

THE ORIGINS OF ARYAN SPEECH

# The Origins of Aryan Speech

## INTRODUCTORY

Among all the many promising beginnings of which the nineteenth century was the witness, none perhaps was hailed with greater eagerness by the world of culture and science than the triumphant debut of Comparative Philology. None perhaps has been more disappointing in its results. The philologists indeed place a high value on their line of study, — nor is that to be wondered at, in spite of all its defects, — and persist in giving it the name of Science; but the scientists are of a very different opinion. In Germany, in the very metropolis both of Science and of philology, the word philology has become a term of disparagement; nor are the philologists in a position to retort. Physical Science has proceeded by the soundest and most scrupulous methods and produced a mass of indisputable results which, by their magnitude and far-reaching consequences, have revolutionised the world and justly entitled the age of their development to the title of the wonderful century. Comparative Philology has hardly moved a step beyond its origins; all the rest has been a mass of conjectural and ingenious learning of which the brilliance is only equalled by the uncertainty and unsoundness. Even so great a philologist as Renan was obliged in the later part of his career, begun with such unlimited hopes, to a deprecating apology for the “little conjectural sciences” to which he had devoted his life’s energies. At the beginning of the century’s philological researches, when the Sanskrit tongue had been discovered, when Max Müller was exulting in his fatal formula, “*pitā, patēr, pater, vater, father*”, the Science of Language seemed to be on the point of self-revelation; as the result of the century’s toil it can be asserted by thinkers of repute that the very idea of a Science of Language is a chimera! No doubt, the case against Comparative Philology has been overstated. If it has not discovered the Science of Language, it has at least swept out of existence the fantastic, arbitrary and almost lawless Etymology of our forefathers. It has given us juster notions about

the relations and history of extant languages and the processes by which old tongues have degenerated into that detritus out of which a new form of speech fashions itself. Above all, it has given us the firmly established notion that our investigations into language must be a search for rules and laws and not free and untrammelled gambollings among individual derivations. The way has been prepared; many difficulties have been cleared out of our way. Still scientific philology is non-existent; much less has there been any real approach to the discovery of the Science of Language.

Does it follow that a Science of Language is undiscoverable? In India, at least, with its great psychological systems mounting to the remotest prehistoric antiquity, we cannot easily believe that regular and systematic processes of Nature are not at the basis of all phenomena of sound and speech. European philology has missed the road to the truth because an excessive enthusiasm and eager haste to catch at and exaggerate imperfect, subordinate and often misleading formulae has involved it in bypaths that lead to no resting-place; but somewhere the road exists. If it exists, it can be found. The right clue alone is wanted and a freedom of mind which can pursue it unencumbered by prepossessions and undeterred by the orthodoxies of the learned. Above all if the science of philology is to cease to figure among the petty conjectural sciences, among which even Renan was compelled to classify it, — and conjectural science means pseudo-science, since fixed, sound and verifiable bases and methods independent of conjecture are the primary condition of Science, — then the habit of hasty generalisation, of light and presumptuous inferences, of the chase after mere ingenuities and the satisfaction of curious and learned speculation which are the pitfalls of verbal scholarship must be rigidly eschewed and relegated to the waste paper basket of humanity, counted among its necessary toys which, having now issued out of the nursery, we should put away into their appropriate lumber-room. Where there is insufficient evidence or equal probability in conflicting solutions, Science admits conjectural hypotheses as a step towards discovery. But the abuse of this concession to our human ignorance, the habit of erecting flimsy conjectures as the assured gains

of knowledge is the curse of philology. A Science which is nine-tenths conjecture has no right at this stage of the human march, to make much of itself or seek to impose itself on the mind of the race. Its right attitude is humility, its chief business to seek always for surer foundations and a better justification for its existence.

To seek for such a stronger and surer foundation is the object of this work. In order that the attempt may succeed, it is necessary first to perceive the errors committed in the past and to eschew them. The first error committed by the philologists after their momentous discovery of the Sanskrit tongue, was to exaggerate the importance of their first superficial discoveries. The first glance is apt to be superficial; the perceptions drawn from an initial survey stand always in need of correction. If then we are so dazzled and led away by them as to make them the very key of our future knowledge, its central plank, its basic platform we prepare for ourselves grievous disappointments. Comparative Philology, guilty of this error, has seized on a minor clue and mistaken it for a major or chief clue. When Max Müller trumpeted forth to the world in his attractive studies the great rapprochement, *pitā, patēr, pater, vater, father*, he was preparing the bankruptcy of the new science; he was leading it away from the truer clues, the wider vistas that lay behind. The most extraordinary and imposingly unsubstantial structures were reared on the narrow basis of that unfortunate formula. First, there was the elaborate division of civilised humanity into the Aryan, Semitic, Dravidian and Turanean races, based upon the philological classification of the ancient and modern languages. More sensible and careful reflection has shown us that community of language is no proof of community of blood or ethnological identity; the French are not a Latin race because they speak a corrupt and nasalised Latin, nor the Bulgars Slavs in blood because the Ugro-Finnish races have been wholly Slavonicised in civilisation and language. Scientific researches of another kind have confirmed this useful and timely negation. The philologists have, for instance, split up, on the strength of linguistic differences, the Indian nationality into the northern Aryan race and the southern Dravidian, but sound observation shows a single

physical type with minor variations pervading the whole of India from Cape Comorin to Afghanistan. Language is therefore discredited as an ethnological factor. The races of India may be all pure Dravidians, if indeed such an entity as a Dravidian race exists or ever existed, or they may be pure Aryans, if indeed such an entity as an Aryan race exists or ever existed, or they may be a mixed race with one predominant strain, but in any case the linguistic division of the tongues of India into the Sanskritic and the Tamilic counts for nothing in that problem. Yet so great is the force of attractive generalisations and widely popularised errors that all the world goes on perpetuating the blunder talking of the Indo-European races, claiming or disclaiming Aryan kinship and building on that basis of falsehood the most far-reaching political, social or pseudo-scientific conclusions.

But if language is no sound factor of ethnological research, it may be put forward as a proof of common civilisation and used as a useful and reliable guide to the phenomena of early civilisations. Enormous, most ingenious, most painstaking have been the efforts to extract from the meanings of words a picture of the early Aryan civilisation previous to the dispersion of their tribes. Vedic scholarship has built upon this conjectural science of philology; upon a brilliantly ingenious and attractive but wholly conjectural and unreliable interpretation of the Vedas, a remarkable, minute and captivating picture of an early half-savage Aryan civilisation in India. How much value can we attach to these dazzling structures? None, for they have no assured scientific basis. They may be true and last, they may be partly true yet have to be seriously modified, they may be entirely false and no trace of them be left in the ultimate conclusion of human knowledge on the subject; we have no means of determining between these three possibilities. The now settled rendering of Veda which reigns hitherto because it has never been critically and minutely examined, is sure before long to be powerfully attacked and questioned. One thing may be confidently expected that even if India was ever invaded, colonised or civilised by northern worshippers of Sun and Fire, yet the picture of that invasion richly painted by philological scholarship from the Rig-

veda will prove to be a modern legend and not ancient history, and even if a half-savage Aryan civilisation existed in India in early times, the astonishingly elaborate modern descriptions of Vedic India will turn out a philological mirage and phantasmagoria. The wider question of an early Aryan civilisation must equally be postponed till we have sounder materials. The present theory is wholly illusory; for it assumes that common terms imply a common civilisation, an assumption which sins both by excess and by defect. It sins by excess; it cannot be argued, for instance, that because the Romans and Indians have a common term for a particular utensil, therefore that utensil was possessed by their ancestors in common previous to their separation. We must know first the history of the contact between the ancestors of the two races; we must be sure that the extant Roman word did not replace an original Latin term not possessed by the Indians; we must be sure that the Romans did not receive the term by transmission from Greek or Celt without ever having had any identity, connection or contact with our Aryan forefathers; we must be proof against many other possible solutions about which philology can give us no guarantee either negative or affirmative. The Indian *surāṅga*, a tunnel, is supposed to be the Greek *surinx*. We cannot, therefore, argue that the Greeks and Indians possessed the common art of tunnel-making before their dispersion or even that the Indians who borrowed the word from Greece, never knew what an underground excavation might be till they learned it from Macedonian engineers. The Bengali term for telescope is *durbīn*, a word not of European origin. We cannot conclude that the Bengalis had invented the telescope independently before their contact with the Europeans. Yet on the principles by which the philologists seem to be guided in their conjectural restorations of vanished cultures, these are precisely the conclusions at which we should arrive. Here we have a knowledge of the historical facts to correct our speculations; but the prehistoric ages are not similarly defended. Historical data are entirely wanting and we are left at the mercy of words and their misleading indications. But a little reflection on the vicissitudes of languages and specially some study of the peculiar linguistic phenomena created in India by the impact of

the English tongue on our literary vernaculars, the first rush with which English words attempted to oust, in conversation and letter-writing, even common indigenous terms in their own favour and the reaction by which the vernaculars are now finding new Sanskritic terms to express the novel concepts introduced by the Europeans, will be sufficient to convince any thoughtful mind how rash are the premises of these philological culture-restorers and how excessive and precarious their conclusions. Nor do they sin by excess alone, but by defect also. They consistently ignore the patent fact that in prehistoric and preliterate times the vocabularies of primitive languages must have varied from century to century to an extent of which we with our ideas of language drawn from the classical and modern literary tongues can form little conception. It is, I believe, an established fact of anthropology that many savage tongues change their vocabulary almost from generation to generation. It is, therefore, perfectly possible that the implements of civilisation and culture ideas for which no two Aryan tongues have a common term may yet have been common property before their dispersion; since each of them may have rejected after that dispersion the original common term for a neologism of its own manufacture. It is the preservation of common terms and not their disappearance that is the miracle of language.

I exclude, therefore, and exclude rightly from the domain of philology as I conceive it all ethnological conclusions, all inferences from words to the culture and civilisation of the men or races who used them, however alluring may be those speculations, however attractive, interesting and probable may be the inferences which we are tempted to draw in the course of our study. The philologist has nothing to do with ethnology. The philologist has nothing to do with sociology, anthropology and archaeology. His sole business is or ought to be with the history of words and of the association of ideas with the sound forms which they represent. By strictly confining himself to this province, by the self-denial with which he eschews all irrelevant distractions and delights on his somewhat dry and dusty road, he will increase his concentration on his own proper work and avoid lures which may draw him away from the great dis-

coveries awaiting mankind on this badly explored tract of knowledge.

But the affinities of languages to each other are, at least, a proper field for the labours of philology. Nevertheless, even here I am compelled to hold that the scholarship of Europe has fallen into an error in giving this subject of study the first standing among the objects of philology. Are we really quite sure that we know what constitutes community or diversity of origin between two different languages — so different, for instance, as Latin and Sanskrit, Sanskrit and Tamil, Tamil and Latin? Latin, Greek and Sanskrit are supposed to be sister Aryan tongues, Tamil is set apart as of other and Dravidian origin. If we enquire on what foundation this distinct and contrary treatment rests, we shall find that community of origin is supposed on two main grounds, a common body of ordinary and familiar terms and a considerable community of grammatical forms and uses. We come back to the initial formula, *pitā, patēr, pater, vater, father*. What other test, it may be asked, can be found for determining linguistic kinship? Possibly none, but a little dispassionate consideration will give us, it seems to me, ground to pause and reflect very long and seriously before we classify languages too confidently upon this slender basis. The mere possession of a large body of common terms is, it is recognised, insufficient to establish kinship; it may establish nothing more than contact or cohabitation. Tamil has a very large body of Sanskrit words in its rich vocabulary, but it is not therefore a Sanskritic language. The common terms must be those which express ordinary and familiar ideas and objects, such as domestic relations, numerals, pronouns, the heavenly bodies, the ideas of being, having, etc., — those terms that are most commonly in the mouths of men, especially of primitive men, and are, therefore, shall we say, least liable to variation? Sanskrit says addressing the father, *pitar*, Greek *patēr*, Latin *pater*, but Tamil says *appā*; Sanskrit says addressing the mother *mātar*, Greek *mēter*, Latin *mater*, but Tamil *ammā*; for the numeral seven Sanskrit says *saptan* or *sapta*, Greek *hepta*, Latin *septa*, but Tamil *eḷu*; for the first person Sanskrit says *aham*, Greek *egō* or *egōn*, Latin *ego*, but Tamil *nān*; for the sun, Sanskrit says *sūra* or *sūrya*, Greek *helios*, Latin *sol*, but



Tāmil *nāyir*; for the idea of being, Sanskrit has *as*, *asmi*, Greek has *einai* and *eimi*, Latin *esse* and *sum*, but Tamil *iru*. The basis of differentiation, then, appears with a striking clearness. There is no doubt about it. Sanskrit, Greek and Latin belong to one linguistic family which we may call conveniently the Aryan or Indo-European, Tamil to another for which we can get no more convenient term than Dravidian.

So far, good. We seem to be standing on a firm foundation, to be in possession of a rule which can be applied with something like scientific accuracy. But when we go a little farther, the fair prospect clouds a little, mists of doubt begin to creep into our field of vision. Mother and father we have; but there are other domestic relations. Over the daughter of the house, the primæval milk-maid, the Aryan sisters show the slight beginnings of a spirit of disagreement. The Sanskrit father addresses her in the orthodox fashion, *duhitar*, O milkmaid; Greek as well as German and English parents follow suit with *thugather*, *tochter*, and *daughter*, but Latin has abandoned its pastoral ideas, knows nothing of *duhitā* and uses a word *filia* which has no conceivable connection with the milk-pail and is not connected with any variant for daughter in the kindred tongues. Was Latin then a mixed tongue drawing from a non-Aryan stock for its conception of daughterhood? But this is only a single and negligible variation. We go farther and find, when we come to the word for son, these Aryan languages seem to differ hopelessly and give up all appearance of unity. Sanskrit says *putra*, Greek *huios*, Latin *filius*, the three languages use three words void of all mutual connection. We cannot indeed arrive at the conclusion that these languages were Aryan in their conception of fatherhood and motherhood, but sonhood is a Dravidian conception, — like architecture, monism and most other civilised conceptions, according to some modern authorities; for Sanskrit has a literary term for child or son, *sūnuḥ*, with which we can connect the German *sohn*, English *son* and more remotely the Greek *huios*. We explain the difference then by supposing that these languages did possess an original common term for son, possibly *sīnu*, which was dropped by many of them at least in a colloquial expression, Sanskrit relegated it to the language of high litera-

ture, Greek adopted another form from the same root, Latin lost it altogether and substituted for it *filius* as it has substituted *filia* for *duhitā*. This sort of fluidity in the commonest terms seems to have been common — Greek has lost its original word for brother, *phrator*, which its sisters retain, and substituted *adelphos*, for which they have no correspondents, Sanskrit has abandoned the common word for the numeral one *unus*, *ein*, *one* and substituted a word *eka*, unknown to any other Aryan tongue; all differ over the third personal pronoun; for moon Greek has *selene*, Latin *luna*, Sanskrit *candra*. But when we admit these facts, a very important part of our scientific basis is sapped and the edifice begins to totter. For we come back to this fatal fact that even in the commonest terms the ancient languages tended to lose their original vocabulary and diverge from each other so that if the process had not been arrested by an early literature all obvious proof of relationship might well have disappeared. It is only the accident of an early and continuous Sanskrit literature that enables us to establish the original unity of the Aryan tongues. If it were not for the old Sanskrit writings, if only the ordinary Sanskrit colloquial vocables had survived who could be certain of these connections? or who could confidently affiliate colloquial Bengali with its ordinary domestic terms to Latin any more certainly than Telugu or Tamil? How then are we to be sure that the dissonance of Tamil itself with the Aryan tongues is not due to an early separation and an extensive change of its vocabulary during its preliterate ages? I shall be able, at a later stage of this inquiry to afford some ground for supposing the Tamil numerals to be early Aryan vocables abandoned by Sanskrit but still traceable in the Veda or scattered and imbedded in the various Aryan tongues and the Tamil pronouns similarly the primitive Aryan denominatives of which traces still remain in the ancient tongues. I shall be able to show also that large families of words supposed to be pure Tamil are identical in the mass, though not in their units, with the Aryan family. But then we are logically driven towards this conclusion that absence of a common vocabulary for common ideas and objects is not necessarily a proof of diverse origin. Diversity of grammatical forms? But are we certain that the

Tamil forms are not equally old Aryan forms, corrupted but preserved by the early deliquescence of the Tamilic dialect? Some of them are common to the modern Aryan vernaculars, but unknown to Sanskrit, and it has even been thence concluded by some that the Aryan vernaculars were originally non-Aryan tongues linguistically overpowered by the foreign invader. But if so then into what quagmires of uncertainty do we not descend? Our shadow of a scientific basis, our fixed classification of language families have disappeared into shifting vestibules of nothingness.

Nor is this all the havoc that more mature consideration works in the established theory of the philologists. We have found a wide divergence between the Tamil common terms and those shared in common by the "Aryan" dialects; but let us look a little more closely into these divergences. The Tamil for father is *appā*, not *pitā*; there is no corresponding word in Sanskrit, but we have what one might call a reverse of the word in *apatyam*, son, in *aptyam*, offspring and *apna*, offspring. These three words point decisively to a Sanskrit root *ap*, to produce or create, for which other evidence in abundance can be found. What is there to prevent us from supposing *appā*, father, to be the Tamil form for an old Aryan active derivative from this root corresponding to the passive derivative *apatyam*? Mother in Tamil is *ammā*, not *mātā*; there is no Sanskrit word *ammā*, but there is the well-known Sanskrit vocable *ambā*, mother. What is to prevent us from understanding the Tamil *ammā* as an Aryan form equivalent to *ambā*, derived from the root *amb* to produce, which gives us *amba* and *ambaka*, father, *ambā*, *ambikā* and *ambi*, mother and *ambariṣa*, colt of a horse or the young of an animal. *Sodara*, a high Sanskrit word, is the common colloquial term in Tamil for brother and replaces the northern vernacular *bhāi* and classical *bhrātā*. *Akkā*, a Sanskrit word with many variants, is the colloquial term in Tamil for elder sister. In all these cases an obsolete or high literary term in Sanskrit is the ordinary colloquial term in Tamil, just as we see the high literary Sanskrit *sūnuḥ* appearing in the colloquial German *sohn* and English *son*, the obsolete and certainly high literary Aryan *adalbha* undivided, appearing in the colloquial Greek *adelphos*, brother.

What are we to conclude from these and a host of other instances which will appear in a later volume of this work? That Tamil is an Aryan dialect, like Greek, like German? Surely not, — the evidence is not sufficient; but that it is possible for a non-Aryan tongue to substitute largely and freely Aryan vocables for its most common and familiar terms and lose its own native expression. But then we are again driven by inexorable logic to this conclusion that just as the absence of a common vocabulary for common and domestic terms is not a sure proof of diverse origin, so also the possession of an almost identical vocabulary for these terms is not a sure proof of common origin. These things prove, at the most, intimate contact or separate development; they do not prove and in themselves cannot prove anything more. But on what basis then are we to distinguish and classify various language families? Can we positively say that Tamil is a non-Aryan or Greek, Latin and German Aryan tongues? From the indication of grammatical forms and uses, from the general impression created by the divergence or identity of the vocables inherited by the languages we are comparing? But the first is too scanty and inconclusive, the second too empirical, uncertain and treacherous a test; both are the reverse of scientific, both, as reflection will show, might lead us into the largest and most radical errors. Rather than to form a conclusion by such a principle it is better to abstain from all conclusions and turn to a more thorough and profitable initial labour.

I conclude that it is too early, in the history of philological research, we have made as yet too crude and slender a foundation to rear upon it the superstructure of scientific laws and scientific classifications. We cannot yet arrive at a sound and certain classification of human tongues still extant in speech, record or literature. We must recognise that our divisions are popular, not scientific, based upon superficial identities, not upon the one sound foundation for a science, the study of various species in their development from the embryo to the finished form or, failing the necessary material, a reverse study tracing back the finished forms to the embryonic and digging down into the hidden original foetus of language. The reproach of the real scientist against the petty conjectural pseudo-science of philology

is just; it must be removed by the adoption of a sounder method and greater self-restraint, the renunciation of brilliant superficialities and a more scrupulous, sceptical and patient system of research. In the present work I renounce, therefore, however alluring the temptation, however strong the facts may seem to a superficial study, all attempt to speculate on the identities or relationships of the different languages, on the evidence of philology as to the character and history of primitive human civilisations, or any other subject whatever not strictly within the four walls of my subject. That subject is the origin, growth and development of human language as it is shown to us by the embryology of the language ordinarily called Sanskrit and three ancient tongues, two dead and one living which have evidently come at least into contact with it, the Latin, Greek and Tamil. I have called my work, for convenience's sake, 'The Origins of Aryan Speech'; but I would have it clearly understood that by using this familiar epithet I do not for a moment wish to imply any opinion as to the relationship of the four languages included in my survey, or the race origin of the peoples speaking them or even of the ethnic origins of the Sanskrit speaking peoples. I did not wish to use the word Sanskrit, both because it is only a term meaning polished or correct and designating the literary tongue of ancient India as distinct from the vernaculars used by the women and the common people and because my scope is somewhat wider than the classical tongue of the northern Hindus. I base my conclusions on the evidence of the Sanskrit language helped out by those parts of the Greek, Latin and Tamil tongues which are cognate to the word-families of Sanskrit, and by the origins of Aryan speech I mean, properly, the origin of human speech as used and developed by those who fashioned these word-families and their stocks and off-shoots. The significance of the word Aryan, as I use it, goes no farther.

In such an enquiry, it is obvious that a kind of science of linguistic embryology is the first necessity. In other words, it is only in proportion as we get away from the habits and notions and apparent facts of formed human speech in its use by modern and civilised people, only in proportion as we get nearer to the first roots and rudiments of the structure of the more ancient

and primitive languages that we shall have any chance of making really fruitful discoveries. Just as from the study of the formed outward man, animal, plant, the great truths of evolution could not be discovered or, if discovered, not firmly fixed, — just as only by going back from the formed creature to its skeleton and from the skeleton to the embryo could the great truth be established that in matter also the great Vedantic formula holds good, — of a world formed by the development of many forms from one seed, in the will of the universal Being, *ekam bijaṃ bahudhā yaḥ karoti*, so also in language; if the origin and unity of human speech can be found and established, if it can be shown that its development was governed by fixed laws and processes, it is only by going back to its earliest forms that the discovery is to be made and its proofs established. Modern speech is largely a fixed and almost artificial form, not precisely a fossil, but an organism proceeding towards arrest and fossilisation. The ideas its study suggests to us are well calculated to lead us entirely astray. In modern language the word is a fixed conventional symbol having for no good reason that we know a significance we are bound by custom to attach to it. We mean by wolf a certain kind of animal, but why we use this sound and not another to mean it, except as a mere lawless fact of historical development, we do not know, do not care to think. Any other sound would, for us, be equally good for the purpose, provided the custom-bound mentality prevailing in our environment could be persuaded to sanction it. It is only when we go back to the early tongues and find, for instance, that the Sanskrit word for wolf means radically “tearing” that we get a glimpse of one law at least of the development of language. Again, in modern speech we have fixed parts of speech; noun, adjective, verb, adverb are to us different words even when their forms are the same. Only when we go back to the earlier tongues do we get a glimpse of the striking, the illuminating fact that in the most fundamental forms a single monosyllable did service equally for noun, adjective, verb and adverb and that man in his earliest use of speech probably made in his mind little or no conscious difference between these various uses. We see the word *vrka* in modern Sanskrit used only as a noun signifying wolf; in the Veda it means simply tearing or a

tearer, is used indifferently as a noun or adjective, even in its noun-use has much of the freedom of an adjective and can be applied freely to a wolf, a demon, an enemy, a disruptive force or anything that tears. We find in the Veda, although there are adverbial forms corresponding to the Latin adverb in *e* and *ter*, the adjective itself used continually as a pure adjective and yet in a relation to the verb and its action which corresponds to our modern use of adverbs and adverbial or prepositional phrases or subordinate adverbial clauses. Still more remarkable, we find nouns and adjectives used frequently as verbs with an object in the accusative case depending on the verbal idea in the root. We are prepared, therefore, to find that in the simplest and earliest forms of the Aryan tongue the use of a word was quite fluid, that a word like *cit* for instance might equally mean to know, knowing, knows, knower, knowledge, or knowingly and be used by the speaker without any distinct idea of the particular employment he was making of the pliant vocable. Again, the tendency to fixity in modern tongues, the tendency to use words as mere counters and symbols of ideas, not as living entities themselves the parents of thought, creates a tendency to limit severely the use of a single word in several different senses and also a tendency to avoid the use of many different words for the expression of a single object or idea. When we have got the word 'strike' to mean a voluntary and organised cessation of work by labourers, we are satisfied; we would be embarrassed if we had to choose between this and fifteen other words equally common and having the same significance; still more should we feel embarrassed if the same word could mean a blow, a sunbeam, anger, death, life, darkness, shelter, a house, food and prayer. Yet this is precisely the phenomenon, — again, I suggest a most striking and illuminating phenomenon, — we find in the early history of speech. Even in later Sanskrit the wealth of apparently unconnected significances borne by a single word is phenomenal, but in Vedic Sanskrit it is more than phenomenal and offers a serious stumbling-block to any attempt by moderns to fix the exact and indisputable sense of the Aryan hymns. I shall give evidence in this work for concluding that in yet earlier speech the licence was much greater, that each word, not only exceptionally but ordi-

narily, was capable of numerous different meanings and each object or idea could be expressed by many, often by as many as fifty different words each derived from a different root. To our ideas such a state of things would be one merely of lawless confusion negating the very idea of any law of speech or any possibility of a linguistic Science, but I shall show that this extraordinary freedom and pliancy arose inevitably out of the very nature of human speech in its beginnings and as a result of the very laws which presided over its pristine development.

By going back thus from the artificial use of a developed speech in modern language nearer to the natural use of primitive speech by our earlier forefathers we gain two important points. We get rid of the idea of a conventional fixed connection between the sound and its sense and we perceive that a certain object is expressed by a certain sound because for some reason it suggested a particular and striking action or characteristic which distinguished that object to the earlier human mind. Ancient man did not say in his mind as would the sophisticated modern, "Here is a gory carnivorous animal, with four legs, of the canine species who hunts in packs and is particularly associated in my mind with Russia and the winter and snow and the steppes; let us find a suitable name for him"; he had fewer ideas about the wolf in his mind, no preoccupation with ideas of scientific classification and much preoccupation with the physical fact of his contact with the wolf. It was this chief all-important physical fact he selected when he cried to his companion, not "here is the wolf", but simply "this tearer", *ayam vṛkaḥ*. The question remains, why the word *vṛkaḥ* more than another suggested the idea of tearing. The Sanskrit language carries us one step back, but not yet to the final step, by showing us that it is not the formed word *vṛkaḥ* with which we have to deal, but the word *vṛc*, that root of which *vṛka* is only one of several outgrowths. For the second obsession it helps us to get rid of is the modern connection of the developed word with some precise shade of an idea that we have accustomed it to convey. The word 'delimitation' and the complex sense it conveys are with us welded together; we need not remember that it comes from *limes*, a boundary, and that the single syllable *lime*, which is the backbone of the word, does not carry to us by



itself the fundamental core of the sense. But I think it can be shown that even in the Vedic times men using the word *vr̥ka* had the sense of the root *vr̥c* foremost in their minds and it was that root which to their mentality was the rigid fixed significant part of speech; the full word being still fluid and depending for its use on the associations wakened by the root it contained. If that be so, we can partly see why words remained fluid in their sense, varying according to the particular idea wakened by the root-sound in the mentality of the speaker. We can see also why this root itself was fluid not only in its significances, but in its use and why even in the formed and developed word the nominal, adjectival, verbal and adverbial uses were, even in the comparatively late stage of speech we find in the Vedas, so imperfectly distinguished, so little rigid and separate, so much run into each other. We get back always to the root as the determining unit of language. In the particular inquiry we have before us, the basis for a science of language, we make a most important advance. We need not enquire why *vr̥ka* meant tearer; we shall enquire instead what the sound *vr̥c* meant to the early Aryan-speaking races and why it bore the particular significance or significances we actually find imbedded in it. We have not to ask why *dolabra* in Latin means an axe, *dalmi* in Sanskrit means Indra's thunderbolt, *dalapa* and *dala* are applied to weapons, or *dalanam* meaning crushing or *delphi* in Greek is the name given to a place of caverns and ravines, but we may confine ourselves to an enquiry into the nature of the mother-root *dal* of which all these different but cognate uses are the result. Not that the variations noted have no importance but their importance is minor and subsidiary. We may indeed divide the history of speech-origins into two parts, the embryonic into which research must be immediate as of the first importance, the structural which is less important and therefore may be kept for subsequent and subsidiary inquiry. In the first we note the roots of speech and inquire how *vr̥c* came to mean to tear, *dal* to split or crush, whether arbitrarily or by the operation of some law of nature; in the second we note the modifications and additions by which those roots grow into developed words, word-groups, word-families and word-clans and why those modifications and additions had

the effect on sense and use which we find them to have exercised, why the termination *ana* turns *dal* into an adjective or a noun and what is the source and sense of the various terminations *ābra*, *bhi*, *bha*, (*del*)*phoi*, (*dal*)*bhāh*, *ān* (Greek *ōn*) and *ana*.

This superior importance of the root in early language to the formed word is one of those submerged facts of language the neglect of which has been one of the chief causes of philology's scientific abortiveness as a science. The first comparative philologists made, it seems to me, a fatal mistake when, misled by the wider preoccupation with the formed word, they fixed on the correlation *pitā*, *pater*, *pater*, *vater*, *father* as the clef, or the *mūlamantra*, of their science and began to argue from it to all sorts of sound or unsound conclusions. The real clef, the real correlation is to be found in this other agreement, *dalbhi*, *dalana*, *dolabra*, *dolon*,<sup>1</sup> *delphi*, leading to the idea of a common mother-root, common word-families, common word-clans, kindred word-nations, or, as we call them, languages. And if it had been also noticed that in all these languages *dal* means also pretence or fraud and has other common or kindred significances and some attempt made to discover the reason for one sound having these various significant uses, the foundation of a real Science of Languages might have been formed. We should incidentally have discovered, perhaps, the real connections of the ancient languages and the common mentality of the so-called Aryan peoples. We find *dolabra* in Latin for axe, we find no corresponding word in Greek or Sanskrit for axe; to argue thence that the Aryan forefathers had not invented or adopted the axe as a weapon before their dispersion, is to land oneself in a region of futile and nebulous uncertainties and rash inferences. But when we have noted that *dolabra* in Latin, *dolon* in Greek, *dala*, *dalapa* and *dalmi* in Sanskrit were all various derivatives freely developed from *dal* to split, and all used for some kind of weapon, we get hold of a fruitful and luminous certainty. We see the common or original mentality working, we see the apparently free and loose yet really regular processes by which words were formed; we see too that not the possession of the same identical formed words, but the selection of a root word and of one among

<sup>1</sup> *Dolos*, fraud; *dolon*, dagger; *doulos*, slave.

several children of the same root word to express a particular object or idea was the secret both of the common element and of the large and free variation that we actually find of the vocabulary of the Aryan languages.

I have said enough to show the character of the enquiry which I propose to pursue in the present work. This character arises necessarily from the very nature of the problem we have before us, the processes by which language took birth and formation. In the physical sciences we have a simple and homogeneous material of study; for, however complex may be the forces or constituents at work, they are all of one nature and obey one class of laws; all the constituents are forms developed by the vibration of material ether, all the forces are energies of these ethereal vibrations which have either knotted themselves into these formal constituents of objects and are at work in them or else still work freely upon them from outside. But in the mental sciences we are confronted with heterogeneous material and heterogeneous forces and action of forces; we have to deal first with a physical material and medium, the nature and action of which by itself would be easy enough to study and regular enough in its action, but for the second element, the mental agency working in and upon its physical medium and material. We see a cricket ball flying through the air, we know the elements of action and statics that work into and upon its flight and we can tell easily enough either by calculation or judgment not only in what direction it will pursue its flight, but where it will fall. We see a bird flying through the air, — a physical object like the cricket ball flying through the same physical medium; but we know neither in what direction it will fly, nor where it will alight. The material is the same, a physical body, the medium is the same, the physical atmosphere; to a certain extent even the energy is the same, the physical Pranic energy, as it is called in our philosophy, inherent in matter. But another force not physical has seized on this physical force, is acting in it and on it and so far as the physical medium will allow, fulfilling itself through it. This force is mental energy, and its presence suffices to change the pure or molecular Pranic energy we find in the cricket ball into the mixed or nervous Pranic energy we find in

the bird. But if we could so develop our mental perceptions as to be able to estimate by judgment or measure by calculation the force of nervous energy animating the bird at the moment of its flight, even then we could not determine its direction or goal. The reason is that there is not only a difference in the energy, but a difference in the agency. The agency is the mental power dwelling in the merely physical object, the power of a mental will which is not only indwelling but to a certain extent free. There is an intention in the bird's flight; if we can perceive that intention, we can then judge whither it will fly, where it will alight, provided always that it does not change its intention. The cricket ball is also thrown by a mental agent with an intention, but that agent being external and not indwelling, the ball cannot, once it is propelled in a certain direction, with a certain force, change that direction or exceed that force unless turned or driven forward by a new object it meets in its flight. In itself it is not free. The bird is also propelled by a mental agent with an intention, in a certain direction, with a certain force of nervous energy in its flight. Let nothing change in the mental will working it and its flight may possibly be estimated and fixed like the cricket ball's. It also may be turned by an object meeting it, a tree or a danger in the way, an attractive object out of the way, but the mental power dwells within and is, as we should say, free to choose whether it shall be turned aside or not, whether it shall continue its way or not. But also it is free entirely to change its original intention without any external reasons, to increase or diminish, to use its output of nervous energy in the act, to employ it in a direction and towards a goal which are quite foreign to the original object of the flight. We can study and estimate the physical and nervous forces it uses, but we cannot make a science of the bird's flight unless we go behind matter and material force and study the nature of this conscious agent and the laws, if any, which determine, annul or restrict its apparent freedom.

Philology is the attempt to form such a mental science, — for language has this twofold aspect; its material is physical, the sounds formed by the human tongue working on the air vibrations; the energy using it is nervous, the molecular Pranic

activity of the brain using the vocal agents and itself used and modified by a mental energy, the nervous impulse to express, to bring out of the crude material of sensation the clearness and preciseness of the idea; the agent using it is a mental will, free so far as we can see, but free within the limits of its physical material to vary and determine its use, for that purpose, of the range of vocal sound. In order to arrive at the laws which have governed the formation of any given human tongue, — and my purpose now is not to study the origins of human speech generally, but the origins of Aryan speech, — we must examine, first, the way in which the instrument of vocal sound has been determined and used by the agent, secondly, the way in which the relation of the particular ideas to be expressed to the particular sound or sounds which express it, has been determined. There must always be these two elements, the structure of the language, its seeds, roots, formation and growth, and the psychology of the use of the structure.

Alone of the Aryan tongues, the present structure of the Sanskrit language still preserves this original type of the Aryan structure. In this ancient tongue alone, we see not entirely in all the original forms, but in the original essential parts and rules of formation, the skeleton, the members, the entrails of this organism. It is through this study, then, of Sanskrit, especially aided by whatever light we can get from the more regular and richly-structured among the other Aryan languages, that we must seek for our origins. The structure we find is one of extraordinary initial simplicity and also of extraordinarily mathematical and scientific regularity of formation. We have in Sanskrit four open sounds or pure vowels, *a* (अ), *i* (इ), *u* (उ), *r* (ऋ) with their lengthened forms, *ā* (आ), *ī* (ई), *ū* (ऊ), and *ṛ* (ऌ) (we have to mention but may omit for practical purposes the rare vowel *ṛ*, ऀ), supplemented by two other open sounds which the grammarians are probably right in regarding as impure vowels or modifications of *i* (इ) and *u* (उ); they are the vowels *e* (ए) and *o* (ओ), each with its farther modification into *ai* (ऐ) and *au* (औ). Then we have five symmetrical Vargas or classes of closed sounds or consonants, the gutturals, *k* (क), *kh* (ख), *g* (ग), *gh* (घ), *ṅ* (ङ), the palatals *c* (च), *ch* (छ), *j* (ज), *jh* (झ), *ñ* (ञ), the cerebrals, answer-

ing approximately to the English dentals, *t* (ट्), *th* (ठ्), *d* (ड्), *dh* (ढ्), *n* (ण्); the pure dentals answering to the Celtic and continental dentals we find in Irish and in French, Spanish or Italian *t* (त्), *th* (थ्), *d* (द्), *dh* (ध्), *n* (न्) and the labials, *p* (प्), *ph* (फ्), *b* (ब्), *bh* (भ्), *m* (म्). Each of these classes consists of a hard sound, *k* (क्), *c* (च्), *t* (ट्), *t* (त्), *p* (प्), with its aspirate, *kh* (ख्), *ch* (छ्), *th* (ठ्), *th* (थ्), *ph* (फ्), a corresponding sound *g* (ग्), *j* (ज्), *d* (ड्), *d* (द्), *b* (ब्) with its aspirate *gh* (घ्), *jh* (झ्), *dh* (ढ्), *dh* (ध्), *bh* (भ्), and a class nasal, *ñ* (ञ्), *ṅ* (ङ्), *ṇ* (ण्), *n* (न्), *m* (म्). But of these nasals only the last three have any separate existence or importance; the others are modifications of the general nasal sound, *m* (म्), *n* (न्), which are found only in conjunction with the other consonants of their class and are brought into existence by that conjunction. The cerebral class is also a peculiar class; they have so close a kinship to the dental both in sound and in use that they may almost be regarded as modified dentals rather than an original separate class. Finally, in addition to the ordinary vowels and consonants we have a class composed of the four liquids *y* (य्), *r* (र्), *l* (ल्), *v* (व्), which are evidently treated as semi-vowels, *y* (य्) being the semi-vowel form of *i* (इ), *v* (व्) of *u* (उ), *r* (र्) of *r* (ऋ), *l* (ल्) of *lr* (ऌ), — this semi-vowel character of *r* (र्) and *l* (ल्) is the reason why in Latin prosody they have not always the full value of the consonant, why, for instance, the *u* in *volueris* is optionally long or short; we have the triple sibilation *ś* (श्), *ṣ* (ष्) and *s* (स्), *ś*, palatal, *ṣ* cerebral, *s* dental; we have the pure aspirate, *h* (ह्). With the possible exception of the cerebral class and the variable nasal, it can hardly be doubted, I think, that the Sanskrit alphabet represents the original vocal instrument of Aryan speech. Its regular, symmetrical and methodical character is evident and might tempt us to see in it a creation of some scientific intellect, if we did not know that Nature in a certain portion of her pure physical action has precisely this regularity, symmetry and fixity and that the mind, at any rate in its earlier unintellectualised action, when man is more guided by sensation and impulse and hasty perception, tends to bring in the element of irregularity and caprice and not a greater method and symmetry. We may even say, not absolutely, but within the range of the linguistic facts and

periods available to us, the greater the symmetry and unconscious scientific regularity, the more ancient the stage of the language. The advanced stages of language show an increasing detrition, deliquescence, capricious variation, the loss of useful sounds, the passage, sometimes transitory, sometimes permanent of slight and unnecessary variations of the same sound to the dignity of separate letters. Such a variation, unsuccessful in permanence can be seen in the Vedic modification of the soft cerebral *d* (द) into a cerebral liquid *l* (ळ). This sound disappears in later Sanskrit, but has fixed itself in Tamil and Marathi. Such is the simple instrument out of which the majestic and expressive harmonies of the Sanskrit language have been formed.

The use of the instrument by the earlier Aryans for the formation of words seems to have been equally symmetrical, methodical and in close touch with the physical facts of vocal expression. These letters are used as so many seed-sounds; out of them primitive root-sounds are formed by the simple combination of the four vowels or less frequently the modified vowels with each of the consonants, the two dependent nasals *ñ* (ञ) and *ṅ* (ङ) and the cerebral nasal *ṅ* (ण) excepted. Thus with *d* (द) as a base sound, the early Aryans were able to make for themselves root-sounds which they used indifferently as nouns, adjectives, verbs or adverbs to express root-ideas; — *da* (दा), *dā* (दा), *dī* (दि), *dī* (दी), *du* (दु), *dū* (दू), *dṛ* (दृ), and *dṝ* (दृ̄). All these roots did not endure as separate words, but those which did, left an often vigorous progeny behind them which preserve in themselves the evidence for the existence of their progenitor. Especially have the roots formed by the short *a* (अ) passed out of use without a single exception. In addition the Aryans could form if they chose the modified root-sounds *de* (दे), *dai* (द्वै), *do* (दो), *dau* (दौ). The vowel bases were also used, since the nature of speech permitted it, as root-sounds and root-words. But obviously the kernel of language, though it might suffice for primitive beings, is too limited in range to satisfy the self-extensive tendency of human speech. We see therefore a class of secondary root-sounds and root-words grow up from the primitive root by the further addition to it of any of the consonant sounds with its necessary or natural modification of the already existing root-idea. Thus on

the basis of the now lost primitive root *da*, it was possible to have four guttural short secondary roots, *dak* (दक्), *dakh* (दख्), *dag* (दग्), *dagh* (दघ्) and four long, *dāk* (दाक्), *dākh* (दाख्), *dāg* (दाग्), *dāgh* (दाघ्), which might be regarded either as separate words or long forms of the short root; so also eight palatal, eight cerebral, with the two nasal forms *daṅ* (दङ्) and *dāṅ* (दाङ्), making ten, ten dental, ten labial liquid, six sibilant and two aspirate secondary roots. It was possible also to nasalise any of these forms, establishing for instance, *dank* (दङ्क्), *dankh* (दङ्ख्), *dang* (दङ्ग्) and *dangh* (दङ्घ्). It seems not unnatural to suppose that all these roots existed in the earlier forms of the Aryan Speech, but by the time of our first literary records, the greater number of them have disappeared, some leaving behind them a scanty or numerous progeny, others perishing with their frail descendants. If we take a single example, the primitive base root *ma* (म), we find *ma* (म) itself dead but existing in the noun forms *ma* (म), *mā* (मा), *man* (मन्), *mataḥ* (मतः), *matam* (मतम्); *man* (मन्) existing only in the nasal form *mank* (मङ्क्) and in its own descendants *makara* (मकर), *makura* (मकुर), *makulā* (मकुल) etc., and in tertiary formations *makk* (मक्क्) and *makṣ* (मक्ख्); *makk* (मक्क्) still existing as a root-word in the forms *makh* (मख्) and *mankh* (मङ्ख्); *mag* (मग्) only in its descendants and in its nasal forms *mang* (मङ्ग्), *magh* (मघ्) in its nasalised form *mangh* (मङ्घ्); *mac* (मक्) still alive, but childless except in its nasal disguise *manc* (मङ्च्); *mach* (मछ्) dead with its posterity, *maj* (मज्) alive in its descendants and its nasal form *manj* (मङ्ज्), *majh* (मज्) wholly obsolete. We find in the long forms *mā* (मा) and *mākṣ* (माक्ख्) as separate roots and words with *māk* (माक्), *mākh* (माख्), *māgh* (माघ्), *māc* (माक्), and *māch* (माछ्) as their substantial parts, but more usually deriving, it would seem, from a lengthening of the short root, than from the long form as a separate root. Finally, tertiary roots have been formed less regularly but still with some freedom by the addition of semi-vowels to the seed-sound in either primitive or secondary root thus giving us roots like *dhyai* (ध्यै), *dhvan* (ध्वन्), *sru* (स्रु), *hlād* (ह्लाद्), or of other consonants where the combination was possible, giving us roots like *stu* (स्तु), *ścyu* (श्च्यु), *hrad* (ह्रद्) etc., or else by the addition of another consonant to the final of the secondary root, giving us



forms like *vall* (वल्), *majj* (मज्ज्) etc. These are the pure root-forms. But a sort of illegitimate tertiary root is formed by the vowel *guṇa* or modification, as for example, of the vowel *r* (ऋ) into *ar* (अर्), and *r̄* (ऋ) into *ār* (आर्), so that we have the alternative forms *rc* (ऋच्) and *arc* (अर्च्) or *ark* (अर्क्); the forms *carṣ* (चर्ष्) and *car* (चर्) replacing *crṣ* (चृष्) and *cr* (चृ) which are now dead, the forms *mṛj* (मृज्) and *marj* (मर्ज्) etc. We find too, certain early tendencies of consonantal modifications, one has an initial tendency to get rid of the palatal *c* (च्) *ch* (छ) and *j* (ज्) *jh* (झ), replace them by *k* (क्) and *g* (ग्), a tendency entirely fulfilled in Latin, but arrested in the course of half fulfilment in Sanskrit. This principle of *guṇa* is of great importance in the study of the physical formation of the language and of its psychological development, especially as it introduces a first element of doubt and confusion into an otherwise crystal clearness of structure and perfect mechanic regularity of formation. The vowel *guṇa* or modification works by the substitution either of the modified vowel, *e* (ए) for *i* (इ), *o* (ओ) for *u* (उ), so that we have from *vi* (वि) the case form *ves* (वेस्), *veh* (वेः), from *janu* (जन्तु) the case form *janoh* (जनोः), or of the pure semi-vowel sound *y* (य्) for *i* (इ), *v* (व्) for *u* (उ), *r* (र्) for *r̄* (ऋ), or a little impurely *rā* (रा), so that from *vi* (वि) we have the verbal form *vyantah* (व्यन्तः), from *śu* (शु), the verbal form *aśvah* (अश्वः), from *vr* (वृ) or *vrh* (वृह्) the noun *vraha* (ब्रह्), or else of the supported semi-vowel sound, *ay* (अय्) for *i* (इ), *av* (अव्) for *u* (उ), *ar* (अर्) for *r̄* (ऋ), *al* (अल्) for *lr̄* (लृ), so that we have from *vi* the noun *vayas* (वयस्), from *śru* (श्रु) the noun *śravas* (श्रवस्), from *sr* (सृ) the noun *saras* (सरस्), from *klrp* (क्लृप्) the noun *kalpa* (कल्प). These forms constitute the simple gunation of the short vowel sounds *a* (अ), *i* (इ), *u* (उ), *r̄* (ऋ), *lr̄* (लृ); in addition we have the long modification or *vrddhi*, an extension of the principle of lengthening which gives us the long forms of the words; we have *ai* (ऐ) or *āy* (आय्) from *i* (इ), *au* (औ) or *āv* (आव्) from *u* (उ), *ār* (आर्) from *r̄* (ऋ), *āl* (आल्) from *lr̄* (लृ), while *a* (अ) has no *vrddhi* proper but only the lengthening *ā* (आ). The principal confusion that arises out of this primitive departure from simplicity of sound-development is the frequent uncertainty between a regular secondary root and the irregular

gunated root. We have, for instance, the regular root *ar* (अर्) deriving from the primitive root *a* (अ) and the illegitimate root *ar* (अर्) deriving from the primitive root *r* (ऋ); we have the forms *kala* (कल) and *kāla* (काल), which, if judged only by their structure, may derive either from *klr* (क्लृ) or from *kal* (कल्); we have *ayus* (अयुस्) and *āyus* (आयुस्) which, similarly judged, may derive either from the root forms *a* (अ) and *ā* (आ) or from the root forms *u* (उ) and *i* (इ). The main consonantal modifications in Sanskrit are structural and consist in the assimilation of like consonants, a hard sound becoming soft by association with a soft sound, as soft sound hard by association with a hard sound, aspirates being replaced in conjunction by the corresponding unaspirated sound and modifying their companion in return, e.g. *lapsyate* (लप्स्यते) and *labdhum* (लब्धुम्) from *labh* (लभ्) substituted for *labh-syate* (लभ्-स्यते) and *labh-tum* (लभ्-तुम्), *vyūḍha* (व्यूढ) from *vyūh* (व्यूह्) replacing *vyūhta* (व्यूह्त्). Beyond this tendency to obey certain subtle but easily recognisable tendencies of mutual modification, which in themselves suggest only certain minor and unimportant doubts, the one really corruptive tendency in Sanskrit is the arrested impulse towards disappearance of the palatal family. This has gone so far that such forms as *ketu* (केतु) can be considered by Indian grammarians, quite erroneously, to proceed from the root *cit* (चित्) and not from the root *kit* (कित्) which is its natural parent. In reality, however, the only genuine palatal modifications are those in *sandhi*, which substitute *k* (क्) for *c* (च्), *g* (ग्) for *j* (ज्) at the end of a word or in certain combinations, e.g. *lagna* (लग्न) for *lajna* (लज्ज), *vaktṛ* (वक्त्) for *vactṛ* (वक्तृ), *vakva* (वक्व) for *vacva* (वच्च), the noun *vākya* (वाक्य) from the root *vac* (वच्), the perfect *cikāya* (चिकाय) and *cikye* (चिक्ये). Side by side with these modificatory combinations we have regular forms, such as *yajña*, (यज्ञ), *vācya* (वाच्य), *cicāya* (चिचाय), *cicye* (चिक्ये). It is even open to question whether the forms *cikāya* (चिकाय) and *cikye* (चिक्ये) are not rather from the root *ki* (कि) than actual descendants from the parent root *ci* (चि) in whose nest they have found a home.

These elements of variation noted, we are in a position to follow the second stage in the flowering of speech from the root-

state to the stage in which we pass on by a natural transition to the structural development of language. So far we have a language formed of the simplest and most regular elements. The seed-sounds, eight vowels and their modifications four in number; five classes of consonants and the nasals; one quaternary of liquids or semi-vowels: three sibilants; one aspirate based on each of these; their first developments, the primitive and parent roots, as from the seed-sound *v* (व्), the primitive root-group *va* (व), *vā* (वा), *vi* (वि), *vī* (वी), *vṛ* (वृ) *vṝ* (वृ̄) and possibly *vu* (वु), *vū* (वू), *ve* (वे), *vai* (वे), *vo* (वो), *vau* (वौ); round each primitive root its family of secondary roots, round the primitive *va* (व) its family, *vak* (वक्), *vakh* (वक्ख), *vag* (वग्), *vagh* (वग्घ); *vac* (वच्), *vach* (वच्छ), *vaj* (वज्), *vajh* (वज्झ); *vaṭ* (वट्), *vaṭh* (वट्ठ), *vaḍ* (वड्), *vaḍh* (वड्ठ), *vaṇ* (वण्); *vat* (वत्), *vath* (वत्थ), *vad* (वद्), *vadh* (वद्ध), *van* (वन्); *vap* (वप्), *vaph* (वप्फ), *vab* (वब्), *vabh* (वब्भ), *vam* (वम्); and possibly *vay* (वय्), *var* (वर्), *val* (वल्ल), *vav* (वव्); *vaś* (वस्), *vaṣ* (वष्), *vas* (वस्), *vah* (वह्); — the eight or more families of this group forming a root-clan, with a certain variable number of tertiary dependents such as *vañc* (वञ्च्), *vañg* (वञ्ङ्), *vand* (वन्द्), *valg* (वल्ल्), *vañs* (वंस्), *vañk* (वञ्क्), *vraj* (व्रज्), etc. Forty of these clans would constitute the whole range of primitive language. Each word would in the primitive nature of language, like each man in the primitive constitution of human society, fulfil at once several functions, noun, verb, adjective and adverb at once, the inflection of the voice, the use of gesture and the quickness of the instinct making up for the absence of delicacy and precision in the shades of speech. Such a language though of small compass would be one, it is clear, of great simplicity, of mechanical regularity of formation built up perfectly in its small range by the automatic methods of Nature, and sufficient to express the first physical and emotional needs of the human race. But the increasing demands of the intellect would in time compel a fresh growth of language and a more intricate flowering of forms. The first instrument in such a growth, the first in urgency, importance and time, would be the impulse towards distinguishing more formally between the action, the agent and the object, and therefore of establishing some sort of formal distinction, however vague at

first, between the noun-idea and the verb-idea. The second impulse, possibly simultaneous, would be towards distinguishing structurally, — for it is possible that the various root forms of one family were already used for that object, — between the various lines and shades of action, of establishing in modern language, tense forms, voices, moods. The third impulse would be towards the formal distinction of various attributes, such as number and gender, and various relations of the subject and object themselves to the action, of establishing case forms and forms of singularity, duality, plurality. The elaboration of special forms for adjective and adverb seems to have been a later, the latter in fact the latest of the operations of structural development, because in the early mentality the need of these distinctions was the least pressing.

When we examine how the old Aryan speakers managed the satisfaction of these needs and this new and rich efflorescence of the language plant we find that Nature in them was perfectly faithful to the principle of her first operations and that the whole of the mighty structure of the Sanskrit language was built up by a very slight extension of her original movement. This extension was reared and made possible by the simple, necessary and inevitable device of using the vowels *a* (अ), *i* (इ), *u* (उ) and *r* (ऋ) with their long forms and modifications as enclitic or support sounds subsequently prefixed sometimes to the root, but at first used to form appendage sounds only. The Aryans by the aid of this device proceeded, just as they had formed root-words by adding the consonant sounds to the primitive root-sounds, by adding for instance *d* (द्) or *l* (ल्) to *va* (व) had formed *vad* (वद्) and *val* (वल्), so now to form structural sounds by adding to the developed root-word any of the same consonant sounds, pure or conjunct with others, with an enclitic sound either as the connective support or a formatory support or both, or else by adding the enclitic sound alone as a substantial appendage. Thus, having the root *vad* (वद्), they could form from it at their will by the addition of the consonant *t* (त्), *vadat* (वदत्), *vadit* (वदित्), *vadut* (वदुत्), *vadrt* (वदृत्) or *vadata* (वदत), *vadita* (वदित), *vaduta* (वदुत), *vadrta* (वदृत), or *vadati* (वदति), *vaditi* (वदिति), *vaduti* (वदुति), *vadr̥ti* (वदृति) or *vadatu* (वदतु), *vaditu* (वदितु), *vadutu*

(वदुतु), *vadṛtu* (वदृत्तु), or else *vadatri* (वदत्रि), *vaditri* (वदित्रि), *vadutri* (वदुत्रि); *vadṛtri* (वदृत्रि) or else they could use the enclitic only and form *vada* (वद), *vadi* (वदि), *vadu* (वदु), *vadr* (वदृ), or they could employ the conjunct sounds *tr* (त्र्), *ty* (त्स्), *tv* (त्स्व्), *tm* (त्स्म्), *tn* (त्स्न्), and produce such forms as *vadatra* (वदत्र), *vadatya* (वदत्य), *vadatva* (वदत्व), *vadatma* (वदत्म), *vadatna* (वदत्न). As a matter of fact we do not find and would not expect to find all these possibilities actually used in the case of a single word. With the growth of intellectual richness and precision there would be a corresponding growth in the mental will-action and the supersession of the mechanical mind processes by more clearly and consciously selective mind processes. Nevertheless we do find practically all these forms distributed over the root-clans and families of the Aryan word-nation. We find the simple nominal forms built by the addition of the sole enclitic richly and almost universally distributed. The richness of forms is much greater in earlier Aryan speech than in later literature. From the root *san* (सन्) for instance, we find in Vedic speech all the forms *sana* (सन), *sani* (सनि), *sanu* (सनु) (contracted into *snu* स्नु), but in later Sanskrit they have all disappeared. We find also in Veda variants like *caratha* (चरथ) and *carutha* (चरथ्), *raha* (रह) and *rāha* (राह), but in later Sanskrit *caratha* (चरथ) has been rejected, *rah* (रह्) and *rāh* (राह्) preserved but rigidly distinguished in their significances. We find most nouns in possession of the *a* (अ) noun form, some in possession of the *i* (इ) form, some in possession of the *u* (उ) form. We find a preference for the simple hard consonant over the aspirate and the soft *p* (प्) is more frequent in structural nouns than *ph* (फ्) or *bh* (भ्) but both *ph* (फ्) and *bh* (भ्) occur, *p* (प्) is more frequent than *b* (ब्), but *b* (ब्) occurs. We find certain consonants preferred over others, especially *k* (क्), *t* (त्), *n* (न्), *s* (स्) either in themselves or in their combinations; we find certain appendage forms like *as* (अस्), *in* (इन्), *an* (अन्), *at* (अत्), *tri* (त्रि), *vat* (वत्), *van* (वन्), formalised into regular nominal and verbal terminations. We see double appendages, side by side with the simple *jitva* (जित्व), we may have *jitvara* (जित्वर), *jitvan* (जित्वन्) etc. Throughout we see or divine behind the present state of the Sanskrit language a wide and free natural labour of forma-

tion followed by a narrowing process of rejection and selection. But always the same original principle, either simply or complexly applied, with modification or without modification of the root-vowels and consonants, is and remains the whole basis and means of noun-structure.

In the variations of the verb, in the formation of case we find always the same principle. The root conjugates itself by the addition of appendages such as *mi* (मि), *si* (सि), *ti* (ति), etc., *m* (म्), *y* (य्), *h* (ह्), *ta* (त्), *va* (व्), (all of them forms used also for nominal structures), either simply or with the support of the enclitic *a* (अ), *i* (इ), or rarely *u* (उ), short, lengthened or modified, giving us such forms as *vacmi* (वच्मि), *vakṣi* (वक्षि), *vadasi* (वदसि), *vadāsi* (वदासि), *vadat* (वदत्), *vadati* (वदति), *vadāti* (वदाति). In the verb forms other devices are used such as the insertion of an appendage like *n* (न्), *nā* (ना), *nu* (नु) or *ni* (नि) in preference to the simple vowel enclitic; the prefixing of the enclitic *a* (अ) or augment to help out the fixing of tense significance; the reduplication of the essential part of the root in various ways, etc. We notice the significant fact that even here Vedic Sanskrit is much richer and freer in its variations. Sanskrit is yet more narrow, rigid and selective, the former using alternative forms like *bhavati* (भवति), *bhavaḥ* (भवः), *bhavate* (भवते). The latter rejects all but the first. The case inflexions differ from the verb forms only in the appendages prefixed, not in their principle or even in themselves; *as* (अस्), *am* (अम्), *ās* (आस्), *os* (ओस्), *ām* (आम्) are all verbal as well as nominal inflexions. But substantially the whole of the language with all its forms and inflexions is the inevitable result of the use by Nature in man of one single rich device, one single fixed principle of sound formation employed with surprisingly few variations, with an astonishingly fixed, imperative and almost tyrannous regularity but also a free and even superfluous original abundance in the formation. The inflexional character of Aryan speech is itself no accident but the inevitable result, almost physically inevitable, of the first seed selection of sound-process, that original apparently trifling selection of the law of the individual being which is at the basis of all Nature's infinitely varied regularities. Fidelity to the principle already selected being once observed the rest results from the

very nature and necessities of the sound-instrument that is employed. Therefore, in the outward form of language, we see the operation of a regular natural law proceeding almost precisely as Nature proceeds in the physical world to form a vegetable or an animal genus and its species.

We have taken one step in the perception of the laws that govern the origin and growth of language; but this step is nothing or little unless we can find an equal regularity, an equal reign of fixed process on the psychological side, in the determining of the relation of particular sense to particular sound. No arbitrary or intellectual choice but a natural selection has determined the growth and arrangement of the sounds, simple or structural, in their groups and families. Is it an arbitrary or intellectual choice or a law of natural selection that has determined their significances? If the latter be true and it must be so, if a Science of Language be possible, then having this peculiar arrangement of significant sounds, certain truths follow inevitably. First: the seed-sound *v* (व्), for example, must have in it something inherent in it which connected it in man's mind originally in the first natural state of speech, with the actual senses borne by the primitive roots *va* (व), *vā* (वा), *vi* (वि), *vī* (वी), *vu* (वु), *vū* (वू), *vr* (व्र), *vṛ* (वृ), in the primitive language. Secondly, whatever variations there are in sense between these roots must be determined originally by some inherent tendency of significance in the variable or vowel element, *a* (अ), *ā* (आ), *i* (इ), *ī* (ई), *u* (उ), *ū* (ऊ), *r* (ऋ), *ṛ* (ॠ). Thirdly, the secondary roots depending in *va* (व), *vac* (वच्), *vakh* (वख्), *vañj* (वञ्ज्), *vam* (वम्), *val* (वल्), *vap* (वप्), *vah* (वह्), *vaś* (वश्), *vas* (वस्), etc. must have a common element in their significances and, so far as they varied originally, must have varied as a result of the element of difference, the consonantal termination *c* (च्), *j* (ज्), *m* (म्), *l* (ल्), *p* (प्), *h* (ह्), *ś* (श्), *s* (स्), respectively. Finally in the structural state of language, although as a result of the growing power of conscious selection other determining factors may have entered into the selection of particular significances for the particular words, yet the original factor cannot have been entirely inoperative and such forms as *vādāna* (वदान), *vadatra* (वदत्र), *vada* (वद), etc. must have been governed in the development of their sense

dominantly by their substantial and common sound-element, to a certain extent by their variable and subordinate element. I shall attempt to show by an examination of the Sanskrit language that all these laws are actually true of Aryan speech, their truth borne out or often established beyond a shadow of doubt by the facts of the language.

THE END