	ሂ	hi	ሃ	ha
ለ	la	ሉ	lu	ሊ	li	ላ	la
ሐ	hà	ሑ	hu	ሒ	hi	ሓ	ha
መ	ma	ሙ	mu	ሚ	mi	ማ	ma
ሠ	sa[1]	ሡ	su	ሢ	si	ሣ	sa
ረ	ra	ሩ	ru	ሪ	ri	ራ	ra
ሰ	sa	ሱ	su	ሲ	si	ሳ	sa
ሸ	sha	ሹ	shu	ሺ	shi	ሻ	sha
ቀ	ka[2]	ቁ	ku	ቂ	ki	ቃ	ka
በ	ba	ቡ	bu	ቢ	bi	ባ	ba
ተ	ta	ቱ	tu	ቲ	ti	ታ	ta
ቸ	cha	ቹ	chu	ቺ	chi	ቻ	cha
ኀ	ha	ኁ	hu	ኂ	hi	ኃ	ha
ነ	na	ኑ	nu	ኒ	ni	ና	na
ኘ	ña[3]	ኙ	ñu	ኚ	ñi	ኛ	ña
አ	a	ኡ	u	ኢ	i	ኣ	a
ከ	ka	ኩ	ku	ኪ	ki	ካ	ka
ኸ	kha[4]	ኹ	khu	ኺ	khi	ኻ	kha
ወ	wa	ዉ	wu	ዊ	wi	ዋ	wa
ዐ	a	ዑ	u	ዒ	i	ዓ	a
ዘ	za	ዙ	zu	ዚ	zi	ዛ	za

1. Called the "King S", used only in great names. Pronounced as English S.

Modified in 1951 *in consultation with Dr. A. N. Tucker, D. Litt., Ph.D., M.A., University of London, Miss Hazel Mc Geery, American Presbyterian Mission, Sayo, and other workers for the blind in Ethiopia and Sir Clutha Mackenzie, Unesco Consultant on Braille. The signs have been related to the chart as set out in the Alone-Stokes "Amharic Grammar".*

5th FORM *Long E in "let" but more open*		6th FORM *Very short vowelless termination, or short I in "pin"*		7th FORM *O as AU in "Paul"*	
⠓⠢	he	⠓	h, or hi	⠓⠪	ho
⠇⠢	le	⠇	l, or li	⠇⠪	lo
⠓⠢	he	⠓	h, or hi	⠓⠪	ho
⠍⠢	me	⠍	m, or mi	⠍⠪	mo
⠎⠢	se	⠎	s, or si	⠎⠪	so
⠗⠢	re	⠗	r, or ri	⠗⠪	ro
⠎⠢	se	⠎	s, or si	⠎⠪	so
⠩⠢	she	⠩	sh, or shi	⠩⠪	sho
⠅⠢	ke	⠅	k, or ki	⠅⠪	ko
⠃⠢	be	⠃	b, or bi	⠃⠪	bo
⠞⠢	te	⠞	t, or ti	⠞⠪	to
⠉⠢	che	⠉	ch, or chi	⠉⠪	cho
⠓⠢	he	⠓	h, or hi	⠓⠪	ho
⠝⠢	ne	⠝	n, or ni	⠝⠪	no
⠱⠢	ñe	⠱	ñ, or ñi	⠱⠪	ño
⠁⠢	e	⠊	i	⠁⠪	o
⠅⠢	ke	⠅	k, or ki	⠅⠪	ko
⠈⠅⠢	khe	⠈⠅	kh, or khi	⠈⠅⠪	kho
⠺⠢	we	⠺	w, or wi	⠺⠪	wo
⠁⠢	e	⠊	i	⠁⠪	o
⠵⠢	ze	⠵	z, or zi	⠵⠪	zo

2. Explosive K made from the back of the mouth. — 3. Spanish ñ or French gn. — 4. Gutteral, as in "loch".

1st FORM *Short A as in French "le"*		2nd FORM *Long U as in "rule"*		3rd FORM *Long I as in "marine"*		4th FORM *Long A as U in "gun"*	
	zha[1]		zhu		zhi		zha
	ya		yu		yi		ya
	da		du		di		da
	ja		ju		ji		ja
	ga[2]		gu		gi		ga
	ta[3]		tu		ti		ta
	cha[4]		chu		chi		cha
	pa[5]		pu		pi		pa
	tsa[6]		tsu		tsi		tsa
	tsa[7]		tsu		tsi		tsa
	fa		fu		fi		fa
	pa		pu		pi		pa

DIPHTHONGS

	kwa		kwi		kwa
	hwa		hwi		hwa
	kwa		kwi		kwa
	gwa		gwi		gwa

Punctuation marks: The only punctuation marks required are full stop and interrogation mark (2-3-6). No Braille dots should be placed between the words as is the custom in visual Amharic text. Capital letters are not to be used, except for the "king S" which will be preceded by Dot 6.

Numeral sign & numbers: The internationally established signs should be used.

1. As in pleasure. — 2. Always hard. — 3. Explosive T. — 4. Explosive CH. — 5. Explosive P.

5th FORM *Long E in "let" but more open*		6th FORM *Very short vowelless term: short I in "pin"*		7th FORM *O as AU in "Paul"*	
	zhe		zh, or zhi		zho
	ye		y, or yi		yo
	de		d, or di		do
	je		j, or ji		jo
	ge		g, or gi		go
	te		t, or ti		to
	che		ch, or chi		cho
	pe		p, or pi		po
	tse		ts, or tsi		tso
	tse		ts, or tsi		tso
	fe		f, or fi		fo
	pe		p, or pi		po

DIPHTHONGS

	kwe		kwi
	hwe		hwi
	kwe		kwi
	gwe		gwi

6. Explosive TS often replaced in Shoa by TS etc. — 7. Explosive TS, rarely used.

ARABIC BRAILLE

As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, February 12th-17th, 1951, agreed to by the Braille representatives of this language, and officially accepted by the Ministry of Education, Egypt, the Government of Malaya and by schools for the blind in Morocco, Lebanon and Iraq.

BRAILLE SIGN	ARABIC LETTER		BRAILLE SIGN	ARABIC LETTER		BRAILLE SIGN	ARABIC LETTER	
	ا	alef		ك	kaf		أو	alef hamzeh waw (contraction)
	ب	ba		ل	lam		ـْ	sukun
	ت	ta		م	mim		ء	hamzeh
	ث	tha		ن	nun		ـّ	shaddeh
	ج	jim		ه	ha			comma
	ح	ha		و	waw			semi-colon
	خ	kha		ؤ	waw hamzeh (contraction)			colon
	د	dal		لا	lam alef (contraction)			full stop
	ذ	thal		ى	ya			exclamation
	ر	ra		ﻯ	alef maqsourah (contraction)			brackets
	ز	zai		ة	ta marboutah			open quotes & query
	س	sin		ئ	ya hamzeh (contraction)			asterisk
	ش	shin		أ	alef hamzeh (contraction)			close quotes
	ص	ssad		آ	alef maddeh			fraction sign
	ض	ddad		ـُ	dammeh			numeral sign
	ط	ta'		ـَ	fatha			poetry sign
	ظ	dha'		ـِ	kasra			foreign words
	ع	ain		ـٌ	tanwin dammeh			underlining
	غ	ghein		ـً	tanwin fatha			hyphen
	ف	fa		ـٍ	tanwin kasra			accent
	ق	qaf						

ADDITIONAL PERSIAN LETTERS

 پ pe | چ cheh | ژ jhe | گ gaf

ARMENIAN BRAILLE

As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, 12-17 February 1951, agreed to by the Braille representatives of this language, and accepted for use by the schools for the blind, Lebanon.

BRAILLE SIGN	LETTER			BRAILLE SIGN	LETTER		
	Ա ա	ayp			Յ յ	he	hard
	Բ բ	pen	soft		Ն ն	noo	
	Գ գ	qim	soft		Շ շ	sha	
	Դ դ	ta	soft		Ո ո	vo	o and vo
	Ե ե	yech			Չ չ	cha	ch in CHurCH
	Զ զ	za			Պ պ	be	
	Է է	eh	open		Ջ ջ	che'	strong
	Ը ը	ut			Ռ ռ	ra	strong RR
	Թ թ	to	hard		Ս ս	se'	strong
	Ժ ժ	je	French J		Վ վ	vev	
	Ի ի	ene			Տ տ	deoon	
	Լ լ	leoon			Ր ր	re	soft
	Խ խ	khe			Ց ց	tso	special to Armenian, as in biTS
	Ծ ծ	dza	special to Armenian		Ւ ւ	hiun	v, w, ou, u
	Կ կ	gen	soft		Փ փ	piur	special to Armenian, strong P
	Հ հ	ho			Ք ք	ke'	strong
	Ձ ձ	tza	special to Armenian, strong		և	yev	means "and"
	Ղ ղ	ghad	GH as Parisian R		Օ օ	o	French AU
	Ճ ճ	je'	as in Jam		Ֆ ֆ	fe'	
	Մ մ	men					

Punctuation marks: These follow the general international pattern. The query mark is dots 2-3-6 and a special short comma, dot 6.

Numeral sign & numbers: These also are the internationally established signs.

BULGARIAN BRAILLE

Received from the International Association of Blind Esperantists, Stocksund, Sweden.

BRAILLE	BULGARIAN CHARACTER	TRANSLITERATION	BRAILLE	BULGARIAN CHARACTER	TRANSLITERATION
	А	A		П	p
	Б	b		Р	r in veRy
	В	v		С	s
	Г	g		Т	t
	Д	d		У	oo in pOOl
	Е	e		Ф	f
	Ж	s in meaSure		Х	h in aCH
	З	z in Zealous		Ц	ts in biTS
	И	i in machIne		Ч	ch in CHurch
	Й	y in boY		Ш	s in Sure
	К	k		Щ	shch in aSHCHurch
	Л	l		Ъ	e in yEt
	М	m		Ю	u in Use
	Н	n		Я	ya in YArd
	О	o		Ь	u in bUt

Punctuation marks: These are the international signs. The interrogation mark is dots 2-6.

Numeral sign & numbers: These are also the internationally accepted signs.

BURMESE BRAILLE

The following table gives the alphabetical and syllabic signs designed by Father Jackson about 1918. *Blind himself, he was the chief founder of work for the blind in Burma, and his system was as international as the characteristics of Burmese script and the existing limits of traditional signs then permitted. Given in a second column are the modifications which are now suggested.*

FATHER JACKSON'S SIGN	SUGGESTED MODIFICATION	BURMESE LETTER		FATHER JACKSON'S SIGN	SUGGESTED MODIFICATION	BURMESE LETTER	
⠅		က	ka	⠣		ဟ	ha
⠇		ခ	kha	⠩			ja
⠛		ဂ	ga	⠫		ရှ	sha
⠧	⠒	င	nga	⠥		ချ	cha
⠭		စ	sa	⠧	⠒	လှ	hla
⠧	⠶	ဆ	hsa	⠻		ကြ	kya
⠵		ဈ	za	⠻	⠒	မြ	mya
⠽	⠒	ည	nya	⠿		ပြ	pya
⠹		တ	ta	⠗	⠅	နှ	hna
⠷	⠶	ထ	hta	⠧		မှ	hma
⠻		ဒ	da	⠇	⠅	ငှ	hnga
⠻		န	na	⠕	⠒	အ	a
⠿		ပ	pa	⠥	⠇	အာ	ar
⠇	⠅	ဖ	hpa	⠇		အိ	é
⠕		ဗ	ba	⠕	⠶	အီ	ae
⠽		မ	ma	⠗		အူ	ōō
⠾		ယ	ya	⠷		အက်	et
⠛		ရ	ra	⠇	⠒	အယ်	ei
⠧		လ	la	⠻	⠇	အော်	au
⠺		ဝ	wa	⠗		အို	o
⠾		သ	tha	⠕	⠇	အော	ai

FATHER JACKSON'S SIGN	SUGGESTED MODIFICATION	BURMESE LETTER		FATHER JACKSON'S SIGN	SUGGESTED MODIFICATION	BURMESE LETTER	
⠒⠶		အိုင်	aing	⠒⠶		ဪာက်	auk
⠒⠶		ဪာင်	aung	⠶⠒		အိုင်	eing
⠶⠒		အန်	un	⠶⠤		ဪာင်	eung
⠶⠶		အစ်	ick	⠶⠶ ⠶⠶	⠒⠶ ⠶⠶	အပ်	ut
⠶⠶		အုန်	eon	⠶⠶ ⠶⠶		အွတ်	awt
⠶⠶		အုက်	ok	⠶⠶ ⠶⠶		အွန်	ôwan
⠶⠶	⠶⠶	အိန်	ein	⠶⠶ ⠶⠶	⠶⠶ ⠶⠶	အိတ်	eit
⠶⠶	⠶⠶	အိုက်	eik				

Tones: Heavy falling, dots 2-3; short high tone dot 2, unless the "comma" is needed.

Punctuation marks: Only the full stop (2-5-6), dash (3-6) and possibly comma (dot 2) are required.

Numeral sign & numbers: These are the internationally established signs.

Note: Certain of the changes have been made for the reason that signs composed of right-hand dots are often confusing and should be avoided if at all possible.

CHINESE BRAILLE

(Union Mandarin System)

Because of political disturbances it has not been possible to hold a regional conference for a discussion of the ideographic scripts vis-à-vis *a revised World Braille system. The author of this work, however, studied the Braille situation in China when on a mission to the Ministry of Social Affairs, Nanking, in* 1947; *and Mr. Liu Wen Piao, blind Braillist of Peking (now of the Institution for the Chinese Blind, Shanghai) and Dr. W. S. Flowers, one-time adviser on blind welfare to the Ministry of Social Affairs, attended the International Meeting on Braille Uniformity in Paris,* 1950 *to express their views on the subject. Since then, we have prepared a provisional draft in conformity with the principles of World Braille as laid down by the foregoing meeting. In so doing we have taken care to disturb the existing Mandarin as little as possible, no more than was necessary to bring it into accord with the world system. Twenty-two of the old signs remain.*

Copies have been sent to the authorities in China and it is printed here as a matter of record.

WORLD BRAILLE	EXISTING MANDARIN	SUGGESTED MANDARIN	LETTER		REMARKS
			這	dj	Sound between the values of Ch & JH in CHang & JHang.
			扯	ch'	As in English CHum.
			勒	l	Changed to give World Braille L to Mandarin L & to release World Braille C/CH for Mandarin DJ.
			得	d	Unchanged.
			色	s	Changed to give World Braille S to Mandarin S & to release World Braille E for Mandarin E.
			特	t	Changed to give World Braille T to Mandarin T & to release World Braille F for Mandarin F.
			惹	r	Changed to give World Braille R to Mandarin sound between English J & R, & to release World Braille G for Mandarin G.
			則	dz	Changed to give World Braille Z to Mandarin Z & to release World Braille H for Mandarin H.
			赦	sh	Changed to give World Braille SH to Mandarin SH & to release World Braille I for Mandarin I.
Inapplicable			側	ts	Unchanged.
			格	g	Changed to give World Braille G to Mandarin G & to release World Braille K for Mandarin K.
			客	k	Changed to give World Braille K to Mandarin K & to release World Braille L for Mandarin L.
			妹	m	Unchanged.
			楳	n	Unchanged.
			貝	b	Changed to give World Braille B to Mandarin B & to release World Braille O for Mandarin O.
			配	p	Unchanged.
			費	f	Changed to give World Braille F to Mandarin F.
			黑	h	Changed to give World Braille H to Mandarin H & to release World Braille R for Mandarin R.

WORLD BRAILLE	EXISTING MANDARIN	SUGGESTED MANDARIN	LETTER		REMARKS
Inapplicable			又	iu	Changed to release World Braille S for Mandarin S & now given French Braille U circumflex, accented U in Portuguese & Italian.
Inapplicable			厭	ien	Changed to release World Braille T for Mandarin T.
			恩	en	Changed to release World Braille U for Mandarin U & now given the dots used by French, English, Spanish, Portuguese, & Afrikaanse for the contraction EN.
Inapplicable			按	an	Unchanged.
Inapplicable			昂	ang	Unchanged.
			應	ing	Changed to release World Braille Y for purposes stated below & now given World Braille NG (ING in English Braille).
Inapplicable			翁	eng	Changed to release World Braille Z for Mandarin Z.
Inapplicable			龍	ung	Unchanged.
Inapplicable			問	wen	Unchanged.
			慪	ou	Changed to give World Braille OU to Mandarin OU.
Inapplicable			額	eh	Unchanged.
 (as vowel)			亞	ia	
			義	i	Changed to give World Braille I to Mandarin I & to release World Braille CH for Mandarin CH.
			餓	o	Changed to give World Braille O to Mandarin O.
			奧	ao (ow)	Changed to give World Braille OW to Mandarin AO.
			印	in	Changed to give part-World IN to Mandarin IN. Used in French, Spanish, Portuguese, German, English for contraction IN.
			二	i	Changed to give World Braille E to the Mandarin I with value of E.
Inappropriate			位	wei	Unchanged.
Inapplicable			萬	wan	Unchanged.
Inapplicable			遇	yu	Changed to release World Braille OU for Mandarin OU.
Inapplicable			要	yao	Changed to release World Braille OW for Mandarin AO.
			愛	ai	Changed to release World Braille W for Mandarin WA & so that Mandarin AI might have the more appropriate World Braille A. Its value varies between AY & IE in English IAY & IIE.
Inapplicable			臥	wo	Unchanged.

WORLD BRAILLE	EXISTING MANDARIN	SUGGESTED MANDARIN	LETTER		REMARKS
Inapplicable			運	yun	Unchanged.
Inapplicable			捱	yai	Changed to release part-World Braille EN for Mandarin EN.
Inapplicable			用	yung	Unchanged.
Inapplicable			外	wai	Unchanged.
Inapplicable			月	yueh	Unchanged.
			瓦	wa	Changed to give World Braille W to Mandarin W & to release World Braille IN for Mandarin IN.
Inapplicable			約	ioh	Unesco copy of Mandarin Braille does not give this sign clearly, it being in one place Dot 5 and in another Dots 3-5-6. If the latter is correct it could be retained.
			惧	u	Changed to give World Braille U to Mandarin U.
Inapplicable			夜	ie	Changed to release World Braille ING for Mandarin ING & to give French U circumflex to Mandarin IE. This sign is used in Italian, Portuguese & Czech.
			阿	a (long)	Unchanged.
Inapplicable			怨	yuen	Unchanged.
Inapplicable			望	wang	Unchanged.
Inapplicable			樣	yang	Unchanged.

TONE MARKS

	CANTONESE	MANDARIN
No sign	Upper even, sheûng p'ing	High even
	Upper rising, sheûng sheûng	High rising
	Low rising, hâ sheûng	Low rising
	Low going, hâ huî	Falling
	Low entering, hâ yap	
	Low even, hâ p'ing	
	Middle entering, chung yap	
	Upper going, sheûng hui	
No sign	Upper entering, sheûng yap	

The existing Cantonese Braille signs are given above. Our Mandarin chart does not give the Braille signs used for its tones but we believe them to be single dots as in Cantonese Braille.

It is suggested that the commonest tone might be represented, not by a Braille sign, but by a blank space, this practice is already followed in the existing Cantonese Braille, as indicated above. Where the Braille script runs continuously as in Mandarin, a blank space becomes, as it were, the most easily read sign of all.

It is the practice in existing Mandarin Braille for the tone mark to be printed immediately after each syllable with no space left between it and the preceding or following syllable.

Numeral sign and numbers: It is understood that the present Mandarin Braille already employs the international numeral sign and numbers.

Punctuation: No punctuation marks are required.

World Braille Signs already existing in Mandarin and Cantonese Brailles: Mandarin Braille:- D, M, N, P and long A. Cantonese Braille:- F, N, S, W, H, L, M, T, T', CH, KW, E, O, EI, OO.

CANTONESE BRAILLE

As received from the Ebenezer Home for Blind Girls, Pokfulam, Hong-Kong, 1949, *and also as printed by the British and Foreign Bible Society. This system is still used by all Cantonese-speaking schools in Kwangtung and Hong-Kong, as follows:- Men Sam School, Fong Tsuen; Mo Kwong Blindhome, Tung Shan; Chung Kwong Blindhome, Chung Shan-Shekki; Sun Lap Blind School, Shiu King, West River, and the Lutheran Hostel for Blind Girls, Ha Fong Tsuen.*

INITIALS

	非	f		邪	ts'		也	y		貧	p
	崎	k		五	ng		身	sh		吞	t
	尼	n		希	h		歸	gw		之	ch
	新	s		哩	l		基	g		贊	ts
	和	w		品	b		唔	m		規	kw
	出	ch		爹	d						

FINALS

	亞	a		愛	oi		杌	ut		出	oot
	奧	oh		回	ooi		渴	ot		洽	ap
	縊	ai		軏	aak		曰	uet		合	op
	離	ei		惡	ok		葉	ip		奄	im

FINALS *(continuation)*

晏	aan	蓋	aam	夭	iu	熟	it
閒	un	因	an	千	ue	活	ood
鶯	ang	安	on	師	sz	鴨	aap
英	ing	元	uen	亦	ik	唵	am
央	eung	井	eng	屋	ook	暗	om
衣	ei	蠻	ung	壓	aat	言	in
隘	aai	郎	ee	厄	uk	垣	oon
拗	aow	柯	o	隻	ek	鬨	aang
烏	oo	歐	ow	約	euk	盎	ong
水	ui						

TONES

下平	Lower even	下上	Lower rising	上去	Upper going
下入	Lower entering	中上	Middle Entering	(no sign) 上平	Upper even
下去	Lower going	上上	Upper rising	(no sign) 上入	Upper entering

CZECH BRAILLE

Received from the International Association of Blind Esperantists, Stocksund, Sweden.

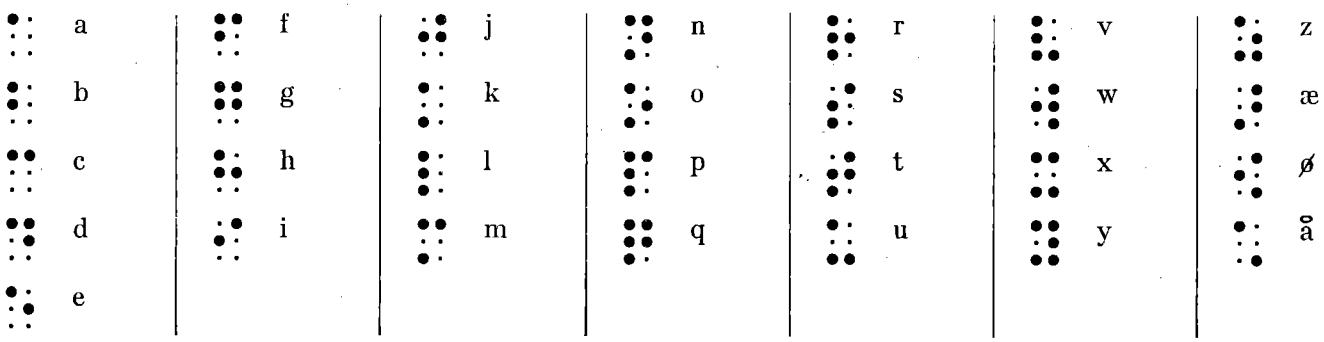
a	d˅	h	l	p	t	v
á	e	ch	m	r	t́	y
b	é	i	n	ř	u	ý
c	ě	í	ň	s	ú	z
č	f	j	o	š	ů	ž
d	g	k	ó			

One contraction is in general use, Dots 2-4-6 for OU.

Punctuation & numerals: Presumed to be international.

DANISH BRAILLE

Received from the Dansk Blindesamfund, Copenhagen.

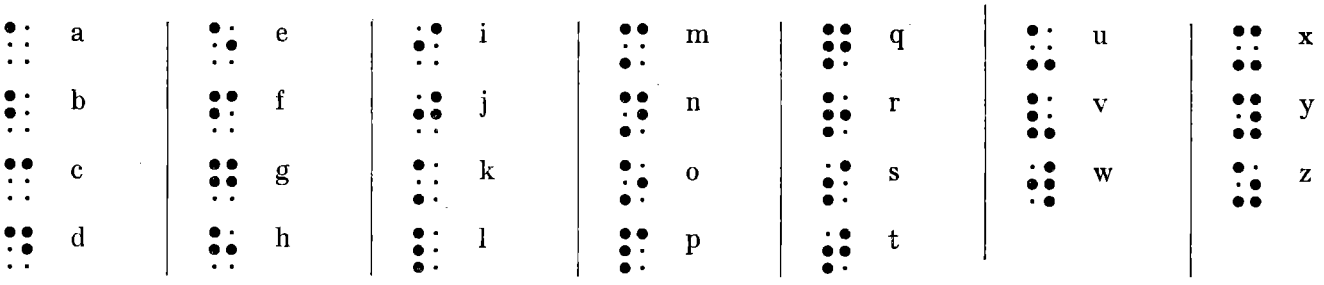


Punctuation Marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.
Danish Braille embraces a limited range of simple contractions.

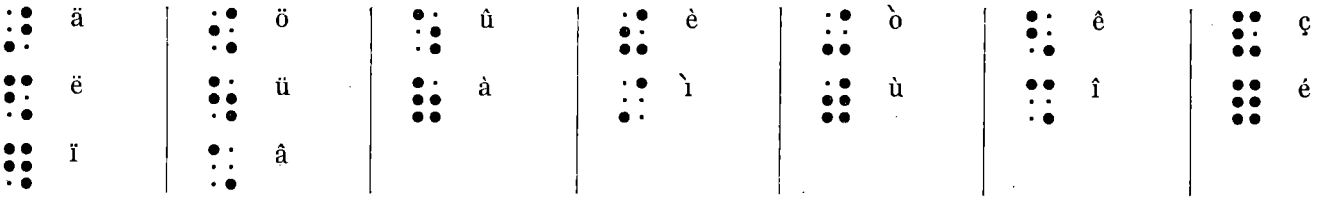
DUTCH BRAILLE

Received from the Stichting "Het Nederlandse Blindenwezen", Amsterdam.



DOUBLE LETTERS

ACCENTED LETTERS FOR FOREIGN WORDS



Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

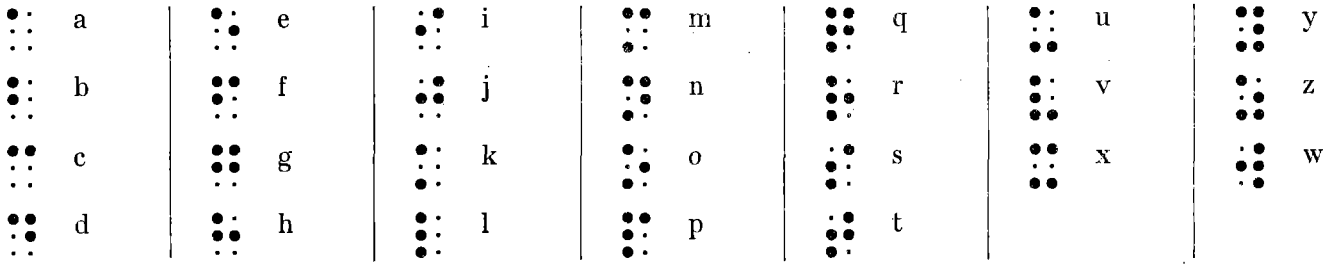
Numeral sign & numbers: These are also the internationally established signs.

History: Braille was introduced into Holland in 1890 and in the years that followed five different systems of contractions were brought into use. One of these was based on the phonetic values of Dutch speech and is still employed for office work, recording of notes by students and similar purposes.

In 1946 a committee of Dutch and Belgian delegates was appointed to evolve by agreement a single system of contracted Braille for both Holland and the Flemish speaking people of Belgium. This system was unanimously accepted in both countries and was published in 1947.

STANDARD ENGLISH BRAILLE

As agreed to in 1932 *between representatives of the British and American Uniform Type Committees for adoption throughout the English-speaking world. The alphabetical letters have been used in British English since the late* 1860's *and the majority of the contractions and word signs were introduced into the system in the* 1870's.



SIMPLE CONTRACTIONS & PUNCTUATION SIGNS

The following table shows the use made in English Braille of the 37 signs not required for the simple alphabet.

AND	OW	ING
FOR	comma; EA*	numeral sign; BLE (at end of word)
OF	semi-colon; BE; prefix BE; BB*	poetry sign; AR
THE	colon; prefix CON; CC*	apostrophe
WITH	full stop; prefix DIS; DD*	hyphen; prefix COM
CH	EN	accent
GH	exclamation; prefix TO	used to form contraction
SH	brackets; WERE; GG*	used to form contraction
TH	open quotes; query; HIS	used to form contraction
WH	IN	italics sign; contraction sign
ED	asterisk	used to form contraction
ER	close quotes; WAS; prefix BY	capital sign ; contraction sign
OU	fraction sign; ST	

Note. - Where not otherwise stated, each contraction may, where applicable, be used alone or within a word. Examples: WITH and IN.

*These contractions can be used only in the middle of a word. Examples: pEAr, beGGing.

WORDS REPRESENTED BY A SINGLE SIGN
OF THE ENGLISH BRAILLE ALPHABET

a	have	people	it	with	enough
but	I	quite	you	child	to
can	just	rather	as	shall	were
do	knowledge	so	and	this	his
every	like	that	for	which	in
from	more	us	of	out	was
go	not	very	the	will	still

ESTONIAN BRAILLE

Received from the International Association of Blind Esperantists, Stocksund, Sweden.

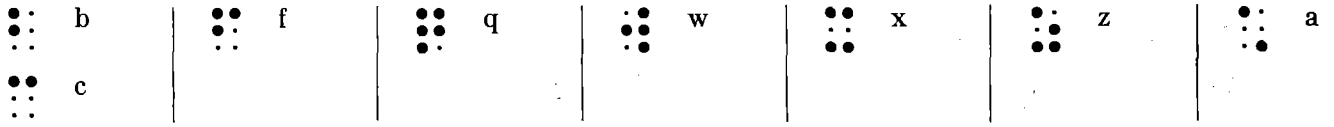
a	d	h	l	õ	s	ü
ä	e	i	m	ö	t	v
b	f	j	n	p	u	z
c	g	k	o	r		

Punctuation & numerals: Presumed to be international.

FINNISH BRAILLE

Received from the Blind School Kuopion Sokeainkoulun, Johtaja.

a	g	j	m	p	t	y
d	h	k	n	r	u	ä
e	i	l	o	s	v	ö

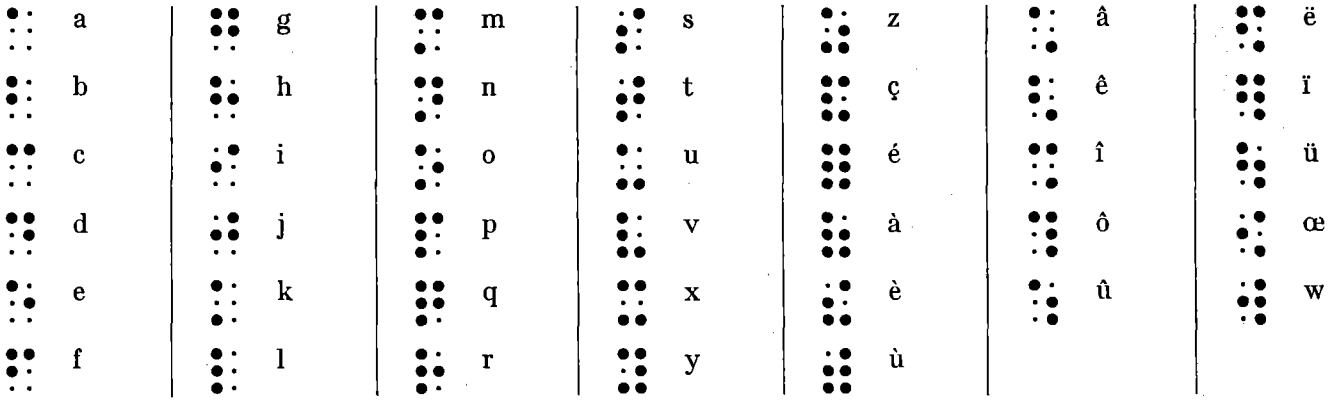


Punctuation & numerals are presumed to be international.

History: Braille was introduced into Finland in 1865, simultaneously with the founding of the first school for the blind. Moon type was also used until 1920. The library now contains 6,000 Braille volumes. Chiefly because of the complicated nature of Finnish grammar, no contracted system has yet been designed.

FRENCH BRAILLE

Received from the Institut des Jeunes Aveugles de Paris and the American Foundation for Overseas Blind Paris.



Punctuation marks: These follow the general international pattern. The query mark is dots 2-6; capital sign, 4-6 & italics, 4-5-6.

Numeral sign & number: These are also the internationally established signs.

Contractions: An extensive system of contractions was designed by Mr de la Sizeranne in 1883 and was considerably enlarged in 1924 on the decisions of a committee representing the American Braille Press and the Technical Research Committee of the Association Valentin Haüy. A similar committee went to work in 1950 to consider further additions. These have not yet been finally agreed to. The 1924 system is held by a number of Braillists to be too difficult, and it is not uniformly used, the Swiss-French preferring the older or the uncontracted form.

Mr Pierre Henri, a member of the foregoing committee, gives us the following analysis:

	1883 SYSTEM	1924 SYSTEM	PROPOSED 1950 ADDITIONS
Groups of letters contracted in a word	28	56[1]	
Words contracted by one sign	28	44	
Words contracted by two or three signs	185	387	39
Locutions	22	41[2]	7
Contractions derived from simpler contractions .	0	212[3]	300

1. 15 of these are obtained by a double value given to the same Braille sign.
2. For example, c'e-à-d for c'est-à-dire.
3. For example, DF, DFM, DFT for difficile, difficilement, difficulté.

SIMPLE CONTRACTIONS

Words represented by a single sign.

bien	au*	se	sans	grand	du
ce	le	te	et	ou*	si
de	me	un	tout	son	sous
faire	ne	vous	même	tous	la
qui	nous	mais	cet	dès	celui
sur	par	elle	dans	en*	lui
il	que*	pour	est	puis	on*
je	rien	quoi	plus	été	les

* Also representing the same combination of letters in any part of a word.

Single signs representing groups of letters forming parts of words.

ch	an	ll	ar	er	eu	or
oi	eur	ion	gn	in	ieu	ai

GAELIC BRAILLE

Received from the Irish Association for the Blind, Dublin.

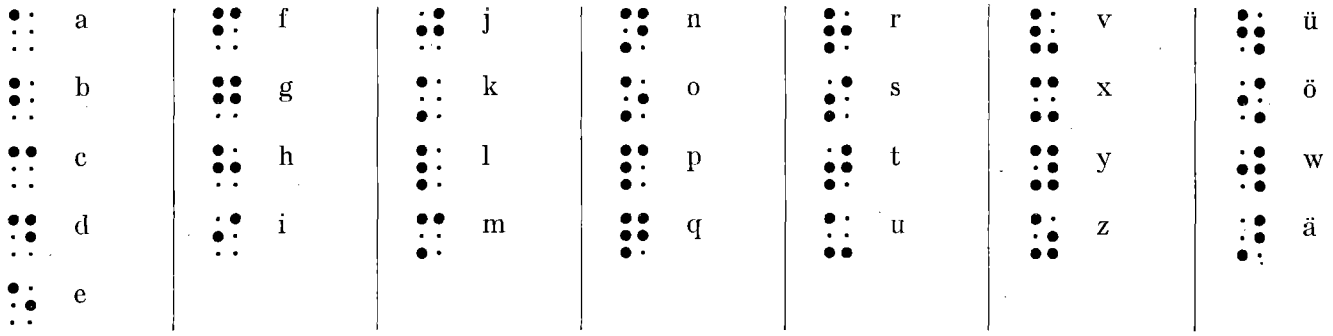
a	f	m	s	í	ċ	ṁ
b	g	n	t	ó	ḋ	ṗ
c	h	o	u	ú	ḟ	ṡ
d	i	p	á	ḃ	ġ	ṫ
e	l	r	é			

Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

GERMAN BRAILLE

Received from Marburger Blindenstudienanstalt, Marburg, Germany.



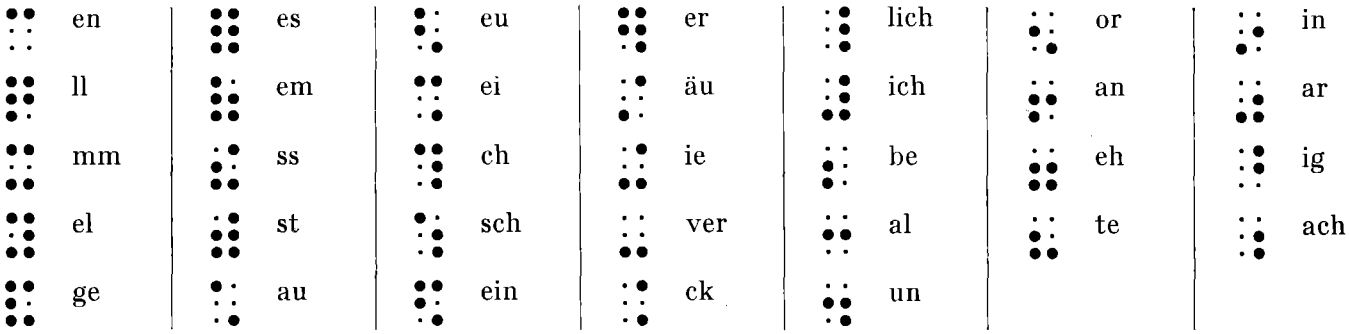
Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

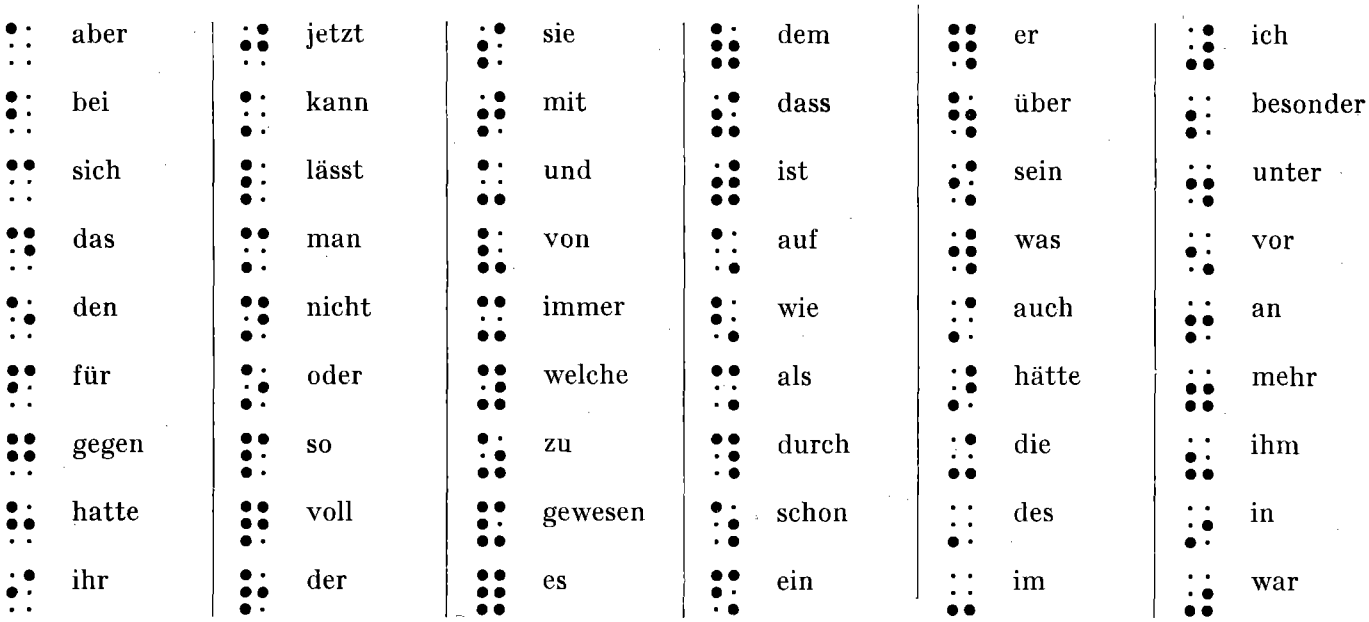
History: Much of the history of Braille in Germany is given in Chapter 2. Austria employs precisely the same system of contractions as is used in Germany. Braille was introduced into the curriculum of the Institution for the Blind in Vienna in 1867 by Director Pablasek.

SIMPLE CONTRACTIONS FOR PARTS OF WORDS

The following table shows the use made in German Braille of the 33 signs not required for the simple alphabet.



WORDS REPRESENTED BY A SINGLE SIGN OF THE GERMAN BRAILLE ALPHABET.



GREEK BRAILLE

(Modern)

Received from the Lighthouse for the Blind, Athens, Greece.

	Α α	alpha		Ι ι	iota		Ρ ρ	rho
	Β β	beta		Κ κ	kappa		Σ σ	sigma
	Γ γ	gamma		Λ λ	lambda		Τ τ	tau
	Δ δ	delta		Μ μ	mu		Υ υ	ypsilon
	Ε ε	epsilon		Ν ν	nu		Φ φ	phi
	Ζ ζ	zeta		Ξ ξ	xi		Χ χ	chi
	Η η	eta		Ο ο	omikron		Ψ ψ	psi
	Θ θ	theta		Π π	pi		Ω ω	omega

DIPHTHONGS

	αι	alpha iota		αυ	alpha ypsilon
	ει	epsilon iota		ευ	epsilon ypsilon
	οι	omikron iota		ηυ	eta ypsilon
	υι	ypsilon iota		ου	omikron ypsilon

Punctuation marks: These follow the general international pattern. The query mark is dots 2-6, accent dot 6 and pneuma (exclamation mark) dots 4-5.

Numeral sign & numbers: These are also the internationally established signs.

GREEK BRAILLE

(Classical)

Two forms are in existence, that published by the National Institute for the Blind, London (1902 edition) and that which was agreed to by the International Conference, Commission VIII, Vienna, and authorised by the Universal Association of Organizations for the Blind, in Sweden, in 1937. The first is still used in Britain, but only because books in it are not yet out of print and that very little reading of classical Greek Braille is now done.

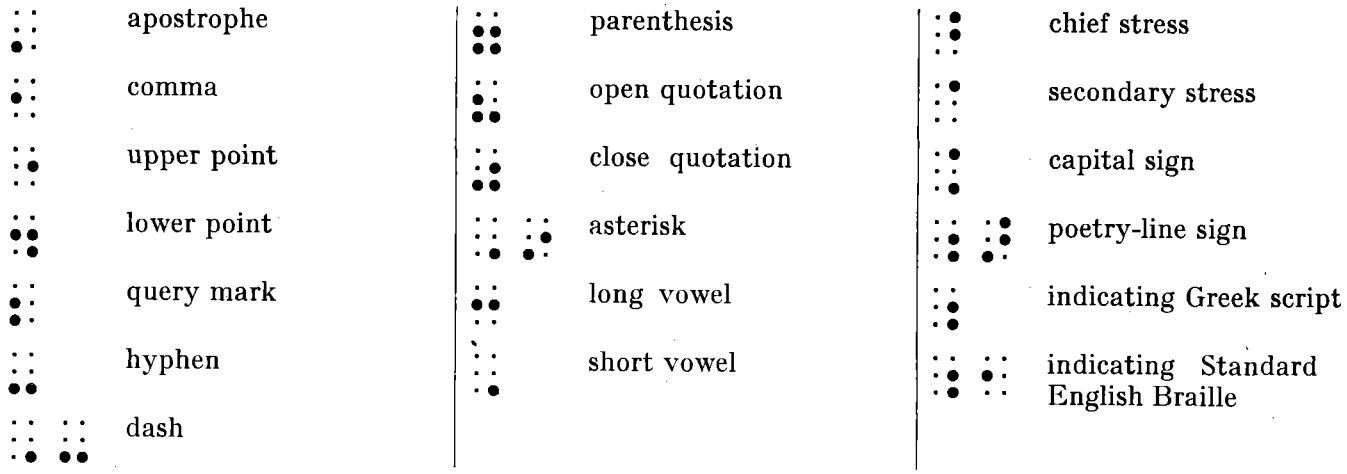
INTERNATIONAL GREEK BRAILLE CODE.

alpha	epsilon	iota	nu	rho	phi
beta	zeta	kappa	xi	sigma	chi
gamma	eta	lambda	omikron	tau	psi
delta	theta	mu	pi	upsilon	omega

Accented vowels: These are set out in four columns, the first showing the dots belonging to the unaccented vowel, the second showing the dots the vowel takes when given an acute accent, the third when given a grave accent and the last with a circumflex accent.

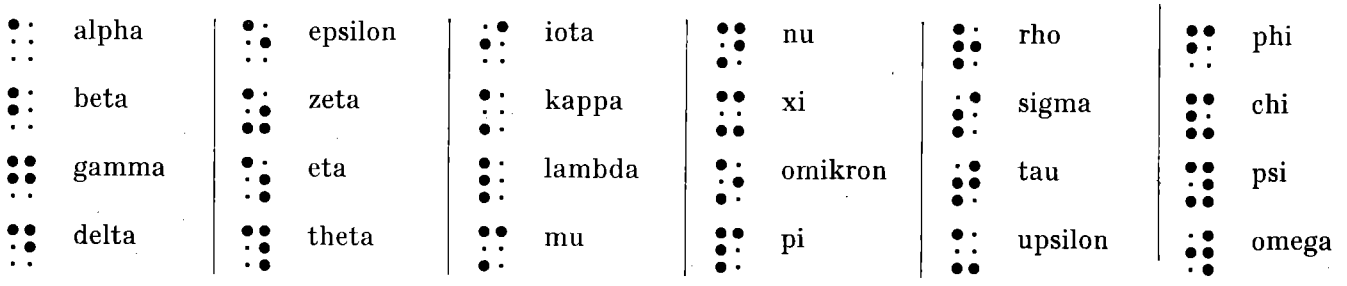
	UNACCENTED	ACUTE	GRAVE	CIRCUMFLEX
alpha				
epsilon				
eta				
iota				
omikron				
upsilon				
omega				
iota subscriptum		—	—	—
digamma, stigma		—	—	—
koppa		—	—	—
sampi		—	—	—
spiritus asper		—	—	—
spiritus lenis		—	—	—

Punctuation & composition marks:

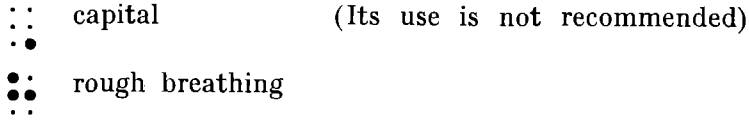


GREEK BRAILLE ALPHABET AND CONTRACTIONS

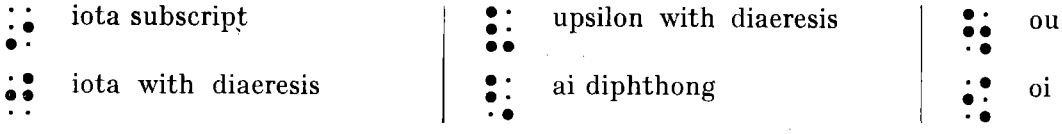
Approved by the National Institute for the Blind, London, November, 1902.



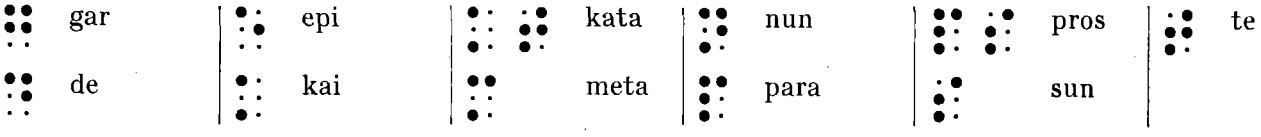
Punctuation, composition marks & extra letters:



Smooth breathing and accents are not written in Braille.



CONTRACTIONS



Krasis is to be represented by the apostrophe sign (dot 3).

INTERNATIONAL HEBREW BRAILLE

Established by the International Hebrew Braille Committee, 1936-44, *and received from the Jewish Braille Institute of America.*

BRAILLE SIGN	LETTER		PRONUNCIATION
	א	alef	silent
	ב	bet	b
	ב	vet	v
	ג	gimmel	g as in Good
	ד	dalet	d
	ה	hé	h
	ו	vav	v
	ז	zayin	z
	ח	het	ch as in German doCH
	ט	tet	t
	י	yod	y
	כ	kaf	k
	כ	haf	ch as in German doCH
	ל	lamed	l
	מ	mem	m
	נ	nun	n
	ס	sameh	s
	ע	ayin	silent
	פ	pé	p
	פ	fé	f
	צ	tsade	ts
	ק	qof	q
	ר	resh	r
	ש	shin	sh

BRAILLE SIGN	LETTER		PRONUNCIATION
	שׁ	sin	s
	תּ	tav	t
	ת	sav	t (Sephardic) s (Aschkenazic)
	ָא	qamats	a as in fAther (Sephardic) & o as in fOr (Aschkenazic
	ֳא	ḥataf-qamats	o as in fOr (Sephardic & Aschkenazic)
	ַא	patah̲	a as in fAther (Sephardic & Aschkenazic)
	ֲא	ḥataf-patah̲	a as in fAther (Sephardic & Aschkenazic)
	ֵא	tsere	e as in gEt (Sephardic) & a as in hAy (Aschkenazic)
	ֶא	segol	e as in gEt (Sephardic & Aschkenazic)
	ֱא	ḥataf-segol	e as in gEt (Sephardic & Aschkenazic)
	ִא	ḥireq	e as in gEt (Sephardic & Aschkenazic)
	ִיא	ḥireq-yod	ee as in bEE (Sephardic & Aschkenazic)
	אֹ	ḥolom	o as fOr (Sephardic) & o as gO (Aschkenazic)
	אׇ ו	ḥolom-vav	o as in fOr (Sephardic) & o as gO (Aschkenazic)
	אֻ	qubbuts	oo as in bOOk (Sephardic & Aschkenazic)
	אוּ	shureq	u as in trUE (Sephardic & Aschkenazic)
	ְא	sh'va	unaccented e as in pErambulator

Punctuation marks: These follow the general international pattern. The query mark is dots 2-3-6.

Numeral sign & numbers: These are also the internationally established signs.

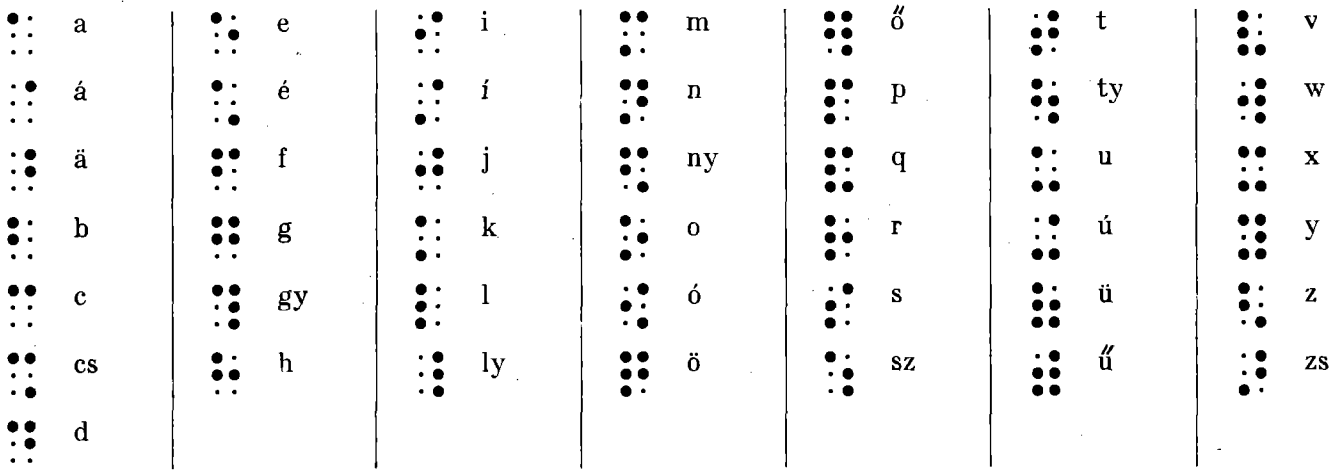
History: We take the following account from the published report of the Jewish Braille Institute of America, New York, 1946:- "Ever since the middle eighties of the last century various attempts were made to adapt the Braille system for the writing of Hebrew. Independently, the task was taken up in England, Austria, Germany and Palestine. But for one reason or another, the Hebrew Braille alphabets which resulted from these efforts, remained in the experimental stage. Even in the Jewish Institute for the Blind at Jerusalem, where Hebrew is the language of instruction, the code used was long recognised to be far too inadequate for permanent acceptance.

"This was the situation up to the year 1931, when the Jewish Braille Institute of America came into being... Among its principal objectives was the formulation and official adoption of an International Hebrew Braille system. Accordingly, the Institute... assembled a competent and internationally representative committee to take the project in hand."

The first code was finished in 1936, but later experience "found... that a few minor changes in vowel symbols were greatly to be desired." Committees in 1937 & 1944 considered these; and the chart presented here constitutes the final basic revision of International Hebrew Braille. By 1951 the whole Hebrew Bible had been printed in it.

HUNGARIAN BRAILLE

Received from the Hungarian Union of the Blind, Budapest.



Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

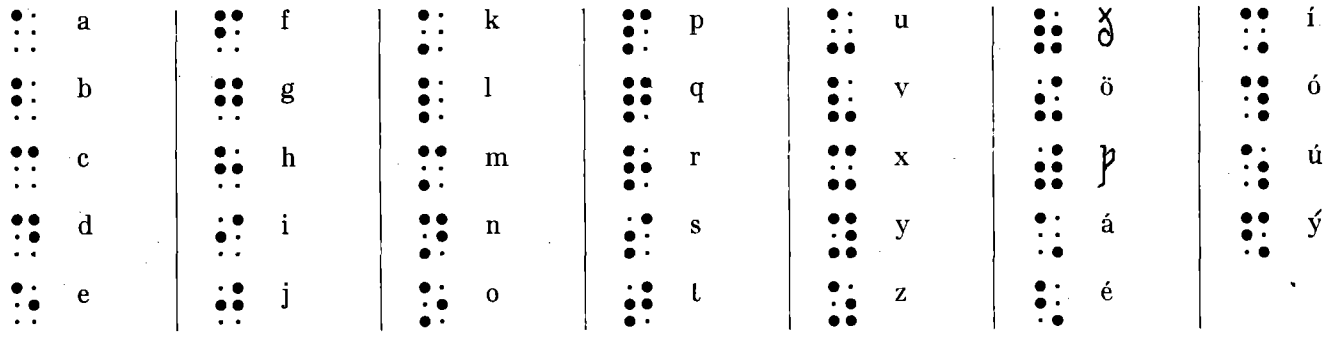
Numeral sign & numbers: These are also the internationally established signs.

History: Braille was adapted to Hungarian in 1880. The structure of the language, the great number of vowels and the complicated grammar presented obstacles to the framing of a contracted form. The first of such systems, published in 1918, proved unsatisfactory. A second system with nearly 600 abbreviations appeared in 1941, but while it saved considerable space, it proved too complex for practical use. Some handwritten books appeared in it, but only a few blind people were able to read them. The present system, limited to 150 contractions, was published in 1950, and in space saving is 92 % as effective as the earlier one, from which it takes most of its signs.

Until 1950 Hungarian books were printed only in un-contracted Braille. Since then the Braille monthly, "The World of the Blind" prints an article in the new system in each issue and this will be increasingly used.

ICELANDIC BRAILLE

Received from the British and Foreign Bible Society, London.



Punctuation marks: These follow the international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the established signs.

BRAILLE FOR THE LANGUAGES OF INDIA

(Bharati Braille)

As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, 12-17 February 1951, and officially accepted by the Government of India subsequent to the Conference.

BRAILLE SIGN	LETTER		DESCRIPTION
⠁	अ	ă	
⠜	आ	ā	
⠊	इ	ĭ	
⠔	ई	ī	
⠥	उ	u	
⠳	ऊ	ū	
⠑	ए	ē	
⠌	ऐ	ai	
⠕	ओ	ō	
⠪	औ	au	
⠣	ඇ	ĕ	e short, Dravidian & Sinhalese
⠷	ඔ	ŏ	o short, Dravidian & Sinhalese
⠽	ඈ	ӕ	additional Sinhalese vowel
⠿	ඉ	ā̆	additional Sinhalese vowel
⠐⠗	ऋ	ṛ	short vocalic r
⠠⠗	ॠ	r̄	long vocalic r
⠐⠇	ऌ	l̲	short vocalic l
⠠⠇	ॡ	l̄	long vocalic l
⠰	ं	ṃ or n̄	anuswara
⠘	ँ		chandra bindu in Bengali, Oriya & Hindi
⠒	ः	ḥ	visarga
⠈	्		virama = absence of vowel after a consonant, when needed.
⠸	ं		short Sinhalese nasal
⠅	क	k	
⠇	ख	kh	aspirate
⠛	ग	g	
⠣	घ	gh	aspirate
⠝	ङ	ṅ	
⠉	च	c	ch as in CHurCH
⠡	छ	ch	ch as in pitCH-High
⠚	ज	j	
⠵	झ	jh	
⠱	ञ	ñ	palatal nasal
⠞	ट	ṭ	cerebral
⠹	ठ	ṭh	cerebral aspirate
⠫	ड	ḍ	cerebral
⠾	ढ	ḍh	cerebral aspirate
⠻	ण	ṇ	cerebral
⠗	ड़	ṛ	flapped r of Hindi, Bengali, Oriya etc.
⠐⠗	ढ़	ṛh	flapped aspirate r of Hindi, Bengali, Oriya etc.
⠹	त	t	dental

BRAILLE SIGN	LETTER		DESCRIPTION
⠿	थ	th	aspirate
⠿	द	d	dental
⠿	ध	dh	aspirate
⠿	न	n	
⠿	प	p	
⠿	फ	ph	aspirate
⠿	ब	b	
⠿	भ	bh	aspirate
⠿	म	m	
⠿	ඹ	mb	Sinhalese
⠿	य	y	
⠿	र	r	
⠿	ल	l	

BRAILLE SIGN	LETTER		DESCRIPTION
⠿	व	v or w	
⠿	ळ	l̤	cerebral
⠿	श	ś	palatal
⠿	ष	ṣ	cerebral
⠿	स	s	dental
⠿	ह	h	
⠿	ண	ñ	Tamil palato-alveolar n
⠿	ற	r̲	Tamil palatal r
⠿	ழ	l̤/ẓ/zh	Tamil, Old Telugu & Old Kanada
⠿	ஃ	h̲	Tamil aytham
⠿	य़	oy	Bengali & Oriya
⠿	क्ष	kṣ	Bengali, Assamese & Oriya, optional for Hindi, = q of Perso-Arabic.

ADDITIONAL COMPOUND SIGNS

⠿	ज्ञ	jn	Hindi
⠿	ग़	g̲	Sindhi Recursives
⠿	ज़	j̲	
⠿	ड़	d̲	
⠿	ढ़	b̲	

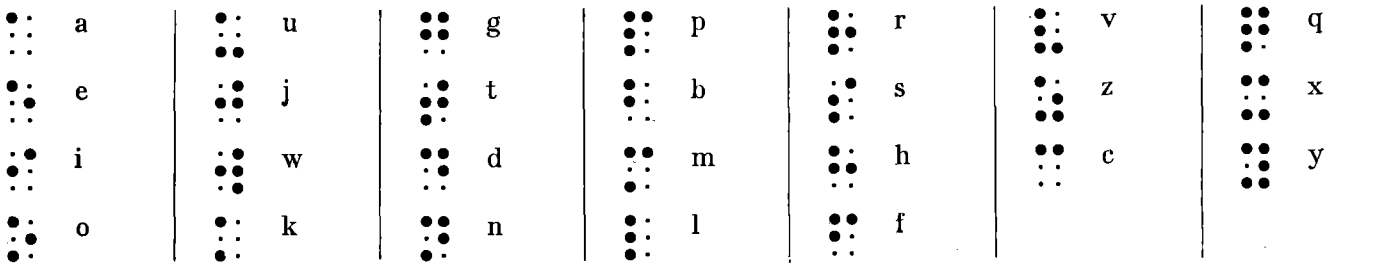
⠿	क'	k'	Munda (Santali etc.) checked stops
⠿	च'	c'	
⠿	ट'	t'	
⠿	प'	p'	

Punctuation marks : These follow the general international pattern; the apostrophe, capital and italics signs not being required.

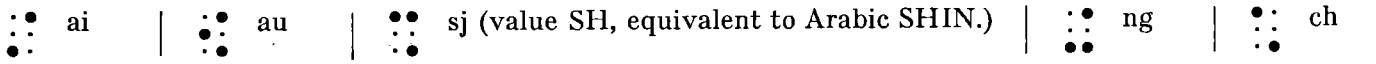
Numeral sign & numbers: These are also the internationally established signs.

BAHASA INDONESIA BRAILLE

As agreed to in Bandung on September 20th, 1952, between the Braille authorities of the Society for the Rehabilitation of the Blind and Sir Clutha Mackenzie, Chairman of the World Braille Council, for recommendation for official acceptance by the Government of Indonesia, the Institute for Linguistic and Cultural Research and the Department of Education. This agreement followed a period of discussion between Unesco, the Institute and the Society relative to the best form of Braille to meet the requirements of Bahasa Indonesia, an amplified form of the Malay language, now adopted as the official language of the whole Indonesian territories. It was decided that Indonesian Braille should adhere to the World Braille values established by the representatives of India, Ceylon, Malaya and the Arabic countries at the Unesco Regional Braille Conference in Beirut (1951), *which, except for the contractions listed below, were already used at Bandung for the expression of Malay.*



CONTRACTIONS



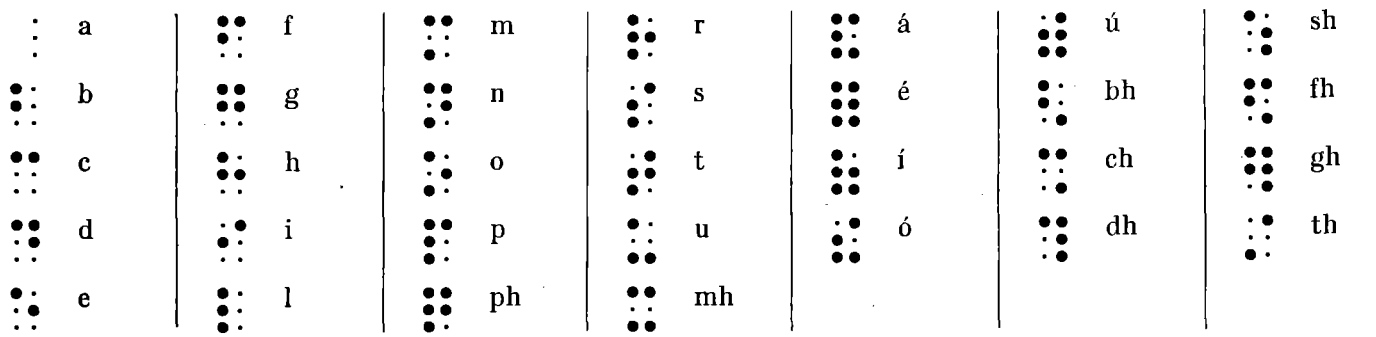
Note. It is recommended that the selection of further signs for Grade 2 should await an analysis of the frequency of recurrence of common words, prefixes, suffixes and letter combinations.

Punctuation marks. These follow the general international pattern. The interrogation mark is dots 2-6 and the capital sign dots 4-6.

Numeral sign and numbers. These are also the internationally established signs.

IRISH BRAILLE

Supplied by National Institute for the Blind.

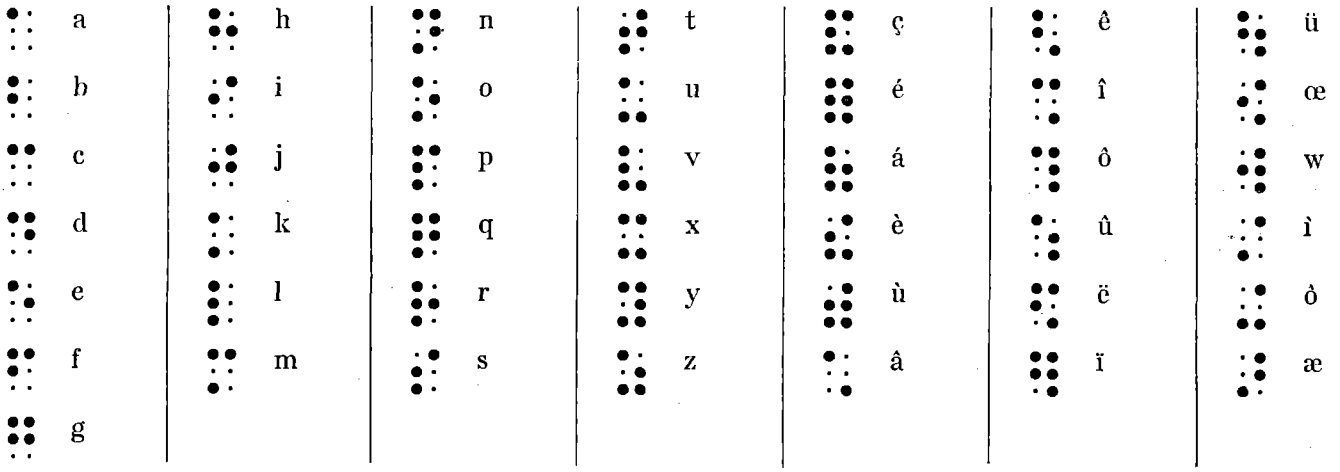


Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

ITALIAN BRAILLE

Received from the Italian Union for the Blind, Rome.



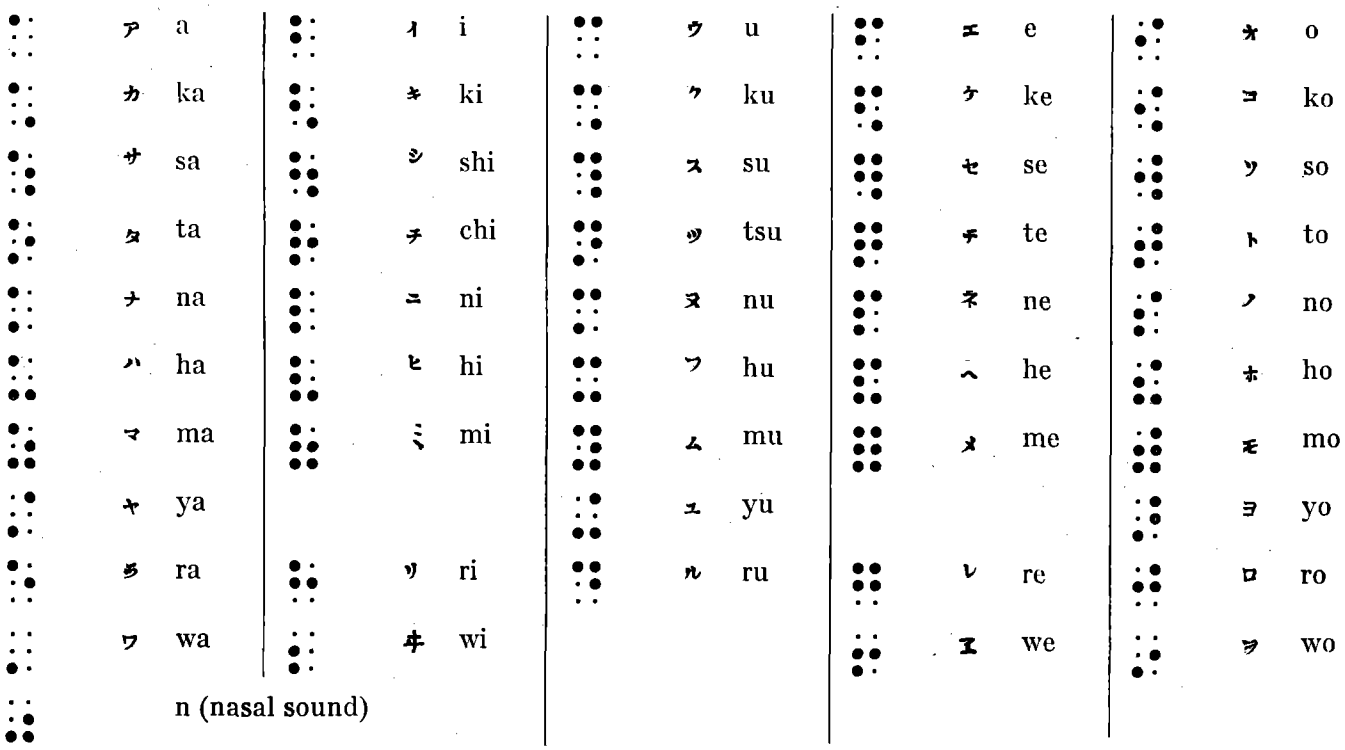
Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

History: Italian Braille was used uncontracted until 1951 when a board of adjudicators of the Italian Union of the Blind accepted an abbreviated Braille designed by Mr. Umberto Trani, Victor Emanuel II Institute for the Blind, Florence.

JAPANESE BRAILLE

Received from the Lighthouse Institution, Osaka City, Japan.



Punctuation marks: These follow the general international pattern.

Numeral sign & numbers: These are also the internationally established signs.

KOREAN BRAILLE

Received from the National Institute for the Blind, London.

—		ㅇ	ng	아	a	야	ya	어	ö, ü	여	yö, yü
ㄱ		ㄱ	k, g	가	ka, ga	갸	kya, gya	거	kö, kü gö, gü	게	kyö, gyü
ㄴ		ㄴ	n, l	나	na	냐	nya	너	nö, nü	녀	nyö, nyü
ㄷ		ㄷ	t, d	다	ta, da	댜	tya, dya	더	tö, tü dö dü	뎌	työ, tyü dyö dyü
ㄹ		ㄹ	l, n, r	라	la	랴	lya	러	lö, lü	려	lyö, lyü
ㅁ		ㅁ	m	마	ma	먀	mya	머	mö, mü	며	myö, myü
ㅂ		ㅂ	p, b	바	pa, ba	뱌	pya, bya	버	pö, pü bö, bü	벼	pyö, pyü byö, byü
ㅅ		ㅅ	s, t	사	sa	샤	sa	서	sö, sü	셔	sö, sü
ㅈ		ㅈ	ch, j	자	cha, ja	쟈	cho, ja	저	chö, chü jö, jü	져	chö, chü jö, jü
ㅊ		ㅊ	ch'a	차	ch'a	챠	ch'a	처	ch'ö, ch'ü	쳐	ch'ö, ch'ü
ㅋ		ㅋ	k'	카	k'a	캬	k'ya	커	k'ö, k'ü	켜	k'yö, k'yü
ㄷ		ㄷ	t'	타	t'a	탸	t'ya	터	t'ö, t'ü	텨	t'yö t'yü
ㅍ		ㅍ	p'	파	p'a	퍄	p'ya	퍼	p'ö, p'ü	펴	p'yö, p'yü
ㅎ		ㅎ	h	하	ha	햐	hya	허	hö, hü	혀	hyö, hyü

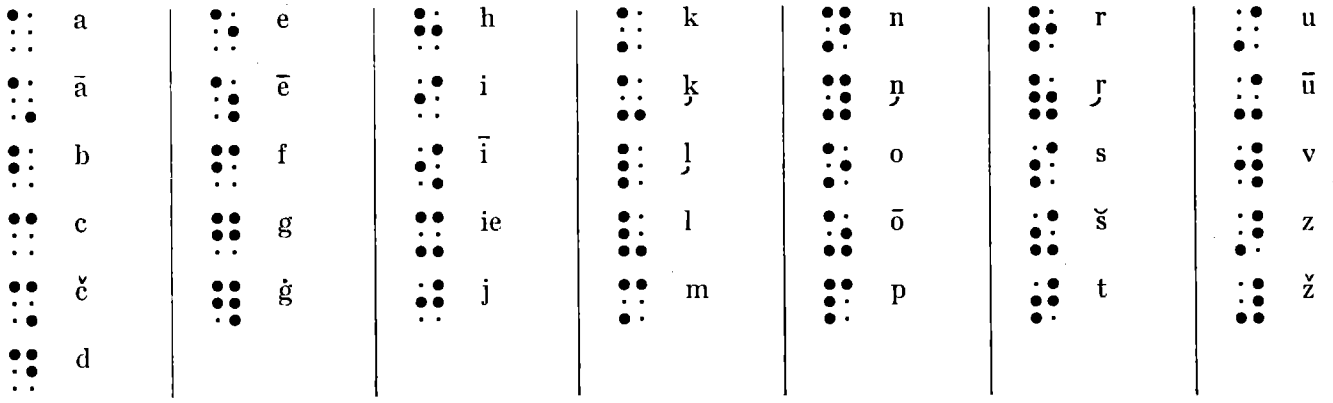
Note: In Korean the sounds of k, t, p and ch, when occurring in the body of a word and at the beginning of a syllable, are usually changed to g, d, b and j.

Numeral sign and numbers: These are the internationally accepted signs.

오 o	요 yo	우 u	유 yu	으 eu	이 i
고 ko, go	교 kyo, gyo	구 ku, gu	규 kyu, gyu	그 keu, geu	기 gi
노 no	뇨 nyo	누 nu	뉴 nyu	느 neu	니 ni
도 to, do	됴 tyo, dyo	두 tu, du	듀 tyu, dyu	드 teu, deu	디 ti, di
로 lo	료 lyo	루 lu	류 lyu	르 leu	리 li
모 mo	묘 myo	무 mu	뮤 myu	므 meu	미 mi
보 po, bo	뵤 pyo, byo	부 pu, bu	뷰 pyu, byu	브 peu, beu	비 pi, bi
소 so	쇼 so	수 su	슈 su	스 seu	시 si
조 cho, jo	죠 cho, jo	주 chu, ju	쥬 chu, ju	즈 cheu, jeu	지 chi, ji
초 ch'o	쵸 ch'o	추 ch'u	츄 ch'u	츠 ch'eu	치 ch'i
코 k'o	쿄 k'yo	쿠 k'u	큐 k'yu	크 k'eu	키 k'i
토 t'o	툐 t'yo	투 t'u	튜 t'yu	트 t'eu	티 t'i
포 p'o	표 p'yo	푸 p'u	퓨 p'yu	프 p'eu	피 p'i
호 ho	효 hyo	후 hu	휴 hyu	흐 heu	히 hi

LETTISH BRAILLE

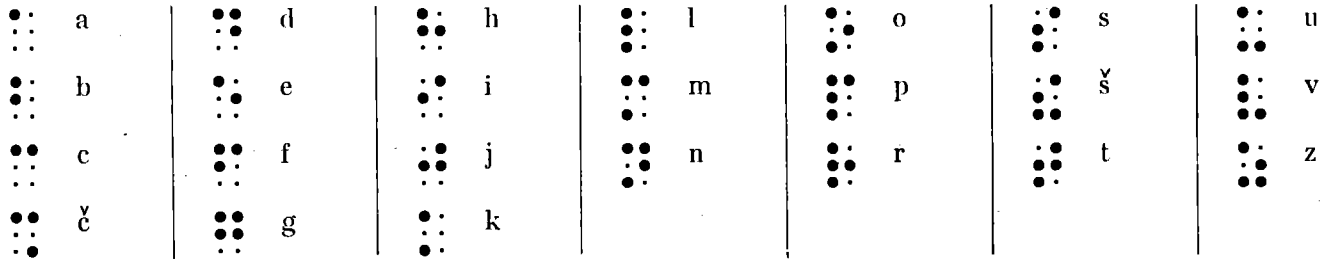
Received from the International Association of Blind Esperantists, Stocksund, Sweden.



Punctuation & numerals: Presumed to be international.

LITHUANIAN BRAILLE

Received from the International Association of Blind Esperantists, Stocksund, Sweden.

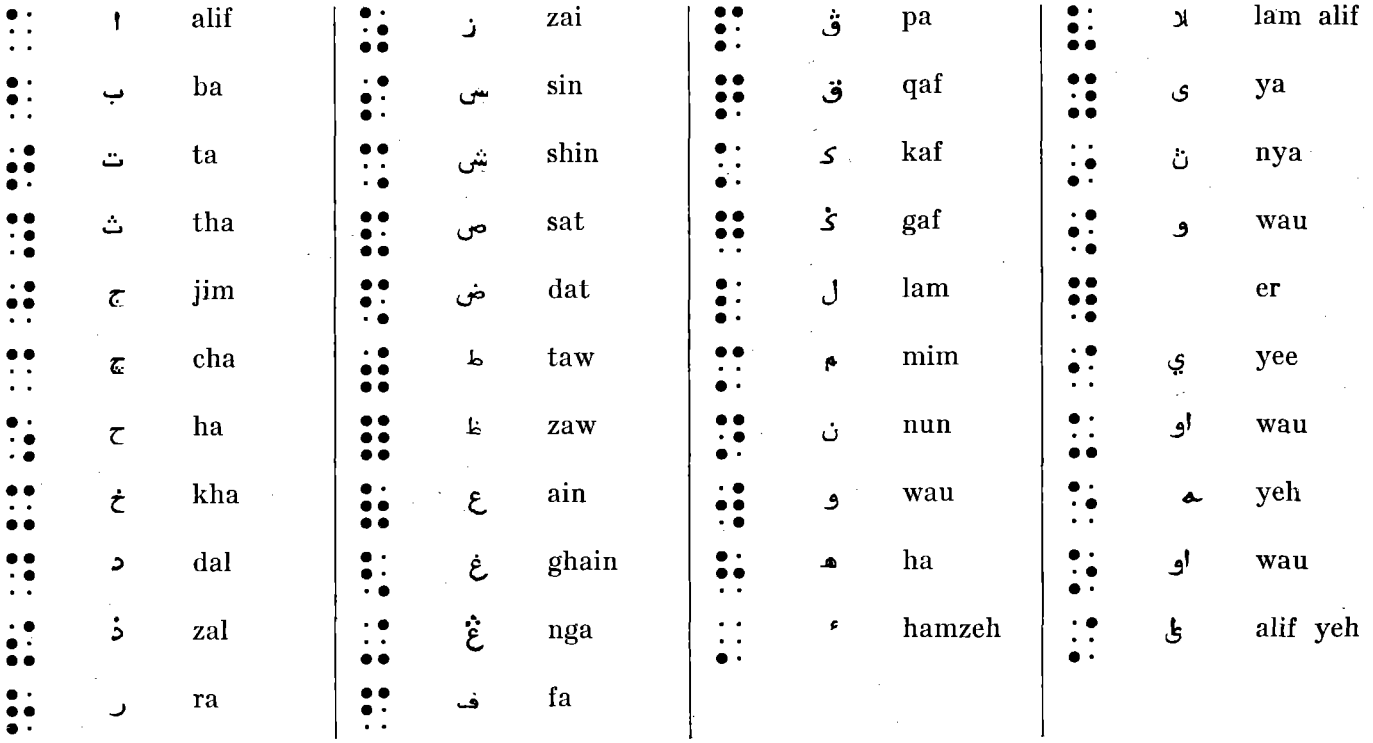


Apart from the two accented consonants shown above, no special sign is used in Braille to indicate accented vowels or consonants used in ink print, they are represented in Braille by the equivalent unaccented vowel or consonant. Where the letter Y occurs it is represented in Braille by I (Dots 2-4).

Punctuation & numerals: Presumed to be international.

MALAY BRAILLE

As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, February 12th - 17th, 1951, and agreed to by the Braille representative of the languages of Malaya and accepted by the Department of Social Affairs, Kuala Lumpur.



Punctuation marks: These follow the general international pattern. The interrogation mark is dots 2-3-6.

Numeral sign and numbers: These are also the internationally established signs.

History: The first Braille adaptation to Malay (Arabic script, locally known as Jawi), was made in 1947, simultaneously with adaptations for Tamil and Chinese Mandarin for Malayan use. These were based on the international values of the Braille signs as far as they then went; and all three have now been further modified to accord fully with the decisions taken at Beirut.

Malay, however, is taught and written in both Arabic and Roman scripts, although the present trend seems to favour the latter. The Government of Indonesia has decided that Roman should be the script for the form of Malay established as the official language of its territories. The World Braille system will, however, adequately express Malay, whether the visual script is Arabic or Roman.

MALTESE BRAILLE

As drafted by Unesco in consultation with the British Empire Society for the Blind and submitted to the Education Office, Government of Malta.

BRAILLE SIGN	LETTER	SOUND VALUE	BRAILLE SIGN	LETTER	SOUND VALUE	BRAILLE SIGN	LETTER	SOUND VALUE
⠁	a		⠓	h		⠗	r	
⠃	b		⠊	i	ee	⠎	s	
⠉	c	cheh	⠚	j	yeh	⠞	t	
⠙	d		⠅	k		⠥	u	oo
⠑	e	eh	⠇	l		⠧	v	
⠋	f		⠍	m		⠺	w	weh
⠛	g	jeh	⠝	n		⠭	x	sheh
⠣	g		⠕	o		⠵	z	tseh
⠜	gh (shajn)	'ayn	⠏	p		⠶	z	zeh, z as in Zero
⠱	h (akka)		⠟	q	kheh			

Punctuation marks: These follow the general international pattern. The query mark is dots 2-3-6.

Numeral sign & numbers: These are also the internationally established signs.

NORWEGIAN BRAILLE

Received from the Norges Blindeforbund, Trondheim.

⠁	a	⠋	f	⠚	j	⠝	n	⠗	r	⠧	v	⠵	z
⠃	b	⠛	g	⠅	k	⠕	o	⠎	s	⠺	w	⠦	æ
⠉	c	⠓	h	⠇	l	⠏	p	⠞	t	⠭	x	⠸	ø
⠙	d	⠊	i	⠍	m	⠟	q	⠥	u	⠽	y	⠷	å
⠑	e												

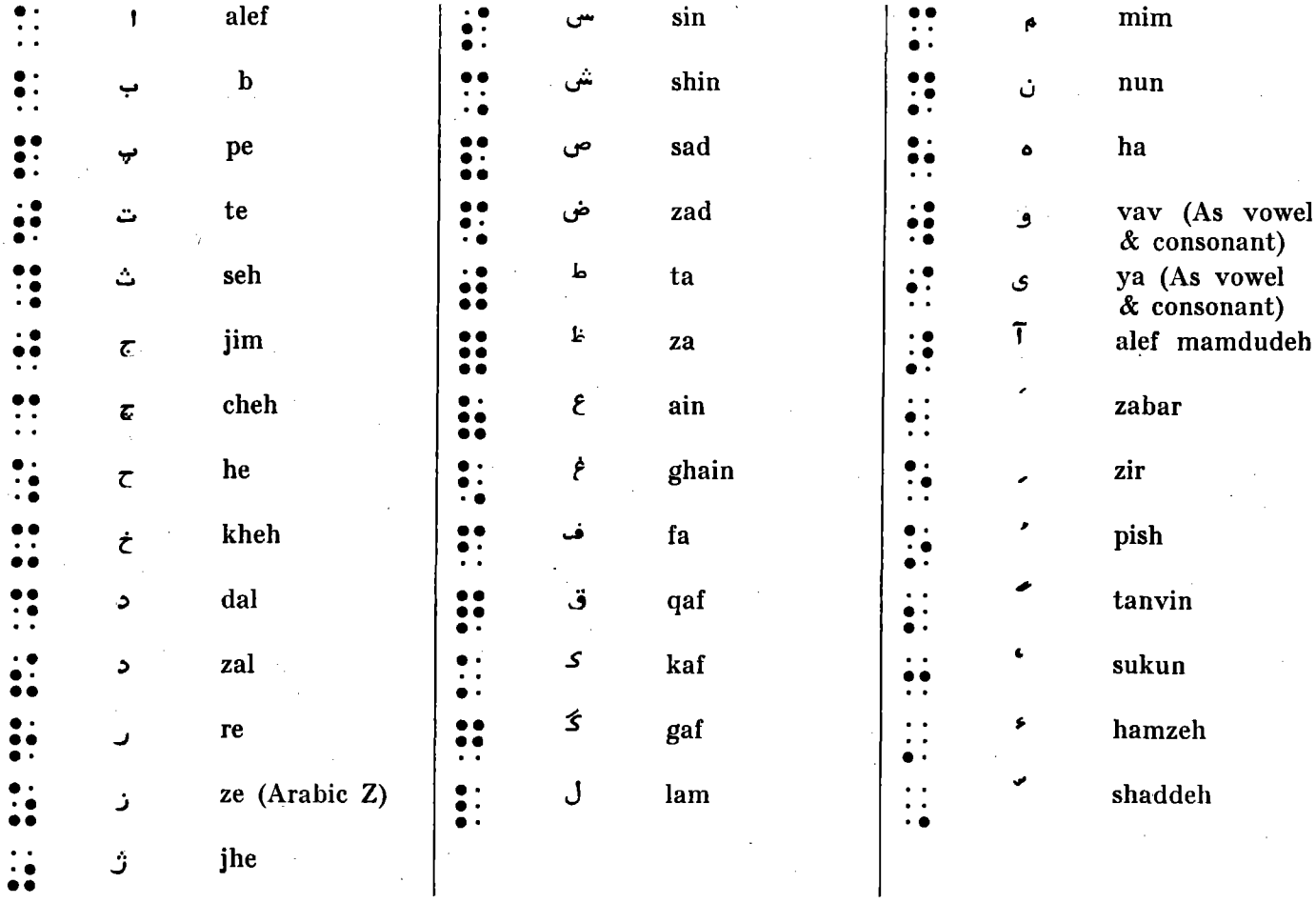
Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

PERSIAN BRAILLE

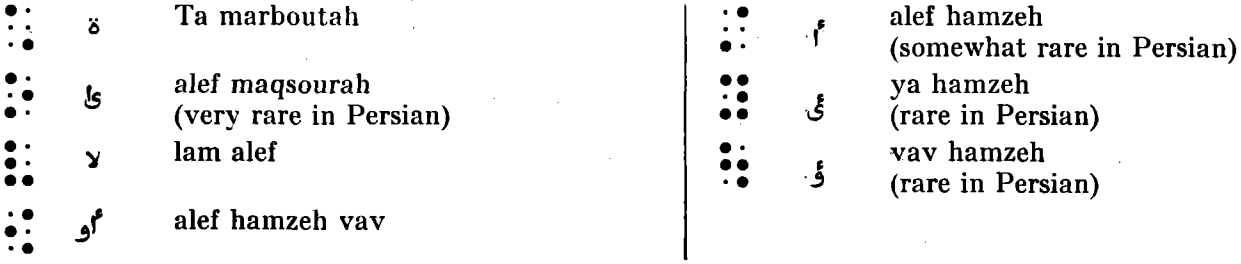
As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, February 12-17, 1951, and agreed to by the representative of that language, and submitted to the Ministry of Education, Teheran.

FULL PERSIAN BRAILLE GRADE 1



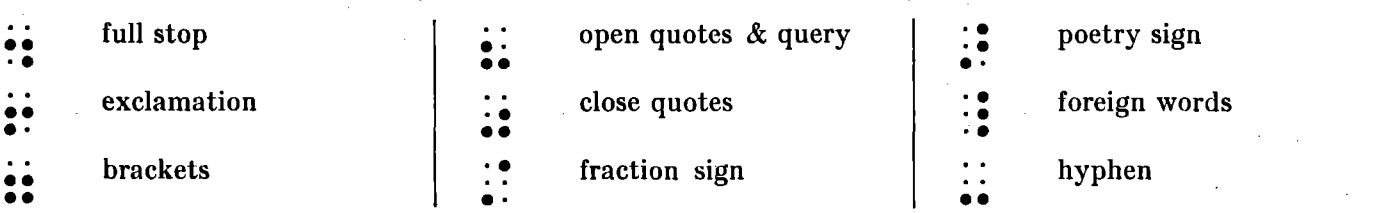
ا	alef	
ب	b	
پ	pe	
ت	te	
ث	seh	
ج	jim	
چ	cheh	
ح	he	
خ	kheh	
د	dal	
ذ	zal	
ر	re	
ز	ze (Arabic Z)	
ژ	jhe	
س	sin	
ش	shin	
ص	sad	
ض	zad	
ط	ta	
ظ	za	
ع	ain	
غ	ghain	
ف	fa	
ق	qaf	
ک	kaf	
گ	gaf	
ل	lam	
م	mim	
ن	nun	
ه	ha	
و	vav (As vowel & consonant)	
ی	ya (As vowel & consonant)	
آ	alef mamdudeh	
◌ً	zabar	
◌ٍ	zir	
◌ٌ	pish	
◌ً	tanvin	
◌ْ	sukun	
ء	hamzeh	
◌ّ	shaddeh	

Arabic Braille contains the following signs for certain letters or combinations of letters and these are available for use in Persian if required.



ة	Ta marboutah
ى	alef maqsourah (very rare in Persian)
لا	lam alef
ﷺ	alef hamzeh vav
أ	alef hamzeh (somewhat rare in Persian)
ئ	ya hamzeh (rare in Persian)
ؤ	vav hamzeh (rare in Persian)

Punctuation marks: The following are required in Persian.



full stop	open quotes & query	poetry sign
exclamation	close quotes	foreign words
brackets	fraction sign	hyphen

Numeral sign & numbers: These are the internationally accepted signs.

History: The first Persian Braille appears to have been designed by Pastor Christoffel, of the German Lutheran Mission, in the 1920's and was taught in the School for the Blind in Isfahan. It maintained traditional values for a number of the letters, B, P, T, D, R, etc., but departed from them in other cases, notably jim, zabar, and pish.

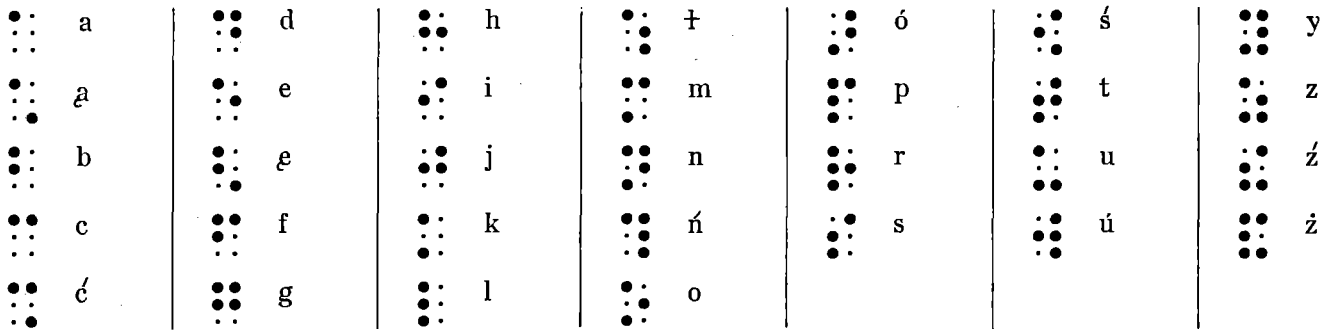
The full and simplified alphabets have been designed on the recommendation of our Persian advisers. The full alphabet to be applied to the study of religious and classical works and for higher scholarship in general, and the shorter form to be used for elementary education and for general everyday purposes.

SIMPLIFIED GRADE FOR ELEMENTARY & EVERYDAY USE.

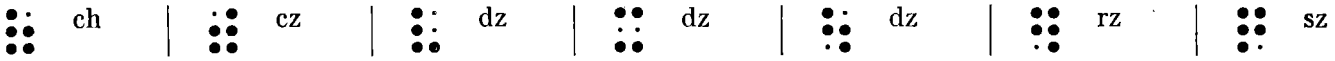
	ا	alef		ژ	jhe		ه	he
	ب	be		ش	shin		و	vav (vowel & consonant)
	پ	pe		ع	ain		ی	ya (vowel & consonant)
	ت	te /ta		غ	ghain		آ	alef mamdudeh
	ص س ث	seh, sin, & sad		ف	fe		◌َ	zabar
	ج	jim		ق	qaf		◌ِ	zir
	چ	cheh		ک	kaf		◌ُ	pish
	ح	he		گ	gaf		◌ً	tanvin
	خ	kheh		ل	lam		◌ْ	sukun
	د	dal		م	mim		◌ٔ	hamzeh
	ذ ظ ض ز د	zal, za, zad & za		ن	nun		◌ّ	shaddeh
	ر	re						

POLISH BRAILLE

Received from the International Association of Blind Esperantists, Stocksund, Sweden.



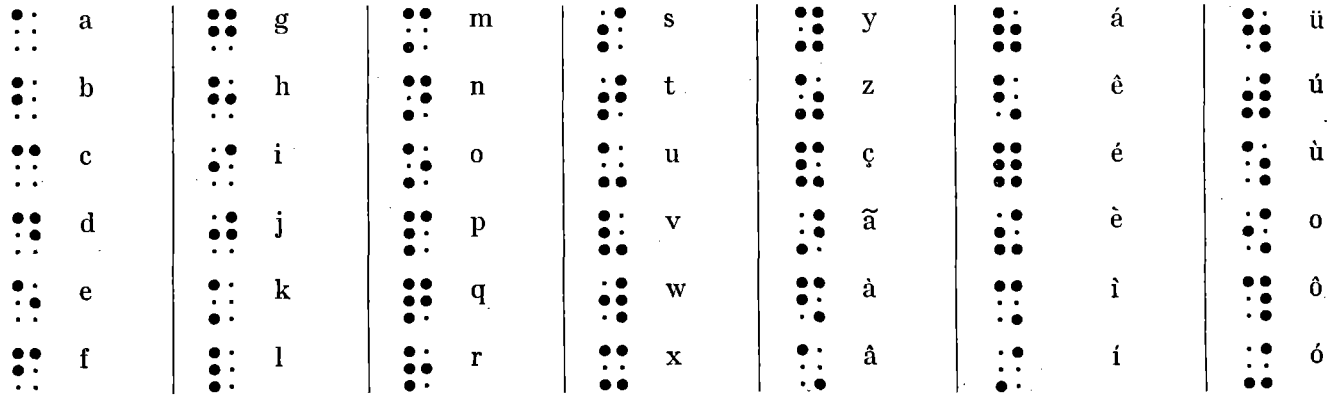
The Polish chart also contains a few contractions which are in general use.



Punctuation & numerals: These are presumed to be international.

PORTUGUESE BRAILLE

Received from the Asilo Escola Antonio Feliciano de Castilho, Lisbon.



Note: The Brazilian chart contains in addition the vowel ò to which dots 2-4-5-6 are given.

Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

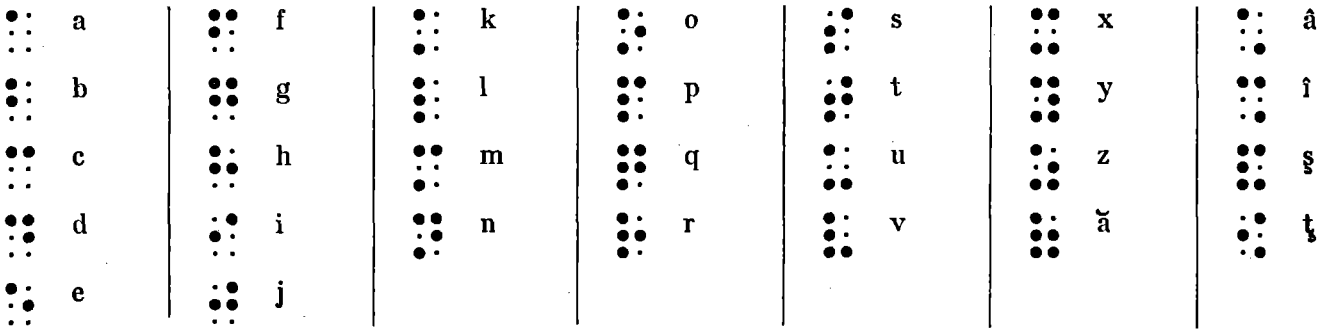
Numeral sign & numbers: These are also the internationally established signs.

History: A contracted form was designed in 1905 by Professor Albuquerque e Castro, St. Manuel Institute for the Blind, Oporto and enlarged in 1937. His work was published in modified form in 1948 by the Asilo Escola Antonio Feliciano de Castilho, Lisbon.

Another contracted system was established independently in Brazil in 1945 by the Institute Benjamin Constant at Rio de Janeiro. A voluntary organization in Sao Paulo, the Braille Foundation for the Blind of Brazil, opened a press in 1946.

ROUMANIAN BRAILLE

Received from the National Institute for the Blind, London and from the American Printing House for the Blind, Louisville, Kentucky.



Note: The three accented letters in the visual script, à, ì, and ù, are not to be used.

Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

RUSSIAN BRAILLE

As received from Mr. H. Thilander, Blindskriftstryckeri, Sweden.

BRAILLE	RUSSIAN CHARACTER	TRANS-LITERATION	BRAILLE	RUSSIAN CHARACTER	TRANS-LITERATION
	А	a		*К*	k
	Б	b		*Л*	l
	В	v		*М*	m
	Г	g		*Н*	n
	Д	d		*О*	o
	Е	e (as in y Es)		*П*	p
	Ё	yo		*Р*	r
	Ж	j (French J)		*С*	s
	З	z		*Т*	t
	И	i		*У*	u

BRAILLE	RUSSIAN CHARACTER	TRANS-LITERATION
	Ф	f
	Х	ch (as in loCH)
	Ц	ts
	Ч	ch (as in CHurCH)
	Ш	s (as in Sure)
	Щ	shch
	Э	e (as in mEt)
	Ю	you

BRAILLE	RUSSIAN CHARACTER	TRANS-LITERATION
	Я	ya
	Ы	y (as in rhYthm)
	Й	I (never after a consonant)
	Ъ	(showing hard or non-palatal pronunciation of preceding consonant)
	Ь	(no value of its own palatalizes preceding consonant)

Punctuation marks: These are the international signs. The query is Dots 2-6.

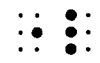
Numeral sign & numbers: These are also the internationally accepted signs.

History: Braille was adapted to Russian many years ago, but we have been unable to ascertain the exact year. The following later history is extracted from a memorandum by Mr. P. Rogov, who designed a new contracted system in 1932. Its Grade 1 ½ contained fifty-five contractions and its Grade II, two hundred. Working tests were carried out in the Moscow Institution for the Blind in 1933/34, but we do not know whether it was finally accepted by the Peoples' Commissariat of Instruction. He says:—"In 1901 the Director of the School for the Blind in Elabuga—Mr. M. Perov, was commissioned to draw up a proposal for a contracted system for the Conference of the Workers for the "Care of the Blind". Mr. Raevski, the oldest printer in the Printing House for Embossed Type in St. Petersburg, drew up a second proposal for the Second Conference of the Workers for the Care of the Blind in 1909. Since then another proposal by Mr. Romanov was presented to the Editorship of the "Life of the Blind" in 1928 and a partial project by Mr. Dlugopolski, as well as two variants of a contracted system worked up by myself. The last variant was completed on commission of the President of the Central Direction of the All Russian Society of the Blind". Contrasting his system with the earlier ones, he says, "It is less economical in regard to space, but at the same time is easier to understand even for illiterate people and therefore can be introduced for all those who read and write Braille. Grade II, which includes all the signs of Grade 1 ½, has 200 signs, and is a little more difficult for learning owing to a greater number of signs, but at the same time it gives about 41.5 % economy of space".

The Russian alphabet, given above, is, we believe, the latest as adapted to the modern reformed Russian alphabet.

SINHALESE BRAILLE

As modified by the recommendations of the Beirut Regional Conference on Braille Uniformity, February 12th-17th, 1951, agreed to by the Braille representative of Ceylon, and accepted by the Ministry of Education.

BRAILLE SIGN	LETTER		DESCRIPTION
	අ	ă	
	ආ	ā	
	ඉ	i	
	ඊ	ī	
	උ	ŭ	
	ඌ	ū	
	එ	ē	
	ඓ	ai	
	ඔ	ŏ	
	ඖ	ow	
	ඒ	ĕ	
	ඕ	ō	
	ඇ	æ̆	
	ඈ	ǣ	
	සිෘ	ru	
	සිෲ	ruu	
	ඍ	ilu	
	ඎ	iluu	
	අං	ang	
	අඃ	ank	
	ඹ	mba	
	ප්		
	්		short nasal

BRAILLE SIGN	LETTER		DESCRIPTION
	ක	ka	unaspirated
	ඛ	ka	aspirated
	ග	ga	unaspirated
	ඝ	gha	aspirated
	ඞ	nga	velar or guttural nasal
	ච	cha	unaspirated
	ඡ	cha	aspirated
	ජ	ja	unaspirated
	ඣ	ja	aspirated
	ඤ	ynga	palatal nasal
	ට	ta	unaspirated cerebral
	ඨ	ta	aspirated cerebral
	ඩ	da	unaspirated cerebral
	ඪ	da	aspirated cerebral
	ණ	na	cerebral or retroflex
	ත	tha	unaspirated, phonetic "t"
	ථ	tha	aspirated, phonetic
	ද	dha	unaspirated, phonetic "d"
	ධ	dha	aspirated, phonetic
	න	na	
	ප	pa	aspirated
	ඵ	pa	
	බ	ba	

BRAILLE SIGN	LETTER	DESCRIPTION	BRAILLE SIGN	LETTER	DESCRIPTION
	ba	aspirated		sca	
	ma			sha	
	ya			sa	
	ra			ha	
	la			la	2nd L
	va			fa	

Punctuation marks: These follow the international pattern and the capital, apostrophe and italics signs are not required.

Numeral sign & numbers: These are also the internationally established signs.

History: In the early days of the Ceylon School for the Blind only English Braille was taught; but in 1917 an English woman teacher from the Palamcottah School for the Blind in Southern India, designed a Sinhalese Braille which followed the same principle as that of Palamcottah Braille for Tamil, under which the signs retained as far as possible their traditional values. A few years later, however, Oriental Braille was substituted on a promise of a gift of books in this system. Experience showed it to be unsuitable and in 1940 Sinhalese Braille was introduced. Later on Mr. Kingsley Dassanaike, Principal of the School, modified it with the object of improving its uniformity with English Braille, both in orthography and in such matters as punctuation, numerals and mathematical symbols. Contractions too were introduced. The short "a" vowel inherent in the consonants is not written. The School welcomed the proposal for the universal rationalization of Braille which further extended the principle upon which it was already working. It shared and accepted the principles agreed upon at the Unesco conferences and the foregoing chart gives the final form of Sinhalese Braille, which is in complete accord with the Bharati system for India and in close uniformity with the Braille systems of Europe and elsewhere.

SPANISH BRAILLE

Received from the National Braille Press, Madrid.

 a	 f	 k	 p	 u	 z	 é
 b	 g	 l	 q	 v	 ll	 í
 c	 h	 m	 r	 w	 ñ	 ó
 d	 i	 n	 s	 x	 á	 ú
e	j	o	t	y		

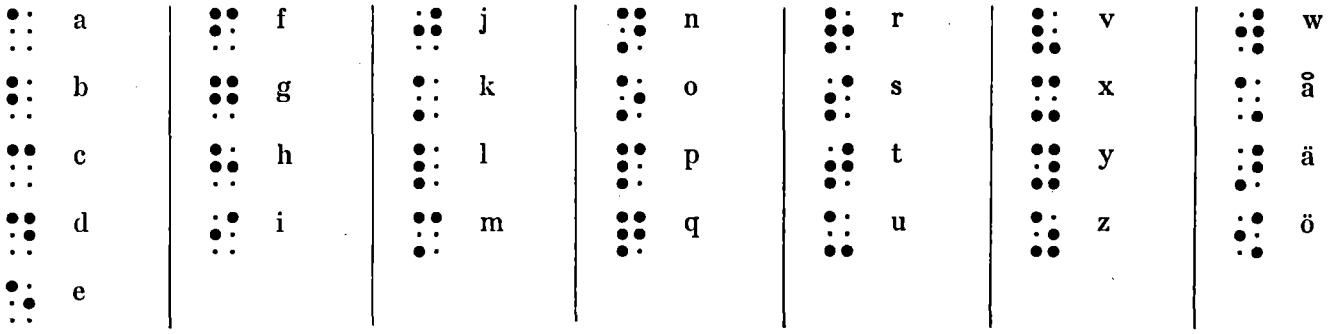
Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

History: The history of Spanish Braille is given in chapter 12.

SWEDISH BRAILLE

Received from De Blindas Förenings Bibliotek, Stockholm.



Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

History: No fixed date is known for the introduction of Braille into Sweden. From about 1860 Braille seems to have been established for the printing of schoolbooks, but a few religious books and parts of the Bible continued to be printed in Moon type during the succeeding thirty years. Nowadays the Swedish blind use Braille only.

THAI BRAILLE

Received from the Foundation for the Welfare and Education of the Blind of Siam, Bangkok.

STRAIGHT SOUNDS

	LETTER	SOUND	BRAILLE	REMARKS
1.	ก	gaw (close to K)		
2.	จ	chaw (hard J)		
3.	ด	daw		Same sound but different characters.
4.	ต	taw		
5.	ฎ	daw (heavy)		
6.	ฏ	taw (heavy)		Same sound as 3, 4 & 5 but different characters.
7.	บ	baw (definitely B)		
8.	ป	paw (consonant)		
9.	อ	o (same as vowel 0)		

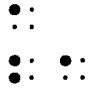
HIGH SOUNDS

	LETTER	SOUND	BRAILLE	REMARKS
1.	ข	khaw		
2.	ฃ	khaw		
3.	ฉ	chaw		Heavier than no. 5 not really CH. (Low CH)
4.	ถ	thaw		Heavy form of 9, 10, 12 & 13.
5.	ฐ	thaw		
6.	ผ	phaw		Counterpart of 15.
7.	ฝ	faw		Heavy of 16
8.	ค	saw		
9.	ฆ	saw		Counterpart of Low 6.
10.	ฌ	saw (most frequent)		
11.	ห	haw		

LOW SOUNDS

	LETTER	SOUND	BRAILLE	REMARKS
1.	ค	khaw		
2.	ฅ	khaw		
3.	ฆ	khaw		
4.	ง	ngaw		
5.	จ	xaw		
6.	ซ	saw		
7.	ฉ	chaw		Pair to 5 (rare)
8.	ญ	yaw		Pair to 19.
9.	ฑ	thaw		(very rare)
10.	ฒ	thaw		(very rare)
11.	ณ	naw		See 14
12.	ท	thaw		
13.	ธ	thaw		
14.	น	naw		See 11.
15.	พ	phaw		
16.	ฟ	faw		
17.	ภ	phaw		
18.	ม	maw		
19.	ย	yaw		See 8.
20.	ร	raw		
21.	ล	law		
22.	ว	vaw		(w sound)
23.	ฬ	law		(very rare)
24.	ฮ	haw		

VOWELS

1.	ะ	a		Short and heavy
2.	า	ā		Long
3.	ิ	e (short)		
4.	ี	e (long)		
5.	ึ	u (short)		
6.	ื	u (long)		
7.	ุ	o͡o		
8.	ู	o͞o		
9.	เ ะ	ă		
10.	เ	ā		
11.	แ ะ	ĕ		
12.	แ	ē		
13.	โ ะ	ŏ		
14.	โ	ō		
15.	เ า ะ	ŭ		
16.	อิ	û		
17.	ว ั ะ	o͡o ă		
18.	ว ั	o͞o ā		
19.	เ ีย ะ	ē y ā		
20.	เ ีย	ē y ă		
21.	เ ือ ะ	ü ă		
22.	เ ือ	ü ā		

LETTER	SOUND	BRAILLE	REMARKS	LETTER	SOUND	BRAILLE	REMARKS
23. เอียะ	ö			26. ฦ	ī		
24. เอีย	ö (long)			27. ฯ	ī (as in THAI)		
25. ำ	um			28. ไ ๅ	ou		

ACCENTS ETC. TONES.

1.	่		5.	์	
2.	้		6.	๊	
3.	๋		7.	ๆ	
4.	+				

History: Thai Braille was designed about 1938 by a blind American lady, Miss G. Caulfield. A number of the signs carry their traditional values, but, with the wider range of established values now available, it is possible that the alphabet could be improved. No detailed study of the system has been possible during the series of Unesco conferences.

TURKISH BRAILLE

As modified in the course of discussions between Turkish Braillists and Sir Clutha Mackenzie while on a United Nations mission to the Government of Turkey, November 1950, *and accepted by the Ministry of Education, Ankara.*

	a		e		i		m		r		u		z		
	b		f	*	ı		n		s		ü	*	â		
	c		g		j	*	o	*	ş		v	*	î		
*	ç	*	ğ		k		ö		t		y		û		
	d		h		l		p								

*Indicates that the sign was changed in the 1950 modifications.

Punctuation marks: These follow the general international pattern. The query mark is dots 2-6.

Numeral sign & numbers: These also are the internationally established signs.

History: The first adaptation to Turkish was made in Izmir in the 1920's and was keyed to the old Arabic script. It was succeeded by a system based on the traditional values of Braille signs when Turkey adopted Roman script in 1928. This was modified in consultation with an American Braillist in the 1930's. In 1950 modifications were again made for the following reasons. Firstly, a wish that certain letters should be given signs containing fewer dots; and, secondly, that, before extensive printing began, Turkish Braille should be brought into close uniformity with the World system.

URDU BRAILLE

As agreed to in Karachi (December 30th 1952-January 1st 1953), in conference between Dr. Imdad Hussain, Assistant Educational Adviser; Mr. Mohamed Ramzan and Mr. Feroz Ali (Pakistan Braille Committee) and Sir Clutha Mackenzie, Chairman of the World Braille Council, and recommended by them for acceptance by the Government of Pakistan.

The following table is set out in order of the Braille system, not in the normal sequence of the Urdu alphabet.

	GRADE 1	GRADE 2		
		INITIAL	MEDIAL	FINAL
ا	alif (as in Arabic)	alif-zabar	alif	alif
ب	be (as in Arabic)	be	be	be
ڈ	cheh (not in Arabic)	cheh	cheh	cheh
د	dal (as in Arabic)	dal	dal	dal
ز	zer (as in Arabic)	alif-ye	ye	ye
ف	fe (as in Arabic)	fe	fe	fe
گ	gaf (not in Arabic)	gaf	gaf	gaf
ہ	he (as in Arabic)	he	he	he
ے	ye (as consonant and ye in vowel combination)	alif-zer-ye	zer-ye	zer-ye
ج	jim (as in Arabic)	jim	jim	jim
ک	kaf (as in Arabic)	kaf	kaf	kaf
ل	lam (as in Arabic)	lam	lam	lam
م	mim (as in Arabic)	mim	mim	mim
ن	nun (as in Arabic)	nun	nun	nun
	—	alif-sakin-vav	sakin-vav	sakin-vav
پ	pe (not in Arabic)	pe	pe	pe
ق	qaf (as in Arabic)	qaf	qaf	qaf
ر	re (as in Arabic)	re	re	re
س	sin (as in Arabic)	sin	sin	sin
ت	te (as in Arabic. 4th letter of Urdu alphabet)	te	te	te
ٗ	pesh (as in Arabic)	alif-pesh	pesh .	—
ھ	d (strong)	d (strong)	d (strong)	d (strong)

	GRADE 1	GRADE 2		
		INITIAL	MEDIAL	FINAL
خ	khe (as in Arabic)	khe	khe	khe
	—	ye (consonant only)		
ز	ze (as in Arabic)	ze	ze	ze
ص	svad (as in Arabic)	svad	svad	svad
ظ	zoe (as in Arabic)	zoe	zoe	zoe
ع	ain (as in Arabic)	ain	ain	ain
ذ	zal (as in Arabic)	zal	zal	zal
ط	toe (as in Arabic)	toe	toe	toe
ھ	chha (ta marboutah in Arabic)	chha	chha	chha
غ	ghein (as in Arabic)	ghein	ghein	ghein
ش	shin (as in Arabic)	shin	shin	shin
ث	se (as in Arabic)	se	se	se
ہ	he (strong. As in Arabic)	he (strong)	he (strong)	he (strong)
ض	zvad (as in Arabic)	zvad	zvad	zvad
ڑ	r (strong)	—	r (strong)	r (strong)
	—	alif-pesh-vav	pesh-vav	pesh-vav
أو	— (hamzeh waw in Arabic)	alif-zabar-vav	zabar-vav (Alif-waw in Arabic)	zabar-vav
و	vav (as in Arabic)	vav (as consonant)		
٬	zabar (as in Arabic)	spare sign	spare sign	comma
بھ	bhh	bhh	bhh	bhh
ٹ	ṭ (strong) (5th letter in Urdu alphabet)	ṭ (strong)	ṭ (strong)	ṭ (strong)
ڈھ	dha (strong)	dha (strong)	dha (strong)	full stop
ٹھ	ṭe (strong. Aspirated 4th letter in Urdu alphabet)	ṭe (strong)	ṭe (strong)	ṭe (strong)
پھ	phh	phh	phh	exclamation mark
	bracket-sukun-bracket	bracket	—	bracket

	GRADE 1	GRADE 2		
		INITIAL	MEDIAL	FINAL
	open quotes	open quotes	—	query mark
	—	alif-zer	zer	izafat
ھ	jhh	jhh	jhh	*close quote
	—	alif-zabar-ye	zabar-ye (Arabic hamzeh ye)	zabar-ye
	nasilization	—	nasilization	nasilization
ڑھ	rh (strong)	numeral sign	rh (strong)	rh (strong)
آ	alif-madd. (as in Arabic)	alif-madd.	alif-madd.	alif-madd.
ء	hamzeh (as in Arabic)	—	hamzeh	hamzeh
	hyphen	—	—	hyphen
	—	—	—	alif maqsourah
	contraction sign			
	contraction sign			
	contraction sign			
کھ	khh	khh	khh	khh
	contraction sign			
ّ	shaddeh	—	shaddeh	tanwin zabar

COMPOUND SIGNS

	thh (strong. Aspirated 5th letter in Urdu alphabet)	thh (strong)	thh (strong)	thh (strong)
ڈھ	dhh	dhh	dhh	dhh
ژ	zh	zh	zh	zh
گھ	ghh	ghh	ghh	ghh

*When *jhh* appears at the end of a word in *Grade* 2 it will be written 2-4-5/1-2-5 in order to avoid confusion with the sign for *close quotation.*

Punctuation marks: These are in accordance with international practice. Because of the length of the Urdu alphabet it has been necessary to omit the Braille *colon* sign and to use this for another purpose. The *hyphen,* although not employed in the visual script, is thought to be desirable in Braille in order to economize in paper by dividing words at the end of the line between the syllables.

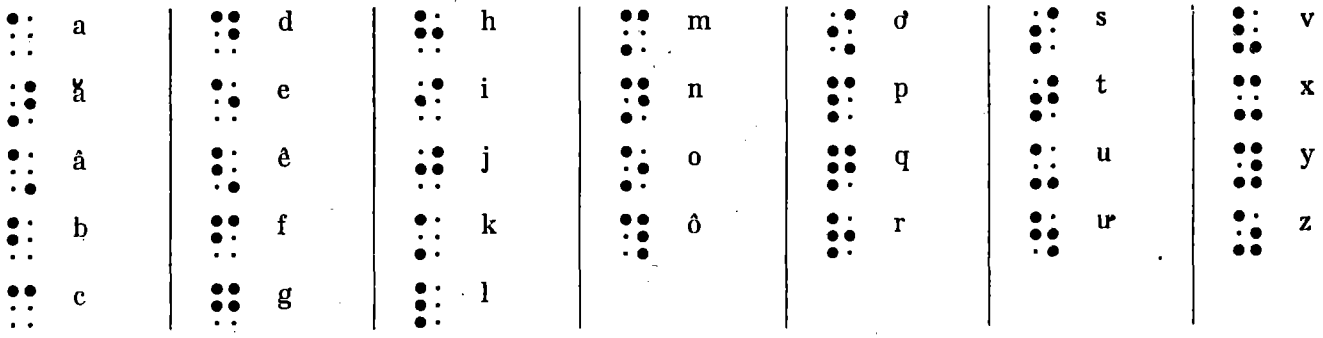
The sign for *ain* (dots 1-2-3-5-6) has been selected as the *poetry* sign. *Ain* is used for this purpose in the visual script, while at the same time the usual poetry sign (3-4-5) is the *long A vowel* which can stand alone as a word in Urdu thereby giving rise to confusion.

The *capital* sign is not required. Dot 3, printed initially, may be used to express stress or indicate foreign words.
The *asterisk* will be the international 3-5/3-5.
Shaddeh and *sukun* will be shown before the letters which they affect.

It will be noted that two Grades of Urdu Braille have been provided as is the customary practice in most Braille systems.
Grade 1 gives the full Urdu alphabet, letter for letter with the visual script, purposely designed for primary education and for the study of Arabic with which it is as closely linked as the differences between the two scripts permit.
Grade 2 presents the script in a slightly more condensed form which is both better suited for Braille reading and more closely linked with the international Braille system known as World Braille, under which, as far as possible, each Braille character carries the same or similar sound, or fills the same purpose in every language. Grade 2 is specific. Each Braille sign represents a particular character or a group of characters of the visual script. In certain cases, as is also international practice, the value of the sign is determined by its position in the word, i.e., as to whether it is initial, medial or final.
Grade 2 may be expanded in the course of time by the addition of contractions and abbreviations for words, syllables and groups of letters of frequent recurrence, with the object of effecting further economy in the amount of space occupied and in the energy required from the Braille reader and writer. These should be carefully planned on a systematic basis and for some years at least, be kept within a small compass. In Grade 2 whenever desired, the short vowel may be omitted as in the visual script.

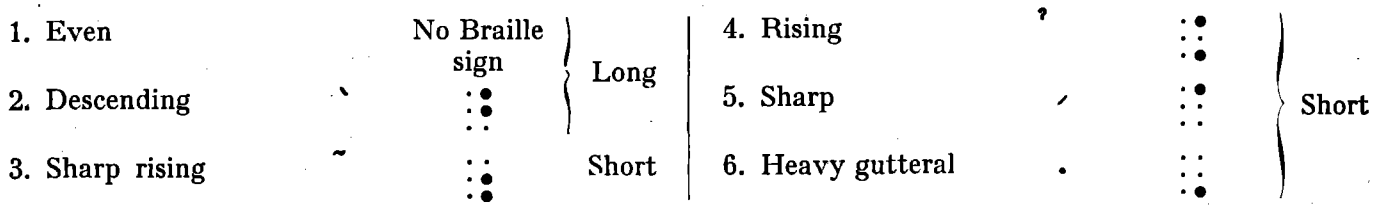
VIETNAMIEN BRAILLE

Received from Mr. Nguyên Công Tiên, ex-member of the Scientific Research Council of Indo-China.



TONE MARKS

There are six tones in Vietnamien which in Braille are written, not as in the visual text, above or below the letter, but between the words.



Punctuation marks: These follow the international pattern. The query mark is Dots 2-6.

Numeral sign & numbers: These are also the internationally established signs.

History: The date when Braille was first introduced into Indo-China is not known but Unesco has records dating from as far back as 1897. The early adaptations are similar to that more recently designed by Mr. Nguyên Công Tiên, with the exception of two letters, and the tone marks which differ completely. In addition to fundamental letters of the alphabet, Mr. Nguyên Công Tiên gives a list of some 458 syllables, these being expressed in full Braille and not as contractions.

YUGOSLAV BRAILLE

Received from the Association for the Blind of Yugoslavia, Belgrade. This table, which is a modification of earlier systems, was issued in 1951 *by the Association's Braille Committee representing the country's languages and scripts in cooperation with the Ministry of Education. It is uniform for the three languages, Serbo-Croat, Slovin and Macedonian, and for the two scripts, Roman and Cyrillic. Serbian and Macedonian employ the Cyrillic; Croatian and Slovin the Roman. All, however, employ the same common Braille except that certain letters are not used by all four.*

BRAILLE SIGN	SERBO-CROAT		SLOVIN	MACEDONIAN	
⠁	А	a	a	А	а
⠃	Б	b	b	Б	b
⠉	Ц	c	c	Ц	c
⠙	Ћ	ć	–		–
⠋	Ч	č	č	Ч	č
⠛	Д	d	d	Д	d
⠫	Ђ	đ	–		–
⠭	Џ	dž	–	Џ	dž
⠱		–	–	S	dz
⠑	Е	e	e	Е	e
⠋	Ф	f	f	Ф	f
⠛	Г	g	g	Г	g
⠱		–	–	Ґ	gj
⠓	Х	h	h	Х	h
⠊	И	i	i	И	i
⠚	Ј	j	j	Ј	j
⠅	К	k	k	К	k
⠱		–	–	Ќ	kj
⠇	Л	l	l	Л	l

BRAILLE SIGN	SERBO-CROAT		SLOVIN	MACEDONIAN	
⠳	Љ	lj	–	Љ	lj
⠍	М	m	m	М	m
⠝	Н	n	n	Н	n
⠻	Њ	nj	–	Њ	nj
⠕	О	o	o	О	o
⠏	П	p	p	П	p
⠟		q	q		–
⠗	Р	r	r	Р	r
⠎	С	s	s	С	s
⠩	Ш	š	š	Ш	š
⠞	Т	t	t	Т	t
⠥	У	u	u	У	u
⠧	В	v	v	В	v
⠺		w	w		–
⠭		x	x		–
⠽		y	y		–
⠵	З	z	z	З	z
⠾	Ж	ž	ž	Ж	ž

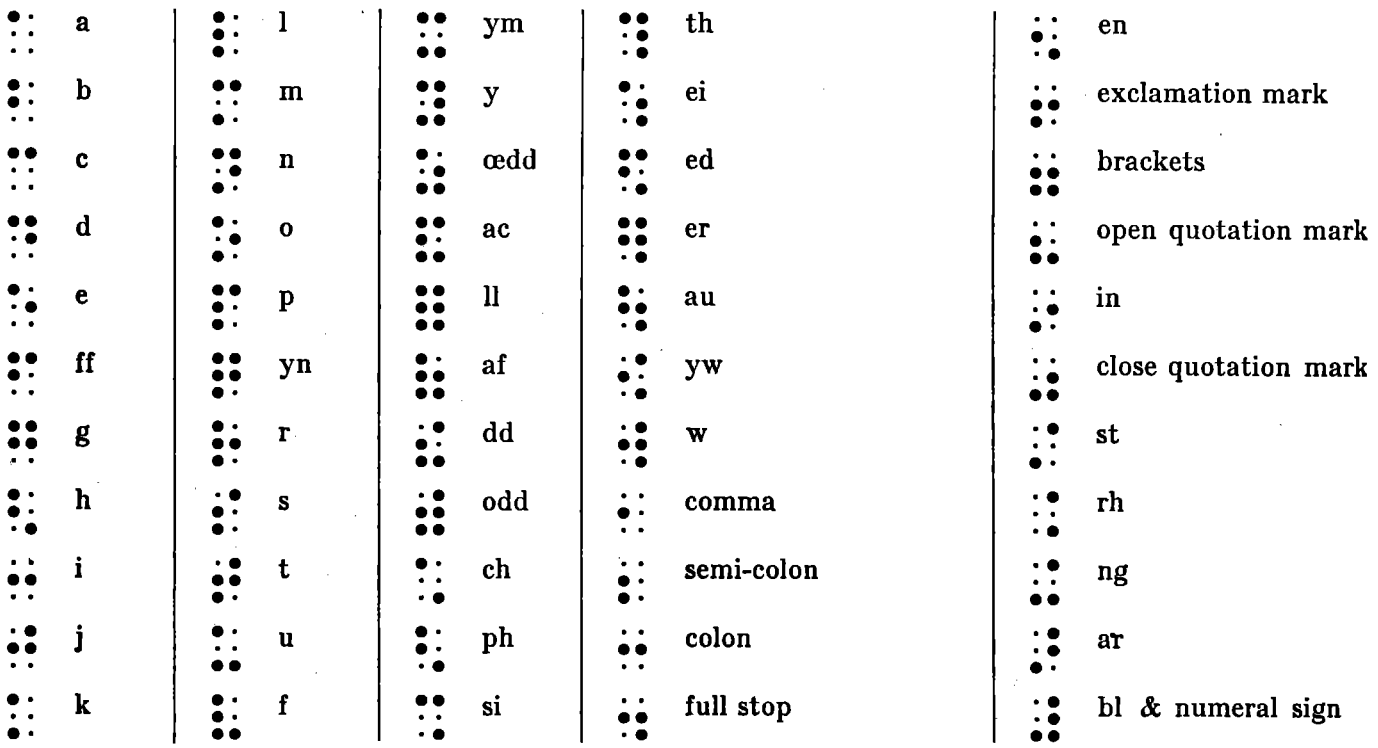
Punctuation marks: These are the international signs. The interrogation mark is dots 2-6.

Numeral sign & numbers: These are also the internationally accepted signs.

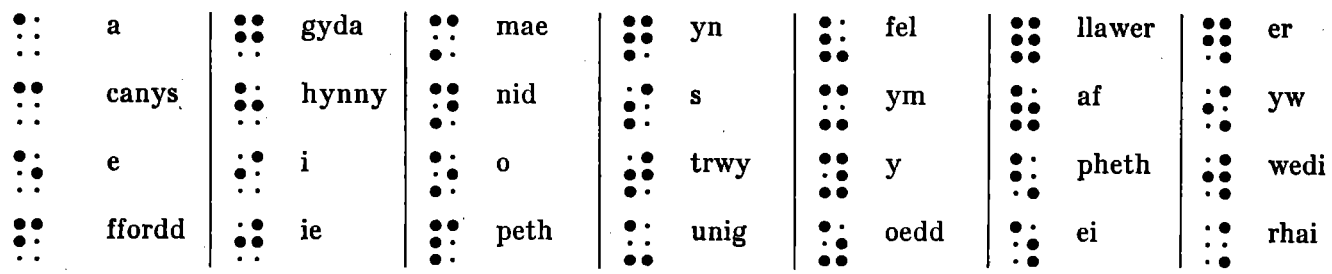
History: Braille was first introduced into Croatia in 1890 and into Serbia in 1917. A conference in Ljubljana in 1921 unified and modified these systems and the new form remained in force until the modifications of 1951 were introduced. A Braille Committee is now at work designing a contracted system.

REVISED WELSH BRAILLE

Received from the National Institute for the Blind, London.



WORDS REPRESENTED BY A SINGLE SIGN OF THE WELSH ALPHABET



INTERNATIONAL PUNCTUATION MARKS

We give below the internationally accepted Braille signs for the punctuation marks, showing where there is a difference in the two major systems, the French and the Standard English.

	FRENCH	ENGLISH
Comma		Same
Semi-colon		Same
Colon		Same
Full stop		Same
Query		
Exclamation		Same

	FRENCH	ENGLISH
Brackets		Same
Open Quotes		Same
Asterisk		
Close Quotes		Same
Apostrophe		Same
Hyphen		Same

	FRENCH	ENGLISH
Capital		
Italic		
Numeral		Same
Accent	Unused	
Letter Sign	Unused	

RECOMMENDATIONS

adopted by Unesco Braille

Conferences 1950-1951

INTERNATIONAL MEETING ON BRAILLE UNIFORMITY

Unesco House, Paris, 20-29 *March* 1950.

Recommendations

1. The International Meeting on Braille Uniformity desires, as a first resolution, to place on record its gratitude and appreciation to Unesco for its interest and for the work which has been carried out on Braille. The ultimate result will be greater educational facilities and vocational opportunities, as well as a wider cultural life, for the blind all over the world. Unesco and the Government of India, which made the first approach on this subject, have thus been responsible for considerable progress towards Braille uniformity, which this Conference considers to be an important milestone in the history of Braille. The following resolutions underline this statement, but in addition the cordial exchange of views and the contacts made at both the present meeting and that of the Advisory Committee in December 1949 have in themselves proved of enormous value. The development of this work must continue and the Conference has spent some time discussing suggestions as to future lines of action. As a result of these international meetings on Braille sponsored by Unesco, not only has a clear picture emerged of the Braille situation in the world today, which was not previously available, but practical and concrete measures can now be undertaken to establish the greatest degree of uniformity in the Braille system.

2. *RATIONALIZATION AND EXPANSION OF ORTHOGRAPHIC BRAILLE.*

(a) *The Practicability of World Braille.* The Conference has made a close study of the Unesco Report on the World Braille situation, the conclusions of the Advisory Committee on Braille Problems in December 1949, and the mass of data submitted to the Conference. During discussions on the Advisory Committee's resolutions delegates have freely expressed their individual views in the light of their various scripts and languages. The Conference is satisfied that the intensive survey of the past nine months, coupled with the great knowledge gained of Braille practice in the world since the Conference in 1911, has permitted the formulation of basic principles of considerable weight which, in the words of the Fourth Session of the General Conference of Unesco, "would improve the rationalization of Braille and develop its extension". The work carried out on Braille has placed the Conference in a position to give a positive reply to the problem which the Government of India asked Unesco to investigate, that of the possibility of a World Braille system. The Conference is of the opinion that such a system is both desirable and practicable.

(b) *Expansion of Existing Uniformity.* The Conference confirms the finding of the Advisory Committee that unquestionably the best means to this end lie in expanding the "generalized" Braille policy laid down by the International Congress in Paris of 1878 in the following terms: "The Congress is overwhelmingly in favour of the extension of the Braille system without modification". This was reaffirmed by the succeeding congresses of 1902 and 1911. Neither the experience of the intervening years nor the data now available give the Conference cause to find fault with the soundness of those earlier decisions. They form a firm and broad foundation on which to build.

(c) *Definition of World Braille.* The Conference wishes to provide some definition of the phrase "World Braille" which appears elsewhere in its recommendations. During and since 1878, the words "generalized", "universal", "standard" and "international" have been used somewhat indiscriminately to describe Braille systems which in orthography, punctuation, numerals, mathematical, chemical symbols and musical notation generally follow the principle of broadly representing the same letters, sounds, figures or marks by what are steadily becoming traditional Braille signs. It is evident, however, from what has been said by members of the Conference, that the time has arrived to define what in future should be termed "World Braille", a phrase coined in correspondence from the Government of India and which seems most suitable.

The following definition is recommended:

(a) The policy in the main, and as far as circumstances permit, provides that each sign shall be used for the same or nearly the same sound as in the original Braille, shall represent the same letter and mark, or shall fulfil the same or similar function.

(b) Except where the complexities of ideographic scripts make it impossible, a Braille symbol should be provided for each visual letter, it being understood that the sound value of this symbol is identical with that of the visual letter and mark of the alphabet of the particular language which it represents.

(c) World Braille therefore should aim, primarily, at being a complete tactile representation of the visual script of the language concerned; secondly, at maintaining the closest uniformity between that language and other languages of the same group linguistically or by virtue of using the same script; thirdly, at achieving the maximum degree of consistency with the Braille systems of the other language groups.

(d) *Classification of Letter Sounds.* The Conference proposes that an international classification of sounds of letters and tone marks should be made, and concurs with the recommendation of the Advisory Committee that a special panel of competent Braillists, expert linguists and phoneticians should be set up to devise such a classification of these sounds of letters in accordance with a concerted plan for allocating the most appropriate Braille sign to each of them. It is recommended that this panel should take into consideration the conclusions of the present Conference and its Sub-Committees.

3. *WORLD BRAILLE COUNCIL.*

The Conference wishes to repeat with greater emphasis and in greater detail the resolution on the subject of a World Braille Council passed by the Advisory Committee in December 1949. It concurs with the view that much of the lack of uniformity in many parts of the world is due to the absence of a co-ordinated plan or authoritative guidance. The Conference therefore recommends the establishment of a small World Braille Council, associated with the appropriate organ of the United Nations. It is not intended that this Council should be a policy-making body. The Conference wishes to stress that if this development takes place it is still of paramount importance that Unesco should continue to play a vital rôle in the Braille problem in view of its educational and cultural commitments. A liaison should thus be maintained permanently with Unesco. The World Braille Council, it is thought, should be closely linked with already existing uniform Braille committees, such as those in Great Britain, France and India. Where linguistic areas lack such committees the Conference recommended that they should be established as soon as possible. The organization of the Council should be built up gradually and it is not proposed that it should meet at regular intervals.

The activities of the Council, based upon the resolution of the Advisory Committee should be:

(a) *To act in an advisory capacity on the interpretation and application of Braille principles.* While lines of general policy have been laid down, they will need to be applied in individual cases. Confusion over interpretation has, in fact, been one of the major causes which made the present Conference so essential. At present no competent body exists and authoritative interpretations are required from time to time.

(b) *To co-ordinate future Braille developments.* The Conference believes that simultaneous development in a number of areas is necessary, and also that there should be some link between each linguistic region. (Although the Conference in 1878 achieved good results it only succeeded in developing uniformity for the European languages. This was a great step forward and is one of the main dates in Braille history, but the maximum co-ordination throughout the world was not achieved).

(c) *To advise on such Braille problems as might be referred to it from time to time.* (The Conference wishes here to underline the problems facing people whose language has no authentic Braille Code. As an example, a Braille alphabet for the Bemba language of Central Africa is now being considered and the existence of a World Braille Council would greatly facilitate this task).

(d) *To act as a centre for the collection and exchange of information on Braille.* The Conference has noted the three excellent centres of information on Braille: the Musée Valentin Haüy in Paris, the Information Department of the National Institute for the Blind in London and the American Foundation for the Blind in New York. It is not intended to duplicate the thorough work carried out by these libraries. No international catalogue of Braille publications, however, is yet available nor

any index of documents on Braille questions. (See note 1). This work would be a later and logical development.

The aim is to create a body which, while carrying out the foregoing activities, would not involve a large amount of financial support. So essential is the World Braille Council that its creation immediately even on a small scale is more vital than attempts to give it at once the importance it may assume in the future. The membership of the Council should be limited to a maximum figure, but providing for at least one representative of each major linguistic area. Members should be either linguists or blind Braillists. An excellent nucleus for its membership has been established by the delegates to the present Conference and to the Advisory Committee in December.

Where linguistic areas lack such committees, the Conference recommends that they should be established as soon as possible under the auspices of the government or governments concerned, or other competent bodies. These committees would carry out the same functions on a regional basis as the World Braille Council, and in close liaison with it, so that changes in Braille usage would not be put into effect before their relationship to the Brailles of other languages had been taken into consideration. In addition, such regional committees should ensure the rational and economical publication of Braille literature, and should keep Braille printing and library services in their areas under review.

4. *INTERNATIONAL PHONETIC ALPHABET.*

The Conference considers that a truly phonetic World Braille is impracticable for general purposes, but recommends that a panel of experts should be set up through the World Braille Council:

(a) To examine the existing Braille notation of the International Phonetic Association (IPA) Alphabet, and

(b) to make suggestions on its suitability for any purposes of particular phonetic study for which it does not yet provide.

5. *A SINGLE CONTRACTED BRAILLE FOR EACH LANGUAGE.*

It is strongly recommended that consultation between Braillists of different parts of the world who use the same language should be established to formulate and adopt a uniform system of contracted Braille for each language, and a wider interchange of views for a similar objective between Braillists using languages of the same group. In this context the Conference notes in particular the problem created by the conflicting systems of contractions in Spanish and Portuguese-speaking areas, and strongly recommends that steps be taken to eliminate these divergencies in order to achieve a greater economy of production and a wider interchange of literature. The Conference recommends that any future systems of contracted Braille should take into account the needs of both Braillists of a comparatively limited education, and those who lose their sight in adult life, by keeping the number of contractions within reasonable limits. At the same time due regard should be paid to economy of space.

6. *CONSISTENCY IN PUNCTUATION, MUSICAL NOTATION, MATHEMATICAL SYMBOLS, ETC.*

The Conference considers that every effort should be made to restore and maintain international uniformity in punctuation signs. In the representation of cardinal numbers absolute uniformity appears to have been achieved. This the Conference regards as the standard to be aimed at in other Braille fields. The Conference likewise advocates greater consistency in mathematical and chemical symbols and in the representation of classical Greek and Latin.

Because music holds such immense cultural and vocational values for the blind, the excellent degree of uniformity in its notation should be both preserved and extended by agreement to express the music of every part of the world.

The Conference regards the foregoing recommendations as being of particular importance and suggests that they should be dealt with by the World Braille Council in consultation with experts.

7. *WORLD BRAILLE VIS-A-VIS MAJOR GROUPS.*

The Conference appointed 4 sub-committees, to consider the application of World Braille to particular language areas concerned, and their reports have been accepted unanimously.

(a) *Indian Languages.* The Conference has taken full note of the views put forward by the Indian members regarding the retention in their Uniform Indian Braille of Louis Braille's original sequenc , for pedagogical and other reasons, concurrently with the order of the letters in the Indian alphabets;

Note 1. An international catalogue of Braille periodicals and also of ink-print periodicals devoted to blind welfare was published by "Petronella Moens" Nederland (1951), in both ink-print and Braille.

but in view of a wide divergence of opinion among members of the committee about the relative value of the original Braille Sequence and also in view of the very great need for World Braille Uniformity, it recommends that the Government of India be requested to reconsider their position, through its Braille Committee, and to see if it is possible to solve the problem in the interests of international uniformity. (See note 2).

(b) *Languages using Arabic Script.* The Conference welcomes the complete agreement on this subject which is the result of considerable sacrifices on all sides in the interests of uniformity, and endorses the work of the sub-committee which has drafted a provisional code. It is recommended that the proposals should be circulated to all concerned, including governments, and that a regional conference should be convened in the early future to facilitate this process of agreement.

(c) *Languages using ideographic characters.*

(i) The Conference considers it both desirable and practicable, in areas using Chinese characters, to formulate a uniform Braille based on Mandarin which would serve as the basic Braille system throughout such areas, and which would at the same time retain a substantial degree of sound relationship with the traditional Braille system.

(ii) The Conference recognizes that the special characteristics of the Japanese syllabary, and the ingenious adaptation of Braille to it, create a special position and that therefore there is no justification for any departure from the present system.

(iii) The Conference recommends that consultations with Korean workers for the blind should be pursued to discover how far it is possible to associate the Korean code with World Braille.

(d) *Tribal Languages.* The Conference recommends that any authority intending to produce Braille in a tribal language should apply the following principles and, where any special problem arises or where the application of these principles is not exact, should consult a regional committee and if necessary the World Braille Council:

(i) Tribal languages using the Roman or Arabic alphabet should employ the internationally accepted Braille equivalent for each letter of that alphabet;

(ii) Tribal languages with ideographic scripts should build their Braille codes on the principle of phonetic association with World Braille;

(iii) Tribal languages which employ an Indian syllabary should follow the system of Braille used for that syllabary even though it may lead to divergence from World Braille.

8. *CONSISTENCY IN THE DIRECTION OF READING.*

Whereas visual scripts are written in various directions, the Conference recommends that Braille should be read universally from left to right for the sake of uniformity and in accordance with established Braille tradition.

9. *EXEMPTION FROM DUTY OF SPECIAL APPARATUS.*

The Conference expresses its deep appreciation of Unesco's action in including with other articles, educational, scientific and cultural books and apparatus for the blind in a draft agreement proposing their exemption from customs duties and currency restrictions.

10. *HONOURING LOUIS BRAILLE.*

The Conference recommends that all organizations engaged in work for the blind should honour the memory of Louis Braille by annually observing his birthday, the 4th January, and by commemorating in 1952 the centenary of his death in gratitude for his contribution to the intellectual emancipation of the blind in every land.

11. *FUTURE LINES OF ACTION AND REGIONAL CONFERENCES.*

A number of principles on Braille have been laid down and various suggestions have been made as to their implementation, but in order that the work so constructively begun by Unesco should reach its full and positive conclusion, the Conference emphatically recommends that during the current financial year the Director-General of Unesco should make provision from extraordinary funds:

Note 2. Dr. Humayun Kabir, Ministry of Education, Government of India, wrote later:—"The Expert Braille Committee met on the 17th and 18th June, 1950, and you will be glad to hear that it passed a resolution unanimously expressing general agreement with the recommendations of the International Meeting on Braille Uniformity, and recommended to the Government of India to ascertain the views of the schools for giving effect to these recommendations."

1. (i) for the continuance of the services of the Braille Consultant within the structure of Unesco;

   (ii) for the compilation of a World Braille chart (Resolution 2);

   (iii) for the establishment of the World Braille Council (Resolution 3);

   (iv) for the preparation of a reference book from material accumulated in connexion with Unesco conferences;

   (v) for the preparation of two of the three regional conferences, namely in areas using an Arabic script (Resolution 7b) and in areas using the Spanish and Portuguese languages (Resolution 5).

2. That provision be made by the Director-General of Unesco from the 1951 budget to allow for:

   (i) the continuance of the services of the Braille Consultant within the structure of Unesco;

   (ii) the convening of the two regional conferences mentioned above, and exploring in greater detail the preparation of the third regional conference in the Far East.

All members of the Conference undertake to mobilize interest for these proposals in their individual countries before the Fifth Session of the General Conference of Unesco, in the conviction that the action proposed above is essential for the satisfactory conclusion of the work which, at the instance of the Government of India, Unesco has so effectively begun in the best traditions of international understanding.

REPORT OF THE REGIONAL CONFERENCE ON BRAILLE UNIFORMITY

(Middle East, India and South East Asia)

Beirut 12-17 *February* 1951

The International Meeting on Braille Uniformity, Unesco House, Paris, March 1950, approved of the desirability of a single World Braille system and agreed to the principles upon which it should be framed. The construction of the World Braille chart and its application in detail to major languages necessarily formed the next phase of the work; and the Fifth Session of the General Conference of Unesco authorized, inter alia, the convening of a regional conference for languages using Arabic script to plan Braille uniformity within this linguistic area.

The Government of India, anxious both to attain the maximum of accord between Indian and Perso-Arabic Brailles and to complete the details of Braille alphabets over an even wider region, asked that the languages of India and Ceylon should be represented. With general consent invitations were extended to those countries to send representatives. Unquestionably this gave the conference a much wider significance, and presented the opportunity needed virtually to bring final agreement in the field of orthographic Braille.

Consequently, fourteen delegates attended, representing the languages of Ceylon, Egypt, French North Africa, Hashemite Jordan, India, Iraq, Lebanon, Malaya, Pakistan, Persia and Syria.

Recommendations

The following resolutions were unanimously adopted by the Conference.

1. *Appreciation.* The Regional Conference on Braille Uniformity desires first to express to the Director-General of Unesco its deep gratitude for bringing together the delegates from various regions and affording them the facilities for devising a World Braille for the good of the blind of all lands. The Conference hopes that its deliberations will lead to the greatest possible uniformity between the Brailles of the various countries to the lasting benefit of the blind as a whole.

The Conference also records its appreciation of the highly specialized services given by the Consultant. But for his experience, patience and guidance the gaps which separated the various Braille systems might never have been bridged.

The Conference expresses its warm thanks to the Government and the people of Lebanon for their generosity and for the excellent facilities provided for the Conference and for the convenience of the delegates.

2. *Acceptance of Reports and Modifications to the African Tribal Braille Chart.* The Conference has heard the "Report to the Conference" submitted by the Consultant, covering the developments of the Braille study since the International Meeting on Braille Uniformity, March 1950, and has studied the Comparative Table of International Phonetic Association Symbols and World Braille Signs, supplied for its information; and received both these reports.

It has considered the "Report of the Committee on African Tribal Languages" and has recommended certain modifications as well as a number of additions which had been held over pending this meeting.

3. *Uniformity in Punctuation.* In regard to punctuation, the Conference recommends that the existing international signs, including the Anglo-American, and not the French query mark, should be adhered to throughout the area, so far as they are required by regional languages subject to such minor modifications as may be needed.

4. *Uniformity in Vowels.* The Conference recommends that the Regional Table of Vowels, be accepted throughout the area.

5. *Uniformity in Consonants.* The Conference recommends that the Regional Table of Consonants be accepted throughout the area.

PERSO-ARABIC LANGUAGES

6. *Arabic and Persian Brailles.* The Conference expresses satisfaction at the excellent degree of uniformity arrived at between Arabic and Persian Brailles and between these and World Braille. It recommends that this close uniformity be maintained and that, if in practice any points of disunity be found, every effort should be made to remove them.

The Conference recommends that the Arabic and Persian Braille systems, as framed by the Conference, should be officially adopted by governments in the region as well as by non-governmental agencies engaged in blind welfare.

7. *Arabic Braille Contractions.* The Conference notes the suggestions for Arabic Braille Contractions submitted by Mr S.T. Dajani, representative from Hashemite Jordan. It recommends that, because many Arabic words occur in languages employing Arabic script, the Braille authorities in all countries concerned should be consulted through the World Braille Council, shortly to be set up, so that the fullest practicable uniformity in these Braille systems may be achieved and maintained.

8. *Persian Braille Contractions.* The Conference recommends that Persian should adopt the Braille alphabet designed by the Perso-Arabic Sub-Committee, for the Holy Koran and devotional literature, as well as for initial education, and that a Grade 2 Contracted Braille, in conformity with World Braille principles, should be designed for the simplification of advanced education for the blind of Persia.

9. *Urdu Braille.* In view of peculiar difficulties presented by Urdu the drafting of its Braille was referred by the Conference to the representative from Pakistan and the Rapporteur. It is further stressed that in considering the Urdu problem every effort should be made to secure the greatest degree of uniformity between it and Arabic Braille, particularly in the direction of arranging single cell signs for all initial characters.

LANGUAGES OF INDIA AND SOUTH EAST ASIA

10. *Indian Braille.* The Conference recommends the acceptance of Bharati Braille with the amendments made by the Indian, Sinhalese and Malayan representatives in the course of the conference, as the approved official Braille for the languages recognized by the Indian Constitution, and for such other Indian languages as may be required for the education and literary enjoyment of the blind.

11. *Sinhalese Braille.* The Conference further recommends the acceptance of Sinhalese Braille as amended with the consent of the Sinhalese representative in the course of the Conference.

12. *Malay Braille.* The Conference makes a similar recommendation in respect to Malay Braille (Arabic Script) as amended during the Conference with the consent of the Malayan representative.

13. *Other Languages of South-East Asia.* In regard to the other chief languages of South-East Asia, the Conference recommends that appropriate steps be taken to frame Braille systems in the closest possible conformity to those now framed for India, Ceylon and Malaya, as well as to World Braille.

14. *Armenian Braille.* An informal committee consisting of the Lebanese delegate and observer, together with representatives of the British Syrian and Swiss Armenian Schools for the Blind, agreed to modifications to the existing Armenian Braille in order to conform to World Braille, and the Conference recommends that the amended Armenian alphabet be accepted.

Turkish Braille. It was noted in Unesco Document MC/Conf.9/12 that minor modifications to the existing Turkish Braille to bring it fully into line with World Braille had been agreed to prior to the Conference.

Hebrew Braille. It was noted that Hebrew Braille which was represented at the International Meeting on Braille Uniformity, Paris 1950, had already been built on similar lines to those recommended by the Unesco conferences some years prior to the Unesco studies and that close uniformity consequently exists between it and the World Braille System.

15. *International Numeral Signs.* The Conference concurs with the views of the International Meeting on Braille Uniformity, March 1950, as to uniformity in numeral mark and number signs and recommends their adoption throughout the region represented at the Conference.

16. *World Braille Chart.* The delegates to the Regional Conference in Beirut believe that they

have succeeded in carrying out to a satisfactory degree the task entrusted to them by Unesco. The decisions made would appear virtually to complete the World Braille Chart to the maximum practicable extent. They submit this World Braille System to the Director-General of Unesco with the following recommendations:

(a) That the Chart, upon its acceptance by Unesco, should be published and circulated to Governments and Braille authorities throughout the world with the recommendation that henceforth it should form the foundation for all new Braille systems and for amendments whenever and wherever possible to the already established Braille systems.

(b) That all proposals for modifications to the Braille of any language, country or region should, before being implemented, be submitted to the World Braille Council, when formed, for approval, consultation with all concerned and co-ordination with the World Braille system.

17. *Uniformity of Method in Braille Printing.* The Conference recommends that a set of rules should be established as a guide to uniformity of method in the presentation of Braille text. The Conference accepts the rules submited by Mr Lal Advani, India, and recommends that they, together with any others which might be thought desirable, should be adopted throughout the world.

18. *Uniformity in Braille Music Notation.* In view of the fact that music holds great cultural and economic values for the blind in most countries, the Conference considers it of the highest importance that every possible effort should be made to facilitate the exchange of musical literature between blind musicians living in different parts of the world. In its opinion the evolution of a single World system presents no insurmountable difficulty. It therefore recommends:

(a) That Unesco should appoint a small committee consisting of blind Braillists and blind musicians, representing the major musical systems, to study the practicability of this aim.

(b) That if the committee finds that this aim is practicable, it should be assigned the task of working it out.

(c) That the notation for Western Music, framed by the Braille Music Notation Congress, Paris 1929, should form the basis of this work.

(d) That the notation framed by the committee should be circulated to the Member States of Unesco for their comments and should only be completed when these have been considered; and,

(e) That the notation envisaged in this resolution should be known as World Braille Music Notation.

REPORT OF THE REGIONAL CONFERENCE ON SPANISH AND PORTUGUESE BRAILLE

Montevideo, 26 November - 2 December 1951

The International Meeting on Braille Uniformity, Unesco House, March 1950, approved of the desirability of a single uniform system of contractions for the Braille of each language, mentioning in particular the need for steps to be taken to eliminate the differences both in the Spanish and the Portuguese contracted systems. The Fifth Session of the General Conference of Unesco authorized the convening of a regional conference of Spanish and Portuguese-speaking representatives to aid the process of reaching agreement on these systems.

Accordingly, 12 delegates, from Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Peru, Portugal, Puerto Rico, Spain and Uruguay attended, representing Braillists, educators of the blind and Braille publishing.

Recommendations

The following resolutions were unanimously adopted by the Conference:

1. The members of the Conference acknowledge the message from the Director-General of Unesco with deep pleasure and resolve unanimously to reply, expressing their grateful appreciation for the magnificent service Unesco is rendering to the advancement of education, culture and independence of the blind by providing the ways and means of solving these important problems leading to the rational use of the Braille system.

2. The Conference expresses its great satisfaction that the educators of the blind and the publishers of Spanish Braille, represented at the Conference, have come to unanimous agreement on a Standard Grade 2 Braille for uniform use throughout all Spanish-speaking countries. The Conference submits this Grade 2 system in detail (UNESCO /MC / Conf. 10 /19 Appendix A), and asks the Director-General to be good enough to place these resolutions and the detailed system before the next session of the General Conference of Unesco, and to circulate them to all governments, Braille Printing Presses and schools for the blind in Spanish-speaking territories with the recommendation that they be officially adopted forthwith.

3. The Conference expresses its great satisfaction that the educators of the blind and the publishers of Portuguese Braille, represented at the Conference, have come to unanimous agreement on a Standard Grade 2 Braille for uniform use throughout all Portuguese-speaking countries. This Grade 2 system is shown in detail in document UNESCO /MC /Conf. 10 /19 Appendix B. The Conference desires the Director-General of Unesco to be good enough to place these resolutions and the detailed system before the next session of the General Conference of Unesco for its approval, and to circulate them to all governments, Braille Printing Presses and schools for the blind in Portuguese-speaking territories, with the recommendation that they be officially adopted forthwith.

4. The Conference, having regard to:

(a) The economic loss involved in printing books in two different Grades,

(b) The need for a graduated Braille for pedagogical purposes in schools for the blind,

(c) The necessity of a moderately contracted system which will best meet the requirements of the general adult Braille reader and the everyday uses which Braille fills in correspondence, etc., and

(d) The needs of the advanced student of a highly abbreviated script for taking notes and for the reading of special technical works,

Resolves to recommend to all countries, where Spanish or Portuguese is spoken, that the following Grades and practices be established as standard:

Integral Braille. A limited amount of printing to be done in uncontracted Braille as it may be required for young children and for adults whose touch, culture or intelligence will not permit of their mastering Grade 2 Braille.

Graduated Braille. The Braille of school textbooks should be graduated, progressively introducing the stenographic signs of Grade 2 as the children advance in age, education and knowledge of grammar and spelling. The method of this graduation should be decided by committees of educators of the blind in the light of the needs of each country. It should be noted that Grade 2 has been so designed that the average child should be master of it by the end of his primary education, after which the whole of the general literature in Grade 2 would be at his command.

Grade 2 Braille. If in the future the Braille situation throughout these linguistic territories is to be satisfactory, this Grade, as agreed to by the Conference for the Spanish and Portuguese languages, should be accepted for standard general use by all governments, printing presses, schools and libraries for the blind, and we ask Unesco to make a strong recommendation in this direction to everyone concerned. The blind have suffered sufficiently in the past by divergences in one direction or another, and we stress the importance of everyone accepting and adhering to the new standard.

The World Braille Council and its Regional Spanish and Portuguese Councils, proposed to be established in 1952, will provide admirable ways and means of consultation with and agreement among the Braille authorities of the territory concerned. In view of this, Braille Presses and schools for the blind should not deviate from the established system. Changes should only be made in consultation and agreement with the World Braille Council and the Regional Council concerned.

Grade 3 Braille. This Grade, sometimes referred to as "total stenography", should be derived from Grade 2. Only a limited market will exist for books printed in it, and it is recommended that its chief use should be for taking notes, the making of private records by individuals who require to do so, and for professional shorthand writers.

Summary. The Conference considers that while integral, pedagogical and total stenography are essential elements of the complete Braille system, Grade 2 as now designed, should, above all, be that for everyday and general literary use.

5. The Conference desires to recommend, that in respect to punctuation in Spanish:

(a) The international signs should be accepted for comma, semi-colon, colon, fullstop, exclamation mark, parenthesis, open and close quotation marks, hyphen, apostrophy, verse sign and numeral sign.

(b) The interrogation mark will be indicated by Dots 2-6. In order to distinguish this sign from the contraction EN, it will be preceded by Dot 5 when used as a mark of interrogation. This use of Dot 5 will also be followed in respect to exclamation, parenthesis and open quotation marks.

(c) The capital sign will be indicated by Dots 4-6 and will be used in all cases in Grades 1 and 2.

(d) The sign for asterisk (Dots 3-5) will be written three times consecutively in the middle of a line in order to separate titles and passages of text.

(e) The sign to indicate a locution will be Dots 4-5-6.

(f) Dot 3, repeated three times, will indicate the suspension of a sentence.

6. The Conference accepts the recommendations of its Commission on Portuguese Braille, that in the matter of punctuation:

(a) The international signs should be accepted for comma, semi-colon, colon, full-stop, exclamation mark, parenthesis, open and close quotation marks, hyphen, apostrophy, verse sign and numeral sign.

(b) The interrogation mark will be indicated by Dots 2-6, which, as in inkprint, occurs only at the end of a question.

(c) The capital sign will be indicated by Dots 4-6, but its use is not recommended in Grade 2 Portuguese Braille.

(d) The asterisk sign (Dots 3-5) will be written three times consecutively in the middle of a line in order to separate titles and passages of text.

(e) Dot 3, repeated three times, will indicate the suspension of a sentence.

(f) Dots 4-5-6 will be employed in the usual way for italics.

7. The Conference recommends that uniformity in the size of books, paragraphing, indexing and other material matters is desirable within the limitations imposed by different types of printing plant, sizes of obtainable paper and other factors outside the control of Braille publishers. The Conference recommends that the page numbering should be indicated by a number on the top right-hand corner of each right-hand page. The Conference also recommends that all extraneous dot patterns on covers and title pages should be omitted in order to allow the essential information to stand out clearly.

8. The Conference expresses the view that three principal centres for the printing of Braille should be adequate for the needs of Spanish-speaking countries. It further recommends that these three presses should be respectively in Spain, Argentina and Mexico.

9. In concluding its week of deliberations in Montevideo, the Conference desires to place on record its deep appreciation of the generous hospitality extended by the Government of Uruguay, the courtesy and kindness shown on all sides by officers of the Government, and the Unesco Centre of Scientific Co-operation, as well as by the workers for the blind in Uruguay and members of the blind community.

The Conference also extends its thanks to the technical staff, interpreters and typists who have attended to the needs of the Conference.

10. The Conference wishes to record its appreciation of the excellent organization of this Conference. In particular the amount of preparatory work and the magnificent direction of the Conference by the Unesco Consultant, Sir Clutha Mackenzie, who has spared no effort in order that the Conference should reach the best possible results, and it would include in this resolution, the services rendered by Miss Lois Yarrow, of the Unesco Secretariat.

11. The Conference extends its hearty support to the plans Unesco has made for the establishment of a World Braille Council to preserve Braille uniformity throughout the world. The Conference equally expresses its pleasure in the proposals to constitute Regional and National Councils for Spanish-speaking countries and for those speaking Portuguese.

In its opinion these Councils should act as co-ordinating organizations and should be the consultative centres to which all questions concerning the more economic production of books in Braille should be referred in order to prevent the duplication of works by Braille presses.

Appendix A. - Spanish Grade 2 Braille

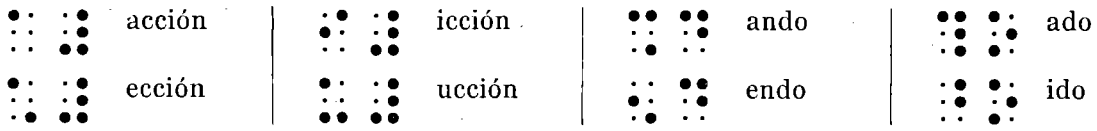
The following table, as recommended by the Regional Conference on Spanish and Portuguese Braille, Montevideo, 26 November-2 December, 1951, shows the use, in Spanish Grade 2 Braille, of the 63 Braille signs in their positions as prefix, part of a word, termination and as a word standing alone.

BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	a	a	a	a
	b	b	ble	bien
	c	c	cia	cual
	d	d	d	de
	e	e	e	el
	f	f	–	fué
	g	g	–	grande
	h	h	–	ha
	i	i	i	si
	j	j	–	jamás
	al	al	al	al

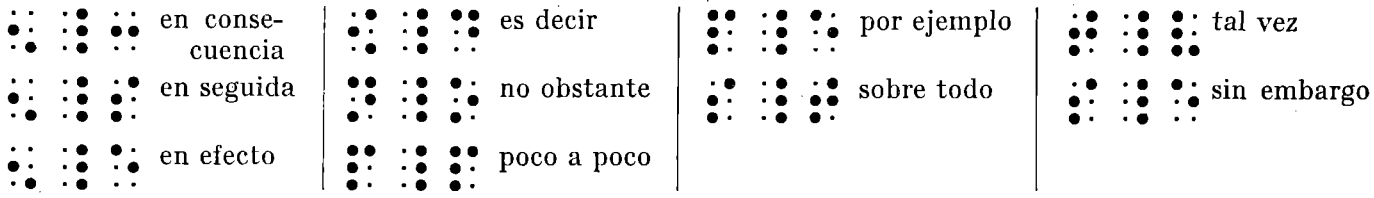
BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	l	l	l	le
	m	m	mente	me
	n	n	n	no
	o	o	o	o
	p	p	–	por
	que	que	que	que
	r	r	r	recién
	s	s	se	se
	t	t	te	te
	u	u	u	su
	v	v	ivo	vez
	ex	on	on	son
	inter	y	y	y
	z	z	z	este
	as	as	as	las
	ll	ll	ella	ella
	á	á	–	más
	é	é	–	él
	ú	ú	–	tú
	ar	ar	ar	para
	em	em	ente (singular only)	siempre
	an	an	an	ante
	ad	ad	ad	además
	or	or	or	yo
	es	es	es	es
	ñ	ñ	año	año

BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	ä	ue	ue	pues
	os	os	os	los
	om	om	–	como
	ab	ab	comma	–
	sobre	br	semi-colon	sobre
	con	cr	colon	con
	dis	dr	full stop	del
	en/query mark	en	en	en
	pre/exclamation	pr	exclamation mark	pero
	gr/bracket	gr	bracket	gran
	er/open quote	er	er	he
	entre	tr	close quote	entre
	in	in	–	sin
	re	apostrophy	apostrophy	la
	com	cl	hyphen	lo
	Reserved for compound signs			
	Reserved for compound signs			
	numeral sign	–	ión	número
	Reserved for compound signs			
	Reserved for compound signs			
	Reserved for compound signs			
	í	í	í	sı
	Reserved for compound signs			
	Reserved for compound signs			
	ó	ó	ó	aquel
	im	im	im	tu

COMPOUND TERMINATIONS FOR GRADE 2



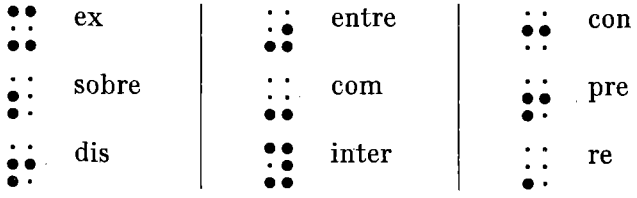
LOCUTIONS FOR GRADE 2



RULES

1. Dot 5 shall be used, (*a*) before the punctuation signs which have been allotted to groups of letters in order to avoid confusion between the use of the sign as a contraction or as a punctuation mark. (*b*) before a word to show that it is not abbreviated.

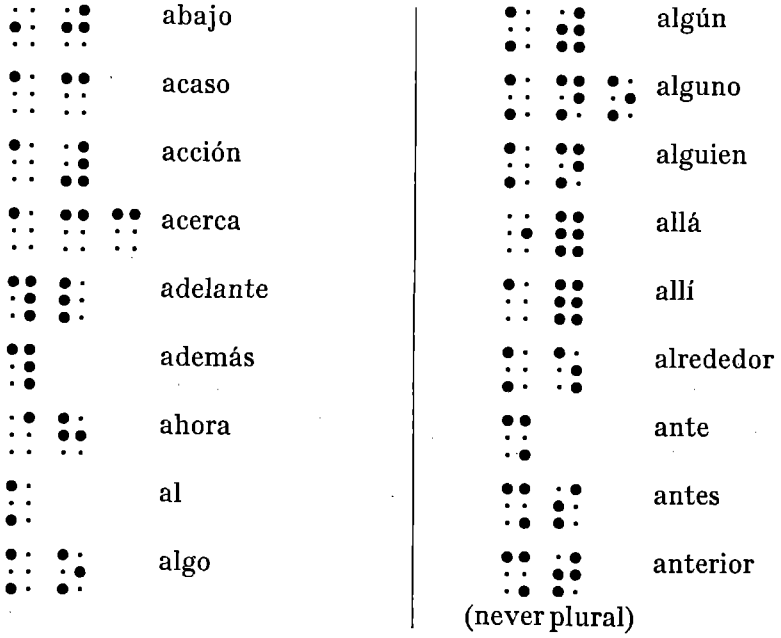
2. The following prefixes may ONLY be used when preceding a consonant:



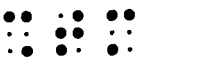
3. The feminine of words will be formed by the addition of the letter A (Dot 1). Plurals will be formed by the addition to the singular of AS (1-2-3-4-6), ES (1-2-4-6) and OS (2-4-6).

4. Words which are spelt the same, whether accented or unaccented, will take Dot 5 before the sign for the accented word, e.g., este ... 1-3-5-6; éste ... 5/1-3-5-6.

LIST OF WORDS FOR GRADE 2




anterioridad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aquello


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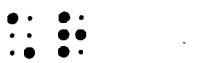
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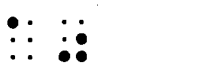
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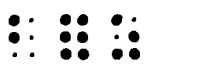
bajo


bastante


bella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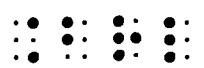
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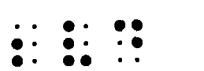
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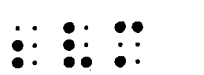
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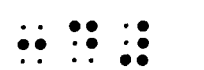
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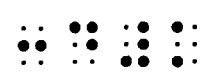
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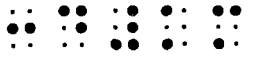
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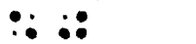
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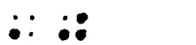
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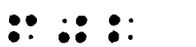
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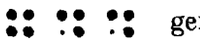
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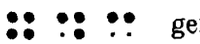
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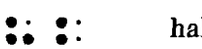
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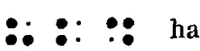
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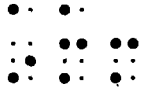
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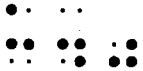
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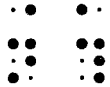
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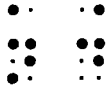
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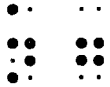
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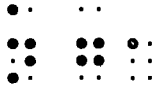
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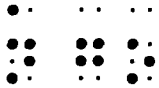
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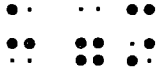
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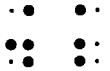
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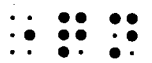
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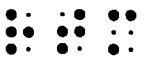
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Appendix B. - Portuguese Grade 2 Braille

The following table, as recommended by the Regional Conference on Spanish and Portuguese Braille, Montevideo, 26 November-2 December, 1951, shows the use, in Portuguese Grade 2 Braille, of the 63 Braille signs in their positions as prefix, part of a word, termination and as a word standing alone.

BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	a	a	a	a
	b	b	b	bem
	c	c	c	cá
	d	d	d	de
	e	e	e	e
	f	f	f	fim
	g	g	gue*	agora
	h	h	h	sobre (Brazil: sôbre)
	i	i	i	ali
	j	j	j	já
	al*	al*	al*	aos
	l	l	l	ele (Brazil: êle)
	m	m	m	me
	n	n	n	nao
	o	o	o	o
	p	p	p	por
	q	q	que*	que
	r	r	r	maior
	s	s	s	se
	t	t	t	te
	u	u	u	um
	v	v	v	vós

* See Rules, page 163.

BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	ex*	ex*	ex*	mas
	os*	os*	os*	os
	z	z	z	ela
	ç	ç	çao	para
	é	é	é	é
	á	á	á	lá
	è	ss	è	assim
	ú	ú	ú	até
	â	â	â	tudo
	ê	ê	ê	mesmo
	ì	ì	as*	as
	ô	ô	ô	mais
	ù	ù	es*	menos
	pl*	pl*	à	à
	gr*	gr*	–	grande
	ou*	ou*	ou*	ou
	–	õ	–	ainda
	ò	ò	–	antes
	-	-	comma	–
	br*	br*	semi-colon	–
	con*	con*	colon	–
	em*	em*	full stop	em
	en*	en*	question mark	dentro
	pr*	pr*	exclamation mark	nós
	parenthesis	nh*	parenthesis	nem

• See Rules, page 163,

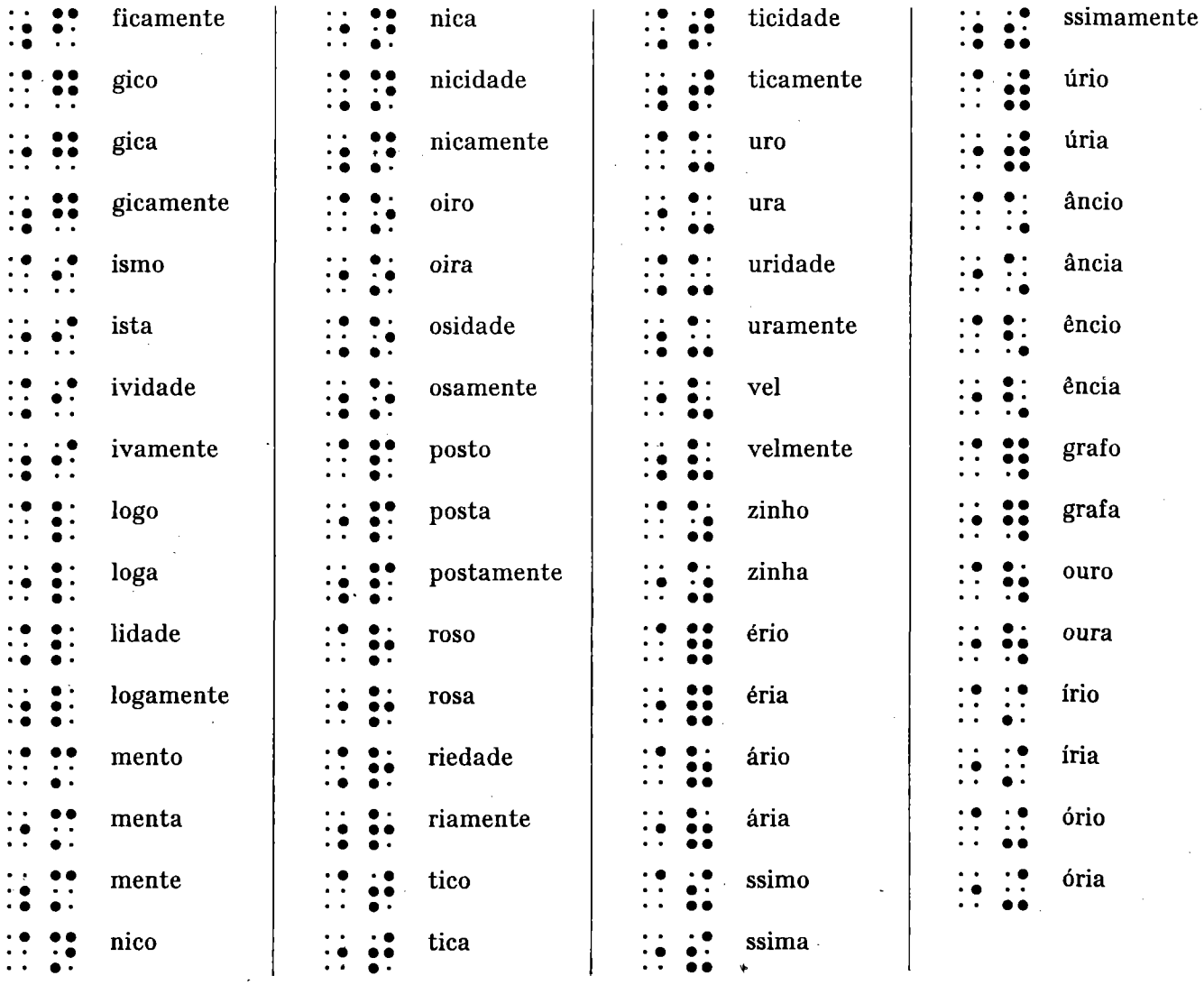
BRAILLE	PREFIX	IN A WORD	TERMINATION	WORD
	open quotation	er*	er*	depressa
	in*	in*	–	isso
	tr*	tr*	close quotation	contra
	re*	apostrophy	apostrophy	aõ
	com*	hyphen	–	com
	Reserved for compound signs			
	Reserved for compound signs			
	numeral sign	ão*	ão*	são*
	Reserved for compound signs			
	Reserved for compound signs			
	Reserved for compound signs			
	í	í	í	sim
	Reserved for compound signs			
	Reserved for compound signs			
	ó	ó	ó	ó
	am*	am*	ã	sem

Rules

1. The signs marked * are only to be used when the letters they represent belong to the same syllable.
2. The sign dots 1-3-4-6 may not be used as an abbreviation for EX when preceded by a vowel.
3. Dot 6 before a sign indicates that the sign carries its original uncontracted value.
4. The syllables ER, at the beginning of a word, and EM, EN and AM, at the end, are never abbreviated because these signs maintain their original punctuation values in these places.
5. When a sign has been allotted two meanings, it may not be used consecutively for both meanings.

COMPOUND SIGNS FOR TERMINATIONS

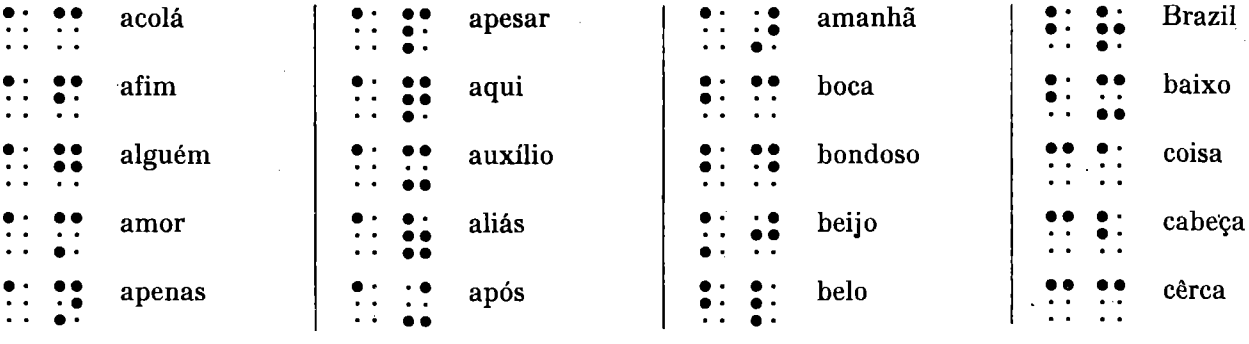
 acidade	 cional	 dora	 eira
 antemente	 cionalidade	 dade	 entemente
 bilidade	 cionalmente	 doramente	 fico
bilmente	 dor	 eiro	 fica



Rules

1. All terminations written with Dot 4 will take Dot 5 for the feminine form, with the exception of dot 4/i which is NOT the masculine of 5/i. Dots 4-6 will represent the termination DADE and dots 5-6, MENTE.
2. The signs in the foregoing list are only to be used at the end of words.
3. The plural is formed in all cases by the addition of S.

WORDS REPRESENTED BY TWO BRAILLE SIGNS




cada


cêde


cego


cima


cujo


claro


como


corpo


caro


caso


carta


certo


doce


desde


difícil


desejo


dêle


duma


depois


diante


diverso

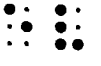

esta


espécie


este


efeito


enorme


evidente


estes


exemplo


fora


fácil


feliz


forma


força


fevereiro


facto (or fato)


favor


fôrça


gente


geral

lha

hábito

lhe

hoje

homem

lho

hora

história

início

idéia (or ïdéa)

igual

imediato

isto

irmão

irmã

julho

jamáis

junto

junho

janeiro

justo

juízo

alfabeto

local

lado

logo

lugar

livro

modo

mulher

maio

mim

menino

melhor

meus

muito

março

mínimo

manhã

nunca

nada

noite (Brazil)

ninguém

nêle

numa

número

nosso

novo

noute (Portugal)

ordem

onde

objeto

ontem

palavra

pouco

parte

página

pelo

porém

pena

perto

papel

porque

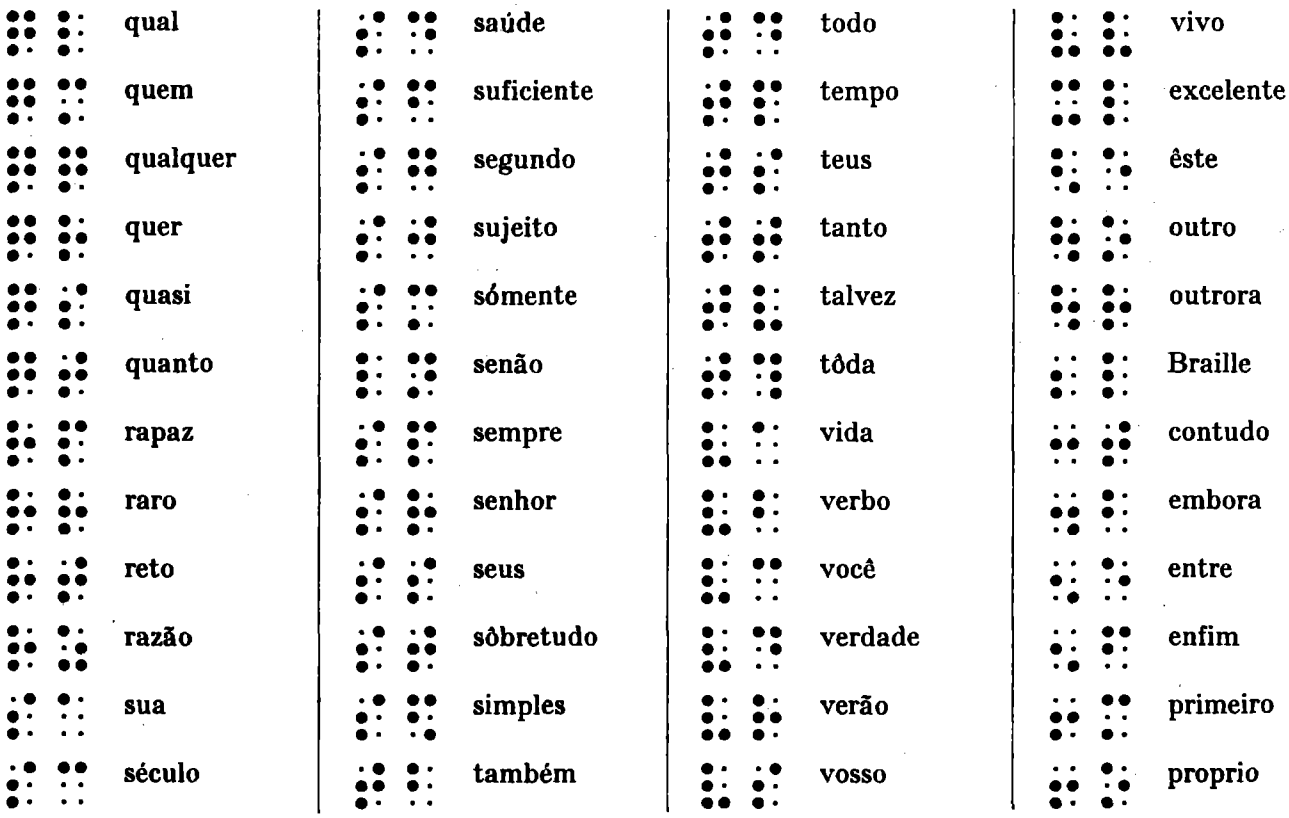
pior

pois

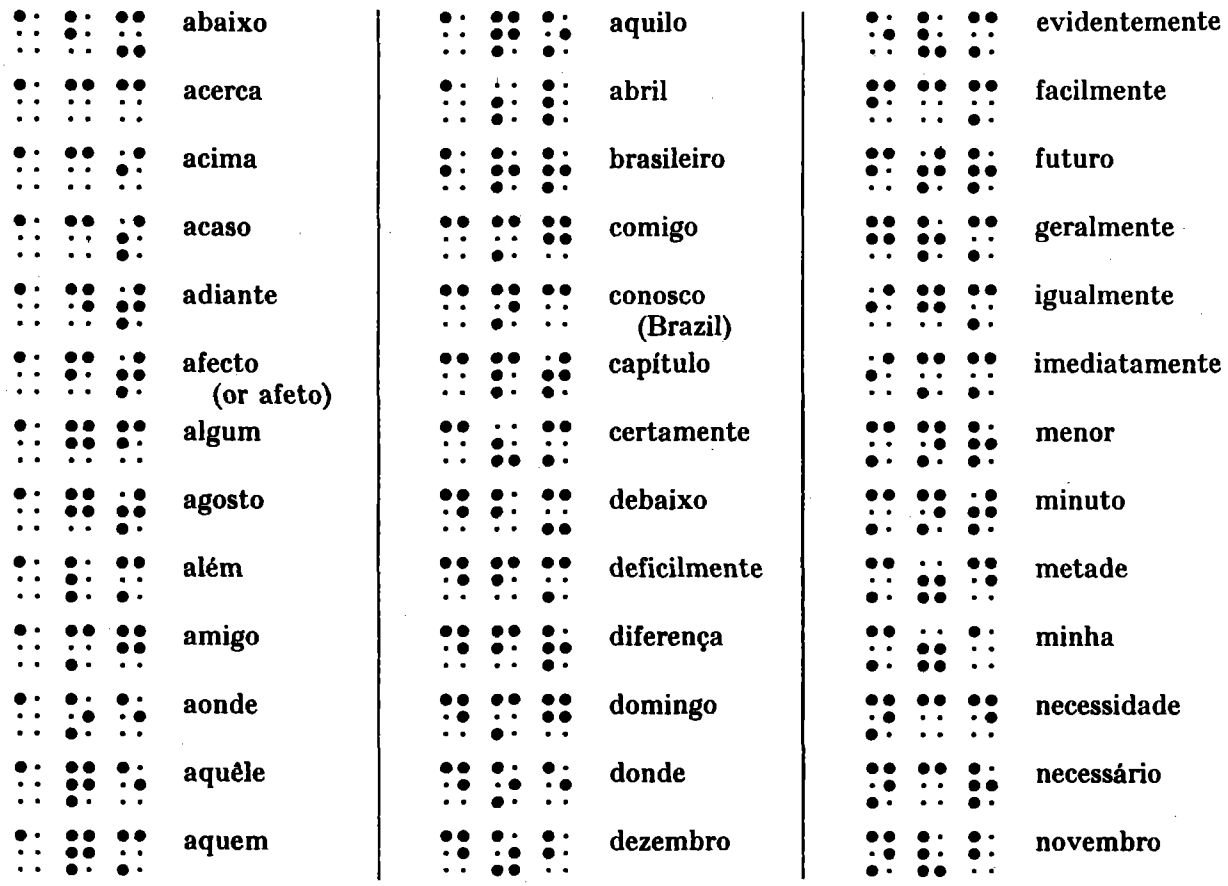
ponto

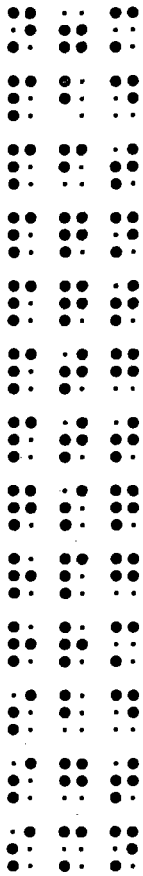
povo

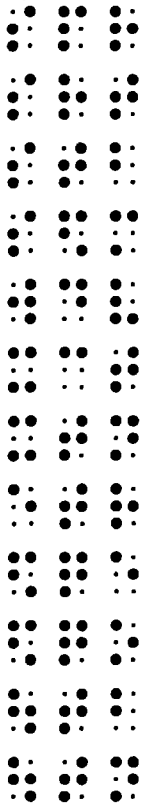
quando

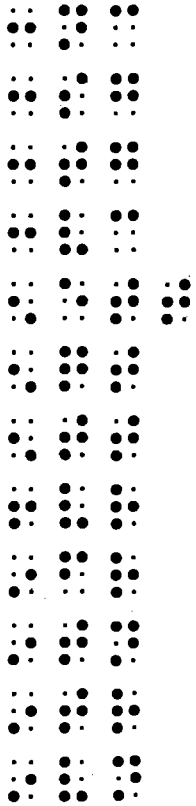


WORDS REPRESENTED BY TRIPLE BRAILLE SIGNS

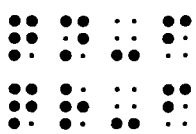


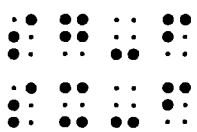

nenhum
possibilidade
perfeito
pequeno
porquanto
português
portanto
quaisquer
rapariga
raramente
sábado
seguinte
semana

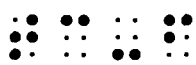

superior
senhorita
setembro
simplesmente
todavia
exceto
externo
exterior
àquêle
àquilo
outubro
outono


connosco (Portugal)
consigo
contigo
convosco
entretanto
enquanto
entanto
primavera
inferior
interno
interior
inverno

SIGNS FOR COMPOUND WORDS


quinta-feira
quarta-feira


segunda-feira
sexta-feira


terça-feira

GENERAL RULES

1. Lower-cell signs are not to be used when followed or preceded by punctuation signs.
2. Dots 3-4-5-6 are not to be used when a lower sign follows.
3. Dot 6 before a sign indicates that the sign carries its original uncontracted value.
4. Dot 5 will precede the mathematical signs, dots 2-3-5, 3-6, 2-3-6, 2-5-6 and 2-3-5-6 when used separately.
5. In abbreviated text the capital sign need not be used except for proper names.
6. Dots 4-6/ 4-6 will indicate block capitals. When more than one word is in block capitals, the sign 2-3/ 4-6 will be placed before the first word and dots 4-6 before the last.
7. In transcribing texts where words which have no contraction in the stenographic system recur very frequently, special signs may be created for them, these being listed at the beginning of each volume.

Rules for the formation of feminine and plural forms of words.

1. The feminine will be formed by adding A to the masculine sign. When a word ends with E, O, AGM or N, NH, M, the letters E, O and M will be replaced by A.
2. The plural will be formed by adding S to the singular sign. When the singular ends with A, E, O, AGM or N, NH, M, the letters E, O and M will be replaced by the contractions for AS, ES, OS and S.
3. The plural forms of the group of compound words will take S at the end of both words.

CONSULTATIVE COMMITTEE FOR THE CREATION OF A WORLD BRAILLE COUNCIL

I. *TERMS OF REFERENCE*

1. The International Conference of Experts on Braille Uniformity convened by Unesco in March 1950, after examination of the suggestions formulated by the preparatory meeting of experts which had met in Paris in December 1949, recommended the establishment of a World Braille Council to promote the adoption of the unified system, to act in an advisory capacity on the interpretation and application of Braille principles, to guard against any regional deviation from the principles approved, to advise on any Braille problems submitted to it and to collect and disseminate information on Braille. It was further suggested that the Council should deal with the unification of musical and mathematical notation in Braille.

In the course of these two conferences the tasks of the Council were defined, but no suggestion was made as to the legal status desirable for it save perhaps the indication that it should be "associated with the appropriate organ of the United Nations".

2. The Fifth Session of the General Conference of Unesco authorized the Director-General "to assist in the establishment of a World Braille Council" (Resolution 6. 162).

3. Upon examination, however, it appeared that the present state of development of Braille in the different regions of the world, and the lack of properly established national or regional organizations, particularly in those countries which would stand in most need of the Council's services, rendered impossible the creation of an independent Council. The Executive Board of Unesco, at its Twenty-eighth Session in October 1951, therefore authorized the Director-General to establish provisionally a World Braille Council attached to Unesco in the form of an Advisory Committee. The Director-General was also authorized to summon a committee of experts to advise him on the composition and the role of the proposed Council.

II. *COMPOSITION AND WORK OF THE COMMITTEE*

The Consultative Committee for the creation of a World Braille Council met in Paris from 10 to 12 December 1951. It was composed of the following members:

President: Professor Suniti Kumar CHATTERJI, Head of the Department of Comparative Philology, University of Calcutta.

Vice-President: Mr Pierre HENRI, Professeur à l'Institut National des Jeunes Aveugles, Paris.

Members: Bey Mithat ENC, Professor, Teacher Training Institute, Ankara,

Sr J. EZQUERRA, Jefe de la Organizacion Nacional de Ciegos, Madrid,

Mr Sayed Abdel FATTAH, Inspector-General, Schools for the Deaf and Blind, Egypt,

Mr Ibrahim Mahmoud GHASSEEBAH, Principal, Queen Huzeina Institute, Baghdad,

Mr John JARVIS, Braille Secretary and International Correspondent, National Institute for the Blind, London,

Mr Paul J. LANGAN, Superintendent, Kentucky School for the Blind, USA,

Mr Milos LICINA, Vice-Président de l'Association des Aveugles de Yougoslavie, Belgrade,

Sr J. Pardo OSPINA, Director, Federacion Nacional de Ciegos y Sordomudos, Bogota,

The Reverend Luka PO-KAI, Superior, School for the Blind, Kemmendine (Burma),

Mr Geo. L. RAVERAT, European Director, American Foundation for Overseas Blind (Paris),

Mr V. H. VAUGHAN, Principal, Boys' School for the Physically Handicapped, Kimberley (Union of South Africa),

Mr John WILSON, Secretary, British Empire Society for the Blind, London,

Mr T. YOSHIMOTO, Former President of the Japanese Federation of the Blind (Japan).

In the course of its six meetings, the Committee prepared draft statutes of the future World Braille Council for submission to the Director-General; made suggestions as to methods of work of the Council and the tasks which it should undertake; and suggested names of specialists on Braille who should be invited to become members of the Council.

III. *RECOMMENDATIONS*

The Consultative Committee drew up the following draft statutes and formulated the following recommendations:

STATUTES RECOMMENDED TO THE DIRECTOR-GENERAL OF UNESCO FOR THE WORLD BRAILLE COUNCIL

Article 1

An Advisory Committee called the "World Braille Council" (WBC) shall be attached to Unesco.

Article 2

With a view to the development and maintenance of world Braille uniformity, as created by the traditional usage of the past and by the decisions of earlier international conferences, and now enlarged and re-defined at the different meetings convened for that purpose under the auspices of Unesco, the WBC shall have the following functions:

(1) to advise the Director-General of Unesco on all matters relating directly or indirectly to the maintenance and extension of uniformity in Braille usage in all its aspects, so that he may answer all questions which may be referred to him by organizations for the blind or any other competent authority;

(2) to advise the Director-General as to the best means of establishing liaison with interested organizations with a view to the above mentioned purposes and to disseminating information concerning uniform usage, and particularly on how to:

(a) ensure permanent liaison with and between the various regional and national Committees for the maintenance or establishment of uniform Braille usage between Braille technicians and responsible international, regional and national organizations for the blind ;

(b) ensure the dissemination of the principles of uniformity in Braille practice, so that these are brought to the notice of all the organizations and States concerned;

(c) promote the setting up of regional and national councils, the functions of which will be the maintenance—or, where not already in existence, the establishment—of uniformity in Braille practice.

(3) and finally to deal with any other matters referred to the Council by the Director-General.

Article 3

The WBC shall consist of nine members, not less than six of whom shall be chosen from among qualified persons representing zones mentioned in Article 4; the other members shall be Braille technicians or other recognized authorities.

Within each of these zones, the members of the Council shall be chosen, as far as possible, by rotation among the representatives of the main script areas or the languages of the zones in question, due regard being paid to the more urgent needs of each area or language. These representatives need not be nationals of the countries of the zones concerned.

Each member of the Council shall submit to the Council the names of correspondents for each territory or language he represents and who might assist him. The WBC may consult experts and technicians when deemed necessary.

Each member shall be appointed for three years; but, in order to ensure the continuity of the Council's work, three of the first nine members shall be appointed for three years, three for five and three for seven years, their selection being determined by lot.

Article 4

Considering that the principle of the Braille script is to reflect as far as possible the alphabet and orthography as used by the sighted for a particular language, for the purposes of the WBC the world is divided into the following zones (the names of the more important individual languages in each zone are given in the Annex which may be amended, as and when necessary, by the WBC):

I. Zones of languages of Europe and of European origin using Roman and allied scripts.

II. Zones of languages using scripts of Indian origin.
III. Zones of languages using Semitic scripts.
IV. Chinese
V. Japanese
VI. Korean.
VII. Zones of languages of Asia using the Roman script.
VIII. Zones of indigenous languages of Africa, Oceania and America using the Roman script.

This division into zones may be revised. Each zone will not necessarily be represented on the Council. One zone may be represented by one person or a maximum of two persons.

Article 5

The first nine members of the WBC shall be appointed upon the recommendation of the consultative committee convened in December 1951.

Before re-electing the members of the WBC, the Director-General shall consult the national or international associations concerned and the national or regional committees for the adoption of the uniform Braille system. The result of these consultations shall be communicated to the WBC which shall indicate to the Director-General the persons whom it thinks best qualified.

Article 6

The Council shall elect its Chairman and Vice-Chairman.

The Chairman shall ensure liaison between the Council and the Director-General and advise the Secretariat on all technical questions, either directly or through a technical delegate appointed by him in agreement with the Director-General.

The Director-General will designate the Vice-Chairman to replace the Chairman in the event of his death or retirement or if he is prevented from fulfilling his duties.

The Unesco Secretariat shall provide the necessary staff for the Council's Secretariat.

Article 7

The WBC shall meet at least once every five years; but it may be convened more frequently by the Director-General. The Chairman shall submit each year a report on the activities of the WBC.

Article 8

In order that the Director-General may be able to answer any question or request for advice referred to him, the WBC shall, between sessions, give its opinion by correspondence.

For that purpose the following procedure shall be adopted:

The Director-General shall submit the question to the Council's Chairman, who shall reply directly, or, if he deems fit, transmit it to the representative of the linguistic zone concerned, or to the appropriate technical specialist. The answer of this representative shall be communicated to all the other members of the Council, who shall make known their own opinions on the matter. Divergent opinions shall be communicated to the person seeking advice. If necessary, a vote shall be taken by correspondence on the reply of the competent delegate.

The members of the Council shall be entitled to recommend that the question be stated in greater detail and accompanied by appropriate documentation, or that the Council's permanent Secretary shall carry out an enquiry on the question asked.

Article 9

In accordance with paragraph 2 of Article 2, the Council shall submit to the Director-General all suggestions which it may deem useful. Every suggestion shall be addressed to the Chairman, who may transmit it directly to the Director-General, or, if he thinks necessary, adopt the procedure for consultation provided in Article 8.

Article 10

The Council's Secretariat shall deal with all correspondence, whether relating to advice asked for by the Director-General or to suggestions submitted to him.

Article 11

The present provisional statute shall be submitted to the Seventh Session of the General Conference of Unesco for ratification.

RECOMMENDATIONS TO THE DIRECTOR-GENERAL

I. The Committee recommends that the World Braille Council programme should include the following matters:

(1) musical notation

(2) mathematical and science symbols

(3) the compilation of an international catalogue

(4) the establishment of regional councils to deal, amongst other matters, with contracted Braille

(5) assistance in the continuation and co-ordination of uniform Braille systems for the African and South East Asian languages.

The Committee recommends that two international meetings be convened to study the first two items above.

II. The Committee proposes that the composition of the first World Braille Council should be as follows:

(1) six members from the various zones; of these:
2 members from zone 1
1 member from zone 2
1 member from zone 3
1 member from zones 4, 5 and 6
1 member from zones 7 and 8

(2) three members chosen as specialists and technicians; of these:
1 for music
1 for mathematics and science
1 for general co-ordination and Braille publications.

The Committee suggests to the Director-General of Unesco the following names for membership of the first World Braille Council:

(1) For zone no. 1: Mr John Jarvis, Braille Secretary and International correspondent, National Institute for the Blind, London.

and: Sr J. Pardo Ospina, Director, Federacion Nacional de Ciegos y Sordomudos, Bogota.

For zone no. 2: Mr Lal Advani, Assistant, Blind Welfare Section, Ministry of Education, New Delhi

For zone no. 3: Mr Sayed Abdel Fattah, Inspector-General, Schools for the Blind and Deaf, Egypt

For zones 4, 5 and 6 : Professor Li Fan Kuei, Washington University, Seattle, USA

For zones 7 and 8 : Mr John Wilson, Secretary, British Empire Society for the Blind, London.

(2) As technician for music :
Mr L. W. Rodenberg, Blind Services Superintendent, Illinois School for the Blind

As technician for mathematics and science:
M. Pierre Henri, Professeur à l'Institut National des Jeunes Aveugles, Paris

As technician for general co-ordination and Braille publications:
Sir Clutha Mackenzie, Specialist on World Braille.

ANNEX TO ARTICLE 4

The more widely current languages under each zone are:

I. Zones of languages of Europe and of European origin using Roman and allied scripts:

(a) Languages of Western Europe: French, English, German, Italian, Dutch, Afrikaans, Danish, Norwegian, Swedish, Icelandic, Welsh, Gaelic.

(b) Languages of Central and Eastern Europe: Czecho-Slovak, Slovene, Croatian, Polish, Rumanian, Hungarian, Turkish, Finn, Lapp, Esthonian, Latvian, Lithuanian.

(c) Languages of South Western Europe, also current in America: Spanish, Portuguese.

(d) Greek.

(e) Languages using the Cyrillic script: Serbian, Macedonian, Bulgarian, Russian.

(f) Irish.

(g) Armenian.

(h) Georgian.

II. Zones of languages using scripts of Indian origin: Indo-Aryan, Dravidian, Austric and Sino-Tibetan speeches of India; Sinhalese and Tamil in Ceylon; Tibetan, Burmese, Siamese, Cambodian.

III. Zones of languages using Semitic scripts:
   (a) Perso-Arabic, Arabic, Persian, Pushtu, Balochi, Urdu (In Pakistan).
   (b) Hebrew.
   (c) Amharic.

IV. Chinese.

V. Japanese.

VI. Korean.

VII. Zones of languages of Asia using the Roman script:
   (a) Indonesian-Malay.
   (b) Vietnamese.
   (c) Other languages of India and other parts of Asia not coming under I, II, III, IV, V and VI.

VIII. Zones of indigenous languages of Africa, Oceania, and America, using the Roman script:
   (a) Central and South Africa: Bantu, Hottentot, Bushman.
   (b) Western and Central Africa: Sudanic languages; Hausa, Fulbe.
   (c) Melanesia, Micronesia and Polynesia.
   (d) Indigenous languages of North and South America.