

**The colloquial linguistic faculty and its physiological groundwork / by
Walter Hayle Walshe.**

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THE

Colloquial Linguistic Faculty

AND ITS

PHYSIOLOGICAL GROUNDWORK.

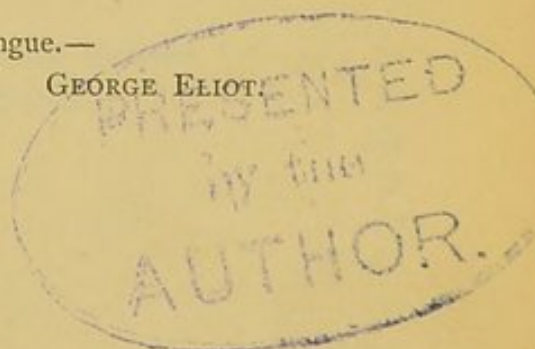
. . . mêlez vous peu des langues étrangères, et
surtout des orientales, à moins que vous
n'ayez vécu trente ans dans l'Alep.—

VOLTAIRE, *DICT. PHILOSOPHIQUE.*



. . . that difficult instrument, the tongue.—

GEORGE ELIOT.



BY

WALTER HAYLE WALSHE, M.D.

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JOHN BALE & SONS, 87-89, GREAT TITCHFIELD STREET,
OXFORD STREET, W.

1885.

Colloidal Chemical Society

19. The following is a list of the members of the Society for the year 1911.

MEMBERS OF THE SOCIETY

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NOTE.

The design of the following sketch is twofold. First, to direct attention to the erroneous belief, very commonly held—erroneous, at least, as the writer conceives—that foreign languages are easily acquirable, and actually are practically possessed in greater or less number and in no faulty fashion by crowds of people, especially among ourselves. Secondly, to set on foot an investigation into the causes of the real rarity of conspicuous and indisputable colloquial linguistic proficiency.

In the course of the enquiry an attempt is made to render the more simple and salient facts of the doctrine of cerebral localisation popularly intelligible, and some suggestions offered, very tentatively, towards the establishment of a physical theory of genius.

NOTES INTRODUCTION

The object of the following study is to present a
brief account of the history of the English language
from its origin to the present time. The English language
is a very ancient one, and it is the purpose of this study
to trace its development from its origin to the present
time. The English language is a very ancient one, and it
is the purpose of this study to trace its development
from its origin to the present time.

In the course of the study, it is to be noted
that the English language has been the subject of much
study and research, and it is the purpose of this study
to present a brief account of the history of the English
language from its origin to the present time.

INTRODUCTION.

I.—There are three distinct senses in which the phrase “linguistic faculty” may be understood. The words may be held to signify :—

(a.) The power of more or less successfully investigating the origin, radical connections and progressive changes or evolution of various tongues, existing and extinct, savage and civilized; that is, of laying the foundations of universal etymology, comparative philology and the science of language, in association with the search for ethnographical relationships.

(b.) The power of fixing on the exact vernacular counterparts of the elements of certain dead, or, so-called, classical languages, and establishing the intimate structure of these, solely of course by the study of their written remains; a task in which rival scholars have the opportunity for special distinction in suggesting recondite meanings for obscure and ill-constructed passages, in inventing crabbed and perplexing scholia, and in torturing words into senses often, as far as evidence goes, not dreamed of by the nations, who actually spoke the dialects.*

(c.) The power of rapidly acquiring and correctly using various languages of the day in speech and in writing.

Now the possession of the first of these varieties of the linguistic faculty seems scarcely to signify anything specific, or strictly differentiated in the nature of its cerebral factors; intellectual aptitudes, which will successfully grapple with scientific problems as a class, will not be baffled utterly by those occurring within the range of philology. Mere dili-

* For convenience' sake, though the practice may not be in strictness justifiable, the word *dialect* is occasionally used in these pages as a convertible term with *language*.

gent labour by any enquirer, provided he be possessed in a fair degree of acuteness of perception, power of attention, retentiveness of memory, logical precision of judgment and faculty of generalisation, will never be bestowed on this variety of mental work altogether in vain. Still, no question is for a moment raised as to the intrinsic difficulty of the study, nor is it doubted that the mental qualifications enumerated must be highly developed for its successful pursuit. The profound discordance of opinion among the most earnest workers on philological questions affords sufficient proof of the intricacy of the problems to be solved, a discordance often so complete, that, although the serious study of the subject commenced about the middle of the last century, not until very recent times have even its most enthusiastic devotees ventured to claim for linguistics the title of a science. And even now, what can outsiders think of its claims to the title, when so scholarly an expert as Renan "after ten additional years of study," emphatically teaches that "language was formed at a stroke, and sprang instinctively, as it were from the genius of each race ;"* while Max Müller and his school hold with equal pertinacity and much greater show of reason, that languages originated in and were developed out of a few, chiefly monosyllabic, roots.

The exponents of the second variety of the linguistic faculty—analytical grammarians and word-critics—seem to belong in an humble fashion to the previous group. By them, a single language in the main is dealt with : cerebral activity is expended in tracing the evolution of dialects, in more or less ingenious straining of the meaning of words, suggestions of copyist errors in early manuscripts, dissertations on syllables and particles, and on the national and local modes of use of a letter, even of an obsolete letter (*exempli gratiâ* the endless logomachia of scholars on the digamma), &c. But in all this grammatical criticism no distinctive special cerebral attribute is called into effective play ; a minor development of the non-specific intellectual qualities required for the pursuit of general philology will suffice for that of its more limited forms.

Far different is the case of the third variety of linguistic aptitude,—that for readily assimilating and practically utilizing colloquial languages of the day. Herein lies a faculty

* Lubbock, "Origin of Civilization," pp. 404-7.

peculiar, special, differentiated in a very striking degree,—one which is the occasional, if rare, endowment of the otherwise non-intellectual, in some sort well-nigh brainless,—one which cannot in its fulness be secured by any amount of toil, nay, which seems repelled in some varieties of organisation by straining efforts to attain it. In the first two varieties purely intellectual qualities are alone required; in that now under consideration, muscular and certain other activities play more or less important parts. It is in the sphere of the latter activities that the failure of effort to secure success is specially noticeable. A Frenchman sometimes flounders more hopelessly in spasmodic effort after years' residence in London, to master the difficulty of the native *th*, than in his early random shots on first crossing the channel. So, too, the throes of the Briton in producing the French *tu, moi, dieu, aiguille, bruit*, &c., are often simply more laborious (he has learned at least the measure of his national incompetence), but not more successful after lengthened sojourn in France, than when, on his first arrival, he blurted out syllables of such typical difficulty in the careless indifference of confident ignorance.

In a word a faculty for *language* differs in nature almost *toto cælo* from a faculty for *languages*. With the latter branch of the subject we propose now to deal exclusively, confining ourselves to a few general considerations, and a popular statement in outline of the physiology of language-learning.

SECTION I.

II.—One main general truth, upon which we are desirous of especially insisting, is that persons, possessing any well-defined aptitude for the colloquial acquirement of languages, are few and far between. Indeed, the illustrations of this truth, coupled with an inquiry into its probable causes, will go far towards forming the essential subject of the present essay.

Now, it must *in limine* be admitted that the very opposite opinion generally prevails, and that capable linguists are held to have been and to be well-nigh as plentiful as "autumn leaves in Valambrosa." But any such belief in the frequency of the accomplishment seems hopelessly dis-

credited by even a very superficial examination of available facts. That persons have existed, and do at present exist, specially distinguished by their tolerable command of contemporaneous languages in greater or less number is indubitable; but there is equally strong ground for discarding as apocryphal many of the stories of exceptional endowment of the kind currently accepted as literally true. There is the old tale, to begin with early times—one at the present day difficult to disprove—of Mithridates, King of Pontus, speaking twenty-two different dialects.* What these alleged dialects may have been, it is now impossible even to conjecture, but the marvellous story may be rejected as resting on no positive evidence. Passing over long years, we find the story of Paulus Deaconus, a monk in the service of Charlemagne, arresting attention; a man in whose honour the following lines were composed:—

“Græcâ cerenris Homerus,
Latinâ Virgilius,
In Hebræâ quoque Philo,
Tertullus in Artibus;
Flaccus crederis in metris,
Tibullus in eloquio.”

Unfortunately, however, for the monk's fame, extant specimens of his work supply, even for the modern critic, ample proof of the inferior quality of the workmanship.† Later in the roll of time appears the transcendental philosopher, Spinoza, who is said to have “gained a knowledge of” French, Italian, and German, and to have employed Spanish, Portuguese, and Hebrew, almost as if they were his own vernacular, while he wrote the language, really native to him, namely, Dutch, with difficulty. Like all scholars of his time, he had free recourse to Latin in his compositions. Now, the style of his performances in that tongue is pronounced by a modern English critic (better worth had the verdict come from an ancient Roman) to have been “grammatical, and *almost always* clear,” but “wanting in flexibility, seldom idiomatic, restricted in vocabulary, and deficient in the niceties of scholarship,”‡ in a word, wanting in the true vernacular ring even to the

* “Mithridates, cui duas et viginti linguas traditur notas fuisse.” Quintilian, 11, 2, 50. Mark the cautious “traditur.”

† Berrington, “Literary History of the Middle Ages,” p. 109, Ed. 1846.

‡ Elwes, “Works of B. de Spinoza,” vol. i., p. xi.

necessarily dull sensitiveness of a foreign judge, a judge not "to the manner born." But much more startling were the alleged linguistic attainments of the blacksmith, Elihu Burritt, who, we are seriously invited to believe, "made himself acquainted with ten languages" in the intervals of his daily toil—Hebrew, Greek, Syriac, Spanish, Bohemian, Polish, Danish, Persian, Turkish, and Ethiopic! * The "acquaintance" with some members, at least, of this oddly associated group must, we venture to apprehend, have been a coldly distant one. However, any observer of men and their accomplishments, who is prepared to accept without demur, and as untainted with gross exaggeration, the story of the village labourer, cannot reasonably quarrel with a recent newspaper writer, who cheerfully saddles himself with the onus of the grave assertion that the lately incoming Vicar of the Jesuits "understands to perfection" (mark, perfection is vouched for), besides the dead languages (how many of these?), "English, German, French, Spanish, and Italian." † At all events, whether to be verified or not, the announcement of the Jesuit skill in the manipulation of tongues, prepares the conveniently credulous for the wonderful assurance somewhat since given in the House of Commons, that "Prince Lucien Bonaparte, among other like achievements, had printed the Gospel of St. Matthew in twenty-nine different languages, for the accuracy of everyone of which he was personally responsible" (is it permissible to insinuate the bare idea of a doubt by asking to *whom* effectively responsible?), "also the Song of the Three Children in eleven dialects of the Basque language, and 'The Parable of the Sower' in seventy-two European languages and dialects." ‡ The accomplishment of these tasks, assigned in Parliament as the reason for bestowing a Government pension on the Prince, doubtless signifies remarkable industry in puzzling over endless pro-

* Brewer, "Reader's Handbook," p. 1088.

† *Times*, October 26, 1883. Macaulay may have, to adopt his own expression, "devoured" Greek, Latin, Spanish, Italian, French, and English; it would, perhaps, be cynical to inquire how much thereof he digested (*Vide* Life by Morison, p. 25). Besides, as the repast must have been taken in reading, not in speaking, it is impossible even to conjecture to what extent words were mentally mispronounced, and sentences conceived with deplorably foreign accent. The historian's serious practical shortcomings, even in French idiom are painfully exposed by Breen ("Modern English Literature," p. 123, Lond. 1857).

‡ *Times*, July 13, 1883.

vincial glossaries and district vocabularies, and, in so far, aptitude of a certain linguistic kind. But what amount of real practical familiarity with the languages and dialects concerned is proved by such performances? Little or none. Somewhat after the fashion of the French prince, the late Sir John Bowring translated poetry from the Russian, Spanish, Polish, Servian, Hungarian, Transylvanian, Czechian, and so on. Yet at the very time, long since past, the public were periodically dazzled by these achievements, the true conversational grasp of even the French language was denied their author. While engaged at that period with Mr. Villiers (afterwards Lord Clarendon) in Paris on a diplomatic trade mission, it was noted with surprise that the versatile linguist spoke French poor in idiomatic expression, and delivered himself with the customary accent of a *nouveau débarqué*,—the Parisian phrase for a freshly-landed Briton.

However, all these extraordinary performances sink into insignificance, when compared with the culminating wonder of Cardinal Mezzofanti's perfect management of forty languages with their dialects. Such command of tongues is even by credulous believers in its possibility admitted to be phenomenal. But, in point of fact, the story, born and nurtured in the sycophantic atmosphere of a Court, must be received with more than the conventional *granum salis*. If the Cardinal really possessed in even tolerable perfection, one fourth of the number of languages with which he has been lavishly credited, the possession would still savour of the marvellous. What, then, is to be said of the innocent faith of people, more or less frequently met with, who earnestly affirm they count among their acquaintances several prodiges, speaking "like natives" four, five, up to six or eight languages? Why, simply that it is based on ignorance. Such people forget in the enthusiasm of their admiration, that they are themselves rarely capable of critically estimating the vocabulary, the idiom and the accent of the speaker, the moment he travels beyond their own vernacular: *dans le royaume des aveugles les borgnes sont rois!* Before what courts of competent examiners have these wonderful linguists appeared, and, with how many of such courts have they passed muster? No amount of general scholarship gives a particle of claim to pronounce judgment on the colloquial management of a foreign tongue.

No doubt an Armenius Vambéry is a possibility, as the

fact of his existence proves. And a fellow student of mine in Paris, born in Malta of British parents, I can aver spoke English like a native, *appeared* to me to manage French, as if he had been born on the Boulevards, and expressed himself with fluency and idiomatic correctness (I was credibly assured), in Italian and Maltese, while it was said he could utilize colloquially with fair success, Arabic, Spanish, and German. But genuine instances of the kind, are of the extremest rarity. The nearest approach to any such facility among the members of any given class is perhaps to be found among Levantine commercial clerks, many of whom habitually employ three, some even five languages for the purposes of trade, without committing errors gross enough to render their speech or correspondence obscure.

We do not, of course, for a moment deny that citizens of the world, perpetually wandering from clime to clime, who can in more or less imperfect fashion, resort to some few different languages to aid them in their struggle through the ordinary embarrassments of travel, do in considerable numbers cross one's path. Of this sort of linguistic sciolism there is abundance and to spare: smatterers in languages are as obtrusively rife as in other departments of knowledge. But in each fresh country, such wanderers speak and read like foreigners. Few get beyond that initiatory stage in assimilating a new language, in which the speaker *first thinks out in his vulgar tongue the words fitted to express his thought, and then translates them literally into the coveted foreign idiom*. As an analogous fact, it may be mentioned that the children of foreigners, born and brought up in London, will often go through this identical process of translation, when trying to overcome the difficulties of their mother-tongue. Such tyros, though constantly living within ear-shot of the more or less perfectly delivered conversational language, will invariably speak with idiom and accent almost, if not quite, as distressing to the parental auditory word-centre, as those of any untravelled Briton.

In sober truth, an absolute practical and critical mastery of even the humble number of two or three languages has seemed to me in my life's journey a form of accomplishment of singular, and in some sense unaccountable rarity. Let me, in justification, instance a pair of languages, those of England and France, countries whose inhabitants are placed in circumstances of locality and of political, commercial and social relationship (antagonistic though it often be) tending

in the strongest manner to familiarize each of the two nationalities with the language of the other. Now to graduate as a thorough master of both tongues a man of education should be able : to read Shakespeare and Corneille, Shelley and Lamartine, Moore and Béranger, with a cultured native's keen, intellectual and emotional perception of every shade of beauty in their lines ; to seize with equal facility the uproarious fun of a burlesque at "The Gaiety," and the double meaning of a scampish farce at "The Palais Royal ;" to follow with the like ease the eloquent exposition of a Tyndal anent the origin and destiny of man, and a poetic rhapsody at the Sorbonne by Michelet (were he still alive to electrify the historical student) on the ferocities of mediæval barbarism ; to lose no single point in a Chansonette of Chaumont, or a serio-comic street Arab ballad of Nelly Farren ; to hold his own equally well in money disputes with the cabmen and laundresses of Paris and London ; to enjoy as thoroughly the humour of *Punch* as the wit of the *Charivari*, and the grave polemics of the *Revue des deux Mondes*, as those of the *Quarterly Review* ; to possess the financial vocabulary of the Bourse and of Capel Court ; to speak the two tongues with at least a fair share of the intonation, inflection, vocal ring, pronunciation, accent and fluency, distinctive of a native's delivery of each ; and finally to translate from either language into the other with correct phraseology, word-collocation and idiom, an epigrammatic article on the topics of the day, and a serious disquisition on a problem in art or literature. Now, how many men are likely to be found, thus qualified, on either side of the channel ? Would Mezzofanti on these lines have taken a Bachelor's degree in any notable minority of—Heaven save the mark !—his forty familiar tongues ?

The newspaper reports of speeches, delivered of late years at various International Scientific meetings in languages foreign to speakers, would appear to weaken the force of, if not wholly refute, much of the somewhat postulatory argument just set forth. But, it must be remembered, these speeches were carefully prepared beforehand ; they were delivered under circumstances, where correctness of language was of much less consequence (provided only the sentences were not unintelligible) than novelty or profundity of idea ; while each orator's phraseology, freed in the processes of printing from all blemishes of accent and pronunciation,

furthermore comes before readers with such amount of idiomatic fitness as the combined capabilities of reporter and speaker, supplemented by native corrections, enabled them to supply.

Professor Monier Williams is said to have "spoken at some length" in Sanscrit, in replying to an address lately presented him at Bulanshahr. Of the Professor's profound scholastic mastery of that mystic tongue all the world knows there is but one opinion among the limited number of Scholars qualified to judge: but on the merits or demerits of the oral delivery of an obsolete language, *who* is entitled to arbitrate?

Diplomatists, sojourning for a time in one country after another, and mixing with the most cultivated society in various capitals, might be expected, as a class, to have numerous languages at their ready beck and call. But as matter of fact, so far as I can learn, the name of such proficient is not legion. An amusing piece of confirmatory evidence, at least in respect of Englishmen, occurs in a recent obituary notice of the late Lord Ampthill.* Prince Bismarck, praising the ambassador in conversation with a brother of the craft, observed, "One thing only made me at first a little suspicious of him; I had always heard, and my own experience had confirmed it, that an Englishman who could speak good French was a *doubtful character*, and Odo Russell speaks French quite admirably." Passing over the fact that the favourable opinion of a common-place Parisian, in regard of French utterance, would have been more to the purpose than that of a German, however intellectually gifted, and noting the singular nexus assumed between the possession of a good French accent by a Briton and obliquity of his moral character, it seems strictly inferible that English diplomatists, speaking passable French, can but rarely have fallen in the Chancellor's way.

That any real connection exists between correctness of idiomatic expression, pronunciation, and accent on the one hand, and immorality on the other, seems a more striking than demonstrable proposition. But that some sort of relationship holds between readiness of speech and weakness of moral sense may be plausibly enough maintained. Thus (to use an illustration of a negative kind), if a speaker were not prompt with his words, he must wholly fail to utilise speech in the fashion rendered famous in the well-

* *Times*, August 26th, 1884.

known apophthegm, credited to Talleyrand (though the precious bit of cynicism had probably been thought out by many a diplomatist before the advent of the excellent Bishop of Autun), namely, as the one true instrument for disguising our thoughts. If such be the very function of speech, obviously the more ready the talker, the more absolute may the concealment, or perversion of truth be made. Again, there are logical grounds for defending the seeming paradox, that a voluble speaker must ever and anon become more or less mendacious, led away in opposition to his knowledge of fact by the impetuous torrent of his verbosity, the pernicious activity of his cerebral word-centres (both ideation and motor) actually forcing him to pour forth assertions which, before donning the mantle of facundity, he would have shrunk from uttering. Words spoken not only express ideas formed, but actually compel the evolution of new thoughts.* An indiscreet argument, risked in the heat of controversy, often involves the hazard of another, yet more reckless than itself, in the struggle at extrication from its consequences. And that eloquence (or rather facility of linking together shallow truisms, enigmatical paradoxes, and ambiguous phrases in endless flow with quasi-automatic volubility) may be designedly and persistently devoted to the crafty concealment of truth, platform and Parliamentary records only too fully prove.†

* This proposition will certainly stand firm, whether we maintain psychologically the impossibility of forming concepts at all without the aid of names, or admit the possibility of forming simple concepts, though not of preserving them without such help, or deny, with the bulk of thinkers and common sense on our side, that the name of a concept can anticipate its birth. "I declare my conviction," says Max Müller, "whether right or wrong, as explicitly as possible, that thought in one sense of the word, *i.e.*, in reasoning, is impossible without language." Dr. Maudsley well observes on this passage that the deaf and dumb man is a living refutation of the proposition that man cannot reason without speech, while he holds it is not possible to think without *any* means of physical expression, such as signs ("Physiology of Mind," Ed. 2, p. 480). See also Bastian, *Op. cit.* p. 417. Long since Voltaire said, in sarcastic reference to some literary opponents, "Pour parler, il faut penser ou à *peu près*."—"Micromégas," chap. ii.

† The power of words, adroitly managed, can in truth hardly be exaggerated. It is even very probable (making all due allowance for the attractive allurements of everlasting happiness held out in its pages to the true believer) that the "persuasive influence of the Koran on the Asiatic mind" may be traceable in great measure to its "harmony

On the other hand, a glib talker may readily be betrayed into *lapsus linguæ*, at once damaging to himself and outraging his hearers, from which hesitancy of speech might have saved him. Had not M. Ollivier possessed the flippant command of that erratic member, the tongue, he would scarcely have descended to posterity as the hero who rushed "*au cœur léger*" into the disastrous war culminating in the fearful catastrophe of Sedan. Nor, unless similarly gifted, would an English professional "friend of the people" have rashly, in one of his pugnacious effusions, stigmatised a section of that well-beloved *plebs* by the opprobrious nickname of the "*residuum*," a chance English rendering of the "*infima fæx populi*" of the patrician Cicero. Nor would a learned historian in ultra-Radical craze have ventured on the perverse cry, "Perish India!" no matter how deeply humanitarian feeling might have been, or might continue to be, outraged in some outlying district of Eastern Europe.

III.—The power of composing in a variety of languages is yet more uncommon, as might be expected, than that of speaking them with reasonable fluency and correctness. Rare indeed are the authors—may they not be counted on the fingers?—who can be said to have written even in two languages as if to the manner born. To think with idiomatic fitness in a foreign tongue, and transfer the thought to paper in the form a cultured native would adopt, is possible only to the very, very few. Walter Savage Landor, a man of high and varied intellectual endowment, lived for long years of his eventful life in spots, where the "*lingua Toscana*" perpetually rang in his ears. Nevertheless, even a friendly English critic succeeds in ascertaining, that his "Italian composition was far from faultless."* So that in all probability an Italian expert would have pronounced it from place to place execrably bad, possibly not Italian at all, but in seeming.

Trustworthy information concerning the degree of mastery of the Italian language in writing and in speaking, attained by the two greatest of modern English poets, whose

of expression and easy flow of style" (Berrington, *Op. cit.* p. 436). The power of words might well furnish a fitting theme for a companion symphony to that in which Spohr has idealised the power of Sound.

* Colvin, *Life of Landor*, p. 212.

lot cast them for such lengthened periods among Tuscan and Venetian speaking people, may be sought for in vain. This is especially true of Shelley. Did Byron, on the other hand, who "lived in their houses, and in the heart of their families, sometimes merely as '*amico di casa*' and sometimes as '*amico di cuore*' of the Dama,"* who experienced largely the sweetness of being "schooled in a strange tongue by female lips and eyes,"—did Byron ever succeed in whispering soft nothings in the ears of the Venus of the hour, whether a "fisherman's wife," or a "nobil dama," in the precise vernacular "melting like kisses from a female mouth," of a genuine son of the soil? The singular fidelity of the translation of Pulci's *Morgante Maggiore*, "often line for line, if not word for word," as himself complacently notes, proves beyond risk of cavil Byron's intimate acquaintance with Italian idiom; but between scholarly knowledge and colloquial use, there may be all the difference in the world.

Landor, among other of his crotchets, staunchly advocated the superiority of Latin to any modern tongue, as the vehicle of expression in the higher realms of thought; and, practising as he preached (to adopt the sarcasm of Lord Byron), "cultivated much *private* renown in the shape of Latin verse." Yet, as might be expected, his poetry, even to the perception of an English critic—perception of necessity dull in comparison with that of an educated contemporary of Cicero—is not free from "grave metrical and prosodial slips."† Perhaps Landor, confiding in his own resources, ventured too far from the beaten tract of plagiarism. Certain it is, that, as a general rule, modern Latin compositions take rank in the direct ratio of the amount of borrowed ancient passages and turns of phrase adroitly infiltrated into a mass of text instinct with the puzzled weakness of modern handicraft; while to exalted and original composition (*pace* Petrarch, who honestly believed his now long defunct Latin poem, "Africa" vastly excelled the immortal Italian Sonnets) no modern can attain: the taint of imitative art will always be traceable. Landor probably adopted the obsolete tongue to a great extent from unconscious imitation of the writers of the middle ages; the governing fact, that mediæval scholars were for the most part obliged to utilize Latin, because their various vernaculars struggled

* Moore's Life, p. 703, small 8vo, London, 1875.

† Colvin, Op. cit. p. 90.

at the time under the difficulties of a state of development too crude for the effective expression of lofty thought or involved argument, seems to have escaped his usually clear perception.*

On the other hand there are not wanting evidences of an occasional disposition on the part of modern scholars to rather presumptuously under-estimate the rich fertility of the obsolete language as an instrument of expression. Cicero occasionally speaks with satisfied pride of the copiousness of his native tongue.† Archbishop Whately takes upon himself to deny the correctness of the practised orator's judgment in the matter, and complacently shows those willing to listen, how the blundering estimate came to be made.‡ Whately *versus* Cicero on a question of practical Latinity! Still, in unravelling the intricacies of the grammatical structure of the Latin tongue very probably an English student of to day would have the advantage of the ancient Roman, so different are the endowments and conditions requisite for philosophising on a language and using it in speaking and writing. We once heard the late Mr. T. H. Key, Professor of Comparative Grammar in University College, give an hour's lecture, exhaustively learned, on the roots, alliances, and repulsions, differences and similitudes—in short, the verbal natural history—of the pronouns *hic, ille, is, iste, ipse*. The feat would to a dead certainty have distanced any effort of the kind, that might have been achieved even by Quintilian. The modern had ransacked the philological mine more thoroughly than the ancient grammarian could possibly have done. But if the Professor, on leaving the class-room, had met the ghost of the Roman, and addressed him in his mother tongue, is it heresy to hint, the learned shade would not only have diagnosed the foreigner, before half a dozen sentences had been uttered, but that, confused by the anomalous accent and pronunciation, he would have been sorely puzzled to catch the meaning of the novel-sounding jargon.

* Berrington, commenting on the general character of the Latin poetry of the middle ages, observes: "nowhere have I discovered a single spark of genius. Beauty of style, grandeur of imagery, boldness of conception, and energy of expression will be sought in vain."—"Lit. Hist. Mid. Ages," p. 222.

† One such passage will be found in "De Finibus," i., 3-10, where he refers to its superior richness to Greek.

‡ "Life by Daughter," p. 404, Ed., 1868.

Strangely enough, the least defective Latin seems to be spoken at the present day in regions lying without the pale of modern civilisation. Among other testimony of a like kind, I may quote the statement of Mr. J. Brice, that on the departure of some English tourists from Iceland, "The health of the departing visitors was proposed by a native in a long Latin speech with an eloquence and command of Ciceronianisms, that put the (English) answerer to shame."*

This is not an appropriate place to broach a lengthy argument on the vexed question, handled of late in his characteristically logical and convincing fashion by Professor Huxley, of the relative value of literary (especially classical) and scientific study. But we may briefly venture to observe, that J. S. Mill seems to have struck successfully at the root of the matter in the pithy judgment, "If there were no more to be said than that scientific education teaches us to think, and literary education to express our thoughts, do we not require both?† Still if we must choose between the two, can it be doubted that the choice should fall to the lot of science? Can we question for a moment that, as even Matthew Arnold admits, "it is a matter of more general interest, as well as of intrinsic importance, to learn the explanation of the phenomena of dew, or how the circulation of the blood is carried on, than it is to learn that the genitive plural of $\pi\alpha\iota\varsigma$ and $\pi\alpha\varsigma$ does not take the circumflex on the termination."‡

Classical culture, it may be conceded without demur, is a necessary element of high-class education; in some sort, too, a normal heritage of gentle blood. Still that precious time is often fruitlessly wasted in the efforts, made at our public schools, to force the dead languages into unwilling brains, seems appallingly certain from the following piece of evidence, contributed by one of the most experienced examiners in Europe, Dr. William Smith: "I have rarely," he says, "met with boys who could translate the *easiest* piece of Latin or Greek *ad aperturam libri*."§ And is there not valuable warning, as to waste of time in the pursuit of the unattainable, conveyed in the following reflec-

* "Impressions of Iceland," *Cornhill Magazine*, vol. xx. p. 568.

† St. Andrew's Inaugural Address, 1867.

‡ G. J. Romanes, *Times*, February 3, 1885.

§ "Schools Enquiry Commission," vol. iv. p. 115, 1868.

tion of one of Lord Lytton's personages? "I consoled myself with the pleasing recollection that, after spending six years in learning to write bad Greek, I should never have any further occasion to avail myself of so precious an accomplishment."* Archbishop Whately (echoing the mediæval proverb, "Magis magni clerici non sunt magis sapientes") frankly, if not too courteously, observes of one of his friends, "He is a great scholar and a great goose," and adds further, "The best scholar, whom I ever had as a candidate for orders, was a man whom I was very near rejecting for incompetency."† Clearly, then, distinction in classical scholarship does not imply other kinds of ability.

But, to return to modern languages, Gibbon's French composition has been pronounced irreproachable by competent judges. Yet it is also held that blemishes, arising out of a certain Gallic quality of idiom and turn of expression, are not wanting in his otherwise faultless English style; blemishes plainly due to his having at once sacrificed too sedulously at the shrine of the Continental language, and to his having lived in almost constant communion with French-speaking people, while engaged in the production of his immortal narrative.‡ The only recent writer who, to my knowledge stands prominently forward as an acknowledged and equal master of high-class French and English composition, is the late Lady Georgiana Fullerton. Now we must not forget, in explanation of her anomalous performances, that this accomplished lady, in whose French phraseology even members of the Institute fail to find a flaw, was brought up in the Faubourg St. Honoré, and at one time of her life (probably as long as she retained the power of expressing herself in French of faultless purity) possessed only imperfect foreign-sounding English. Another gifted British resident of Paris, the late Mrs. Holland, wrote

* "The Caxtons," Part II. Chap. v.

† "Life by Daughter," p. 404.

‡ It almost savours of daring heresy to breathe a verbal criticism concerning that mellifluously flowing product of historic genius. But it is so important for our argument, that we may be pardoned for asking does not the use of the word *expect* in the following phrase seem an idiomatic slip? Gibbon mentions, in relating the story of Theodora, that Justinian, in order to escape his mother's opposition to his marriage with the notorious courtesan, "patiently *expected* the death of the Empress." Ought he not to have said *awaited*.—"Decline and Fall," Chap. xl., Vol. v., p. 44, Ed. Smith, 1862.

two French works, the "Vie de Channing" and the "Vie de Village en Angleterre;" to the former Rémusat contributed the preface—did he lend any further help, say, in revision of either volume? Again, we have recently been assured, on the high authority of a critic in the *Times*, that Mr. J. D. Lewis has renewed the alleged feat of William Beckford, and written a book ("Causes célèbres de l'Angleterre") in "thoroughly Parisian French;" but, with all my respect for the literary dicta of the leading journal, I should feel better satisfied of the writer's claims to an award so high, had it been pronounced by a clever Parisian school-boy than by a judge capable of writing the perfect English article in which it is recorded.* Literati of German and Russian birth occasionally become notably dextrous in French composition; Heine and Turgenieff in particular indubitably acquired extraordinary ease and finish in managing the language. Some of Turgenieff's novels were, indeed, originally written in French (avowedly, or at least presumably, without native help), and sent to St. Petersburg for translation into Russian.† But these exceptional men had both lived for years in Paris; and to what extent each may, or may not, have lost his mother-tongue in its fullness of perfection, there is no public available evidence to show. That some deterioration must have taken place seems extremely probable from such facts as the following. I met somewhere since a Polish lady who, after a few years residence in London, spoke our language with such an amount of idiomatic purity and precision, and with an accent so free from Continental twang, that she might easily have passed muster as an Englishwoman to native ears even of most delicate organisation, unless their owners

* The critic's model English *prima facie* disqualifies him as a Judge of Appeal in French; critical mastership in both tongues is a power so habitually unattainable, that its possession cannot be admitted in any particular instance, unless on proof tendered. The affirmative verdict of M. Waddington, though so long a resident in this country, would have been but poor evidence that the style of an English book, written by one of his countrymen, reached the standard of cultured British purity. Even Jeffrey, the critic *par eminentiam*, betrays a want of thorough acquaintance with the idiom of the language by trifling slips in his survey of French literature (*Vide* "Collected Essays" from the *Edinburgh Review*).

† I understand, too, that the novel by "Une Grande Dame Russe," which recently—1884—created such a sensation in Berlin, is written in very unexceptionable French.

had been forewarned of her foreign extraction. But during a recent visit to Poland this lady was, on her own confession, perpetually laughed at for her foreign inflections, idiomatic blunders, and absurd periphrases. Again, I knew intimately an English youth who, after three years' constant mixture with Parisian society, spoke the language in such faultless fashion that very few Frenchmen, with whom he conversed, even suspected his British nationality. But, while thus revelling in the use of his newly-found speech, our Anglo-Parisian, chancing to cross the Channel, found he had partially lost his mother-tongue; in idiom, turn of phrase, intonation, manner of expression and accent, he had received so unmistakeable a French veneer that for a time he commonly passed for a Gaul, speaking unusually good English. Both the Polish lady and the British lad could, doubtless, have composed for the time being as respectably in the tongue foreign to each of them as in their own.

Composition in an unaccustomed tongue proves a much easier task, if the subject handled be scientific, than purely literary and imaginative. Scientific terms are often quasi-identical in various vernaculars; and precision of meaning, the object essentially in view of the writer, may be secured even through the medium of awkward periphrases and ungraceful expressions. Finished grace of style, brilliant imagery, and refined turns of idiomatic phraseology may not only be wholly dispensed with, but would be actually out of place.*

IV.—What amount of perfection can be attained in the mere oral delivery by rote of a foreign language? The dramatic performances of Celeste, Fechter, and, in a notably less degree, of Modjeska in English, and of Charles Matthews in French prove, that, even after residence of some duration in a foreign land, its language cannot be declaimed on the stage (and this, be it remembered, by persons who from the nature of their calling must presumably be more or less bountifully endowed with the *imitative* faculty) without faults of pronunciation, method of utterance, accent and inflection, painfully jarring on the ear of a native. No doubt we hear of singers (Viardot Garcia, for instance) producing in song as many as five different languages *with*

* In the "Medical Directory" for 1885, Miss F. E. Hoggan is credited with contributions on various professional scientific subjects in English, French, Italian, and German.

*equal ease and correctness,** but, conceding the questionable statement to be true, there is an immeasurable distance between this aptitude for slurring over the difficulties of pronunciation in vocalising from memory *cantabile* or even *recitative*, and the power of uttering with the semblance of a native's manner, words produced on the spur of the moment to represent the thoughts rapidly whirling through the brain.†

V.—Corroborative evidence of another kind is to be found in the absurd misuse of terms and the flagrant ignorance of idiom often betrayed by writers, even though of magistral excellence in handling their vernacular speech, the moment they attempt even in fragmentary fashion to employ the phraseology of a foreign language. How strange it seems that English novellists and newspaper correspondents perpetually go astray in transferring to their manuscript a short phrase or even a few words of the speech of the country in which their scene is laid or to which they are editorially accredited. Nay more, writers of presumably higher stamp than the producers of ephemeral novels frequently commit blunders of the kind equally gross, and in them less pardonable. The curious may satisfy themselves by consulting the valuable work of Breen,‡ that the author of the "Letters of Junius," Mrs. Sigourn y, Lord Byron,§ the first Lord Lytton, Lord Macaulay, Sir A. Alison (this writer pre-eminently distinguished for his blunders) betray discreditable ignorance of the meaning of numerous French words and phrases they employ, and often go needlessly out of their way to employ. Yet more noteworthy is the ludicrous and humiliating, linguistic dis-

* The "Biographie des Contemporains" is responsible for the actual statement : *in voce*.

† Madame Viardot was, besides, a very exceptionally gifted person : on the usual fearful mis-pronunciation of Italian on the London opera stage by the polyglott companies singing of late years in the language of Rossini, it is needless to insist. To her last season that deliciously-voiced French contralto, Madame Nantier Didi e persisted in pronouncing the Italian vowels, as if she were uttering them in her own tongue.

‡ H. H. Breen, *English Literature, &c.*, p. 119. London, 1857. Imagine, among other instances, Alison translating "*droits de timbre*," "*timber duties*" !!

§ Byron's deficiencies in French grammar and speech were so remarkable, that one of his latest biographers thinks it incumbent on him for truth's sake to register the fact. *Life* by Nichol, p. 26.

pute, recorded for all time in parliamentary history, which occurred in the House of Commons between Lord Auckland, Dundas and Sheridan, concerning the meaning of the words "*Ces Malheureux*." The altercation ended by Sheridan moving a vote of censure on Lord Auckland, while it had fully revealed the astounding fact that not one of the three disputants knew the precise signification of the words.* This singular passage of arms came off, it is true, "when George the Third was King," and while French and English people as yet saw little of each other; but despite the constant intercourse of to-day between the countries, it would be only too easy to point out multitudinous instances from the current literature of both, in which more or less grave misconceptions of the meaning of the original occur, traceable to want of familiarity with its idiomatic forms. A short while since Mr. John Morley, in his version of a phrase used by Frederick of Prussia, in reference to Maupertuis, makes the King say, "his *character* is surer than that of Voltaire," the translated word "*caractère*," really meaning *temper*.† Again, still later, Mr. Nichol, perverting Danton's famous apostrophe "*de l'audace, de l'audace, et toujours de l'audace!*" into "*l'audace, l'audace et toujours l'audace*," thrusts a phrase into the mouth of the fierce revolutionist not only destitute of point, but even, under the actual conditions of utterance, devoid of definite meaning.‡ Only the other day, the writer of a powerful leader in a daily journal might be found misapplying the familiar French word *patois*, under the impression that the term is applicable to the blundering speech of a foreigner, whereas it is solely employed by the people themselves to designate a provincial dialect. No educated Parisian would think of styling a Briton's talk, were it ever so excruciatingly absurd, a *patois*: he would call it *du baragouin* or *un jargon*. But even professed teachers of a language occasionally go astray in their versions of its plainest words. Thus we are told by an apparently competent critic that Mr. Morfill, in his "admirable grammar of one of the richest of European languages," the Polish, falls into the inaccuracies of translating *Koniecznie* "certainly," instead of necessarily,—*coraz* "always," instead of more and more,—and *ubioru*

* Wraxall's Memoirs, in *Temple Bar*, December, 1883, p. 467.

† "Life of Voltaire," p. 172.

‡ "Life of Byron," p. 204. 1880.

"furniture," instead of clothing.* Numerous parallel errors and misconceptions on the part of eminent Frenchmen will be by and bye set forth.

General culture, it follows, even though of high stamp, will avail little for the practical acquirement of existing languages. As to classical knowledge in particular, doubtless the value of a familiar acquaintance with Latin and Greek, cannot be easily overrated as a guide to the meaning of words in the various vernaculars partially derived from those languages. But such knowledge lends no particle of help in the foreigner's colloquial struggle to remember, pronounce, accentuate, inflect, and deliver a modern tongue after the native model. J. S. Mill began at three years old to commit Greek vocables to memory, and on attaining the mature age of seven, he had read Herodotus, Xenophon's *Cyropædia* and Memorials of Socrates, portions of Diogenes Laertius, with part of Lucian and Isocrates, and six dialogues of Plato.† Yet in after life, though he was much favoured by social circumstances, Mill's French colloquial delivery, albeit reported to have been somewhat noteworthy as the performance of a Briton, never approached that of a genuine Gaul. Nor, on the other hand, does deficiency of education constitute an impediment in the way of attaining the practical use of foreign tongues. It has often been remarked that couriers, valets, and ladies'-maids, show greater facility in battling with new idioms than their masters or mistresses. George Eliot, not, it will be admitted, an incompetent judge of men and things, makes the Levantine cook of one of her personages "speak five or six languages, one as well as another," but is discreetly silent as to the proficiency of the master.‡ Walter S. Landor tells us he had a groom, who acquired Welsh (one of the most difficult of current languages) in seven or eight months from a scullion.§ Nay, more, education may in certain ways prove at least a temporary obstruction. A friend of mine, a solicitor, who had just returned from a

* *St. James's Gazette*, January 8, 1885, p. 7.

† Autobiography, p. 5, 3rd Ed., 1874.

‡ "Felix Holt," chap. ii. It is, however, to be presumed, that the cook's command of the various vocabularies did not extend beyond their more or less ready use in the ordinary business of life.

§ Reflections on Athens, &c. Quasi-idiot's have been known to show aptitude for acquiring languages (Archbishop Whately, "Life by Daughter," p. 404.)

first visit to the Continent, informed me in answer to the enquiry, where he had lived in Paris, "in the *Rou-y croiks dess pettits shamps*," (Rue Croix des petits Champs). Now in infinite probability had this conscientious master of orthography not seen, and been able to spell, the name at the corner of the street, his ear, seizing something of the native method, would have saved him, within certain limits, from verbal blunders so ludicrous. The great relative facility, with which children assimilate strange languages, proves not only that vigorous intellectuality is not needed for the purpose, but that a knowledge of spelling may be wholly dispensed with.

VI.—The difficulty of attaining competent skill, at once critical and practical, in dealing with any given pair of languages, is further shown by the rarity of satisfactory translations. It must be admitted, that the want of perfect identity of signification, under all circumstances of appliance, of words in different tongues, which are nevertheless recognized by custom, as the nearest counterparts of each other, often proves a formidable stumbling-block in the way of the desired conversion. There are in truth frequent instances, wherein it is impossible to reproduce the phraseology, even the words, of one language by those of any other, without some sacrifice of meaning; and the difficulty thus arising from inadequacy of equivalent words can only be partially overcome by the use of periphrases or other linguistic device. An example or two will suffice. Take first the English word *female*, and its French correlative *femelle*. There are many circumstances under which the two words are correctly convertible; but on the other hand it might be perfectly decorous to say *female* in a collocation, where to use the word *femelle* would be grossly rude. Observe next a difficulty of this kind even in scientific terminology. Dr. Sankey maintains that the terms "illusion" and "hallucination" are absolutely synonymous.* For my own part, having long held† that a hallucination is a true mental phantasm or creation, bearing no relation to objects of perception present, while an illusion is a mental perception of a real object with characters differing from those it actually possesses, I look with curiosity for Dr. Sankey's explanation; and I find him

* "Lectures on Mental Diseases," p. 118, 2nd Ed. 1884.

† "What to observe at the Bedside," p. 70, 2nd Ed. 1854.

ascribing the divergence of opinion to "the variation of præfix in the French and English languages. In French there is no such word as *delusion*, the French for the English word *delusion* is *illusion*, and the French of the English word *illusion* is *hallucination*." I confess I cannot accept Dr. Sankey's teaching. The cerebral conditions represented by the two words are, as I conceive, sufficiently distinct to require different names for purposes of scientific precision. But all the same this battle of words aptly serves my present purpose.

Furthermore, there are shades of sentimental meaning in words and phrases, stirringly significant, deeply emotionising to the native, which impinge meaninglessly on the brain of a foreigner. Often these refinements of speech are the reflections of distinctive idiosyncracies in national manners and modes of thought, and simply cannot be conveyed from their original to another tongue. I do not hesitate to affirm that it would be wholly impossible to represent in English the veiled inmost meanings of certain sparse couplets of Béranger and Alfred de Musset, or the latent spirit of all the delicate touches in the intensely Gallic comedies of Scribe or Sardou.

Hence it must be conceded, that the mere work of true interpretation (setting aside any ambitious attempt at infusion of the distinctive quality of the original style) implies higher intellectual effort than it is commonly credited with. Whether their short-comings do, or do not, deserve to be more leniently dealt with on this score, as matter-of-fact translators (admitting for the moment, what is by no means always the truth, they already are, or *currente calamo* make themselves, by help of lexicons, masters of the ordinary meaning of the foreign words)* sin in two chief ways. Either, on the one hand, their ideation word-centre is so dominated for the time being by the idiom of the translated tongue, that, failing to find correct corresponding idiomatic turns of expression in their own language, they translate literally those of the former; the result is a mongrel composition bearing so deeply the linguistic impress of the original, that its phraseology is uncouth in style, vapid in spirit and sometimes in sense so obscure, that it would prove downright unintelligible, unless the

* The other day taking up an English version of a classical French medical treatise, I was amused at finding the article of food *de la bouillie* (*pap*) uniformly translated *broth* (*du bouillon*).

reader, perchance familiarly versed in that original, can mentally reconvert the text before him into its first shape. The translation seems (let the original be French or English) like Gallicised English or Anglicised French. Or, on the other hand translators are sometimes so imperfectly acquainted with the idiomatic niceties of the language they attempt to deal with, as totally to misconceive the meaning of occasional passages. When a Frenchman means to say in jocular form he "took to his heels," or "ran away from a place," he commonly uses the phrase "*j'ai pris la clef des champs*": fancy the words being rendered (as I remember to have seen them in a printed volume), "I took the key of the fields." Here the mistranslation is only laughable. But such idiomatic ignorance may become of serious importance, where scientific propositions are concerned. I recently stumbled on a passage in the English version of a French philosophic work, wherein, in consequence of the translators ignorance of the meaning of the phrase "*faire justice d'une théorie*" (which he renders "doing justice to a theory," instead of "showing the worthlessness of" "demolishing" or "overturning" the said theory), the author is made to stultify himself and cancel at a stroke his entire delicately spun argument on a problem no less momentous than the age of the globe.

How comical, again, on the other side of the Channel, to catch the learned French translator of Walter Scott's novels, converting "*a stickit minister*," otherwise an unsuccessful parson, into "*un ministre assassiné*," or to find an accomplished linguist in the "Pays," condescendingly explaining to the readers of that advanced journal, that the English word "*Ichabod*" signifies a *guano-yielding island on the West Coast of Africa*;"* or to detect Victor Hugo in flattering himself, he faithfully renders the geographical term "Firth of Forth" by the numerals "*le premier du qua-*

* *Globe*, March, 1884. I once received a pamphlet from the authorities of a French mineral water station, addressed *verbatim et literatim* as follows :

A Monsieur le Rédacteur du Journal
"The Walter Hayle Walsher"
Londres.

It says not a little for the excellence of management of the London Post Office, that the singularly addressed document reached me without an hour's delay, in spite of the conversion of my name into that of an imaginary periodical print.

*trième?** Again, can we help complacently smiling over Taine's ludicrous *Io Pæan* to the filial reverence of the English boy, because he habitually dubs his father in mocking phrase "the governor;" or read without mirth the quaint story of a member of the French Academy, posing before his learned brethren (some half-dozen of whom probably knew enough English either in patriotic dismay to blush for, or in fraternal jealousy to enjoy, the *fiasco*) in a thrilling apostrophe to Shakespeare, as "*le divin Williams*"! And most of these grotesque blunders not the work of half educated persons (like the rough excursionist at "Boulong" objecting to his bed-room because unfurnished with a "*poitrine de caleçons*," Anglo-French for a "chest of drawers"), but actually perpetrated by members of the cream of the cream of French men of letters. But the higher the literary position of the delinquents, the more significant for the present purpose the testimony of their errors. Conceive for a moment what inaptitude for seizing the mere meaning of words, not to speak of shades of idiomatic significance, and what insensibility to the genius of the language are implied by mistakes so glaring—what a deep substratum of incompetence must lie beneath them. And yet there are people who maintain that the acquisition of foreign tongues is an easy matter.†

The acknowledged frequency of crass absurdities, such as these, fails to warn fresh adventurers from deserting the safe pathway of their vernacular, and there are in truth few acquirements of which the common run of people are so inordinately vain as the possession, or the supposed possession, of the merest rudiments of a foreign tongue. I

* Victor Hugo himself is nevertheless untroubled by uneasy misgivings as to his profoundly critical knowledge of the language, and has lately given forth in the *more suo* oracular fashion the startling dictum: "*Prose does not exist in English*"! "For a great man," says a writer in the *St. James's Gazette* (Nov. 4th, 1884), "Victor Hugo has perhaps talked and written more nonsense than any one living, and this precious utterance is quite in character." Perchance the poet may have espied some such estimate of his own style as the following, hardly calculated to impress him favorably with English prose; "Victor Hugo's sounding phraseology, comprising absolute ignorance of men, times and manners in *unintelligible metaphor and melodramatic braggadocio*."—Lord Lytton, "The Parisians"; Book, vii. ch. i.

† "Something in the reach of the humblest understanding, but sufficiently searching to the highest—a new language," says Lord Lytton ("The Caxtons," part ix. ch. v.): an estimate better applicable to the scholarly than the colloquial study of tongues.

remember a French physician, burning to air half-a-dozen words he had, no doubt, laboriously acquired, putting a question to an English lady in terms of most unfortunate indelicacy, at which no one could have been more dismayed than himself, when his verbal misapprehensions had been explained.

A Frenchman, wearied out by an unusually long concert at St. James's Hall, and desirous of displaying his acquaintance with the local vernacular, suddenly rising from his seat, remarked to an English neighbour: "*I haf some music over ze back.*" The Briton, having deliberately examined the said back in search of sheets of music, in all innocence responded: "I don't see any." The Gaul, who had simply turned into literal English the national idiomatic and somewhat slang expression signifying a state of surfeit (*j'ai de la musique par dessus le dos*), went his way with a shrug, not a whit disconcerted,—only painfully impressed by the Briton's unhappy ignorance of his mother-tongue.

And with vanity of like type scholars, who really can manage a foreign language with reasonable or even distinguished success, sometimes prove to the last degree touchy under the most temperate criticism of their performances. Men of even strong mental power occasionally break forth in ebullitions of almost childish irritability, if the existence of blemishes be even hinted at. Frederick the Great, previously an earnest student of the "Encyclopédie," is said to have never again dipped into its pages, after Didérot had ventured mildly to suggest in the article "Prussia," that a sojourn of a year or two in Paris might render the king's French composition more completely free from flaw.

SECTION II.

VII.—There seems then little room for question that persons possessed of magistral linguistic power, on the model already traced (p. 14) are very, very rarely encountered. Even respectable orthoepy proves in nine cases out of ten a hopeless object of ambition. But a still bolder assertion may, I think, without serious risk be hazarded. It may, I believe, be affirmed, that men, qualified up to that imaginary standard, and who are yet further capable of

exhaustively *feeling* in its daintiest and most refined touches and shades of meaning any one single language beyond their own,—of mentally realising the *genius* of a strange tongue,*—of plumbing foreign folks-lore to the very depths of its veiled imaginative and patriotic significance,—of savouring keenly the Attic salt of any one idiom, but that in which they prattled from childhood, are to be reckoned, the world over, not by tens but by units. The scholarly few, rather than the unlettered many, will doubtless furnish the sparse contingent ; but no amount of mere scholarship, as we have already seen, will supply the qualifications needed for a place in its ranks. And so very real is this limitation of the practical and colloquial linguistic faculty, that it entails insuperable difficulty in the facile and perfect interchange of refined thought between peoples of different nationalities. Here is an evil, however, which would not be satisfactorily overcome by the adoption, more than once proposed, of any given existing language as the universal medium. To make a *tabula rasa* of all languages but one, far from being an unqualified boon, would distinctly involve a new form of linguistic imperfection. For assuming, *argumenti gratiâ*, such a reformation were possible (which it clearly is not), delicate phases of signification, distinctive of words in certain languages, and for which precise equivalents are wanting in others, would be lost,—and ideas occasionally in some sort the product of words, disappear with the words evolving them.†

Neither do the actualities of life, nor the history of the past lend support to the philanthropic philologists' waking dream, that "nothing would conduce more directly to bring about a golden age of union and harmony among the several nations and races of mankind, than the removal of that barrier to the interchange of thought and mental good understanding between man and man, which is now interposed by the diversity of their respective languages."‡ Were

* For instance, it has been said by many Frenchmen (among others by Lamartine), that the *genius* of their language makes it the choicest existing instrument for the discussion of abstruse logical, scientific and mathematical subjects. Where is the foreigner who can from his inner consciousness accept or rebut the assumption?

† Horne Tooke (*Ἑπεὶ Περὶ ῥητορικῆς*, p. 125) condemns the various schemes of the kind so far proposed, especially that of Bishop Wilkins (*An essay towards a real character and a philosophical language*, 1668), as wanting in "simplicity, ease, convenience and philosophy."

‡ Roget, *Thesaurus*, Introduction, p. xxix., 1879.

the ferocity of the struggle, the bitterness of mutual animosity, displayed in the war between the Northern and Southern States of the Union, a whit tempered by the fact that the swarming combatants on both sides spoke identically the same language? The Catholics and Protestants of Germany began a deadly struggle in Bohemia in 1618, and fought out the "Thirty Years' War" to the bitter end, though both the belligerent forces exchanged execrations in the same vernacular. How many

Thousands had sunk on the ground overpowered,
The weary to sleep and the wounded to die,

before the thirst for each other's blood of these brothers in talk was finally sated?

On the other hand that actual evil may accrue from the use of a *partial universal* tongue is shown by the history of the thousand years of priestly domination, of the consciences and thoughts of men, that preceded the Reformation. Latin, during that period, the sole and sacred instrument of international communication, unintelligible to the masses, served the ecclesiastical purpose of blindfolding them politically and religiously. Well might the acute Cardinal Ximenes exclaim, "What will become of *religion* if the study of Greek and Hebrew be permitted"? For with the study of those obsolete tongues he saw that the formation of modern languages co-advanced vigorously out of the existing vulgar dialects. He saw that in the use of Latin lay a condition of the power of the Church; and it is not too much to assert that diversity of tongues has had a precious influence in emancipating Europe.*

Scholarly acquaintanceship with ancient languages is avowedly widely diffused and easily attained. The critical linguist of the past escapes the difficulties of the practical talker of the present. In point of fact the former in great measure makes his own laws; the latter finds them made for him: in the one case the standard of knowledge is conventional and changeable at will; in the other, fixed and immutable. Scholars in the seclusion of the study pronounce their Greek, for example, in conformity with canons of their own ordering. The sounds of vowels are arbitrarily settled,—quantities made all important *vice* accentuation,—the arrangement of syllables every now and then altered. It is a matter of no consequence to the declaimer of ancient

* Draper's "Conflict between Religion and Science," p. 280.

Greek in the closet, whether his pronunciation, accent and mode of utterance, do, or do not, bear even remote resemblance to those of the ancient born spokesman of the tongue. That English pronunciation wanders wide of the Athenian standard may be fairly inferred from comparing it with the modern Greek style. Let us take in illustration the names of three dramatists:—

ANCIENT GREEK.	IN ENGLISH	IN MODERN GREEK.
Σοφοκλῆς	Sop'h-o-clees	So-ph'oc-less.
Αριστοφάνης	A-ris-to'ph-a-nees	A-ris-to-ph'an-ess.
Ευριπίδης	U-rip'-i-dees	I-ri-p'id-ess.

But scholastic erudition suffers naught from such differences. It makes no matter whether ϵ and η are or are not pronounced alike, or whether $\epsilon\upsilon$ sounds as English u or z , in the solitude of the modern university; though it did infinitely matter in the crowd of the ancient Agora or Grove, the Market Place or the Academia.

So again with Latin. Nothing can be more curious than to hear, say, the first line of the *Æneid* pronounced by English, Scotch, Irish, French, Italian, Portuguese and German people in conformity with the conventional standard of each nation. The varied styles agree but in one particular,—not one among the series is the style of the ancient Roman.

VIII.—But, conceding that the difficulties escaped by the scholastic learner fall with full force on people attempting to speak modern tongues, it still may be asked, why is it that the faculty of thoroughly assimilating one or more fresh groups of vocal symbols should be so uncommon? Why is it, that physicists comparatively abound,—that imaginative writers of excellence are fairly common—that even poets inspired more or less with the *divine afflatus* (in plain physiological phrase lavishly provided with the *poetic brain-cell*) grace in respectable number the literature of various lands,—why is it, that all men of even moderate brain power can by steady industry make goodly inroad into the fields of science, and yet that no earnestness of toil will necessarily make the student even a *bi-linguist* typically perfect both colloquially and philologically? The surprise, naturally felt, when the reality of this anomalous state of things first breaks upon us, is lessened, though, it by no means reaches the vanishing point, by analysis of the elements required to form a model linguist. We find, in truth, that such linguistic aptitude implies the

possession of certain statical and dynamic cerebral and nervo-muscular qualities, as well as the facility of access to social influences, that are *à priori* unlikely to be often united in the same person. The chief of these may be tabulated as follows :—

CONDITIONS REGULATING THE COLLOQUIAL LINGUISTIC FACULTY.

- A CEREBRAL 1. Formative word-centre ; 2. Emission word-centre ; 3. Audition-centre ; 4. Tone-centre ; 5. Motor word-centre ; 6. Imitative faculty ; 7. Memory ; 8. Automatism ; 9. Unconscious cerebration ; 10. Anastomotic association.
- B MUSCULAR.
- C SENSUOUS. Organs of hearing and of sight.
- D SOCIAL. International intercourse ; Foreign marriage ; Social status.
- E PERSONAL Sex ; Age ; Temperament ; Health ; Heredity.
- F NATIONAL.

We propose now to submit each of these conditions to more or less close examination.

A. *Cerebral.—Word Centres.*—Of all the enumerated constituents of, or aids to, facile speech in foreign tongues, the cerebral word-centres take the lead in importance. In order to make this statement intelligible to the general reader, we must be permitted a digression into the doctrine of cerebral localisation.

The metaphysical conception of mind, as a spiritual entity, one and indivisible, existing and acting independently of the brain, may be dismissed from consideration, the advance of physiological psychology having demonstrated its fallacy. So, too, we may ignore the so-called “collective force of the intelligence” as a cognisable agent in mental results of any kind ; the phrase is indefinite, in truth, meaningless—a phrase, and nothing more. Nor can it be expected that the originator of such phrases—namely, pure introspective psychology—will, even with the aid of the concessions made of late years in its behalf on the objective side (especially, perhaps, by G. H. Lewes) ever reveal the mechanism of mind, correctly analyse its functions, or take a serious part in determining that with which we are now concerned, namely, the spheres of operation of those functions. And this, because such psychology takes cognisance of the phenomena of consciousness alone, while the important psychic activities, among others, of automatic

and unconscious cerebration consequently escape its ken. Thus defective in its construction, subjective psychology seems scarcely to merit the title of a science. But Herbert Spencer thinks otherwise, maintaining that "the claims of psychology to rank as a distinct science are not smaller, but greater, than those of any other science."* Still, how of this view (albeit held by one of the "foremost men of all this world") if the teaching of Kant be sound: "*That only can be called science proper, whose certainty is apodictic; cognition that can merely contain empirical certainty is only improperly called science. . . . When the grounds or principles are in the least degree empirical, as, for instance, in chemistry, the whole does not in strictness deserve the name of science; chemistry, indeed, should rather be termed systematic art than science.*"† Elsewhere we find the sage asserting downright, that empirical psychology can never supply more than a "natural description of the soul," and that it is still further removed than chemistry from the rank of a science.‡ Huxley, in mezzo-terme fashion, maintains that "on whatever ground we term physiology science, psychology is entitled to the same appellation."§ Doubtless this may be so; but plainly Kant would on his premisses deny the claim of physiology to take a place among true sciences.|| And, it may be added, that, even if we accept the somewhat wide definition of Buckle, who regards a science as a "body of generalisations so irrefragably true, that, though they may be subsequently covered by higher generalisations, they cannot be overthrown by them,"¶ existing psychology distinctly fails to make good its right to the title. Where is to be found its body of fundamental generalisations "irrefragably true?" And obviously the more exalted the transcendentalism of any given scheme of psychology, the wider its departure from the position of a science in the Kantian sense. When, distancing Berkeley, Schopenhauer** elaborates the thesis

* "Principles of Psychology," vol. 1, p. 141, 2nd Ed. 1870.

† Kant's "Prolegomena," translated by Bax, p. 138.

‡ *Ibid.*, p. 141.

§ "Life of Hume," p. 51.

|| Osterlen actually does make this denial part of his creed.—

"Medical Logic," pp. 72, 433.

¶ "Civilisation in England," vol. i., p. 801.

** Die Welt als Wille und Vorstellung: The World as Will and Idea; translation by Haldane and Kemp, 1884. Turgot, who long since registered his conviction, that he who has never doubted the

that the world is but man's idea—that *universal objectivity is but human subjectivity*—he treats the unknowable as knowable, he asserts a proposition not only utterly undemonstrable and resting its claims to reality on the keenness of his own fallible introspective faculty alone, but actually lying without the pale of comprehension by minds evolved up to the level of the ordinary nineteenth century type. True, Schopenhauer professed to write for posterity, but whether with any definite idea that the brain of the future will evolve into a more perfect, than the contemporary organ—grow more capable of fathoming the depths of his mystifying idealism—does not appear in his pages. Schopenhauer seems clearly inferior quoad the Kantian standard to Spinoza, who at least strove to throw into mathematical form even the most hazy of his conceptions.

When the part played by the cerebral substance in the genesis of thought first dimly dawned on physiological intelligence, "the brain as a whole" was supposed to enter into a state of activity as the imperative condition of the processes of ideation, volition, &c. Naturally enough, so long as the anatomy of the organ continued in a state of primitive rudeness, no attempt was, or could be, made (the problem would have had no significance for early physiologists) to determine the possible existence of a nexus between any particular spot in the total encephalon and the manifestation of any particular form of mental activity. It is needless at the present day to insist on the obvious truth that the brain is never concerned in its totality in acts of cerebration.

Willis (1622-78) commonly credited with having originated the notion that special functions are discharged by special *areae* within the brain,* seems to have been, at least vaguely, anticipated in the middle of the fourteenth century by Guy de Chauliac, physician to three of the Avignon Popes.† Almost contemporaneously with Willis, Swedenborg (1668-1772), with greater definiteness of idea,

existence of matter, is inapt for metaphysical study, would at least be satisfied with Schopenhauer. Nor could he quarrel with R. W. Emerson, who . . . takes his departure from his consciousness, and reckons *the world an appearance*. . . His *thought*, that is *the universe*.—"Life," by O. W. Holmes, p. 146.

* Among others by Draper. "Intellectual Development of Europe," vol. ii., p. 286, Ed. Lond. 1875.

† Isensee, *Geschichte der Medicin*, 1er Theile, p. 308. 221

suggested that things relating to theology belong to the highest region of the brain ; things relating to morality to the second ; under these lie matters of a political or civil nature ; while scientific subjects form the door that leads to these higher regions ! * Later on Hume, ever a pioneer in philosophic progress, intimated his conviction (1711-60) that particular kinds of ideas originate in particular regions of the brain.† The first serious attempt, however, to localise function originated with Gall (1796), and underwent modification at the hands of his follower, Spurzheim. But the psychological system of Gall, with its given number of mental faculties, these and no more (*phrenology*) ; *plus* its physiological postulates, namely, localisation of those faculties, varying growth of the corresponding cerebral area, varying influence of that growth on the form of the superjacent portion of skull (*craniology*) ; and possible identification of mental qualities during life by means of such variations in outline of the cranial surface (*cranioscropy*) erred *ab imo* both psychologically and physiologically. "The absurdity of phrenologists," says Herbert Spencer, "in presenting their doctrine as a complete system of psychology suffices to repel all students of mental science."‡ On the other hand, physiologists could scarcely be expected to give their allegiance to a guide so very ignorant of the alphabet of their department as to assign to the grey matter the sole function of feeding the white. Nevertheless, admitting to the full the gravity of his obvious errors, Gall gave a new impulse to the study of cerebral physiology, and merits a high place among its cultivators.

The system propounded by Gall collapsed utterly. A modification suggested by Comte made no scientific mark. The very idea of localisation came to be scouted as a hopeless error. And, seeing that "mind has no locality" (as though the whole question were not begged in this assumption), the notion, that the brain might by possibility be ever parcelled out into distinct areas of differentiated activities, was thenceforth habitually stigmatised as contemptibly ridiculous and unworthy of scientific consideration.

But worse remained in store for the unpopular theory. So far its condemnation had rested on its own inadequacy ;

* "The True Christian Religion," No. 186, Lond. 1858.

† Huxley, "Life of Hume," p. 79.

‡ "Principles of Psychology," vol. i. p. 572, 2nd Ed. 1870.

but hereupon intervened Flourens with a budget of *experimental* evidence apparently giving the idea of localisation its direct and final quietus. And, as all who, like the writer, ever listened to the earnest pleadings of that enthusiastic dogmatist can testify, it was difficult to resist conviction, while under the spell of his eloquent expositions. Now Flourens, removing the brain in different directions by successive slices (in imitation of Zinn and Rolando), announced as *proven* propositions:—A small portion of the cerebral lobes suffices for all their functions;—there are no separate seats for various functions or various perceptions;—when one perception is lost, all are lost;—when one mental faculty goes, all others follow in its immediate train. The metaphysical conception of the unity of mind seemed once more to have regained ascendancy. But, in as much as the analyses, separations, siftings and new combinations of cerebral activities, clinically exhibited by disease (not to adduce conflicting experimental results) demonstrate day by day the precise contrary of this latter postulate, Flourens' mode of procedure must have been in some manner or other radically unsound and misleading. His conclusions have long been disregarded by the great body of physiologists. Specially were they disregarded even from the first by Bouillaud, who taught persistently on pathological evidence, that one faculty at least owned an individual home in the brain,—that the faculty of articulate speech resided in the anterior lobes. By thus nursing the idea of localisation among an unwilling generation (even his colleague Andral* denied on clinical evidence the alleged connection between the anterior lobes and speech) Bouillaud paved the way for its ultimate general acceptance. Nor has the recent advocacy by Goltz† of a hypothesis, closely allied to the dogma of Flourens, succeeded in shaking to any noteworthy extent the faith of physiologists in the principle of localisation.

Looking at the problem of localisation *à priori* (and while physiological proof is still limited in amount, and pathological observation remains far, very far, from having delivered its ultimatum, this is a legitimate course), which

* The cases of Andral, on which I have more than once heard him base his opposition, are referred to in his "Clinique Médicale," t. v. p. 382, 1833.

† "Trans. Internat. Med. Congress," vol. i. p. 228, 1881.

is the more reasonable hypothesis? (a) That one and the same given set of brain-cells may be successively or indifferently dynamised, either motorially, sensationally, religiously, erotically, intellectually (say mathematically, musically, pictorially, or linguistically) : or (b) that to each of these varieties of cerebral activity a separate nidus, however infinitesimally small, is inalienably allotted within the brain substance? The query may be answered by another : is the notion of varying dynamisation even for a moment admissible? Would such an admission not involve the apparent absurdity, that liver-cells, habitually secreting bile, may ever and anon expend their formative force in producing the other hepatic secretion, its peculiar saccharine substance?*

Does it not seem a foregone conclusion that, once the corpus striatum had been proved to be the seat of reinforcement and discharge of motor impressions and the optic thalamus, that of various sensory perceptions, the principle of localisation must be conceded a place among established truths? Does it not become patent, that thenceforth no physiologist, unless on the evidence of unimpeachable observation, could logically set a limit to the multiplicity and refinement of the issues, whereto the principle might extend itself. Furthermore, if every part of every nerve-ganglion has its own specific work, if there be in the acoustic nerve differentiated fibres for the conveyance of impressions, severally of musical tone, of pitch of tone, and of mere noise, is it reasonable to suppose that a universal jumble takes place within the culminating seat of mental activity, the cerebral centre?

How is it possible to conceive various of the singular pranks of diseased memory, except on the hypothesis of localization? How otherwise can we even dimly understand that one man, for example, may lose a language, *in toto*, another, noun substantives alone; another, names of persons solely; another, a certain number of letters of the alphabet; yet another, a single one of these? Does not the existence of special centres, themselves subdivided, seem to force itself on us as a necessary involution of such facts?

* Vide Bastian's *à priori* argument for "localization" "The Brain," p. 521, and *Journal Mental Science*, for his original views on "Perceptive Centres." Vide also Ferrier, *Cerebral Localization*, Med. Chir., Trans. vol. 67. 1884.

Herbert Spencer admits phrenology to be the "adumbration of a general truth," and holds emphatically that "different parts of the cerebrum must *in some way or other* subserve different kinds of mental action."* It is true, he also argues that it is possible for a limited number of fibres and cells to become the seat of a relatively unlimited number of perceptions.†

But the truth is, the question of localisation has been in large measure affirmatively decided by the logic of facts; removed from the domain of plausible conjecture to that of fairly proven certitude. The significance of the clinical discovery of Broca's convolution (of which more presently), and of the experimental success of Fritsch, Hitzig, and Ferrier in exciting crucial motor action in the limbs by electric stimulation of the anterior part of a hemisphere, is daily strengthened by fresh pathological facts and additional experiments. All combine to prove the existence of definite areas, within which are presumably seated spots, specks, quasi-points, microscopical aggregates of cells and fibres (cerebral centres), inseparably linked with and presiding over distinct intellectual, emotional, volitional, motorial, and sensational activities.‡ The connection seems to hold in such fashion, that, though the onus of bringing into play and maintaining this or that form of activity does not wholly rest with this or that particular centre, a normal condition of the structure and dynamism of that centre is a *sine quâ non* of a normal condition of the correlated activity. In other words, the receiving and emitting portions of the cerebral hemispheres are composed of differentiated microscopical cell and fibre groups, each effective in its own special variety of faculty alone, though by direct and collateral communications each maintains an intimate relationship with various other differently endowed groups.

Furthermore, certain of these groups are maintained in communication with certain peripheral sensory organs and with none other; stimulation of the olfactory periphery,

* Psychology, vol. i., p. 573, Ed. Cit.

† *Ib.*, p. 563.

‡ It has been calculated by Meynert that the grey matter of the convolutions contains six hundred million cells. Dr. Lionel Beale assigns portions of many thousands of nerve fibres to a fragment of grey matter not larger than the head of a very small pin ("Bioplasm," 2nd Ed., p. 321). What almost exhaustless potentiality may there be conceived to reside in an infinitesimally small space.

for example, will effect changes in the olfactory, but not in the auditory centre, and *vice versa*. A centre and its correlated peripheric tract, stand to each other in fixed dynamic relationship; the more violent the peripheric stimulation, the greater the sequential vibratile activity excited within the recipient central cell-group; so that it becomes well conceivable (a conception to which practical significance will by-and-by be given), that through constant more or less energetic peripheric excitement, that central group shall evolve statically as well as dynamically, shall increase both in dimensions and in amount of stored force for manifestations of memory. Herein, to be just, we find ourselves in some sort echoing Gall in one of his fundamental dogmas.

Whether the morphology of variously endowed cells and cell-groups differs on some definable and distinctive plan is a problem awaiting positive solution in the future. So far as present experience goes, no conclusive evidence can be adduced to show that definite and constantly distinctive cell-form is a statical condition of, and betokens, peculiarity of function in various parts of the brain. Nevertheless, in the actual state of cerebral micrology, great though its advances have been of late, it would be rash to affirm that abiding peculiarities of outline, of size, of polar supply, of density of wall, &c., may not really exist and possess such significance, because research has hitherto failed to substantiate them. Besides, it is notorious, actual morphological differences are, as matter of fact, discernible, which it is the habit to ignore because they seem to be devoid of importance.

And in truth affirmative evidence on the question is not altogether wanting. Schroeder Van-der Kolk found differences many years ago in the morphology of the cells and fibres of the grey substance of the convolutions in the anterior and posterior lobes, and held them to be demonstrably associated with difference of function.* More recently the morphological differences, especially in regard of size, between the superficial (small) and deep-seated (large) nerve-cells in the cerebral cortex, assimilating them severally to the sensory and motor columns of the spinal cord, has been insisted upon by Luys, as suggesting with strong probability that the variation in form in the brain

* Maudsley, op. et. ed. cit. p. 116.

may have an identical dynamic significance.* Again, is it reasonable to suppose that the intermixture of polygonal cells like the larger cells of the grey matter of the cortex and smaller cells like those of the cerebellum, within the grey matter of the corpus striatum, means nothing? The researches of Bevan Lewis have also proved the existence of peculiarities of structure and collocation in the cortex, which doubtless have their real, though yet unrevealed, meaning.

Uncertainty yet greater holds as to the reality or non-reality of a definite connection between the chemical constitution of localised cells and the nature of their functions.

Yet another allied question of deep interest eludes reply in the existing state of knowledge. Where does cell-differentiation in its progress towards infinitesimal minuteness cease? What is the actual amount of cell-structure told off for this or that kind of manifestation amid the sum total of cerebral activities? In other words how many cells go to form a *faculty ganglion*? There are no known means of fixing the limit, of determining how many of the millions on millions of cells, agglomerated in the cortical grey substance, take part in each cerebral act. But that the number of cells, required for any individual manifestation, may be comparatively small, and occupy a site of only microscopical dimensions, seems excessively probable. Ganglions composed of a few cells or even of one cell, have been identified in the coats of the intestines, in the bladder and in the walls of the vessels.† And assuredly it may be safely postulated, that cells of a given potentiality are never accumulated in sufficient number to constitute a definite mass. In this sense we may accept without cavil the dictum of Brown-Séquard: "motor or other centres, as commonly conceived,

* "The Brain and its Functions," Fig. 1, p. 15, Lond., 1881. Another French writer speaks as if it were an established fact, that the large pyramidal cells in the cortex are purely motor. (Ferrière, *L'Âme est la Fonction du Cerveau*, vol. 1, p. 249, 1883.)

† Legros, in Luys, *op. cit.* p. 173. Maudsley (*loc. cit.*, p. 117, seeks to prove by a numerical argument, that "only a small portion of our intellectual instruments are utilised." Ribot (*Dis. of Memory*, p. 38) speaks of cells and fibres in repose, or "*which remain inactive during a life-time*," as if the matter were not open to question. No doubt, as all our cerebral potentialities are seldom, if ever, brought into activity, so the cells representing some of them may be supposed to remain in a life-long state of *quasi-hibernation*.

that is to say as agglomerations of cells having one and the same function, and *which form a more or less definitely limited mass*, do not exist."* There may be no specific agglomeration, no definite area from which cells of all varieties of endowment, except one, are rigidly excluded; cells of differentiated morphology and dynamism may be as functionally specific, if intermixed, as if absolutely separate. The proximity or intermixture of cells, differently endowed, would not impair the proper activity of their intimate neighbours,—each cell maintaining that variety of ideating, motorial or volitional life, independent of all others, which is the necessary outcome of its own specific endowments.

On the basis of such limitation how easy it becomes to realise the difficulty of establishing, either experimentally or clinically, the precise sites of special cerebral functions. If a few cells—a few compared with the infinite total—suffice to represent a special form of activity, they must be so mixed, jumbled, overlapped and underlapped by others differently endowed, that the search for those actual cells, must out-rival the proverbial puzzle of finding a needle in a hay-stack. And this all the more certainly because any one specific kind, if once thrown into activity, may or may not influence others close by through anastomotic communication or nerve-currents.

Hence, maps of the functional topography of the brain could only, if perfected to any fairly conceivable degree, roughly indicate the locality occupied by any given activity, not exhibit outlines of the actual cells and fibres concerned. The infinitely minute, the microscopical, could not be correctly outlined on the surface: besides the difficulty of overlapping centres must prove insuperable. The maps hitherto drawn of various centres on the cerebral surface represent a state of knowledge as tentative as, if not more tentative than the accepted charts of Mars do of the surface-structure of that planet.

Again, this idea of extreme limitation in the amount of cell-structure, allotted to each differentiated form of activity, seems to furnish a partial clue to the solution of another puzzle in cerebral physiology,—the relation of size to power of brain. Now it is well known that no uniform direct relationship holds between the two: if the brain of Cuvier,

* Quoted by Bastian, "The Brain," &c., p. 523.

for instance, reached the exceptional weight of $64\frac{1}{2}$ ounces, that of the least cultured "hewer of wood and drawer of water," might weight as much. Long years ago I heard Bérard Ainé, the then Professor of Physiology at the Paris School, tell his class, that within a few days after Cuvier's death he found the brain of a *porteur d'eau* at the Hôpital St. Antoine, slightly outweigh that of the philosophical naturalist. Now, though a certain number of plausible arguments are easily found to meet this difficulty, that they fail to dispose of it satisfactorily, is an inference which must impress itself strongly on any reader of recent works on the brain. That the water carrier's brain may have been the seat of original potentiality, which came to nothing, because the organ was not worked, seems scarcely a final or even a very cogent argument; the converse view, that if the potentiality existed, it would have forced itself into active development, might quite as reasonably be urged. So long as the "brain as a whole," or even islets of appreciable magnitude were supposed to be the effective agents of each and every form of cerebral manifestation, the existence of some fixed ratio between amount of brain substance and of intellectual power seemed a necessary postulate. But if a few cells perfect in morphology, duly specialised in chemical constitution (?), intense in dynamism, and constantly fed from a vigorous and plenteous neuroglia, suffice for the full production of a given variety of intellectual force, the complete antagonism, occasionally substantiated between bulk and power, ceases to be a source of serious embarrassment. Besides the growth of the most highly developed brain in some one or other intellectual sphere might find its balance in the undue production of cerebral cells unconnected with the higher forms of ideation, but correlated, say, with muscular exertion,—with the emotions, whether elevated or low,—with the fierce pursuit of unworthy propensities, such as the cowardly destruction of animal life, the enjoyment of slaughtering something, so-called "sport,"—or the steady indulgence in a vice, such as gambling, which requires a certain amount of mental aptitude for its successful management.* Thus the startling difficulty of the similitudes, occasionally revealed by the weights and scales, might find an intelligible solution.

* The bulkiest brain ever weighed in the United States, weighed $62\frac{1}{2}$ oz. : the owner, a Colorado man, was a professional gambler. —*British Medical Journal*, p. 1216, Dec. 16, 1882.

Fortunately for the present enquiry, the speech-centres are, at least in part, among those most satisfactorily identified. Gall, catching the first glimmer of the truth, persistently placed the faculty of language in the anterior lobes. Of course, he fell into errors. Among the rest, he held the "organ" to be symmetrical, supposed that it lay immediately on the bony plates above the globe of the eye, traced extrusion of the eye-balls to its exuberant growth, and taught in "cranioscopic" practice that prominent eyes denoted linguistic aptitude. Unfortunately for this doctrine, people, remarkable for their deep-set eyes, were every now and then found to be gifted with singular fluency of talk, conversational and oratorical;* while the converse association of protruding eye-balls with lameness of speech proved to be extremely common.

Bouillaud, adhering, as we have already seen, to the fundamental idea of speech-localisation in the anterior lobes, first distinctly drew the line between the ideation and the articulate expression of words. Next, Dax, a physician of Montpellier, made the very remarkable step—remarkable even as a general principle of physiological psychology—that the *left* hemisphere *solely* held functional relationship with speech (1835). After a lengthened interval Broca (1861) fixed the seat of the "faculty of articulate language" in the second, and especially the posterior extremity of the third left frontal convolution. The assymetry, revealed by Dax, was thus maintained. Next, Hughlings Jackson showed the frequent connection between the sufficing lesion in the left anterior lobe and embolic obstruction of the middle cerebral artery. Later on Ferrier proved that Broca's convolution specially presided over the muscular acts of articulation; while the very original and lucid papers of Broadbent† and Bastian's chapters in his previously quoted work yet further help to identify the gyrus in question as playing a prominent part in articulate speech.

But the entire cerebral onus of speech-production does not reside in Broca's convolution, though himself appears to have imagined the affirmative. Far from this physiology, subjective and objective combined, proves the subjoined

* Macaulay, the talker *per eminentiam* of his day, furnished an excellent illustration, if we may accept the evidence of the sunken eyes in the apparently life-like photograph by Maull and Polybank.

† "Medico-Chirurg. Transactions," vol. 55, 1872.

series of intra and extra-cerebral successive events or stages (the earlier of which have no communication, direct or indirect, with that gyrus) to be its indispensable factors. In the following brief description of these stages the anatomical words employed shall be as few as possible.

(α) Ideation takes place within its special centres (fronto-parietal) in the intellection in response to the stimulus of some one or more of the following excitants :—

1. Perception of sensation, extrinsic, intrinsic or visceral.
2. Introspection, volitional or involuntary.
3. Active correlation with an already existent idea (association).
4. Emotion.
5. Memory.
6. Unconscious cerebration.
7. Automatism.

(β) In the second stage (this may be simultaneous with the first),* the idea, thus flashing into consciousness, is transformed into its word-image, probably in the actual site of ideation.

These two stages constitute the *formative* process of word-making. For their normal activity a healthy state of the visual and auditory word-centres is indispensable.

(γ) In a stage beyond the word-image is conveyed to the special psycho-motor centre in the cortex.

With this stage the train of *afferent* or *in-bringing* currents is completed.

(δ) In a fourth stage the *efferent* or *out-carrying* process commences. The word-image is transmitted from the cortex by nerve currents (presumably direct through the white substance) to the motor word-centre in the third left gyrus.

Now here evolution may stop, that is, with mental cognition of words and preparation duly made for their discharge. The symbols are there, but silent; they exist *in posse*, but not *in esse*, as words. They are so far only subjective modes of consciousness duly prepared for objective realisation. Arrest at this period of progress is constantly illustrated in the acquisition of language in infancy; there can be no doubt infants recognize various objects by their names (through the potentiality of their visual and auditory word-centres conjointly) from hearing them used by those

* Vide note p. 16.

about them, before they have the power to pronounce those names. In infancy the arrest comes of imperfect acquirement, resulting in turn from backwardness of structural development, or from feebleness of dynamism; in adult years it occurs in obedience to a decision of the will, or as an effect of disease in the motor word-centre or in the nerve-tracts conducting outwards therefrom.

(e) Here, in the third left convolution, a fifth stage is reached by the transformation of the word symbols into motor-impulses.

(f) In a sixth stage those motor-impulses are conveyed to the left great motor ganglion, the corpus striatum, grouped in the appropriate cells and probably reinforced therein, prior to being discharged automatically or volitionally.

But here arises a seeming conflict between physiology and pathology. The latter would teach us that the left hemisphere is alone connected with articulation,* while physiology pleads, that if one corpus striatum alone transmits motor verbal activity, articulation should be a unilateral, instead of as it is known to be a bi-lateral process. The difficulty may be met by the hypothesis (as yet unproven) that anastomotic communication takes place through the corpus callosum from the third left to the third right convolution and thence to its own corpus striatum.

(g) In a seventh stage the phonó-motor currents are discharged from the corpus striatum, and, following the usual route outwards (by the cerebral peduncle and pons), reach the affiliated motor cells of the antero-lateral columns of the spinal cord, which through their connecting nerves stimulate the muscles of phonation and articulation.

(h) The respiratory and laryngeal muscles responding instantaneously to the nerve influence from the spinal marrow, modify the tension of the vocal cords, and with the help of expired air cause phonation. Phonated sounds in turn, strengthened in their passage outwards, make their exit as voice. An eighth stage is thus completed.

* Besides the superior importance denoted by its connection with speech, the left hemisphere (exciting the more powerful movements of the right half of the body), is otherwise *more noble* than the right. It weighs heavier (Boyd), especially its grey substance (Bastian); it is often furnished with a convolution in excess, and its intra-uterine growth is more rapid than that of the right (Gratiolet). But these facts throw little light on the difficulty above set forth.

(i) Finally, in a ninth stage the voice is moulded into articulate speech by the muscles of the tongue, throat, lips, and face.

Now, in the utterance of a new language, each or all of these stages may be of easy or difficult accomplishment to the individual. A man, unhampered by actual cerebral disease, may be a ready or a laboured speaker, either because his ideation is brilliant or dull, or the conversion-process of ideas into word-symbols vigorous or inert, or the transforming changes in the motor word-centre active or sluggish, or the discharge of motor impulses from that centre slow or rapid. He may revel in, or almost wholly want, power of ideation, transformation, or discharge. And the activity of ideation will in turn vary both with the sensitiveness of its special cell-clusters to impressions of the various kinds just enumerated, and with the force of those impressions.

And here it seems advisable to place before the non-medical reader some inkling of the evidence, derived from the failures of speech in cerebral disease, which aids in proving the correctness of the views taken concerning the normal factors of the function. The power of word-ideation may be annulled or perverted, words are wholly forgotten and non-producible mentally, or they are imperfectly producible, misconceived and misused (*Amnesia*)*. Or words may be mentally producible with facility and correctness, while their egress from the brain is arrested *in transitu* outwards (*Aphasia*).† In the first case, structural defect is found in the intellectual sphere of the cortex. In the second the precise site of stoppage is identified by structural change; (1) at the posterior extremity of the third left frontal convolution, either in its grey matter or in the white fibres connecting it with the corpus striatum; (2) or within the corpus striatum, involving its reinforcing cells or out-leading fibres. Two examples of speechlessness, co-existing with a normal state of the ordinary intellectual faculties were long since published by Andral, wherein the

* A non, and *μνησις* memoria.

† Aphasia, *i.e.*, *Ἀφασία*, stupor, *præ quo loqui non possumus*. Morelli *Lexicon in voce*.—The chapter (lvii.), descriptive of the making of Monsieur Noirtier's will in Dumas "Monte Christo," supplies a picturesque and dramatic, and, for the lay reader, a sufficiently accurate version of the conditions of one form of true aphasia.

left corpus striatum (in one of them the right also), and no other part of the encephalon had undergone softening.* On the other hand the corpus striatum may, as far as naked eye appearances go, escape implication. The third gyrus is *per eminentiam* the home of aphasia.

Aphasics may retain the power of writing down their ideas in correct and lucid phrases, or from defect in the visual word-centre they may completely lose this power also (*agraphia*).†

Amnesia and aphasia may be permanent, temporary, or only of momentary duration. Virgil's *vox faucibus hæsit* represents the condition of a man rendered for an instant emotionally aphasic. The temporary association of amnesia and aphasia has fallen under my notice in fatty metamorphosis of the heart, doubtless caused by accidental extra feebleness of blood propulsion.‡

I have recently met with a singular variety of *agraphia*, which might be called *paragraphia*. The patient omitted, as he wrote, the *first* syllable of all lengthy words, well knowing he was committing error after error. The converse condition of perverted writing with correct commencement, followed by incorrect sequence, is common.

The condition of a pure aphasic, free from amnesia and *agraphia*, resembles that of a vocalist, who is not a singer at sight, in the process of learning a new piece. There is a stage at which the air may exist, distinctly ideated note by note in the mind; yet the would-be executant cannot phonate, perhaps, a single bar correctly. Here the transforming and discharging activities are plainly at fault. And the fault is dynamic not statical, for bye-and-bye the incapacity disappears. The association of ideal notes and the corresponding changes in the emissive centres, and hence in the varying tension of the vocal cords is at first unsteady, doubtful, hesitating and consequently imperfect. But, just as in speech-aphasia, the failure is independent of motor defect in the muscles of phonation and articulation, these being *ex hypothesi* and in actuality perfectly free from paralytic disqualification.

An aphasic will often utter words of more correct signifi-

* Andral, "Clinique Médicale," t. v., p. 454, *et seq.*, 1883.

† A non and *γραφω*, scribo.

‡ "Diseases of the Heart and Great Vessels," 4th Ed., p. 343, 1873.

cance under the influence of startled sensation and emotion than of ordinary conventional ideation-processes in the intellectorium. Reflex currents from the centres of taste or touch, or of wounded feeling, sometimes evolve coherent phrases, *volitionally non-reproducible*, to the astonishment of bystanders. Sometimes, however, a word or short phrase, first emitted emotionally remains a permanent addition to the aphasic vocabulary, to be utilized, however, quite as often irrationally as rationally, whereby a clue is given to the co-existence or not of some amount of amnesia. The learner of new tongues scarcely exhibits any analogous peculiarity; in truth, emotion rather adds to his perplexities.

The observer of mental disease frequently meets with mixed conditions of amnesia and aphasia, associated or not with other cerebral failures, which almost defy complete physiological interpretation. The speech under such circumstances may temporarily, or for long years, as a congenital or acquired defect, be limited to a more or less accurate repetition of the words of questions put to the patient, or of his own original replies to such questions, or he may never get beyond the wearisome iteration of some sentence with or without meaning (accidental or intentional), or of a phrase, a word, a syllable, or some few nondescript articulate sounds; he may pour forth floods of unintelligible gibberish, or commence a sentence correctly and yet finish it (cognizing the fact himself or not) with utter nonsense,—succeed in repeating words, which he cannot initiate, if distinctly spoken by a bystander; call objects by wrong names, or resort to signs to express his ideas.

Now it is not difficult to trace a certain similarity between some of these perversions of speech, and the multiform failures of the student of fresh languages.

The cerebral contingent, helping to build up the colloquial linguistic faculty, is then sufficiently varied. Enough (we may hope) has been said to make its modes of action intelligible to the general reader; if he be desirous of more precise technical details, these may be found in the works referred to.* In closing this section of my subject I should wish once again to notice, "that the only firm grasp of the great problem in *physiology*—the mechanism of speech—

* For the latest views vide Broadbent, "Medico-Chir. Trans." vol. 67, 1884.

has been obtained by meditation on facts in *pathology*. Therein appears one of the happiest conceivable illustrations of the fundamental truth, that while physiology may often suggest inferences in pathology, the latter branch of biology may play a yet more effective part in laying bare the secrets of the former."*

Now if structural perfection and dynamic fitness in the ideating, transforming and discharging brain cells be carried to extremes, a *genius*, as it is called, for languages is the result. The opportunity seems so tempting that perhaps we may be allowed a short digression on the puzzling question, what is genius?

Genius in general may, I think, be defined as the *irrepressible energy of a differentiated highly dynamised and perfectly organised cluster of brain cells* (cerebral centre), *which through use increases in potentiality and in readiness of assimilating nutrient material from the interwoven neuroglia, and eventually becomes extra-nourished and extra-vigorous*. The perfection of cell-structure and the preponderance of contained force become so great that a quiescent state of the centre ceases to be possible; a physiological conception rendering the familiar phrase, *genius must out*, on rational grounds intelligible. With this condition of brain-cells must be associated, as a matter of necessity, normal activity of the afferent, efferent and intertwining cerebral and nerve currents. The fitfulness and wayward "inspiration" of genius may, most probably, depend on variation in the vigour of assimilation of nutrient material by the brain-cells, or in the velocity of inter-cell currents. But no amount of either such vigour or of such activity can conceivably ensure high potentiality, unless the nutrient process act on, or the nerve currents play between, cells of *exceptionally perfect statical qualities*.†

* "Diseases of the Heart and Great Vessels," 4th Ed. p. 367, 1872.

† I have been unable to find any definition of genius in Galton's most remarkable volume, "Hereditary Genius"; but I think his results lend support to the view taken in these pages. He seems to have logically proved his main thesis, the hereditary transmission of genius as a possibility, pretty often exemplified by family history. But no abundance of genius in parents or immediate or remote ancestors will ensure its existence in a descendant. Herein I find myself in perfect accordance with O. W. Holmes: "The gift of genius is never to be reckoned upon beforehand, any more than a choice new variety of pear or peach in a seedling; it is *always a surprise*, but is born with great advantages, when the stock from which it springs has been long under cultivation."—"Life of Emerson," p. 3, 1885.

If this be a successful attempt to identify the nature of genius, what is to be said of the notion, which pronounces the glorious gift to consist in an unlimited power of work? Why that such a view must be received with, at least, the gravest demur: the proposition seems, in truth, to take rank in the group of stock phrases, that all the world goes on repeating, because they've once been said.* Will any amount of work make a man a painter who cannot draw? If they practised *ab ovo usque ad malum* of their vocal lives, would ordinarily endowed singers ever reach the quasi-inspired standard of a Mario or a Grisi? Would scores of years of toil succeed in fashioning a dramatic Edmund Kean or Rachel? All homage to the earnest labour of Samuel Johnson; all homage to his efforts to impregnate his writings with sound, albeit somewhat narrow, morality! But may we not without irreverence ask, had he toiled half-a-dozen lifetimes on Lexicons and "Ramblers," artificial prose, stilted poetry and essays displaying but feeble capacity for philosophic speculation, would he have ever produced a volume bearing the exalted stamp of genius?† Is it to be imagined, that any amount of sacrifice of the midnight oil, aided by any degree of earnestness of purpose would so idealise a common-place versifier, that eventually at his bidding couplets should appear rivalling in spontaneous brilliancy and fervency of imagination even the minor efforts of Byron or Shelley? Could he ever be expected to do more than, like many a preceding poetaster, link together incongruous phrases and torture them into limping rhymes?

All the world knows the capacity of Macaulay for work was simply stupendous, almost incredible. Of his brilliancy and versatility of *talent* the literature of his country bears imperishable record, but injudicious flattery alone would ever dream of assigning him a place on the lofty pinnacle of *genius*‡. No! the very contrary view

* Il y a des choses que tout le monde dit, parcequ'elles ont été dites une fois.—*Montesquieu*.

† Alike in every theme his pompous art,

Heaven's awful thunder, or a brewer's cart.—*Peter Pindar*.

According to some critics Johnson was even in his own special sphere deficient in lofty qualifications. "His dictionary," says an acute essayist, "shows that he was no etymologist; and he had in fact *very little taste for language*."—*Times*, Oct. 10th, 1884, p. 7, col. v.

‡ And in truth the kindly but stringent criticism of a recent biographer seems to deny him an exalted order even of *talent* in his special

seems much nearer the truth,—namely, that *genius is the spontaneous intellectual attribute, which supersedes the necessity for labour*, how much so-ever after-toil may beautify and amend its first improvised outbreaks. You may raise talent and labour conjoined to the tenth power of efficiency, but even then genius will fail to appear.

But the ordinary belief finds a doughty champion in Dr. Maudsley. "It is ridiculous," observes that subtle and logical thinker, "to suppose that the man of genius is ever a fountain of self-generating energy."* How, then, if the supposition be a ridiculous one, shall we explain the performance of a child, aged eleven, whom I have heard draw forth, apparently without mental effort or forethought of any kind, complex and varied harmonies, and occasionally tuneful melody, from the piano for half-an-hour at a time without *falling into a single discord*, his fingers wandering rapidly over the keyboard under the unerring guidance of some cerebral force, which he simply obeyed without obvious attempt at control,—how shall we explain this, when, yet further, as I happen to have been told on the spot by a fairly accomplished pianist (herself a student of the instrument for twenty years), that for worlds she could not toy with the keys, as that boy had done.† But to pass from small to great people. Mozart played admirably when only four years old, and composed largely between that age and six; Beethoven began to publish in his thirteenth year; Pope "lisped in numbers, for the numbers came"; Moore at the age of eleven wrote a comic epilogue;‡ Bellini, between the ages of six and eight, set to music several religious pieces, one of which was performed in church; §

department. A writer of History, who is declared to be "deficient in generalized and synthetic views," "excessively diffuse," and above all "wanting in historic spirit," can scarcely be awarded serious claims to the higher qualities of the historian's craft.—Vide *Life*, by Morison, p. 163.

* "Physiology of Mind," 2nd ed. p. 34.

† It is noteworthy that the child referred to was rather deficient than otherwise in the faculty at "playing at sight," while remarkably gifted with memory for music once learned,—so sharply may these allied endowments be differentiated. This curious fact may be instructively read in the light of a yet more singular one, namely, that (as I am assured on indisputable authority) Senior Wranglers have sometimes been found incompetent at sums in common addition.

‡ A Squeeze at St. Paul's, by Master Moore, 1790.

§ Phipson, Bellini and the Somnambula, p. 8, 1880.

Doré published lithographs of scenes in the Gallo-African war, when eleven years old.* What again of the nature of the cerebral activity of a chess-player, who will carry on mentally, and win, half-a-dozen different games at one and the same time without seeing a single board?† What of the specific faculty that gives originality to every subject brought within an individual's mental grasp? What of the unrestrainable intellectual leaning, severally, to the abstract or the concrete? What of the aptitude for unravelling cryptograms and puzzles in action, as displayed by Edgar Poe? What of the wit of a Douglas Jerrold, whom we have heard flash forth as many brilliant witticisms in the course of an hour, as would make a season's effective stock-in-trade for half-a-dozen professional diners out? What above all of the "Calculating Boy"?

Genius is furthermore displayed occasionally by the *impromptu* aptitude to turn unforeseen accidents to useful purpose. Let me give an instance. All musical people are acquainted with the deeply emotionising effect of the change of key from the minor to the major in the choral prayer, "Dal tuo stellato soglio" in Rossini's "Mosé in Egitto," an effect so powerful that it excited hysterical seizures among numbers of the Neapolitan population when first produced. Here is the composer's story of the genesis of that marvellously effective stroke of musical genius. "A short time after this exhausting concert, I had to take a *tisane*, which stood before me as I wrote that prayer. While I was writing the chorus in G minor, I suddenly dipped my pen into the medicine bottle instead of the ink. I made a blot, and when I dried this with the sand it took the form of a natural, which instantly gave me the idea of the effect, the change from G minor to G major would make, and to this blot is all the effect, if any, due."‡ Chance made the suggestion, genius automatically, as it were, appropriated it. Would any amount of previous toil have inspired a musical drone to seize the golden occasion?

Now in all these cases where is the evidence of sustained

* "Biographie des Contemporains," p. 194, Paris, 1878.

† Morphy won six of eight games, playing blind-folded with the ablest of Parisian players, a seventh game was drawn, the eighth only lost.

‡ For the application of this valuable anecdote I am of course responsible; for the story itself readers are indebted to an anonymous but evidently trustworthy, writer in "Temple Bar," June, 1882, p. 187.

labour? Yet *audiamus alteram partem*, as advocated by Dr. Maudsley. "To believe that any one how great soever his natural genius, can pour forth with spontaneous ease, the results of great productive activity without corresponding labour in appropriation, is no less absurd, than it would be to believe, that the acorn can grow into the mighty monarch of the forest without air and light and without the kindly influence of the soil."* But how if the air, light and soil of this striking, but as it appears to me all too captivating, simile, be bounteously supplied by a specially rich and ever ready neuroglia?

Per contra, the value of work in addition to lofty natural endowment is not contested. Elaboration must improve the first rough strokes of genius in any department. It is well known that the third act of *Manfred*, as originally sketched, was so inferior to its predecessors, that seizing a spell of happier "inspiration"—that is when the poetic brain-centres were "in the vein,"—Lord Byron completely re-wrote it. In one sense, this may be called *work*. Let us note, too, the method of composition of one of the most exalted geniuses yet vouchsafed the world—Beethoven. "Little as it might be imagined, Beethoven was one of the slowest and most tentative of composers. He always carried a large sketch-book with him, into which he scribbled every thought and every change of thought as it occurred to him. Many of these remain, and thus the progress of his works can be traced from the germ to the finished production."† But all the hewing and the polishing in the world would have failed to consummate even one of the immortal symphonies, had not a certain little cluster of cells, endowed with the potentiality of genius, been lodged in the brain to supply the original frame-work. *Non ex quovis ligno fit mercurius!*‡

But the secondary value of work under all circumstances

* Op. et loc. cit.

† Letter from Sir G. Grove to the *Times* on Nottebohm's "Neue Beethoveniana."

‡ And in truth Maudsley somewhat yields his point in proclaiming, that "in the man of genius . . . imagination is the highest display of organic evolution, and like nature *works unconsciously*" (Op. cit. p. 527). Is real *labour* ever unconscious? It was not so at least with Kepler, when he toiled after the discovery of the laws of planetary motion, that have made his name immortal: he, that best cognized his inward throes, writes, "I considered and reflected, till I was *almost mad*!"

is further exemplified by the rarity with which men display genius in more than one, though they may earnestly devote themselves to several departments of art or science. Take as a recent instance the case of Wagner. His enthusiastic admirers claim for the composer as high a place among poetic dramatists as among musical innovators ; but an un-biassed judgment finds in the one sphere aptitude and facility, accomplished handicraft,—in the other genius. George Eliot was as incapable of fixing on canvas the poetry of form of the Francesca di Rimini of Ary Scheffer, as the painter of writing a Teuton Silas Marner. Herbert Spencer possesses no more aptitude for linking together in melodious sequences those few and simple tones, which will endear the name of Schubert to all generations, than the German composer for compassing the lofty generalisations of the English philosopher.

The *spelling centre*, the potentiality of which would be effectively tested rather in writing than in speaking, must from the nature of things be intimately connected with the visual word-centre, and has not yet been identified as the occupant of a separate locality. Correct performance of the spelling centre is not however necessarily associated with manifestation of activity in the speech-centre ; for the sound of words may be recognized, ideationally imitated, transformed and discharged without the component letters being known,—nay more, if those letters were required from the speaker, the names assigned them might be wholly erroneous.

The real existence of such a differentiated centre seems proved by the fact, that this humble accomplishment, commonly assumed to be equally, is in truth very unequally, shared by educated people. That orthography is anything but a very general possession was curiously shown on a large scale at the recent meetings called "Spelling Bees." A schoolfellow of mine at the age of fourteen (almost rivalling Blaise Pascal) invented original mathematical propositions with their Q. E. D., after the manner of Euclid, and yet was unable to spell with surety words of the slightest difficulty. Defective power of spelling is in fact not excessively uncommon in men otherwise highly gifted : Napoleon may be referred to in apt illustration. Some authors of distinguished mark display ever and anon a particular aptitude for mis-spelling names of persons : thus I find in Carlyle's "Sartor Resartus" (chap. i. par. 2) the

names of the French physiologists Bichat and Magendie converted into Bichât and Majendie. But Carlyle notoriously bristled with that class-contempt for science and its professors, unfortunately too common among purely literary men ignorant of its simplest elements, and in all likelihood thought it a matter of indifference how the names of such people were spelt.

It may not be out of place to observe, though somewhat parenthetically, that the avowed contempt for science of writers of Carlyle's stamp is probably oftentimes a mask under which they seek to conceal their mingled distrust and dislike. Finding that the data of science, physical and sociological, perpetually come most inconveniently in the way, either to contest or actually disprove the justness of their *à priori* guesses anent the nature and destinies of man, they begin by dreading, and end by hating its work; fear not only casts out love, but engenders malicious dislike. To feel his pleasant dream—the evolution of final truth in an easy chair out of complacent introspection—interfered with by the unbidden intrusion of an agent, armed to the teeth with controverting objective facts, must prove galling in the extreme to even the most amiable speculative philosopher under the sun. What kind of influence, then, may such unwelcome meddling be expected to exercise upon, perhaps (*teste* Mr. Froude), the worst-tempered teacher of questionable wisdom the world has seen—unless Heinrich Heine be held to have outstripped his Scotch competitor in sinister malevolence? Even J. S. Mill, who intellectually o'ertopped Carlyle by the "head and lofty shoulders," gravely erred by systematically undervaluing science.† Again, Emerson scoffs at science of all kinds; even gentle botany receives, after the manner of Wordsworth, its sneering condemnation from his pen. Amiable in disposition though he habitually proved, his bitter animosity in this direction betrays him into the unpardonable libel, that a scientist (because a scientist) would make light even of his mother's death,—philosophy would "throttle all his pas-

* Well may Mr. Herbert Spencer class Carlyle through "his conceptions of the world, and man and conduct" with "the sternest of Scotch Calvinists."—"Man *versus* the State," p. 78, 1884.) *Plus aloës quam mellis habuit.*"

† This blot on the intellect and character of literary men is not one of yesterday. Cicero regarded the pursuits and discoveries of Archimedes with undisguised contempt.

sion.”* Further, concerning this philosophy, he enquires—

Is't not like
That devil-spider, that devours her mate
Scarce freed from her embraces?

Now, the maternal illustration seems singularly infelicitous for, as matter of fact, it actually does in some sort apply to a man who stood high in literature and held no place in true science—Schopenhauer. The apostle of idealism, as is well known, extended his contemptuous hatred of women even to his own mother. As the sixth Ptolemy obtained the surname of *Philometor* from his devoted filial love, so, conversely, might Schopenhauer be styled *Misometor*, to signalise his hatred of her who bore him. But scientists would not adopt the *non sequitur*, equally grotesque and malevolent, that he detested his mother, *because* he was eminent in literature and transcendental metaphysics.

The works, however, of one conspicuous writer of the present day unmistakeably prove the union of the poetic and scientific temperaments to be possible. Oliver Wendell Holmes; a master of song, who breaks through the rule that (to adopt his own phrase) “the poet is contented with the colours of the rainbow, and leaves the study of Fraunhofer’s lines to the man of science.”† And the prose volumes of this gifted essayist derive some of their chief charms from illustrations of social and moral truths, as correct in science, as poetic in sentiment. As a single example, taken at hazard: “his words, his tones, his looks, carried the evidence of a sincerity which pervaded them all, and was to his eloquence and poetry like *the water of crystallisation*, without which they would effloresce into mere rhetoric.”‡

But, to return, there can be no doubt that the difficulties in the way of practically acquiring fresh languages, both in speech and writing, are seriously increased by the strain put on the spelling-centre through the difference in the sound of words and of their component letters. The adoption of the phonetic system would certainly smooth the way among educated people to the acquisition of fresh tongues.

3.—*Audition word-centre*—The possession of a well-nourished audition-centre for the accurate perception, ready registration and rapid reproduction of words is so mani-

* “Life of Emerson,” by O. W. Holmes, p. 402, Boston, 1885.

† *Ib.*, p. 240.

‡ *Ib.*, p. 324.

festly necessary for the colloquial acquirement of a new language, that the obvious general truth needs not to be insisted on.

But an illustration or two shewing how correct delivery, say of French by English people, depends in special cases on precision of hearing, may not be thrown away. No fault is more common among us than that of accentuating the wrong syllable; now as there is no greater muscular difficulty, in the process of articulation, in throwing the accent on one syllable rather than on another, the defect must mainly depend on imperfect audition of the native manner. I knew a Briton who, after years' residence in France, invariably asked for a "*dem-mij*"—bottle of wine, (instead of *dēmīe*—thus converting the French iambus into a trochee); another who persisted in laying the accent of the word *Château* on the last instead of the first syllable; nothing is more common than to hear *brūt* pronounced *brōū-ij*, &c., &c. The tendency in the French language to throw the accent forward, while the Englishman is accustomed in his own tongue to throw it backwards, may in some measure explain the British failure; but certainly not altogether, as the single instance of the quoted word *Château* would suffice to prove.

Another illustration of the importance of a delicate ear may be found in the difficulty experienced by English people in catching and reproducing the precise difference in sound of the same vowel when without an accent, or provided with an acute, a grave, or a circumflex accent. Thus the *a* and *e* in *matin* and *mâtin*; *épeler*, *pêcheur*, *pêcheur*, *arrière* have each and all their distinctive ring,—in so much that a difference of accent signifies a difference of sound as great as that of two different vowels. Even practised English speakers constantly fail in this delicacy of French pronunciation, and obviously through deficiency of refined hearing. It requires careful analysis to determine in individual cases, whether the defect is aural or cerebral.

French speakers of English, of course experience the same difficulty only in the converse direction, with this additional source of perplexity: that the accentuation of a dissyllable may be of duplicate kind, changing with the signification of the word, as in the case of *prodûce*, the verb, *produce* the substantive.

4.—*Tone-centre*.—The importance of a watchful and correct tone-centre, though perhaps less self-evidently so,

is scarcely inferior to that of a working audition-centre ; and its influence in speech will be rendered more intelligible by a brief reference to the part the centre plays in the appreciation of music. A man, gifted with fair, or even very remarkable powers of attention, apprehension, ideation, judgment, logical inference and memory (in a word, a well-furnished intellectorium) may be so organised that music has no significance for him,—that though his ears are as accurately conductive of, and his audition cerebral centre as acutely sensitive to, sonorous vibrations, *re* mere sound, as those of his neighbours, the harmonic relations and rhythmic sequences of tones produce no specific impression on his brain. How is this familiar fact to be at all plausibly explained, unless as an outcome of the deficiency, or immature condition of a special centre,—qualified alike by its structural cell-endowment and its specifically dynamised (or *tuned*) state to perceive and realise variations in pitch of tone? Just as within the internal ear there exists a specific, differentiated structure—not the labyrinth as a whole—to distinguish the pitch of tones (the rods or organ of Corti), so there must exist in the brain a special centre to receive the tone-impressions from that organ. Each group of rods, assigned to a particular note, must have its correlated cerebral representative in a particular cluster of cells and fibres ; while each such cluster, in virtue of its being specially tuned, will refuse to receive impressions from—that is to vibrate either in unison with or in consonance with—any other fasciculus of rods. Were not this negation-power really vested in the tone-centre, the brain must, when harmony is listened to, generate discord within itself from the jumbled recognition of accidentally associated intrinsic sounds forming no part of the music performed.

That each cluster of cerebral tone-cells and fibres is specially tuned, has just been postulated ; the assumption seems a necessary one. For if, as taught by Helmholtz, the rods of Corti be tuned, that precaution on the part of Nature would be valueless, unless followed out by tuning within the annexed cerebral tone-centre. The function of tuning the rods of Corti, and maintaining them in tune is hypothetically assigned by Helmholtz to the basilar membrane on which they rest,* and this membrane doubt-

* Die Lehre von dem Tonempfindungen, 1865 ; " Ellis's Translation On the Sensations of Tone as a Physiological Basis for the Theory of Music," 1875.

less has its counterpart tuning-agent within the affiliated cerebral plexuses of cell and fibre. And I would suggest that the downright aversion for music occasionally met with in men otherwise more or less highly endowed, for instance, Humboldt, S. Johnson, Dean Stanley, may be the natural outcome of an abiding state of bad tuning of the cerebral tone-centre, wherethrough series of concords are perceived as discords. It is certain there are people (I have known one myself) who cannot distinguish one air from another.

Now, all that has just been said concerning the influence of the tone-centre in music, is *mutatis mutandis*, applicable in the case of speech. The rises and falls in pitch, the inflexions of the voice in the delivery of a language must be caught, registered, and identified, and so become capable of reproduction, at first by training, eventually automatically, by a foreigner desiring to speak in the native method, and such reproduction can only be effected through the instrumentality of a correctly-tuned tone-centre.

Change in pitch of the speaking voice is used in all languages to represent variation in feeling and passion.

And in further illustration it may be observed that the value of a refined sense of tone to the writer of verse can scarcely be overrated. 'Tis the abiding activity of this gift which gives such tuneful measure to the light poetry of the musically-endowed Moore, that his stanzas often seem almost to sing themselves. So, on the other hand, to Emerson's deficiency in musical feeling may be ascribed the "desperate work made with rhyme and rythm," "jarring on a sensitive ear," which constantly mars his versification, and shows that, although "a born poet, he was not a born singer."* Nor is the gift to be despised by the writer of prose. Herbert Spencer, through his theoretical and emotional grasp of the laws of melody and harmony, gives such euphonious rhythmic flow to his philosophic periods, that they oftentimes seem to call aloud for transference by some new Lucretius into sonorous hexameters.

5.—*Motor Word-centre*.—The part played by this centre in ordinary speech has already been sufficiently explained. The greater the potentiality of the centre, the brisker will be the nerve-currents discharged, and the more ready the response of the muscles concerned in phonation and articulation: herein undoubtedly lies one of the elements of easy

* O. W. Holmes, Op. cit., pp. 327, 365.

or laboured utterance of strange tongues. In fact, if the motor-centre be feebly endowed, or its emissive nerve-tracts torpid, prompt power of ideation, aided by all the toil in the world, will fail to make its owner a ready conversational linguist.

6.—*Imitative Faculty*.—The faculty of imitation will obviously afford no help to the scholastic acquirement of a new language; but there can be no reasonable doubt it will considerably assist him in attaining a correct manner of colloquial delivery. Imitation plays a very efficient part in helping the infant to speak its mother-tongue.

The art of imitating particular kinds of phonation and articulation implies keen perception of habitual and changing pitch of voice, accent, cadence, and any individual peculiarity of utterance; for this purpose quickness of sight and hearing are essential, as likewise some special power of regulating the motor-currents from the cerebral word-centre to the desired standard. The faculty is best illustrated by actors in their imitations of the delivery of their colleagues. Now, as this power of imitation is notoriously carried by some persons to a singular degree of perfection, while the extremest effort of others ends only in ridiculous failure; and as, furthermore, the organs of sight and hearing may in both classes be equally perfect, it seems probable that a special centre must be allotted to the talent in the brain.

Be this as it will, the imitative faculty, by helping the foreigner to reproduce the movements of the lips and tongue, habitual to the native, facilitates the delivery of the unaccustomed syllables.

Few, if any, professional imitators of vocal utterance ever analyse the nature of the peculiarity to be imitated, or the means by which the imitation may be scientifically affected. But Herbert Spencer gives a clue to the principles on which such analysis may be successfully utilized by tracing the difference in English and Scotch accent to the fact, that in the former a rise in pitch, in the latter a fall, takes place to the emphatic syllable in a sentence.*

7.—*Memory*.—Memory holds a place of the highest importance among the cerebral attributes essential to the colloquial acquirement of fresh languages, not only in the broad sense of the faculty of recollecting words, but in regard of sundry refinements of sound and mode of

* Psychology, vol. ii., p. 550.

delivery. Obviously, unless new words, as grasped by the brain, become by some process or other readily reproducible by the organ, and a budget of serviceable vocables thus gradually secured, the acquisition of any strange tongue would prove a never ending, still beginning task. Whether the needed facility is effected through perpetuation of the vibrations of the brain-cells, concerned in the original cognition of the words, or through structural change in those cells, or maintained by some other mechanism, is rather a question of the general theory of memory than of its special verbal department. The singular hypothesis of "organic phosphorescence," started by Luys,* cannot be said to explain, though it does ingeniously illustrate the prolonged continuance of impressions; neither does it render intelligible their volitional or automatic reproduction after the lapse of long years.

But whatever be its mechanism, compare the linguistic prospects of a man notably deficient in memory with those of a scholar like Joseph Scaliger, who is said to have learned the whole of the Iliad and the Odyssey by heart in three weeks; or like Macaulay, whose method of agreeably passing the time, when unable to gratify his urgent passion for reading, consisted in repeating to himself "one half of Milton's Paradise Lost!"† These happen to be examples of men of high mental endowment, but tenacity of memory, it must not be forgotten, does not necessarily imply the possession of any other intellectual attribute, even of common sense. Dr. Maudsley saw an idiot at Earlswood, who could "repeat accurately a page or more of any book, which he had read years before, though it was a book which he did not understand in the least."‡

On the other hand though the possession of memory be a *sine quâ non* in the linguistic as in other departments of knowledge, no amount of such endowment, whether natural or acquired, will ensure any remarkable facility in mastering strange tongues: Macaulay himself supplies an illustration. Probably the vigour of memory, (that is, the perpetuation of the necessary conditions for word-reproduction in a state for instant activity, within the brain-cells concerned) is attained at the expense of other important elements of facile speech.

* Op. cit., Book ii., p. 133.

† Life by Morison, p. 26; also Galton, Hereditary Genius, p. 23.

‡ Op. cit., p. 517.

In reproducing language, memory plays a triple part: acoustic, ideal and motor. And just as in the original utterance of words, failure may occur in the manner previously explained, at any one of the three stages: vocal amnesia may in other terms be of three different kinds. And plainly the sufferer from any one of the three forms of defect can have but scant, if any, aptitude for expressing himself in new tongues.

The general law, that memory of any particular group of facts, or of any special variety of knowledge, will prove sure and active in the direct ratio of the facility of original acquirement, holds good in the case of language. He who grasps easiest, retains best; a system of cells, potent in producing words, will be proportionally vigorous in reproducing them.*

Whether the well-known tendency of old people, suffering from increasing amnesia, to forget, in their own language, first, the names of persons rather than of things, and then substantives, rather than adjectives and verbs, attends feebleness of memory in acquiring new languages, I am unable to state from observation. Probably it does; but, in truth, when senile amnesia has set in, a final adieu may be bid to all hope of assimilating and hiving new vocables. The peculiarity in question seems inexplicable. True, the failure of verbal memory in general is intelligible; changes in structure of the cells originally concerned in speech must weaken, and finally annul the impressions requiring to be reproduced; but why should such changes arise earlier in connection with one part of speech rather than another? Or, stranger still, why arise with *some* letters of the alphabet and not all, or even with a *single* letter? May it possibly be, that just as a certain number of the rods of Corti are told off for a given note and no other, so a certain number of brain-cells are correlated with a given letter of the alphabet and that alone?

The faculty of speech furnishes some of the most curiously intricate problems for the student of the laws of memory. I had myself a singular experience the other night, while vainly courting sleep. Humming a few bars of an old ballad, I ideated, in advance of utterance, certain words; waking up more completely at the close of a couple

* So, too, in music. Mozart is said to have succeeded in notating the entire score of the "Miserere," after having heard it twice at the Sistine Chapel.

of lines of the song, I on the instant found I had uttered one word differing in almost all its syllables from the pre-formed idea; memory automatically corrected drowsy intelligence; for the imagined word (Salamander) was wrong, the remembered and produced one (Highlander) right. Why, again, is it that, as life advances, language recently acquired with a fair amount of precision is by-and-bye utterly forgotten, while words registered at a much earlier period still exist in memory? And how can we explain the fact that, under the influence of disturbed cerebral circulation, people have been known to recite poetry, of which on recovery they fail to recall a line, as also to speak fluently and correctly in a language, which they were supposed to have, and habitually had wholly forgotten? To say that the temporary recovery of such power depends on reproduction of lost cells, with their original vibratile impressions also reproduced, seems a scarcely acceptable hypothesis. Probably the phenomenon rather depends on unwonted stimulation of cells by blood circulating vehemently through *areae*, within which the current is habitually only strong enough to sustain a feeble amount of nutrition.

In attempting to speak French, the Englishman meets with an annoying difficulty in the capricious uncertainty of the language as to the genders of its nouns. A few rules, doubtless, have been laid down by grammarians for the determination of verbal sex; but correctness in using the masculine or feminine proves to be practically a matter, at first, of pure and most difficult memory, and eventually of habit and automatism. The mere sound of a given substantive obviously cannot (though I have heard Frenchmen maintain the affirmative) guide directly to its gender, inasmuch as the same word may under different significations assume two different genders, as *la mode* (fashion), *le mode* (mode or mood); *une somme* (a sum or a burden), *un somme* (a nap or doze), &c.

8.—*Automatism*.—The special aptitude of the cerebral cortex for spontaneous manifestations of activity, known as automatic, exercises a certain favorable influence in the acquirement of fresh languages. The manner in which automatic energy comes to our help in speech may be well illustrated by the movements of orchestral players during the execution of any piece of music more or less thoroughly learned and assimilated. More than once have I watched a pair of violin players nodding, smiling, and otherwise

gesticulating at each other, concerning some occurrence on the stage or in the orchestra, while bow and fingers elaborated the most intricate *prestissimo* passages, evidently not under the guidance of conscious attention, but under the impulse of spontaneous vibration of the brain-cells involved in producing the notes required. The sequence has been so often repeated under the guidance of consciousness, that it eventually goes on through habit—each note in the succession evolving its follower *ex necessitate rerum*.

And so it is, though less obviously with speech. After an experience, more or less prolonged in a fixed ratio to the automatic potentiality present in different brains, we acquire the use of phrases, and of the manner of pronouncing them and inflecting them, without directing the attention to their delivery. The intervention of active memory, or recollection, is dispensed with. Here, as in other intellectual spheres, repetition renders acts, originally purely conscious and volitional, producible unconsciously and independently of the will. The process becomes a form of intra-cerebral reflex action, the only difference from reflex acts of the spinal cord being, as Huxley first clearly pointed out, that the former are artificial and acquired, the latter natural and congenital.*

As regards the scope of its aid in speech, automatism may help a flounderer in a strange tongue, through its activity in the sphere of ideation: one idea automatically suggests another, and the idea generates its vocal symbol. So true is this, that, as everyone must have occasionally noted in his own case, we sometimes succeed in catching a coveted word or phrase by letting the conscious mind go as it were, by ceasing to try to think out our verbal puzzle, and allowing automatic activity free play.

But automatism proves in this sense a two edged sword; the cells spontaneously thrown into a state of activity may be other than those required at the particular moment. An

* Cerebral automatism is a factor of wide spread influence, and in the realm of Sociology even may play its occasional part. Thus we are told, though suicide is habitually a direct product of the will, "in some cases the idea of suicide arises suddenly in the mind, and the act follows without the individual having the power to restrain himself. The phenomenon depends on cerebral automatism."—(Morselli, *Suicide* p. 270). But here the term is understood in a sense differing from that in the text: for the element of repetition is wanting. Again the influence of automatism in political combinations and sequences is assumed by e/ Bagshot in his remarkable book, "Physics and Politics."

explosion of wrong words is the result. An habitual condition of perverted automatism lies at the root of most of the incorrect and ill-chosen speech of people delivering themselves in their own vernacular.

The activity of automatism in the motor range of speech-production may be fairly assumed to be yet more energetic than in that of ideation.

9.—*Unconscious cerebration*.—The continuance of trains of thought, started volitionally but sustained unconsciously, known through the exposition of Dr. Carpenter, as “unconscious cerebration,” is in some respects closely allied to automatism. In both forms of cerebral activity there is a nullity of subjective consciousness. The originating influence of will in the former, its non-intervention in the latter condition, constitutes the essential difference between them.

Unconscious cerebration helps to produce thoughts, consequently the symbols of thoughts. But in order that emission of such symbols should follow, consciousness must intervene. It cannot therefore be held that this form of ideation gives real help, proper to itself, in the attainment of new languages.

10.—*Anastomotic Association*.—The sluggard in anastomotic nerve current between brain centres more or less closely affiliated in function will be slow in evolving trains of thought collateral to any ideas originally started. Word-formation will be proportionately tardy;—*per contra*, where intercommunication by anastomotic currents is facile and rapid, fresh words will present themselves with proportional ease.

Abrupt and unexpected association of apparently disconnected thoughts has been held to constitute an attribute of certain varieties of genius. Speaking of Butler’s “Hudibras,” one of his most sagacious critics observes, that “many of his happiest sallies appear to escape him as if by accident; many of his hardest hits appear to be mere chance blows.”* But collateral communication becomes in some persons too easy, irregular and fortuitous, interfering with the control of attention and the fixation of thought upon any given subject. People thus characterised become known for want of stability of thought, for introducing topics in conversation wholly foreign to the subject in hand, and are familiarly said to “go off at a tangent.”

* Life, by Mitford, Aldine Edit., p. 26.

Freedom of anastomotic current between various brain-centres acts then as a double-edged sword in the handling of new languages ; up to a certain point it is useful, carried to extremes it diverts attention in wrong directions, produces word-images inapt for the occasion, and so interferes with appropriate conversational delivery.

B.—*Muscular Conditions*.—The simple act of phonation requires the perfect consensus in action of intrinsic and extrinsic laryngeal, respiratory and other muscles, numbering more than one hundred. In the case of ordinary singers the control over the vocal cords in adjustment of pitch is one of the most remarkable of cerebro-muscular phenomena furnished by the human organism. What does it not become in the case of highly gifted vocalisers, who, possessing a voice-range of some two-and-a-half to three octaves may be able to produce a series, it is averred, of modulations to each tone amounting to twenty or thirty in number. Such exquisite reach of skill is plainly a natural gift—a bit of nervo-muscular *genius*,—and could never be commanded by any conceivable toil. But on the other hand, practice will increase the refining power in ordinary interval-sounding, and the earlier in life that practice commences the more satisfactory will prove the results.

Of course, no semblance of such modulating faculty is required for the delivery of words in speaking,—the range of pitch limiting itself even in the utterances of the most excitable nationalities to a very few tones. But in articulate speech some additional groups of muscles—facial, labial, buccal—are brought into requisition, in excess of those thrown into movement during mere phonation. And the more and the earlier these are exercised, the more perfect the obedience eventually secured in the attempt to assimilate the individual sounds distinctive of each fresh language. Training of the muscles concerned must commence early, if perfection in their use is to be attained ; just as with the muscles of the trunk and limbs in persons intended to earn their livelihood as acrobats. So true is this, that unless the muscles of articulation be brought into the special exercise almost from the cradle, the difficulty of rapidly guiding them in the fashion requisite for the production of sounds unknown in the speaker's vernacular becomes simply insurmountable. There is probably not to be found in Europe a single adult Briton, German or Italian, who, having commenced the use of French after

earliest childhood, could repeat the words *tu, vous, bruit, sous, vu, aiguille, roue, feuilles, veilleuse* three or four times in quick succession without frequently blundering in pronunciation.

C.—*Organs of sense. Ear.*—It seems needless to insist on the importance of a well constructed internal ear for acquiring colloquial facility in fresh languages. Unless fed, as it were, by a healthy ear, the cerebral audition and tone-centres must plainly be useless. We may more appropriately insist on the converse fact, almost invariably ignored by amateur writers, that something more is wanted than perfection of a sense-organ to secure perfection of its affiliated sense. A man may have a consummately modelled ear,—the vibrations of his tympanic membrane, uninterfered with by a fundamental tone of its own (in this negative property unlike stretched membranes in general) may unisonate with all notes reaching its surface,—his chain of ossicles may be perfectly shaped and properly linked together,—his Eustachian tube deftly maintain the equilibrium of pressure between the air in the tympanic cavity and the atmosphere, and with like success discharge its minor functions,—his organ of Corti be tuned to the hundredth part of a tone,—the fluid of his labyrinth be of the precise density best adapted for perfect conduction,—the sound-fibres and pitch-fibres of his acoustic nerves be all of blameless texture and conducting power: but all will be in vain if the brain responds not on its part to this auricular perfection with audition and tone centres of faultless structure and dynamism.

And on the other hand, if these cerebral sound-centres be of model truthfulness, the allied sense-organ may itself in persons of exalted endowment be actually dispensed with in the execution of work, for which its *ne plus ultra* structural perfection would *à priori* appear to be an indispensable condition. A man of exalted tone-genius may, as it were, hear without ears: he may—at least Beethoven did—produce melody and harmony, the most original, the grandest, the most complex and the most just without being able to test one or the other by the ordinary means, the sensation of hearing,—for he is deaf. Memory cannot be accepted as the working factor in explanation of this marvellous endowment of the imperial master. M. Ernest Pauer, contrasting the sonatas of Beethoven, written before and after he became deaf, points out that, “whilst the former

were characterised by their conciseness, the latter were notable for their greater breadth of fancy, their wonderful combination of weirdness, anger or grief, and also for their evidence of touching resignation to his great affliction."* The cerebral activity seems in no wise to have lost by the failure of the faculty of hearing ; while as the manifestations of that activity were *new* in character, they could not have been reproductions from memory.

Eye.—The utility of quick and correct vision is limited in the oral acquirement of a new language to catching and registering accurately the articulating movements of a native speaker. But, in reading, and more especially in writing strange vocal symbols, precision and quickness of sight and perfect accordance of the cerebral centre of vision must plainly play a very important part.

D.—*Social Conditions.*—The cardinal significance of the social surroundings, amid which the attempt at acquiring a strange language is made, is greatly more certain than the advocates of mere brain-power would care to admit. A true genius for languages will, no doubt, obviate within certain limits, the necessity for contingent social help of any kind ; but it is needless to again insist on the rarity of any such endowment.

Intercourse with native speakers of the desired language is simply a condition of absolute necessity ; and such intercourse should commence in very early years, or its efficacy will be more than problematical. Numerous illustrations of this fundamental truth have been given intercurrently in previous pages ; it will suffice to add here that no trustworthy evidence exists, that a thorough colloquial mastery of a language has ever been acquired except on its own indigenous soil.

And so, it might perhaps, be fairly expected, that the inhabitants of conterminous countries wherein two different languages are spoken, would prove adepts in the ready and correct management of both. But, somehow, the very reverse proves to be the fact. On the one hand the habitual speech of border-lands is generally neither precisely one language nor the other ; an admixture of words, phrases and proverbial sayings of the two, making up the jumbled and ill-pronounced medium of colloquial intercourse between the contiguous nationalities. A pair of

* *Morning Post*, March 23rd, 1883.

dialects of the genuine "*patois*" type is the result. While on the other hand the scholarly acquisition of the neighbouring tongue by the educated inhabitants of either region seems, by some strange perversity to be rarely an object of ambition. Look at the evidence supplied from the two sides of the Pyrenees. The Spanish spoken by the French denizens of Biarritz is, assuredly, not of model excellence; nor can the French, passing current among the Spaniards of St. Sebastian claim any merit except that of being locally comprehensible.

Foreign Marriage.—Marriage between foreigners might be supposed to greatly facilitate the acquirement by each of the pair with the vernacular of the other. And so it probably would were honeymoons indefinitely prolonged institutions. But, alas! love seldom "defies custom."* Just as the fervour of personal attraction grows "small by degrees and beautifully less," the effort at expression in the unwonted dialect becomes more and more irksome. As matter of experience the linguistic utility of such unions is problematical. Speaking in the strange tongue being resented as a trouble, it is used irregularly and briefly, never systematically, and merely as an instrument to secure the supply of immediate wants. Each of the couple, desires, as a rule, to maintain the idiom familiar from childhood; while from the jumble of the two tongues each loses his own in its purity. Misunderstandings often arise from the unintentional misuse of words or phrases, and the language supplying these becomes doubly distasteful. Bitter quarrels have I known originate in this fashion between husband and wife habitually living together on affectionate terms, and this too, even where the vernaculars of both had, by common consent been ostracised, and a language foreign to both adopted as a means of interchanging ideas.

Social Status.—The scholarly acquisition of foreign tongues is with the rarest exceptions, such as that of Elihu Burritt, confined to the higher orders of society. The cultivation of his mother-tongue even is a forbidden occupation to the hewer of wood and drawer of water: fairly

* An idea graphically expressed in the quaintly pathetic lines of Browning:—

"And still, as Love's brief morning rose,
With a gentle start, half smile, half sigh,
They found love not what it seemed before."
(*The Statue and the Bust.*)

might he urge, "My poverty, not my will consents." But as we have already seen (p. 26), the colloquial management of new vocables, necessary for intercourse with foreigners, sometimes appears a less difficult task to humble retainers than to their lords and masters.

E.—*Personal—Sex*.—In colloquial delivery and in familiar writing of their own tongue, women, as a rule, excel men. Cicero observed of women of the higher classes in his day, that they were distinguished, in comparison with the other sex, for the purity and grace of their language: when he hears Lælia speak, he fancies himself listening to the accents of Plautus or Nævius, so chaste, so simple are the tones of her voice.* This favorable estimate applies to cultured Englishwomen of the present time. Besides, the relative facility and accuracy with which they deliver themselves are most striking: the perpetual "hums" and "hahs" and "ohs," the slipshod articulation, the corrections, the jerkings onwards and the tumblings backwards so abounding in the male speech of the nineteenth century, are conspicuous by their absence in every-day female utterance. So, too, in familiar composition, the educated woman, from Lady M. Wortly Montague and Madame de Sévigné down, vastly as a rule excels her male competitor. The easy flow of a letter, penned by a female hand, commonly contrasts most favourably with the laboured drag of the masculine epistolary style.

Volubility of oratorical speech seems more a male than a female accomplishment,—possibly, however, because the field for its display has hitherto been denied the sex. When women have appeared on the arena of public declamatory life, they have often exhibited grace of language, dexterity in argument and eloquent fulness of vocabulary, that might well be envied by the immense majority of males.

The gentler sex has scarcely furnished specimens of the faculty of endless conversational talk—the insanabile *loquendi cæcoëthes*—for which *exempli gratia* Coleridge, Mackintosh and Macaulay were notorious: a faculty which, though when first exercised charming, became, as evening wore on, according to the testimony of the greater number of those who perforce continued to listen, obstructive boredom. But on the other hand in the gift of flowing, incisive,

* De Orator. iii. 45.

polished drawing-room talk, free and unrestrained, copious, but not excessive, no male that ever breathed excelled Madame Recamier or Madame de Stael.

The praise, thus accorded to women, admits, I should think, of no cavil. But I am unacquainted with any evidence showing that they possess any very distinctive facility in the acquisition of new languages,—though colloquially, especially in the matter of pronunciation, they commonly make better figures than men. George Eliot succeeded in acquiring a useful knowledge of Latin, Greek and Hebrew,—and is represented to have been a literary and scholarly mistress of French, German, Italian and Spanish. Of a woman so intellectually gifted we might *à priori* expect any amount and variety of cerebral activity. But it must in the first place be remembered, that conversational facility in languages is not a necessary appurtenance of acute, observant or lofty reasoning faculties,—indeed, as we have seen, rather the reverse. And, in the second place, no proof exists that her familiarity with the modern tongues enumerated was as complete, as indiscriminate eulogy might lead us to conceive. Her recent biographer, admitting she spoke the above languages, “with difficulty,” hazards the laudatory qualification, “although accurately and grammatically.”* On what competent authority is this rider added? The affirmative evidence of cultured natives in the instance of each tongue would alone justify the proceeding. Has he obtained this? Besides I have heard on what, I should imagine, to be good authority (being myself incompetent to judge) that her version of Strauss, “*Leben Jesu*” is not absolutely free from occasional imperfections. The intense difficulty of conveying abstruse phrases of German philosophical theology into accurately equivalent and yet readable English can perhaps hardly be over-rated. Doubtless, too, she grew wearied, and possibly a little careless, in the course of her prolonged task. Before its completion, we have her own testimony, she had become “Strauss sick,” and felt “ill at dissecting the beautiful story of the Crucifixion.”* Her conversion from the orthodoxy of her early youth to Agnosticism had evidently not at that moment been fully achieved.

Age.—Enough has already been incidentally said of the all-importance of youth as a factor or condition of the assimilation of strange languages.

* Life. By Cross.

But what is the rationale of this importance? Children acquire new tongues with comparative ease, probably because ideation is in its imperfectly-developed fashion notably active,—a constant desire prevails to learn the names of new objects. The automatic activity of the brain-cells is highly pronounced, and the power of storage by memory of the simple ideas and words, more or less accessible to the nascent intelligence, specially vigorous. Anastomotic communication seems easy and prompt within the limited province of accumulated—extending sometimes to novel—ideas; and above all, the structure of the youthful brain-cells is unworn, and their dynamism fresh and energetic. While, on the other hand, the higher intellectual powers, in which the child is of necessity deficient, are not required.

With the adult the automatic craving for new acquisitions in the knowledge of words and things fails in activity; their acquirement is undertaken, sometimes wofully against the grain, as a matter of necessity, or of volitional effort.

The adult has doubtless the advantages, in learning new tongues, of the experience of life unshared by the child, and of understanding the meaning of the various parts of speech, of number, of time, &c.; but these advantages fail to counterbalance the textural superiority of the brain-cells concerned in grasping, and registering and uttering strange vocables.

Temperament.—People of lymphatic, languid, and sluggish temperament, slow in all their mental processes, commonly drawling in the delivery of their own language, display the inertness that might be expected in acquiring new idioms. Men, on the contrary, of nervo-sanguinous temperament, ardent in all their doings, taking bright interest in everything around them, familiarise themselves, *cæteris paribus*, with comparative ease in the vocal garb of fresh nationalities.

There seems no undue strain of analogy in tracing a certain similitude here to the respective results of ordinary stimulation and of vivid emotional excitement on the speech in aphasia.

Health.—An abiding state of feeble or strong health will play relatively much the same part as languidness or vivacity of temperament.

Heredity.—Even if we accept, as critically justifiable, the wide signification of Genius, implied, rather than precisely

assigned *totidem verbis* to the term, in the treatise of Galton (in his hands the word manifestly includes mere talent of high, sometimes only of respectable order), the transmission of the gift from parent to child, or between collaterals, is far from common.* The numerical method has in this, as in many another field of inquiry, dispelled clouds of erroneous fancy. Certainly in no one of the departments of art, literature, and science tested statistically by Galton, are the cases adduced in support of the notion of hereditary transference of endowment either strikingly numerous or altogether free from the taint of insufficient proof.

In the field of classical criticism, the most conspicuous example of hereditary power is perhaps furnished by the two Scaligers, father and son,—the latter of whom by his marvellous linguistic acumen so enchained the reasoning faculties of his disciples that it became a saying among them, “better be wrong with Scaliger, than right with the first comer.”

Among men of letters of the present time the first Lord Lytton and his son, best known in the literary world by his pseudonym, Owen Meredith, strikingly exemplify the probable influence of the paternal brain on that of offspring.

But how stands the evidence in regard of colloquial linguistic attainment? As we shall presently see, more fully, aptitude of the kind is beyond all manner of doubt in various degrees, characteristic of divers races and nationalities. The fact that such aptitude is distinctively retained, generation after generation, by the denizens of certain regions affords substantial, if somewhat indirect proof, of transmission in families. But I have no positive facts to adduce in proof of the active potentiality of hereditary influence in particular stocks belonging to nationalities themselves poorly endowed in linguistic faculty. Still I have met with a few Frenchmen (among them the celebrated pulpit orator Athanase Coquerel) speaking unusually good English, in whom, such superiority might have depended on the admixture however slight and remote of English blood actually existing in their veins.

F.—*National*.—But whatever be the association of cerebral qualities and accessory conditions, combining to make the practical linguist, they seem to be very unequally dis-

* Hereditary Genius, Lond. 1869. Vide ante note, p. 52.

tributed among different races and nationalities. The natives of some countries, it is indeed familiarly known, are as distinguished for the relative readiness with which they utilize a foreign tongue or two, as others for their stolid incapacity in adopting any idiom but their own. From this point of view I should be disposed from my own observation to arrange European nations, at least tentatively, in three subjoined groups :—

<i>Plus Facility.</i>	<i>Medium Facility.</i>	<i>Minus Facility.</i>
Dutch.	Irish.	English.
Poles.	Scotch.	Italians.
Russians.		Spaniards.
Swedes.		French.
Danes.		
Northern Germans.		
Austrians.		
Greeks.		

Ethnologists might be engaged on many a less interesting question than the determination of the causes of this difference in national endowment. The preponderance of conspicuous skill among the Northern and North Eastern nations of Europe clearly points to the activity of race-influence.

On the other hand national linguistic inferiority seems to have little dependence on distinction of race, but to be more plausibly traced, in some instances at least, to the specific emotional character of the individual and the masses. Thus, that the position, assigned the French, as the *facile principes* of the *minus* group (even Talleyrand knew none but his mother-tongue) is in part to be ascribed to the preposterous national vanity, which assures the native Gaul, no language exists worth knowing but his own, cannot be doubted.* Any one, who has had much intercourse with French people of various classes, will be able from his own experience to furnish anecdotes, more or less closely

* Voltaire, writing in 1740, boasted concerning the spread of his native tongue : "enfin la langue Française, Milord, est devenue presque la langue universelle" (Lettre à Milord Harvey, Siècle de Louis XIV). Great then has been the change wrought by the lapse of a century. I saw somewhere since the bitter lament of a French writer, that English was gradually overrunning the globe, and must ultimately, unless some counteracting influence were brought to bear, become of almost universal adoption. Prévost Paradol had previously uttered a similar, but less piteous, complaint.

similar to the following, related by Story, the American artist, resident at Rome during the French occupation. "Did not my Parisian acquaintance assure me very gravely, after lamenting the absurdity of the Italians not speaking French instead of their own language,—'*mais enfin Monsieur, qu'est ce que c'est, que cet Italien? ce n'est que du mauvais Français*'!"* On arriving at the railway station at Civita Vecchia the other day, I heard a little strutting French Abbé make nearly the same remark, adding in a contemptuous tone of voice, as an illustration of the truth of his remarks, "*regardez, par exemple, on ne sait pas même écrire le mot bagages. Dans leur patois il est bagaglie. Quels ignorants!*"† Such is too often the Frenchman, even of a much better educated type than this pert illiterate priest;—fancy the ineffable arrogance of a foreigner, reviling as a "*patois*" the language of Dante, Petrarch, Machiavelli—a language incomparably more beautiful than his own.‡ Again, an English acquaintance of mine, having occasion to make a legal declaration before a Parisian functionary, answered, in reply to an enquiry for her Christian name—"Sophia." "*Sophia*" (vilely pronounced with a mocking sneer), "*c'est pas Français, ça.*" "*Sans doute, ce n'est pas Français, et moi je ne suis pas Française,*" the lady naturally observed. It is scarcely credible, but nevertheless a fact, that the official persisted in setting down the name as "*Sophie*," whereby the legal value of the document might have been impaired or annulled. But all these illustrations will, perhaps, be thought to "*pale their ineffectual fires*" before the following choice bit of characteristic assumption of superiority, a kind of social assumption which, one cannot help thinking, often tends greatly to mar the otherwise attractive quality of French manners. In a play, recently brought out at one of the Boulevard Theatres, some of the scenes being laid in good society in an English drawing-room, social equals

* Story, "*Roba di Roma*," p. 173, 7th Ed. Lond. 1875.

† It was not to be expected the Abbé should know that the abundant Latin element in the French language was in reality directly derived from the Italian,—so that it would have been *nearer* to (though of course *not*) the actual truth to say, French is bad Italian.

‡ The contempt of Frenchmen for foreign tongues may sometimes reach a point savouring of silliness. "The most illustrious exile that our free land has received from France in our times" never, according to Mr. Morley, learned "the language of the country that had given him twenty years of shelter."—"Life of Voltaire," p. 62, Ed. 1878.

of the young lady of the house are made constantly to address her as "Miss,"—for example, "*Oui, Miss, je dois partir demain.*" A well-meaning English friend of the author undertook to point out the error of this mode of address, striving to make the Parisian understand that in good English society equals do not, after the French model, "Mademoiselle" young ladies, as themselves would say, "*à tout bout de champ.*" He was told, servants only and inferiors use the phrases "No, Miss," "Yes, Miss," &c. But the French dramatist knew better; he would hold to his text. At one stroke he would give the benighted Anglo-Saxon three lessons: one in pronunciation (Miss is always pronounced in France as if written "Meess"), a second in idiomatic social phraseology, and a third in good manners; for obviously if we do not, we ought to, interlard our conversation with unmarried ladies with a perpetually recurring "Miss," "Miss," "Miss," for the simple reason, 'tis the habit in France.*

The acknowledged inaptitude of the average Englishman for the colloquial acquirement of continental tongues owns no such cause as national vanity; we do not render ourselves ridiculous by inane faith in the wondrous superiority of our vernacular. Nor is the cause of failure among English people any special want of readiness in ideation: their linguistic deficiency apparently depends on sluggish dynamism of the national emissive word-centre; feeble activity of the motor-centre regulating movements in the mouth and lips; inaptness of the muscles concerned to respond to the cerebral orders, and poverty of imitative faculty. The extreme difference of the vowel-sounds in the two languages will always prove a stumbling block in the way of the Englishman striving to reproduce the native French pronunciation, and his powers of memory will be unduly taxed in retaining the arbitrary distinctions of gender.

IX.—In conclusion: the rare endowment of easily and perfectly acquiring fresh languages apparently depends on the possession of a *plus* amount of structural and dynamic excellence of the ideating and emissive word-centres, aided by subordinate activities and conditions. Not assuredly can the accomplishment be traced to extra-vigour of the higher qualities of intellect. The mathematician and the

* I regret to have mislaid the reference to the newspaper article in which this whimsical illustration of national conceit is put on record.

scientist seldom exhibit any distinctive colloquial linguistic aptitude, and conversely people, who acquire foreign tongues with exceptional ease are often otherwise dullards.

Practice, as the proverb would have it, makes perfect. But in the matter of languages use is much more effectual with some learners than with others. And, while linguistic faculty is in the main a *congenital* gift, it is in a secondary degree dependent on the amount of facility with which the cells concerned absorb material in different brains from the nutrient neuroglia, and in so far takes rank as an *acquired* potentiality.

ADDENDA.

Vide p. 16.

And in truth Voltaire, sixty years before the day of Talleyrand, had written: "Ils n'emploient les paroles, que pour déguiser leurs pensées" (Le Chapon et la Poularde). So, too, Goldsmith, while the future diplomatist was yet in arms, suggested: "the true use of speech is not so much to express our wants as to conceal them." (The Bee iii., 1759.) See Brewer, Reader's Handbook, p. 972.

Vide p. 30.

And greater, greater far than all these, Voltaire! That versatile genius managed during his few months' stay in England to acquire very considerable proficiency in the language, reading, as his biographers assure us, not only works of philosophy but of farcical literature, such as "Hudibras and Gulliver's Travels," with appreciative relish. Yet, without entering on the delicate ground of colloquial delivery, we may affirm his English education was anything but complete. Not only does he in his estimates of our phraseology occasionally prove critically unsound, but falls every now and then into notable misconception of the mere meaning of words. An instance in point, wherein he informs his countrymen, "*preferment* signifie *benefice* en Anglais," has just fallen under my notice (Les Oreilles du Comte de Chesterfield, ch. 1). It is easy to see how the error arose of thus confounding the abstract and the concrete significations, while the mistake shows to what a lamentable extent even the greatest human mind may be subjugated by the veriest trivialities, where a foreign tongue is concerned.