





243 symbols, made up of 192 elements, 14 vowel diphthongs, 4 consonant diphthongs, 19 modifiers, and 11 other signs. It has been reduced to the smallest possible number suitable for giving a notion of the kind of symbolization required for universal alphabets. The list from which it was extracted contained double the number and was still incomplete, even so far as the writer's investigations had extended. A universal alphabet would probably require a thousand cases to be provided for. It would be difficult for even the inventors to use such an alphabet, and absurd to present it for practical use. Inventors have therefore had recourse to radical signs symbolizing what they consider the principal relations and modifiers of these radicals. Some, as Brücke, Merkel, Bell, and Sweet, use entirely new characters, of which Bell's and Sweet's are intended by their shape to recall the positions of the organs of speech in uttering the sounds represented. But these writers are not agreed either as to the shape or value of the radicals themselves. The modifiers are very various, and when more than one modifier is required the characters become too complicated for the eye and hand to deal with them rapidly. Universal writing is still a philosopher's stone, though much has been learned in its pursuit. Palaeotype is of course a mere typographical makeshift.

Fortunately writing long preceded phonetic knowledge. The number of distinct sounds in any one language seldom exceeds fifty, and practically fewer still are needed, for a native needs only a broad hint of the sound to reproduce it. The signs for English in art. 1 are rather superabundant than deficient, and the small additions of foreign signs suffice for French, German, and Italian practically, though very deficient scientifically. In fact, the modes of combining sounds in those three languages and English are so different that the alphabet has to be differently conceived for each. This is the final breakdown of universal writing. An English, German, French, and Italian reader, each requires an alphabet founded on his own linguistic habits, and very insufficiently comprehends any other. But even a rough appreciation for linguistic purposes is better than the thoroughly false appreciations now current. To obtain a scientific foundation for erecting an alphabet of any language which shall have scientific value, five stages are needed:—(1) the perfect acquisition of a series of words containing every sound used; (2) variation of each word by involving its sounds in different combinations to appreciate the effects of gliding juxtaposition; (3) the perfect acquisition of short sentences of different characters to understand the effects of construction and emotion; (4) the study of unrestrained conversation between natives from the phonetic point of view; (5) frequent writing from the dictation of natives and teaching others to read by the signs adopted after the first four stages are passed. How far the characters should indicate the positions of the organs of speech is another point, which need not be considered at first, and can only be accomplished with extreme roughness even at last. Thus Bell's capriciously conceived and executed "visible speech" requires much explanation to be intelligible and after all tells but little. Any signs easy to write and distinct to read without wearying the eye will suffice, provided each be furnished with a full explanation (much longer and more explicit than the greatly condensed explanations of art. 20) not only of its separate but its combined power, and the requisite knowledge for furnishing these cannot be obtained without much and long-continued labour. Mr Sweet's studies of Danish, Swedish, Russian, Portuguese, and North Welsh pronunciation are models in their way, especially the last, but suffer from extreme conciseness.

The use of such phonetic studies is principally philological, a much smaller amount of precision sufficing for all the purposes of ordinary life,—understanding speech and speaking intelligibly, writing speech from dictation and reading what is written. Our scientific knowledge of speech-sounds has really only just commenced, and is therefore extremely incomplete and confined to very few people. But what has as yet been learned is of great practical value in the reduction of unwritten dialects and languages to writing, in exhibiting the actual speaking habits of existent written tongues, in divining the intention of systems of writing employed in extinct languages, and hence in historically tracing the cognation and filiation of one language to another and the successive forms assumed in the gradual development of a single form of speech. These great applications of the study of speech-sounds, as well as the practical introduction of systems of spelling easier to read and write than those now found in most of Europe (including European America) and Asia, lie beyond the scope of this article, which only aims at showing in extremely condensed terms the foundations of the theory of their combinations and some of their most important and best known forms.

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SPEKE, JOHN CANNING (1827-1864), an eminent African explorer, who was the first European to cross Central Africa from north to south and to determine the existence and position of the great water basin from which the Nile proper issues full formed. He was born on 4th May 1827 at Jordans near Ilchester, in Somersetshire. Entering the Indian army in 1844, he served in Sir Colin Campbell's division in the Punjab campaigns, and gradually acquired no small repute both as a military officer and as a sportsman and naturalist. When on furlough Captain Speke often advanced into unexplored portions of the Himalayas, and even crossed the frontier into Tibet; but his attention was at an early date turned to the great problems not of Asiatic but of African geography, and in 1854 he commenced his brief and brilliant African career by an expedition along with Captain Burton into Somali land, the incidents of which are narrated in *What led to the Discovery of the Source of the Nile* (London, 1864). It was along with the same explorer that the expedition of 1857-59 was undertaken, in the course of which Captain Speke, leaving Captain Burton, unfortunately invalidated, at Kazé, struck northwards and reached the shores of Lake Victoria Nyassa in the neighbourhood of a nullah, which he named Jordans after his birthplace. Convinced though he was that this lake belonged to the Nile system, he had no absolute proof to offer to the scepticism of his fellow-traveller and many stay-at-home geographers, until in 1863 he returned from another expedition along with Captain James Augustus Grant, in which he struck the Nile at its exit from the lake, and proved its identity with the river of Egypt by following it most of the way down. Captain Speke was expected to hold a public discussion with Captain Burton as to certain disputed points in the history of his discoveries at the British Association in Bath (1864); but on the very morning (15th September)

fixed for the tournament he was killed by the accidental discharge of his own gun as he was crossing a fence while out shooting.

See Speke, *Journal of the Discovery of the Source of the Nile*, 2 vols., 1863; J. A. Grant, *A Walk across Africa*, 1864.

SPENCER, JOHN CHARLES SPENCER, THIRD EARL (1782-1845), better known by his courtesy title of Lord Althorp, had the good fortune to be acquainted, through his father's official position in the ministries of Pitt and Grenville, with both Pitt and Fox, and to be the confidential ally, through his own sound judgment and political honesty, of the leaders of the Whig party immediately before and after the Reform Bill of 1832. His father, the second earl, was well versed in books. His mother, the eldest daughter of Lord Lucan, was conspicuous in London society for her gaiety and brightness. Their eldest son, John Charles, was born at Spencer House, London, on 30th May 1782, and sent to Harrow for his education when less than eight years old. At school he was chiefly remarkable for his love of sports and for a shyness which accompanied him throughout life, but fortunately did not prevent him whilst at Harrow from forming two or three acquaintances which proved useful in parliamentary life. In January 1800 he took up his residence at Trinity College, Cambridge, and for some time applied himself energetically to mathematical studies; but during the last year of his life at college he surrendered himself a captive to the pleasures of hunting and racing. Almost immediately after taking the degree of M.A., in June 1802, he set out on a Continental tour, which was cut short, after he had passed some months in the chief cities of Italy, by the renewal of war. Through the influence of Pitt's Government he was returned to parliament for the borough of Okehampton in Devonshire in April 1804, and, although he vacated his seat in February 1806 to contest the university of Cambridge against Lord Henry Petty and Lord Palmerston (when he was hopelessly beaten), he was re-elected in the same month for Okehampton, and rewarded with the emoluments of a lord of the treasury. At the general election in November 1806 the freeholders of Northamptonshire selected him as their representative, and he continued to sit for the county until he succeeded to the peerage. His tastes were then, as ever, for country life, but his indignation at the duke of York's conduct at the Horse Guards led him to move a resolution of the House of Commons in 1809 for the duke's removal from his post. For the next few years after this speech Lord Althorp occasionally spoke in debate and always on the side of Liberalism, but from 1813 to 1818 he rarely entered the doors of the House of Commons. His absence was partly due to a feeling that it was hopeless to struggle against the will of the Tory ministry, but more particularly to his marriage on 14th April 1814 to Esther, only daughter of Richard Acklom of Wiseton Hall, Nottinghamshire. In 1819, on his return to political life after the death of his wife, and for many years after that date, he pressed upon the attention of the House the necessity of establishing a more efficient bankruptcy court, and of expediting the recovery of small debts; and, although his name is not associated with the attainment of either of these objects, he saw both accomplished before 1825. During the greater part of the reign of George IV. the Whigs lost their legitimate influence in the state from their want of cohesion, but this defect was soon remedied when Lord Althorp was chosen their leader in the Lower House, and his capacity for the position was proved by experience. When Lord Grey's administration was formed at the close of 1830 the chancellorship of the exchequer combined with the leadership of the House of Commons was naturally entrusted to Lord Althorp, and to him more

than to any other man, with the exception of the prime minister and the lord chancellor, may be attributed the success of the Government measures. The budget, it is true, was a failure, but this misfortune was soon forgotten in the struggles over the Reform Bill. The consideration of the preliminaries of this measure was assigned to four ministers, two in the cabinet and two outside that body; but their proposals were, after careful examination, approved or rejected by Lord Grey and Lord Althorp before they were brought under the notice of the cabinet. When the Bill was ready for introduction to the House of Commons its principles were expounded by Lord John Russell; but from the commencement of the protracted discussion over its details he had the assistance of Lord Althorp, and after some weeks of incessant toil, which the physique of Lord John Russell could not sustain any longer, the whole responsibility was cast on Lord Althorp. To combat the objections of three such pertinacious opponents as Croker, Sugden, and Wetherell required both skill and courage, and in Lord Althorp these qualities were found. He was constantly on his legs, and on one evening he made as many as twenty speeches. The Reform Bill was carried at last, and popular instinct was right in assigning to the leader of the House a credit only second to that earned by Lord John Russell. After the dissolution the Whigs returned to power with augmented numbers; but differences soon showed themselves among both leaders and followers, and their majority crumbled away. Their position was strengthened for a time by triumphantly carrying a new poor law Bill; and even their keenest critics would now allow that, had the Whig propositions on tithes and church-rates been carried into effect, many years of passionate controversy would have been spared. The ministry of Lord Grey was shattered to pieces by difficulties over an Irish coercion Bill, in which O'Connell thought that he had been unfairly treated. Although Lord Melbourne became premier (14th July 1834), the fortunes of the ministry rested on Lord Althorp's presence in the House of Commons. The death of Lord Spencer on 10th November 1834 called his son to the Upper House, and William IV. took advantage of this event to summon a Tory cabinet to his side. The new Lord Spencer abandoned the cares of office and returned to country life with unalloyed delight. Often as he was urged by his political friends to come to their assistance, he rarely quitted the peaceful pleasures which he loved. He died at Wiseton on 1st October 1845. The Whigs required, to carry the Reform Bill, a leader of unstained character, one to whom party spirit could not attach the suspicion of greed of office, and against Lord Althorp malevolence was powerless. No stronger proof of his pre-eminence could be given than the oft-quoted saying of Lord Hardinge that one of Croker's ablest speeches was demolished by the simple statement of Lord Althorp that he had collected some figures which entirely refuted it, but had lost them. The trust which the House put in him then was never wanting.

SPENCER, PHILIPP JAKOB (1635-1705), "the father of Pietism," was born 13th January 1635, at Rappoltswiler in Upper Alsace. He received his earliest education from his subsequent brother-in-law, Joachim Stoll, chaplain to the count of Rappoltstein, whose wife was Spener's god-mother. After a brief stay in the grammar-school of Colmar he entered the university of Strasburg in 1651 as a student of theology,—living there with an uncle, and holding quite aloof from the student-life of the place. He devoted himself to philology, history, and philosophy, and won his degree of master (1653) by a disputation against the philosophy of Hobbes. He then became private tutor to the princes Christian and Charles of the Palatinate, and lectured in the university on philology and history. From 1659 to