I. THE SCIENCE OF LANGUAGE.

There are very few sciences for which the Nineteenth Century did as much as it did for the Science of Language. It is indeed a question whether there was such a thing as a science of language till the eve of the “Wonderful Century,” unless the stage of rudimentary guesswork in which this like other sciences began is to be called “science” by anticipation. In the eighteenth century etymology was defined as a science in which the vowels mattered nothing at all, and the consonants very little. Now, we are no longer allowed to indulge in wild guesses when we seek the history of a familiar word. We have to bind ourselves rigidly within the laws of an exact scientific method, and the science is the more complicated and exacting in that it cannot confine itself to mechanical processes which may be measured and analysed like those of chemical or astronomical phenomena. The Science of Language, as established by the labours of the nineteenth century, combines the methods of the natural and the moral sciences. On one side it deals
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with a purely natural evolution, on the other it studies the workings of the human mind, which crosses the stream of mechanical development and imperiously turns it in directions which only the psychologist can reduce to rule.

Perhaps I have said enough to suggest that the Science of Language has a peculiar value as an educating force. It may be fairly claimed that it combines all the elements which are most necessary for a really perfect educator. It is a science, and it demands in the highest degree those methods of exactness, of rigid investigation of facts and collection of material, of precise and logical deduction, which we associate with the physical sciences. But at the same time it takes its material very largely from literary sources; and even where it deals with colloquial idiom or non-literary dialects, the careful analysis of the forms of speech cannot avoid the constant application of principles which form the very basis of literary composition. Our science therefore lies on both sides of the frontier which divides the two great fields of human study, and it is admirably adapted to correct the narrowness which is often seen in those whose training is purely literary or purely scientific.

The side of our science which presents itself to the ordinary educated person is Etymology. No one can fail to feel interested by a dip into a dictionary, which tells us by what devious and lengthy paths words have come to the meanings and forms they now show. The dictionary of course only gives us results, which
may stimulate us to seek for processes to establish conclusions often paradoxical. When we are told that Easter is akin to the Latin Aurora, and uncouth to ingens, that sooth, (pre)sent and suttee all come from the participle of the verb “to be” as it shows itself in three cognate languages, with onto(logy) depending on a corresponding form in a fourth, we are easily convinced that the ways of words are peculiar. And when we trace the development of a word like nice back to the Latin nescius, “ignorant,” or find in an old poem Christ described as a “silly knave,” the words then meaning “holy boy,” we can see that the laws by which words change their meaning are complex enough to give a science which examines them plenty of work to do.

The foundations of the science which changed etymology from mere random guessing into a sound process of reasoning were laid when, mainly through the labours of our great countryman, Sir William Jones, the Western world became possessed of the ancient language of India. That the classical languages of Greece and Rome were very closely connected had been always taken for granted: indeed their nearness to one another was greatly exaggerated. But that they formed only a part of a gigantic system of related languages, spoken by races scattered over the lands lying between India and Iceland, was never dreamt of till the obvious identity between the Sanskrit noun and verb systems and those of Greek and Latin was presented to the Western scholar’s eye. It was Sir William Jones himself who first drew the
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momentous inference, in words which well deserve quoting: "The Sanskrit language, whatever may be its antiquity, is of wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could have been produced by accident; so strong that no philologer could examine all the three without believing them to have sprung from some common source which, perhaps, no longer exists. There is a similar reason, though not quite so forcible, for supposing that both the Gothic and the Celtic, though blended with a different idiom, had the same origin with the Sanskrit." This brilliant discovery, declared in the year 1786, practically lies at the root of all linguistic science. Our science is not, of course, solely concerned with the languages of our own great family of speech, but the principles of the science have been built up exclusively through the study of this family, and no really scientific investigation of alien languages could possibly be carried on without the tools which we ultimately owe to the impulse given by the founder of the Royal Asiatic Society.

It was early in the nineteenth century when the English scholar's brilliant aperçu was taken up by the Germans, who developed it into a scientific fact, and have largely kept the study to themselves as a close preserve of German industry and thoroughness up to the present time. English genius has led the world in
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mathematics and physical science; while our literature for five hundred years has been without a rival among the literatures of Europe. In the study of the ancient classics we at least hold our own; but we do not seem to care to study the treasures of the English language, which in the hands of German students afford material for two periodicals exclusively devoted to them. And in the science of language we have only supplied occasional rivulets to swell the stream of progress; while our editors of classical texts are still too often content if in their etymological excursions they lag no more than twenty years behind the science of the day.

I must return from this digression, pleading in excuse of it the necessity of accounting in advance for the foreign names which will mark every step of the advance recorded in a brief sketch of a science born and matured within the nineteenth century. We begin then with the year 1816, thirty years after Sir William Jones’s far-sighted announcement, when Franz Bopp published the first of a series of works in which he systematised the doctrine of the common origin of the languages of our family, and examined the history of their forms. His life-work may be said to have defined for us, practically on lines which we still follow, the limits and constituents of the Indo-germanic or Aryan family of languages. Before I go further, it may therefore be well to give some short description of the field as left by Bopp’s labours, with very slight modification from later research. We
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have eight main languages (apart from a few that are only known by fragments), which descend from a single approximately homogeneous original, long ago lost. Arranged geographically as on the dial of a clock, they will stand thus. (1) Lithuanian, still spoken on the eastern shore of the Baltic; and Slavonic, embracing Russian and other dialects of the Slav nations. These, like the next two to be named, are shown to be so closely akin that we must reckon them as one branch rather than two. (2) Iranian, the language of Persia; and Indian, by which we mean Vedic and the classical Sanskrit, with its descendants Hindi, Bengali, and others. The Indian and Iranian branches are combined under the common title Aryan, by which both peoples knew themselves in the earliest times. (3) Armenian; and (4) Albanian—two less important branches, whose original position on the dial is not quite certain. We are now, from the results of recent investigations, able to class these four together as the eastern section of the family; the four western branches will occupy the left-hand half of our dial. These are (5) Greek, ancient and modern; (6) Italic, including Latin and certain minor dialects of ancient Italy, together with the Romance languages of to-day, descendants of colloquial Latin; (7) Keltic, which preserves a rather precarious vitality in Brittany, Wales and Ireland, and even less than this in Scotland.

1 Italic and Keltic are so closely bound together by important phonetic and morphological affinities that they are sometimes spoken of as one branch.
and Man; and lastly (8) Germanic, the dominant language of all the lands of Western Europe which are not washed by the Mediterraneaean. We must allow at least the fourth quarter of our dial to this prolific member of the family, which at the top of the dial touches the first of the eastern branches, Lithuanian. A name has to be found which will conveniently represent the whole. German scholars insist on Indo-Germanic, a name combining the extreme east and extreme west of the language area. Far less cumbrous is the name Aryan, popularised in England by Max Müller, and plausibly supported by the etymology which traces the word in Erin—a fact which, if proved, would have gone far to show that the undivided people called themselves Aryans in prehistoric times. But since Aryan is a name undeniably appropriated by the ancient Indians and Iranians, it is safer to restrict it to the second of the eight main branches just described, and use for the whole family the title Indogermanic, which, if clumsy, is at any rate free from ambiguity.

Pursuing our historical order, we come next to the great name of Jacob Grimm. We all become familiar with that name in childhood through the great collection of folklore stories, in which the anthropologist and the small boy are equally at home. Later on, the sound of “Grimm's Law” forces itself on our attention, and the great principle therein laid down may very possibly be to this day the sole possession we hold in the realm of Comparative Philology. The
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Law was enunciated in 1822, and may fairly be set down to the account of the great scholar whose name it bears, although the idea of it had been announced before. Since it is obviously impossible in this lecture even to sketch in the briefest manner the whole field of Indogermanic philology, I shall probably lay out my time to most advantage if I take up one or two salient points and show their bearing on the principles of the science as a whole. Grimm's Law is certainly the best possible point from which to begin, for I may fairly assume it to be generally known, and it is at the same time of immense importance in the history of linguistic study. Its importance is indeed utterly out of proportion to the field which it immediately affects. We who speak English can easily realise the significance of a law which must be considered almost every time when we seek Latin or Greek cognates for words in our own language,—a law which in its further development rules the relations between Dutch or English and the literary language of Germany. But, after all, there are other civilised languages besides German, Dutch, or Norse, and even besides English, and we may find ourselves asking whether Grimm's Law would have quite the same perspective if we were Frenchmen or Russians or Hindoos. Practically, the answer would be yes. Grimm's Law is not merely a convenience whereby we may scientifically equate our word brother with the Latin frater, the Greek φράτηρ, the Sanskrit bhṛātār, and again the German Bruder, or deny the identity of call with the Greek
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καλω, for all their nearness of sound and meaning. It has proved in experience the great educator in the science of language. Its presence has perpetually reminded amateur etymologists—and it is astonishing how universally people feel themselves qualified to tackle an etymology, however innocent of special knowledge they may be—that there are laws governing the changes of human speech, which can only be set aside by the presence of other factors known to the expert alone. And even among experts, the wide extent of its operations and the sureness with which it works have done more than anything else, perhaps, to evolve the conviction that phonetic changes are exempt from mere caprice, and so to place our science upon the firm basis which it occupies to-day.

For the present I propose to develop the history of scientific method in terms of Grimm’s Law, abandoning the strictly chronological order with which we began. How did this far-reaching change originate, and by what steps did it arrive at its present wonderful uniformity? In those fascinating Lectures on the Science of Language, by which the late Professor Max Müller did so much to popularise linguistic study in our country, an account is given which raises all at once the question of the nature of phonetic change. Practically it comes to this. The Germans found themselves no longer able to pronounce the difficult sounds bh, dh and gh which they had inherited from their Indogermanic forefathers, and (like several other members of the family) came to say b, d and g instead.
But this involved confusion with words which had a $b$, $d$ or $g$ already. Therefore, with a conscientiousness lacking in those other Indogermans, who did not mind the confusion, they replaced $b$, $d$ and $g$ by $p$, $t$ and $k$. This, however, was thoughtless of them, for these sounds likewise were appropriated. Having committed themselves too far to go back, they had to bring in a new set of sounds, $f$, $th$ and $h$, which accordingly took up the old $p$, $t$ and $k$, and the "sound-shifting" was complete. We should have to postulate a somewhat similar process when, about a thousand years after the first sound-shifting, the High Germans started a second, by which the existing Germanic $b$, $p$ and $f$ were shifted on further to $p$, $pf$ and $b$, with similar changes for the dentals and gutturals. You will probably anticipate the fatal objection against any such explanation. It postulates a conscious change, simultaneously adopted by a whole people, and the briefest reflexion will show that such things do not and cannot happen. Phonetic changes are not determined by committees. Speech is unconscious, except when we are trying to conform our pronunciation to that of our neighbours. The realisation of this point will prepare us for the study of the latest phase of enquiry upon which our science has entered. I cannot enter now on the solution of the interesting question as to the causes from which the "sound-shiftings" arose. Suffice it if I observe that no explanation will suit the phenomena of language which does not recognise the unconscious and independent