

**A Reader in Nineteenth Century
Historical Indo-European Linguistics**

Winfred P. Lehmann

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CONTENTS

Introduction by the Editor	<u>1</u>
1. Sir William Jones: The Third Anniversary Discourse, on the Hindus	<u>7</u>
2. Friedrich von Schlegel: On the Language and Wisdom of the Indians	<u>21</u>
3. Rasmus Rask: An Investigation concerning the Source of the Old Northern or Icelandic Language	<u>29</u>
4. Franz Bopp: On the Conjugational System of the Sanskrit Language	<u>38</u>
5. Jacob Grimm: Germanic Grammar	<u>46</u>
6. Wilhelm von Humboldt: On the Structural Variety of Human Language and Its Influence on the Intellectual Development of Mankind	<u>61</u>
7. Rudolf von Raumer: Linguistic-Historical Change and the Natural-Historical Definition of Sounds	<u>67</u>
8. August Schleicher: Introduction to A Compendium of the Comparative Grammar of the Indo-European, Sanskrit, Greek and Latin Languages	<u>87</u>
9. C. Lottner: Exceptions to the First Sound Shift	<u>97</u>
10. Hermann Grassmann: Concerning the Aspirates and Their Simultaneous Presence in the Initial and Final of Roots	<u>109</u>
11. Karl Verner: An Exception to the First Sound Shift	<u>132</u>
12. Heinrich Hubschmann: On the Position of Armenian in the Sphere of the Indo-European Languages	<u>164</u>
13. Karl Brugmann: Nasalis Sonans in the Original Indo-European Language	<u>190</u>
14. Hermann Osthoff and Karl Brugman: Preface to Morphological Investigations in the Sphere of the Indo-European Languages I	<u>197</u>
15. Eduard Sievers: On the Accent and Phonology of the Germanic Languages. III. On the Law of Vocalic Finals	<u>210</u>
16. Ferdinand de Saussure: Memoire on the Primitive System of Vowels in the Indo-European Language	<u>217</u>
17. William Dwight Whitney: Language and the Study of Language, Lecture X	<u>225</u>
18. Eduard Sievers: Foundations of Phonetics	<u>257</u>

Introduction

W. P. Lehmann

This anthology has been arranged to provide easy access to some of the important works of nineteenth-century historical Indo-European linguistics. These works are not readily available to students, in part because of their language, in part because of the difficulty of obtaining the works themselves. Schlegel's book of 1808, for example, is generally placed in a special section for rare books in a library; the early issues of an important journal like the *Zeitschrift für vergleichende Sprachwissenschaft* may be stored in a depository; even the section in Grimm's *Grammar* dealing with the sound shift may be difficult for a non-specialist in German to locate. An anthology will permit students to become acquainted with some of the key works of the nineteenth century, and to learn at first hand their contributions to the development of linguistics as well as their weaknesses.

The weaknesses are readily apparent, and should not need detailed comment. Even the important contributions presented here include shortcomings we would not tolerate. Principles observed in writing, printing and editing generally seem to have been determined for the ease of the publisher rather than the reader. A very capable author like Grassmann, for example, paid little attention to editorial details. The name Panini is at one point given without a macron in his article, at another point as Pānini; similarly Samaveda and Sāmaveda. These are superficial details, but they indicate how little the editor pampered the reader. Greek forms were rarely labeled--the special type face used for Greek was considered an adequate marker--and often a reader was expected to recognize Latin and Sanskrit forms as well. Glosses for forms may be in one of a number of languages. Other such editorial practices of the nineteenth century are left to the reader to discover. Occasionally it was difficult to maintain them without seeming unfair to our great predecessors. But when Brugmann lists himself as Brugman and permits spelling his forename Carl or Karl, one has the impression that externals were of little concern in the aim to make available as quickly as possible new insights into linguistic problems.

The selections here incorporate such insights, or are credited with priority in achieving them. In making selections, I intended to present only complete essays, or complete sub-sections of a work, so that the reader might himself determine the point of view of a scholar, his contemporaries, and his publication. Excerpts may more economically present the high points of early linguistics, but they take from readers the pleasure of determining these; the interested student can find the history of linguistics in this way in Hans Arens' *Sprachwissenschaft*. Excerpts also fail to provide the context in which a permanent contribution was made. Jones's entire essay is reprinted here, for example, to indicate that the celebrated paragraph which is constantly reprinted simply makes up one small segment of a report on Indian culture; it is instructive for students to find out for themselves how peripheral was the concern with language at the beginning of the nineteenth century. Schlegel too discussed Indian culture in general, not simply language. Yet it did not seem useful to demonstrate repeatedly by incorporating long passages of their writings on other matters that he and the other early linguists assumed many intellectual responsibilities. For similar reasons, only parts of selections 12, 13, 15, 16 and 18 are included here.

Each selection in the anthology is preceded by comments which point up its contributions, and thus I do not give here a survey of the development of nineteenth-century linguistics. I might also note that the anthology does not reflect all advances of the nineteenth century.

Some are not represented because they were inaugurated by more than one man, sometimes in several different works. The study of dialect geography, for example, was encouraged by many linguists, as the selections from von Raumer and Sievers demonstrate. Such encouragement was not given in special essays, as the example of Gaston Paris may indicate; his initial lecture of 1868 on the historical grammar of the French language, *Mélanges linguistiques*, pp. 153-173 (Paris, 1909), reflects the views that led to the dialect project in France, but only in a general discussion. Other advances are not represented because they occurred to a number of linguists almost simultaneously and were not made in any one notable work, for example the understanding that reconstructions can be established from other segments of a linguistic system than those directly involved. The conclusion that PIE *e* must be assumed because of palatals in Sanskrit is the most striking example. The gradual clarification of the vowel system of Proto-Indo-European is also the work of many, as the excerpt from Saussure indicates. Further, because of the length of the materials here, I have omitted the works of the great dissenters such as Hugo Schuchardt. These to be sure would be useful in illustrating the breadth of approaches in linguistics, as does the *Hugo Schuchardt-Brevier* (Halle: Max Niemeyer, 1922). But, as Schuchardt himself points out, his central concern was the Romance language group, not Indo-European; accordingly his work lies outside the area of the anthology. Moreover, like the dialect geographers, he published many of his theoretical statements in the twentieth century. For this reason too Paul's *Prinzipien* is not represented; its definitive form was reached only in 1920. For a synthesis of nineteenth-century work, I have included a chapter from Whitney.

Interpretation of the contributions of the leading nineteenth-century linguists are happily available in a number of fine surveys. One of the best is *Language*, by Otto Jespersen (London: Allen and Unwin, 1922) pp. 19-99. The most widely read is probably Holger Pedersen's *Linguistic Science in the Nineteenth Century*, translated by John W. Spargo and republished as *The Discovery of Language* (Bloomington: Indiana University Press, 1962). Pedersen's penetrating review of linguistics has a capable predecessor in Vilhelm Thomsen: *Geschichte der Sprachwissenschaft bis zum Ausgang des 19. Jahrhunderts*, translated by H. Pollak (Halle: Niemeyer, 1927). A recent short survey going beyond the nineteenth century is *Perspectives in Linguistics*, by John T. Waterman (Chicago: University of Chicago Press, 1963).

Students who read German should make use of the excellent introduction to the history of linguistics through well-chosen excerpts in Hans Arens' *Sprachwissenschaft* (Freiburg/München: Karl Alber, 1955). Its bibliography contains 744 items, of which items 306-321 deal with the history of linguistics.

Moreover, handbooks that provide brief surveys should not be overlooked, such as Hermann Hirt's *Indogermanische Grammatik* I. (Heidelberg: Winter, 1927) pp. 1-16, or J. Schrijnen's *Einführung in das Studium der indogermanischen Sprachwissenschaft*, translated by W. Fischer (Heidelberg: Winter, 1921) pp. 20-38, or Antoine Meillet's *Introduction à l'étude comparative des langues indo-européennes* (Paris: Hachette, 1937 8), Appendix I, pp. 453-483, or the fine essays on individual linguists in his collected essays: *Linguistique historique et linguistique générale* II. (Paris: Klincksieck, 1938). All of these provide means for a better understanding of the contributions in the selections presented here, and of the problems their authors attempted to solve.

This Reader was undertaken in the fall of 1963. At that time students in a course on the history of the German language were asked to translate various essays. Of these, translations

by the following students are included, after revision: 5 by Mr. Roy A. Boggs, 7 by Mr. Louis E. Brister, 9 by Mr. Peter Mollenhauer, 11 by Miss Carolyn Farmer, 13 by Mr. Clifford Crowe, 14 by Miss Judy Haddon, 18 by Mr. Jerry Glenn. The other essays I have translated. I am grateful to Catharina Breedveld for typing much of the manuscript, and to Miss Victoria Bunye for reading all of it.

Problems of translation could be discussed at length. Among them are shifts in the uses of terms. For Grimm *deutsch* meant Germanic, for Schleicher West Germanic, though also German in accordance with its current use. It is often difficult to translate such terms accurately without providing a contemporary interpretation that reflects the increased precision in use of terminology, and may therefore not correspond to the views of the author. More external, but also troublesome, are items that we no longer use, such as Bactrian rather than Avestan, or symbols like *ḱ* rather than Sanskrit *c*, IE *a₁* rather than *e*. The proper interpretation of these is generally apparent. Some of the forgotten terminology one is tempted to reintroduce, such as the youthful Saussure's symphthong and autophthong.

In general, interpretation is left to the reader; when Grimm uses "analogy," for example, his meaning differs from ours, but it is instructive and not difficult to interpret his use of the term. Often such terminology has been long maintained. It is highly important to understand Grimm's view of the consonant shift occurring in *stufen* "grades," in accordance with the scheme he included in his discussion; the concept of the shift as a series of steps or grades has persisted to the present, though it was probably carried to its extreme under the neogrammarians for whom not only the various series but also the individual items were distinct. Further, an understanding of the methodological approach of Grimm to the consonant shift may be instructive when viewed in relation to that maintained in our handbooks for Indo-European ablaut.

Students who seek to follow the development of methodology in linguistics will want to consult the originals, not merely the translations or even the selections provided here. Fuller acquaintance with the important contributions of the past will lead to a deeper understanding of the views we have maintained and may also provide insights into contemporary approaches and the discussions of linguists today.

CHAPTER ONE

SIR WILLIAM JONES

THE THIRD ANNIVERSARY DISCOURSE, ON THE HINDUS

Delivered 2 February, 1786. Works I, pp. 19-34.

Editor's Introduction

Sir William Jones's celebrated discourse is given here in full to illustrate the context from which linguistics developed in the nineteenth century. With his contemporaries, Jones was interested in better knowledge of ancient history. In the pursuit of this knowledge, language was only one means. The commemorative address of his successor as president of the Asiatic Society, Sir John Shore, states explicitly that for Jones language was a tool, not an end in itself. "But the judgement of Sir William Jones was too discerning to consider language in any other light than as the key of science, and he would have despised the reputation of a mere linguist. Knowledge and truth, were the object of all his studies, and his ambition was to be useful to mankind; with these views, he extended his researches to all languages, nations, and times." (*Works I.p.v.*) A glance at the other annual discourses supports this statement on Jones's wide interests and the subsidiary position of linguists, which it maintained to the middle of the nineteenth century. Yet the "Desiderata" which Shore found among his papers may indicate that Jones had planned to spend additional time on linguistics: the third desideratum is "A Grammar of the Sanscrit Language, from Panini, etc."; the fourth, "A Dictionary of the Sanscrit Language, from thirty-two original Vocabularies and Niructi." These proposed undertakings, and citations from his "Dissertation on the Orthography of Asiatick Words in Roman Letters" (*Works I. pp. 175-228*) may indicate that Jones deserves a larger reputation than that for stimulating study of the Indo-European languages and historical linguistics. The views in his third discourse on the origin of our writing system and Devanagari are accurate; the following excerpts from the "Dissertation" indicate a knowledge of phonetics comparable with that of Grimm's successors.

It would be superfluous to discourse on the organs of speech, which have been a thousand times dissected, and as often described by musicians or anatomists; and the several powers of which every man may perceive either by the touch or by sight, if he will attentively observe another person pronouncing the different classes of letters, or pronounce them himself distinctly before a mirror: but a short analysis of articulate sounds may be proper to introduce an examination of every separate symbol.

All things abound with error, as the old searchers for truth remarked with despondence; but it is really deplorable, that our first step from total ignorance should be into gross inaccuracy, and that we should begin our education in England with learning to read the five vowels, two of which, as we are taught to pronounce them, are clearly diphthongs. There are, indeed, five simple vocal sounds in our language, as in that of Rome; which occur in the words *an innocent bull*, though not precisely in their natural order, for we have retained the true arrangement of the letters, while we capriciously disarrange them in pronunciation; so that our eyes are satisfied, and our ears disappointed. The primary elements of articulation are the soft and hard breathings, the *spiritus lenis* and *spiritus asper* of the Latin Grammarians. If the lips be opened ever so little, the breath suffered gently to pass through them, and the feeblest utterance attempted, a sound is formed of so simple a nature, that, when lengthened, it continues nearly the same, except that, by the least acuteness in the voice it becomes a cry, and is probably the first sound uttered by infants; but if, while this element is articulated, the

breath be forced with an effort through the lips, we form an aspirate more or less harsh in proportion to the force exerted. When, in pronouncing the simple vowel, we open our lips wider, we express a sound completely articulated, which most nations have agreed to place the first in their symbolical systems: by opening them wider still with the corners of them a little drawn back, we give birth to the second of the Roman vowels, and by a large aperture, with a farther inflexion of the lips and a higher elevation of the tongue, we utter the third of them. By pursing up our lips in the least degree, we convert the simple element into another sound of the same nature with the first vowel, and easily confounded with it in a broad pronunciation: when this new sound is lengthened, it approaches very nearly to the fourth vowel, which we form by a bolder and stronger rotundity of the mouth; a farther contraction of it produces the fifth vowel, which in its elongation almost closes the lips, a small passage only being left for the breath. These are all short vowels; and, if an Italian were to read the words *an innocent bull*, he would give the sound of each corresponding vowel, as in the monosyllables of his own language, sà, si, sò, se, sù. Between these ten vowels are numberless gradations, and nice inflexions, which use only can teach; and, by the composition of them all, might be formed an hundred diphthongs, and a thousand triphthongs. ...

We may now consider in the same order, beginning with the root of the tongue and ending with the perfect close of the lips, those less musical sounds, which require the aid of a vowel, or at least of the simple breathing, to be fully articulated; and it may here be premised, that the harsh breathing distinctly pronounced after each of these consonants, as they are named by grammarians, constitutes its proper aspirate. (pp. 182-5)

We hear much of aspirated letters; but the only proper aspirates (those I mean, in which a strong breathing is distinctly heard after the consonants) are to be found in the languages of India; unless the word *cachexy*, which our medical writers have borrowed from the Greek, be thought an exception to the rule: this aspiration may be distinguished by a comma, as the letter before us is expressed in the word c'hanitra, a spade. (p. 195)

Agreeably to the preceding analysis of letters, if I were to adopt a new mode of English orthography, I should write Addison's description of the angel in the following manner, distinguishing the simple breathing, or first element, which we cannot invariably omit, by a perpendicular line above our first or second vowel:

Só hwen sm éñjel, bai divain cãmánd,
Widh rais'n tempests shécs a gilti land,
Sch az äv lét ór péł Britanya pást,
Cálm and s'rín hi draivz dhi fyúryas blást,
And, pl^l'z'd dh'álmaitiz ārderz tu perfórm,
Raids in dhi hwerlwind and dairescts dhi stārm.

This mode of writing poetry would be the touchstone of bad rhymes, which the eye as well as the ear would instantly detect; as in the first couplet of this description, and even in the last, according to the common pronunciation of the word perform. I close this paper with specimens of oriental writing, not as fixed standards of orthography, which no individual has a right to settle, but as examples of the method, which I recommend. ... (p. 205)

Jones (1746-94) was led to his knowledge of Sanskrit through an interest in Hindu law. At Harrow and Oxford he studied oriental languages and literature. After achieving a reputation as an oriental scholar, out of financial necessity he undertook the study of law. In 1783 he was appointed judge in Calcutta, where he continued his vigorous career of publication. His collected works were published five years after his death, in a handsome edition, *The Works of Sir William Jones* in six volumes (London: Robinson and Evans, 1799). This has been followed here, with a few orthographical changes: since ligatures and symbols like long s are not maintained, it also seemed best to modernize spellings like authentic for authentick, and Sanskrit for Sanscrit, except in titles. Students having the opportunity of consulting the

printing of 1799 will admire, with Sir John Shore, Jones's "degree of knowledge" and his elegant presentation.

In the former discourses, which I had the honor of addressing to you, Gentlemen, on the institution and objects of our Society, I confined myself purposely to general topics; giving in the first a distant prospect of the vast career, on which we were entering, and, in the second, exhibiting a more diffuse, but still superficial, sketch of the various discoveries in History, Science, and Art, which we might justly expect from our inquiries into the literature of Asia. I now propose to fill up that outline so comprehensively as to omit nothing essential, yet so concisely as to avoid being tedious; and, if the state of my health shall suffer me to continue long enough in this climate, it is my design, with your permission, to prepare for our annual meetings a series of short dissertations, unconnected in their titles and subjects, but all tending to a common point of no small importance in the pursuit of interesting truths.

Of all the works, which have been published in our own age, or, perhaps, in any other, on the History of the Ancient World, and the first population of this habitable globe, that of Mr. Jacob Bryant, whom I name with reverence and affection, has the best claim to the praise of deep erudition ingeniously applied, and new theories happily illustrated by an assemblage of numberless converging rays from a most extensive circumference: it falls, nevertheless, as every human work must fall, short of perfection; and the least satisfactory part of it seems to be that, which relates to the derivation of words from Asiatic languages. Etymology has, no doubt, some use in historical researches; but it is a medium of proof so very fallacious, that, where it elucidates one fact, it obscures a thousand, and more frequently borders on the ridiculous, than leads to any solid conclusion: it rarely carries with it any internal power of conviction from a resemblance of sounds or similarity of letters; yet often, where it is wholly unassisted by those advantages, it may be indisputably proved by extrinsic evidence. We know *à posteriori*, that both *fitz* and *hijo*, by the nature of two several dialects, are derived from *filius*; that *uncle* comes from *avus*, and *stranger* from *extra*; that *jour* is deducible, through the Italian, from *dies*; and *rossignol* from *luscinia*, or the finger in groves; that *sciuro*, *ecureuil*, and *squirrel* are compounded of two Greek words descriptive of the animal; which etymologies, though they could not have been demonstrated *à priori*, might serve to confirm, if any such confirmation were necessary, the proofs of a connection between the members of one great Empire; but, when we derive our *hanger*, or short pendent sword, from the Persian, because ignorant travellers thus mis-spell the word *khanjar*, which in truth means a different weapon, or *sandalwood* from the Greek, because we suppose, that sandals were sometimes made of it, we gain no ground in proving the affinity of nations, and only weaken arguments, which might otherwise be firmly supported. That *Cús* then, or, as it certainly is written in one ancient dialect, *Cút* and in others, probably, *Cás*, enters into the composition of many proper names, we may very reasonably believe; and that *Algeziras* takes its name from the Arabic word for an island, cannot be doubted; but, when we are told from Europe, that places and provinces in India were clearly denominated from those words, we cannot but observe, in the first instance, that the town, in which we now are assembled, is properly written and pronounced *Calicátá*; that both *Cátá* and *Cút* unquestionably mean places of strength, or, in general, any inclosures; and that *Gujarát* is at least as remote from *Jezirah* in sound, as it is in situation.

Another exception (and a third could hardly be discovered by any candid criticism) to the *Analysis of Ancient Mythology*, is, that the method of reasoning and arrangement of topics adopted in that learned work are not quite agreeable to the title, but almost wholly synthetical;

and, though synthesis may be the better mode in pure science, where the principles are undeniable, yet it seems less calculated to give complete satisfaction in historical disquisitions, where every postulatam will perhaps be refused, and every definition controverted; this may seem a slight objection, but the subject is in itself so interesting, and the full conviction of all reasonable men so desirable, that it may not be lost labor to discuss the same or a similar theory in a method purely analytical, and, after beginning with facts of general notoriety or undisputed evidence, to investigate such truths, as are at first unknown or very imperfectly discerned.

The five principal nations, who have in different ages divided among themselves, as a kind of inheritance, the vast continent of Asia, with the many islands depending on it, are the Indians, the Chinese, the Tartars, the Arabs, and the Persians: who they severally were, whence, and when they came, where they now are settled, and what advantage a more perfect knowledge of them all may bring to our European world, will be shown, I trust, in five distinct essays; the last of which will demonstrate the connection or diversity between them, and solve the great problem, whether they had any common origin, and whether that origin was the same, which we generally ascribe to them.

I begin with India, not because I find reason to believe it the true center of population or of knowledge, but, because it is the country, which we now inhabit, and from which we may best survey the regions around us; as, in popular language, we speak of the rising sun, and of his progress through the Zodiac, although it had long ago been imagined, and is now demonstrated, that he is himself the center of our planetary system. Let me here premise, that, in all these inquiries concerning the history of India, I shall confine my researches downwards to the Mohammedan conquests at the beginning of the eleventh century, but extend them upwards, as high as possible, to the earliest authentic records of the human species.

India then, on its most enlarged scale, in which the ancients appear to have understood it, comprises an area of near forty degrees on each side, including a space almost as large as all Europe; being divided on the west from Persia by the Arachosian mountains, limited on the east by the Chinese part of the farther peninsula, confined on the north by the wilds of Tartary, and extending to the south as far as the isles of Java. This trapezium, therefore, comprehends the stupendous hills of Potyid or Tibet, the beautiful valley of Cashmír, and all the domains of the old Indoscythians, the countries of Népál and Butánt, Cámrúp or Asám, together with Siam, Ava, Racán, and the bordering kingdoms, as far as the Chína of the Hindus or Sín of the Arabian Geographers; not to mention the whole western peninsula with the celebrated island of Sinhala, or Lion-like men, at its southern extremity. By India, in short, I mean that whole extent of country, in which the primitive religion and languages of the Hindus prevail at this day with more or less of their ancient purity, and in which the Nágari letters are still used with more or less deviation from their original form.

The Hindus themselves believe their own country, to which they give the vain epithets of Medhyama or Central, and Punyabhúmi, or the Land of Virtues, to have been the portion of Bharat, one of nine brothers, whose father had the dominion of the whole earth; and they represent the mountains of Himálaya as lying to the north, and, to the west, those of Vindhya, called also Vindian by the Greeks; beyond which the Sindhu runs in several branches to the sea, and meets it nearly opposite to the point of Dwáracà, the celebrated seat of their Shepherd God: in the south-east they place the great river Saravatya; by which they probably mean that of Ava, called also Airávati in parts of its course, and giving perhaps its ancient name to the gulf of Sabara. This domain of Bharat they consider as the middle of the Jambudwípa, which

the Tibetians also call the Land of Zambu; and the appellation is extremely remarkable; for Jambu is the Sanskrit name of a delicate fruit called Jáman by the Muselmans, and by us rose-apple; but the largest and richest sort is named Amrita, or Immortal; and the Mythologists of Tibet apply the same word to a celestial tree bearing ambrosial fruit, and adjoining to four vast rocks, from which as many sacred rivers derive their several streams.

The inhabitants of this extensive tract are described by Mr. Lord with great exactness, and with a picturesque elegance peculiar to our ancient language: "A people, says he, presented themselves to mine eyes, clothed in linen garments somewhat low descending, of a gesture and garb, as I may say, maidenly and well nigh effeminate, or a countenance shy and somewhat estranged, yet smiling out a glozed and bashful familiarity." Mr. Orme, the Historian of India, who unites an exquisite taste for every fine art with an accurate knowledge of Asiatic manners, observes, in his elegant preliminary Dissertation, that this "country has been inhabited from the earliest antiquity by a people, who have no resemblance, either in their figure or manners, with any of the nations contiguous to them," and that, "although conquerors have established themselves at different times in different parts of India, yet the original inhabitants have lost very little of their original character." The ancients, in fact, give a description of them, which our early travellers confirmed, and our own personal knowledge of them nearly verifies; as you will perceive from a passage in the Geographical Poem of Dionysius, which the Analyst of Ancient Mythology has translated with great spirit:

To th' east a lovely country wide extends,
India, whose borders the wide ocean bounds;
On this the sun, new rising from the main,
Smiles pleas'd, and sheds his early orient beam.
Th' inhabitants are swart, and in their locks
Betray the tints of the dark hyacinth.
Various their functions; some the rock explore,
And from the mine extract the latent gold;
Some labor at the woof with cunning skill,
And manufacture linen; others shape
And polish iv'ry with the nicest care:
Many retire to rivers shoal, and plunge
To seek the beryl flaming in its bed,
Or glitt'ring diamond. Oft the jasper's found
Green, but diaphanous; the topaz too
Of ray serene and pleasing; last of all
The lovely amethyst, in which combine
All the mild shades of purple. The rich soil,
Wash'd by a thousand rivers, from all sides
Pours on the natives wealth without control.

Their sources of wealth are still abundant even after so many revolutions and conquests; in their manufactures of cotton they still surpass all the world; and their features have, most probably, remained unaltered since the time of Dionysius; nor can we reasonably doubt, how degenerate and abased so ever the Hindus may now appear, that in some early age they were splendid in art and arms, happy in government, wise in legislation, and eminent in various knowledge: but, since their civil history beyond the middle of the nineteenth century from the present time, is involved in a cloud of fables, we seem to possess only four general media of satisfying our curiosity concerning it; namely, first their Languages and Letters; secondly,

their Philosophy and Religion; thirdly, the actual remains of their old Sculpture and Architecture; and fourthly, the written memorials of their Sciences and Arts.

I. It is much to be lamented, that neither the Greeks, who attended Alexander into India, nor those who were long connected with it under the Bactrian Princes, have left us any means of knowing with accuracy, what vernacular languages they found on their arrival in this Empire. The Mohammedans, we know, heard the people of proper Hindustan, or India on a limited scale, speaking a Bháshá, or living tongue of a very singular construction, the purest dialect of which was current in the districts round Agrà, and chiefly on the poetical ground of Mat'hurà; and this is commonly called the idiom of Vraja. Five words in six, perhaps, of this language were derived from the Sanskrit, in which books of religion and science were composed, and which appears to have been formed by an exquisite grammatical arrangement, as the name itself implies, from some unpolished idiom; but the basis of the Hindustání, particularly the inflections and regimen of verbs, differed as widely from both those tongues, as Arabic differs from Persian, or German from Greek. Now the general effect of conquest is to leave the current language of the conquered people unchanged, or very little altered, in its groundwork, but to blend with it a considerable number of exotic names both for things and for actions; as it has happened in every country, that I can recollect, where the conquerors have not preserved their own tongue unmixed with that of the natives, like the Turks in Greece, and the Saxons in Britain; and this analogy might induce us to believe, that the pure Hindi, whether of Tartarian or Chaldean origin, was primeval in Upper India, into which the Sanskrit was introduced by conquerors from other kingdoms in some very remote age; for we cannot doubt that the language of the Védas was used in the great extent of country, which has before been delineated, as long as the religion of Brahmà has prevailed in it.

The Sanskrit language, whatever be its antiquity, is of a 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 possibly have been produced by accident; so strong indeed, that no philologist could examine them all 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 very different idiom, had the same origin with the Sanskrit; and the old Persian might be added to the same family, if this were the place for discussing any question concerning the antiquities of Persia.

The characters, in which the language of India were originally written, are called Nágari, from Nagara, a City, with the word Deva sometimes prefixed, because they are believed to have been taught by the Divinity himself, who prescribed the artificial order of them in a voice from heaven. These letters, with no greater variation in their form by the change of straight lines to curves, or conversely, than the Cusic alphabet has received in its way to India, are still adopted in more than twenty kingdoms and states, from the borders of Cashgar and Khoten, to Ráma's bridge, and from the Sindhu to the river of Siam; nor can I help believing, although the polished and elegant Dévanágarí may not be so ancient as the monumental characters in the caverns of Jarasandha, that the square Chaldaic letters, in which most Hebrew books are copied, were originally the same, or derived from the same prototype, both with the Indian and Arabian characters: that the Phenician, from which the Greek and Roman alphabets were formed by various changes and inversions, had a similar origin, there can be little doubt; and the inscriptions at Canárah, of which you now possess a most accurate copy, seem to be compounded of Nágari and Ethiopic letters, which bear a close relation to each other, both in

the mode of writing from the left hand, and in the singular manner of connecting the vowels with the consonants. These remarks may favor an opinion entertained by many, that all the symbols of sound, which at first, probably, were only rude outlines of the different organs of speech, had a common origin: the symbols of ideas, now used in China and Japan, and formerly, perhaps, in Egypt and Mexico, are quite of a distinct nature; but it is very remarkable, that the order of sounds in the Chinese grammars corresponds nearly with that observed in Tibet, and hardly differs from that, which the Hindus consider as the invention of their Gods.

II. Of the Indian Religion and Philosophy, I shall here say but little; because a full account of each would require a separate volume: it will be sufficient in this dissertation to assume, what might be proved beyond controversy, that we now live among the adorers of those very deities, who were worshipped under different names in Old Greece and Italy, and among the professors of those philosophical tenets, which the Ionic and Attic writers illustrated with all the beauties of their melodious language. On one hand we see the trident of Neptune, the eagle of Jupiter, the satyrs of Bacchus, the bow of Cupid, and the chariot of the Sun; on another we hear the cymbals of Rhea, the songs of the Muses, and the pastoral tales of Apollo Nomius. In more retired scenes, in groves, and in seminaries of learning, we may perceive the Bráhmans and the Sarmanes, mentioned by Clemens, disputing in the forms of logic, or discoursing on the vanity of human enjoyments, on the immortality of the soul, her emanation from the eternal mind, her debasement, wanderings, and final union with her source. The six philosophical schools, whose principles are explained in the Dersana Sástra, comprise all the metaphysics of the old Academy, the Stoa, the Lyceum; nor is it possible to read the Védánta, or the many fine compositions in illustration of it, without believing, that Pythagoras and Plato derived their sublime theories from the same fountain with the sages of India. The Scythian and Hyperborean doctrines and mythology may also be traced in every part of these eastern regions; nor can we doubt, that Wod or Oden, whose religion, as the northern historians admit, was introduced into Scandinavia by a foreign race, was the same with Buddh, whose rites were probably imported into India nearly at the same time, though received much later by the Chinese, who soften his name into FO'.

This may be a proper place to ascertain an important point in the Chronology of the Hindus; for the priests of Buddha left in Tibet and China the precise epoch of his appearance, real or imagined, in this Empire; and their information, which had been preserved in writing, was compared by the Christian missionaries and scholars with our own era. Couplet, De Guignes, Giorgi, and Bailly, differ a little in their accounts of this epoch, but that of Couplet seems the most correct: on taking, however, the medium of the four several dates, we may fix the time of Buddha, or the ninth great incarnation of Vishnu, in the year one thousand and fourteen before the birth of Christ, or two thousand seven hundred and ninety-nine years ago. Now the Cáshmirians, who boast of his descent in their kingdom, assert that he appeared on earth about two centuries after Crishna the Indian Apollo, who took so decided a part in the war of the Mahábhárat; and, if an Etymologist were to suppose, that the Athenians had embellished their poetical history of Pandion's expulsion and the restoration of Ægeus with the Asiatic tale of the Pándus and Yudhishtir, neither of which words they could have articulated, I should not hastily deride his conjecture: certain it is, that Pándumandel is called by the Greeks the country of Pandion. We have, therefore, determined another interesting epoch, by fixing the age of Crishna near the three thousandth year from the present time; and, as the three first Avatárs, or descents of Vishnu, relate no less clearly to an Universal Deluge, in which eight persons only were saved, than the fourth and the fifth do to the punishment of impiety and the humiliation of the proud, we may for the present assume, that the second, or silver, age of the

Hindus was subsequent to the dispersion from Babel; so that we have only a dark interval of about a thousand years, which were employed in the settlement of nations, the foundation of states or empires, and the cultivation of civil society. The great incarnate Gods of this intermediate age are both named Ráma but with different epithets; one of whom bears a wonderful resemblance to the Indian Bacchus, and his wars are the subject of several heroic poems. He is represented as a descendent from Súra, or the Sun, as the husband of Sítá, and the son of a princess named Caúselyá: it is very remarkable, that the Peruvians, whose Incas boasted of the same descent, styled their greatest festival Ramasitóa; whence we may suppose, that South America was peopled by the same race, who imported into the farthest parts of Asia the rites and fabulous history of Ráma. These rites and this history are extremely curious; and, although I cannot believe with Newton, that ancient mythology was nothing but historical truth in a poetical dress, nor, with Bacon, that it consisted solely of moral and metaphysical allegories, nor with Bryant, that all the heathen divinities are only different attributes and representations of the Sun or of deceased progenitors, but conceive that the whole system of religious fables rose, like the Nile, from several distinct sources, yet I cannot but agree, that one great spring and fountain of all idolatry in the four quarters of the globe was the veneration paid by men to the vast body of fire, which "looks from his sole dominion like the God of this world"; and another, the immoderate respect shown to the memory of powerful or virtuous ancestors, especially the founders of kingdoms, legislators, and warriors, of whom the Sun or the Moon were wildly supposed to be the parents.

III. The remains of architecture and sculpture in India, which I mention here as mere monuments of antiquity, not as specimens of ancient art, seem to prove an early connection between this country and Africa: the pyramids of Egypt, the colossal statues described by Pausanias and others, the sphinx, and the Hermes Canis, which last bears a great resemblance to the Varáhavatár, or the incarnation of Vishnu in the form of a Boar, indicate the style and mythology of the same indefatigable workmen, who formed the vast excavations of Cánarah, the various temples and images of Buddha, and the idols, which are continually dug up at Gayá, or in its vicinity. The letters on many of those monuments appear, as I have before intimated, partly of Indian, and partly of Abyssinian or Ethiopic, origin; and all these indubitable facts may induce no ill-grounded opinion, that Ethiopia and Hindustán were peopled or colonized by the same extraordinary race; in confirmation of which, it may be added, that the mountaineers of Bengal and Bahár can hardly be distinguished in some of their features, particularly their lips and noses, from the modern Abyssinians, whom the Arabs call the children of Cúsh: and the ancient Hindus, according to Strabo, differed in nothing from the Africans, but in the straitness and smoothness of their hair, while that of the others was crisp or woolly; a difference proceeding chiefly, if not entirely, from the respective humidity or dryness of their atmospheres: hence the people who received the first light of the rising sun, according to the limited knowledge of the ancients, are said by Apuleius to be the Arü and Ethiopians, by which he clearly meant certain nations of India; where we frequently see figures of Buddha with curled hair apparently designed for a representation of it in its natural state.

IV. It is unfortunate, that the Silpi Sástra, or collection of treatises on Arts and Manufactures, which must have contained a treasure of useful information on dying, painting, and metallurgy, has been so long neglected, that few, if any, traces of it are to be found; but the labors of the Indian loom and needle have been universally celebrated; and fine linen is not improbably supposed to have been called Sindon, from the name of the river near which it was wrought in the highest perfection: the people of Colchis were also famed for this manufacture, and the Egyptians yet more, as we learn from several passages in scripture, and

particularly from a beautiful chapter in Ezekial containing the most authentic delineation of ancient commerce, of which Tyre had been the principal mart. Silk was fabricated immemorially by the Indians, though commonly ascribed to the people of Serica or Tancūt, among whom probably the word Sèr, which the Greeks applied to the silkworm, signified gold; a sense, which it now bears in Tibet. That the Hindus were in early ages a commercial people, we have many reasons to believe; and in the first of their sacred law-tracts, which they suppose to have been revealed by Menu many millions of years ago, we find a curious passage on the legal interest of money, and the limited rate of it in different cases, with an exception in regard to adventures at sea; an exception, which the sense of mankind approves, and which commerce absolutely requires, though it was not before the reign of Charles I. that our own jurisprudence fully admitted it in respect of maritime contracts.

We are told by the Grecian writers, that the Indians were the wisest of nations; and in moral wisdom, they were certainly eminent: their Níti Sástra, or System of Ethics, is yet preserved, and the Fables of Vishnuserman, whom we ridiculously call Pilpay, are the most beautiful, if not the most ancient, collection of apologues in the world: they were first translated from the Sanskrit, in the sixth century, by the order of Buzerchumihr, or Bright as the Sun, the chief physician and afterwards Vezír of the great Anúshireván, and are extant under various names in more than twenty languages; but their original title is Hitópádésa, or Amicable Instruction; and, as the very existence of Esop, whom the Arabs believe to have been an Abyssinian, appears rather doubtful, I am not disinclined to suppose, that the first moral fables, which appeared in Europe, were of Indian or Ethiopian origin.

The Hindus are said to have boasted of three inventions, all of which, indeed, are admirable, the method of instructing by apologues, the decimal scale adopted now by all civilized nations, and the game of Chess, on which they have some curious treatises; but, if their numerous works on Grammar, Logic, Rhetoric, Music, all which are extant and accessible, were explained in some language generally known, it would be found, that they had yet higher pretensions to the praise of a fertile and inventive genius. Their lighter Poems are lively and elegant; their Epic, magnificent and sublime in the highest degree; their Purána's comprise a series of mythological Histories in blank verse from the Creation to the supposed incarnation of Buddha; and their Védas, as far as we can judge from that compendium of them, which is called Upanishat, abound with noble speculations in metaphysics, and fine discourses on the being and attributes of God. Their most ancient medical book, entitled Chereca, is believed to be the work of Siva; for each of the divinities in their Triad has at least one sacred composition ascribed to him; but, as to mere human works on History and Geography, though they are said to be extant in Cashmír, it has not been yet in my power to procure them. What their astronomical and mathematical writings contain, will not, I trust, remain long a secret: they are easily procured, and their importance cannot be doubted. The Philosopher, whose works are said to include a system of the universe founded on the principle of Attraction and the Central position of the sun, is named Yavan Achárya, because he had travelled, we are told, into Ionia: if this be true, he might have been one of those, who conversed with Pythagoras; this at least is undeniable, that a book on astronomy in Sanskrit bears the title of Yavana Jática, which may signify the Ionic Sect; nor is it improbable, that the names of the planets and Zodiacal stars, which the Arabs borrowed from the Greeks, but which we find in the oldest Indian records, were originally devised by the same ingenious and enterprising race, from whom both Greece and India were peopled; the race, who, as Dionysius describes them,

... first assayed the deep,
And wafted merchandize to coasts unknown,
Those, who digested first the starry choir,
Their motions mark'd, and call'd them by their names.

Of these cursory observations on the Hindus, which it would require volumes to expand and illustrate, this is the result: that they had an immemorial affinity with the old Persians, Ethiopians, and Egyptians, the Phenicians, Greeks, and Tuscans, the Scythians or Goths, and Celts, the Chinese, Japanese, and Peruvians; whence, as no reason appears for believing, that they were a colony from any one of those nations, or any of those nations from them, we may fairly conclude that they all proceeded from some central country, to investigate which will be the object of my future Discourses; and I have a sanguine hope, that your collections during the present year will bring to light many useful discoveries; although the departure for Europe of a very ingenious member, who first opened the inestimable mine of Sanskrit literature, will often deprive us of accurate and solid information concerning the languages and antiquities of India.

CHAPTER TWO

FRIEDRICH VON SCHLEGEL

ON THE LANGUAGE AND WISDOM OF THE INDIANS

*From Über die Sprache und Weisheit der Indier:
Ein Beitrag zur Begründung der Alterthumskunde
(Heidelberg: Mohr & Zimmer, 1808)*

Editor's Introduction

Like Jones's Discourse, Friedrich von Schlegel's *Über die Sprache und Weisheit der Indier* prepares for the important early works in nineteenth-century linguistics. Schlegel's aim too is to encourage general study of antiquity, not only of language; the section on language makes up only approximately a fourth of his book, which goes on to deal with other "media of satisfying our curiosity concerning . . . the early age" of mankind. Schlegel's book was important for arousing interest in Sanskrit, especially in Germany; it also makes the first mention of aims that were to be central to linguistics, notably "comparative grammar". Because its prime importance is its encouragement to others, only excerpts are given here, though the entire book is delightful to read. I have included one paragraph of citations comparing the vocabulary of Sanskrit and German; it may illustrate the advances made over Schlegel by his successors. And his lists of grammatical criteria for establishing relationships illustrate the enthusiasm of a popularizer rather than the care of a scholar. From the selections translated, students may learn to know the contributions of Schlegel's work as well as its shortcomings.

With his successors, Schlegel is interested in finding a common source for the languages which after Jones were held to be related. In interpreting the early conception of "source" or "derived from" we must be careful to avoid our own definitions, which are based largely on the work of subsequent linguists. In his excellent introduction to the centenary edition of Rask, *Ausgewählte Abhandlungen XIII-LXIII*, Holger Pedersen discusses sympathetically the use of these notions at the beginning of the nineteenth century for determining the relationship of languages. Schlegel indeed speaks of a family-tree, but derives the European languages from Sanskrit on the basis of its greater antiquity, not by positing intermediate stages. Accordingly, the relationship he suggests between German and Sanskrit should not be equated with our deriving German from Proto-Indo-European.

Schlegel's emphasis on grammar in determining relationships merits great credit. His demand for precise agreement of vocabulary items may be understood when we compare the fanciful etymologies of his predecessors; insistence on rigor was essential to stop further such fabrications. Yet while he asks for complete agreement in determining cognates, Schlegel permits the use of forms which differ, though he has not yet hit upon the concept of determining "rules" for such differences; his citing of an "analogy" between Latin *p* and Germanic *f*, Latin *c* and Germanic *h*, is a step on the way to the more comprehensive sets of rules given by Rask and Grimm.

Schlegel also is applauded for introducing the term "comparative grammar" into linguistics. In basing this term on comparative anatomy and incorporating the notion of family trees for languages, he drew on biology for linguistic methodology, foreshadowing Schleicher and his reliance on Darwinism. These adoptions of methodology and the attention he drew to Sanskrit are the most important contributions of his book.

Yet in it Schlegel also suggested a further means for distinguishing language interrelationships, one that was not taken over by Bopp, Grimm and their successors, and subsequently remained peripheral to the central course of nineteenth century linguistics: the use of typology. For Schlegel there was an ancient grammar, characterized by inflection, and a more recent grammar, characterized by analytic devices. Languages of the ancient type were more *kunstreich* (ingenious, artistic) than are those of the newer manner. Accordingly, examination of the type of a language might contribute to determining its antiquity. Yet in dealing with Chinese, for even Schlegel this means was disappointing; the problems of typology interested some linguists of the nineteenth century, notably Humboldt and Steinthal, but its uncertainties gave it more status among nonspecialists than among linguists. Even the efforts of Sapir in this century did little to encourage its application, though recent techniques may make it more useful. (See my *Historical Linguistics*, Chapter III.) Yet all attempts to use typology in support of genealogical classification have been completely discredited. We may wonder whether the ineffectiveness of typology as a tool for supporting genealogical classification led Schlegel's successors to disregard his interest in structure, which we find duplicated only in this century.

Apart from his book of 1808, the chief concern of Friedrich von Schlegel (1772-1829) was for literature. He began his study of Sanskrit and Indian antiquity in 1803, under Alexander Hamilton in Paris, planning a chrestomathy printed in Devanagari, but for it he lacked the necessary funds. Instead he published his book to arouse interest in Indic studies, expecting for European scholarship results comparable to those produced by the study of Greek in the fifteenth and sixteenth centuries. Yet after publication of the book, he himself abandoned his concern for Indic studies, in a shift of interest that may be reflected by his joining the Roman Catholic Church. From then to his death he directed his attention to Europe and his own literary production. His brother, August Wilhelm von Schlegel (1767-1845), who also concerned himself with the typological classification of language, came to concentrate on Indic studies, especially after he was appointed professor of literature at the University of Bonn in 1818. His work in this position is generally credited as the beginning of Indic scholarship in Germany. Apart from the contributions which increased knowledge of Indic languages made to linguistics, the importance of the brothers for linguistics is based almost entirely on Friedrich's book of 1808.

Chapter 1. On the Indic Language in General (pp. 1-3)

The Old Indic Sanskrito, that is the cultivated or perfected, also Gronthon, that is the written language or the book language, has a very close relationship with the Roman and Greek, as with the Germanic and Persian languages. The similarity consists not only in a great number of roots, which it shares with them, but it extends to the innermost structure and grammar. The agreement is accordingly not one of chance which might be explained by mixture, but rather an essential one which points to common descent. Comparison yields the further result that the Indic language is the older, the others however later and derived from it. For Armenian, the Slavic languages and next for Celtic, the relationship with Indic is either minute, or not to be compared with the close agreement among the languages named above which we derive from it. Yet this relationship, though minute, is not to be completely disregarded, since it manifests itself in accordance with the sequence in which these languages were named at least in some grammatical forms, in such components which cannot be reckoned among the chance features of the language but rather belong to their inner structure.

In Hebrew and related dialects, as well as in Coptic, a goodly number of Indic roots may possibly be found still. But this does not prove an original relationship since it can be the result of simple mixture. The grammar of these languages like that of Basque is basically different from that of Indic.

The large and not yet completely determinable number of the remaining north and south Asiatic and American languages has absolutely no essential relationship with the Indic language family. To be sure, in the grammar of these languages, which also is quite different from that of Indic, we find a similar arrangement among several; in their roots however they are also completely different, even among one another and so totally deviant, that there is no possibility of being able to take them back to a common source.

The important results of this linguistic comparison for the oldest history of the origin of peoples and their earliest migrations will be the subject of investigation in the future. In this first book we will be content with establishing and making clear the principles themselves, simple but very comprehensive results of conscientious research....

Chapter 2. On the Relationship of Roots (pp. 6-7)

Some examples may show most clearly that the claimed relationship does not in any sense rest on etymological elaborations, many of which were contrived before the proper source was found, but that it may be presented to impartial scholars as simple fact.

In making this demonstration we permit absolutely no rules of change or replacement of letters, but rather demand complete equivalence of the word as proof of descent. To be sure, if the intermediate steps can be proved historically, then *giorno* may be derived from *dies*; and if instead of Latin *f* we often find Spanish *h*, if Latin *p* very often becomes *f* in the Germanic form of the same word and Latin *c* not infrequently *h*, this certainly establishes an analogy, also for other not quite such apparent cases. Yet as indicated, one must be able to demonstrate the intermediate steps or the general analogy historically; nothing can be fabricated from axioms, and the agreement must be very precise and evident in order to permit even the minutest variations of form.

I cite first of all some Indic words which are characteristic of Germanic. *Shrityoti* - er schreitet 'strides'; *vindoti* - er findet 'finds'; *schlißyoti* - er umschließt 'surrounds'; *Onto* - das Ende 'end'; *Monuschyo* - der Mensch 'human being'; *Shvosa, Svostri* - die Schwester 'sister'; *Rotho* - das Rad 'wheel'; *Bhruvo* - die Brauen der Augen 'eyebrows'; *Torsho* - der Durst 'thirst'; *Tandovon* - der Tanz 'dance'; *Ondoni* - die Enten 'ducks'; *Noko* - der Nagel 'nail'; *sthiro* - unbeweglich, stier 'immovable'; *Oshonon* - das Essen 'food', etc....

Chapter 3. Of Grammatical Structure (pp. 27-28; 32-35)

Might one however not possibly reverse this whole proof and say: the relationship is striking enough and may be established in part; but what really is the reason for assuming that Indic is the older among the related languages and their common source? May it not just as well have arisen only through mixture of the others, or at any rate have received its similarity in this way?

Not to mention that much of what has already been mentioned and also many another probability speaks against that, we will now come to something that decides the situation fully

and raises it to certainty. In general the hypothesis that attempts to derive whatever Greek elements are found in India from the Seleucids in Bactria is not much happier than one which might try to explain the Egyptian pyramids from natural crystallization.

The decisive point however which will clarify everything here is the inner structure of the languages or comparative grammar, which will give us quite new information about the genealogy of languages in a similar way as comparative anatomy has illuminated the higher natural history.

Of the related languages we will first select Persian, whose grammar, which has even taken over personal suffixes from Arabic through the long and old intercourse between both peoples, agrees with that of Indic and the others far less than even that of German today, not to speak of Greek and Roman. But if one assembles all similarities, they are certainly weighty.... [to p. 32]

In Germanic grammar there are many other agreements with the Greek and Indic besides those which it shares with Persian. In Germanic as throughout in Indic, *n* is characteristic of the accusative, *s* of the genitive. The final syllable *-tvon* forms substantives of state in Indic, just as *-thum* is used in German. The subjunctive is in part marked by a change of the vowel, as in all languages which follow the old grammar. Agreeing similarly is the formation of the imperfect through change of the vowel in one type of the German verbs. If in another type the imperfect is formed by means of an inserted *t*, this to be sure is a special characteristic, just as is the *b* in the Roman imperfect; the principle however is still the same, namely that the secondary determination of the meaning for time and other relationships does not happen through special words or particles added outside the word, but through inner modification of the root.

If, moreover, we add the grammar of the older dialects, of Gothic and Anglo-Saxon for German, of Icelandic for the Scandinavian branch of our language, then we not only find a perfect with an augment, as in Greek and Indic, a dual, more exact gender and relationship markers of the inflections, which now are somewhat worn down and less recognizable; the third persons of the singular and plural of verbs, for example, are complete and in perfect agreement. In a word, in the contemplation of the old monuments of the Germanic language not the slightest doubt can remain that they formerly had a quite similar grammatical structure to that of Greek and Roman.

Even now very many traces of these older forms of language remain in Germanic, in German itself more than in English and the Scandinavian dialects; but if on the whole the principle of the more recent grammar prevails here -- to form conjugation primarily through auxiliary verbs, declension through prepositions -- this should mislead us the less, since also all the Romance languages, which stem from the Latin, have undergone a similar change, as have all the Hindustani dialects, as they are now spoken, which have approximately the same relationship to Sanskrit as the Romance dialects do to Latin. No external cause is necessary either to explain this phenomenon which shows up everywhere the same. The ingenious structure is readily lost through wearing away by common usage, especially in a time of barbarism, either quite gradually, or at times also more suddenly; and the grammar with auxiliaries and prepositions is actually the shortest and most convenient, like an abbreviation for simple, general usage; in fact one could almost establish the general rule that a language is the easier to learn, the more its structure has been simplified and approximated to this abbreviation....

Chapter 4. Of Two Main Types of Languages according to Their Inner Structure (pp. 44-45)

The real essence of this principle of language which prevails in Indic and in all languages derived from it is best made clear through contrast. For not all languages follow this grammar, whose ingenious simplicity we admire in Indic and Greek, and to whose character we tried to call attention in the previous chapter. In many other languages and actually in the most, we find the characteristics and laws of a grammar quite different from that, indeed in complete contrast with it.

Either the secondary markings of meaning are indicated through inner change of the sound of the root, through inflection; or on the other hand always through a separate, added word, which by itself indicates plurality, past, a future obligation or other relationship concepts of manner; and these two very simple cases also designate the two main types of all languages. On closer inspection all other cases are only modifications and secondary types of these two kinds; therefore this contrast includes and completely exhausts the entire sphere of language which is immeasurable and indeterminable with regard to the variety of roots.

A notable example of a language quite without inflection, in which everything that the other languages indicate through inflection is arranged through separate words that have a meaning by themselves, is furnished by Chinese: a language which with its peculiar monosyllabicity, because of this consistency or rather perfect simplicity of structure, is very instructive for the understanding of the entire world of languages.... (to 49-50)

The series of grades of languages, which follow this grammar, is accordingly the following. In Chinese, the particles which designate the secondary marking of meaning are monosyllabic words that exist by themselves and are quite independent of the root. The language of this otherwise refined nation would accordingly stand precisely on the lowest grade; possibly, because its childhood was fixed too early through its extremely ingenious writing system. In Basque and Coptic, as in the American languages, the grammar is formed completely through suffixes and prefixes, which are almost everywhere still easy to distinguish and in part still have meaning by themselves; but the added particles are already beginning to merge and coalesce with the word itself. This is even more the case in Arabic and all related dialects, which to be sure clearly belong to this type in accordance with the greater part of their grammar, while many other things cannot be taken back to it with certainty; here and there we even find an individual agreement with grammar through inflection. Finally, in Celtic some individual traces of grammar through suffixes are found; yet in greater part the newer manner is the prevalent one, of conjugating through auxiliaries and declining through prepositions....

Chapter 6. Of the Variety of Related Languages and of Some Peculiar Intermediate Languages (conclusion, pp. 84-86)

I would really be afraid of tiring and confusing the reader if I reported everything that had been gathered and prepared. Enough if some order has been brought in the whole field and it has been indicated satisfactorily, by what principles a comparative grammar may be drawn up, and a completely historical family-tree -- a true history of the origin of language instead of the former fabricated theories about its origin. What was said here will at least be adequate to demonstrate the importance of the study of Indic, even only from the point of view of the language; in the following book we will contemplate this study in relation to the history of the Oriental spirit.

I conclude with a look back at William Jones, who first brought light into the knowledge of language through the relationship and derivation he demonstrated of Roman, Greek, Germanic and Persian from Indic, and through this into the ancient history of peoples, where previously everything had been dark and confused. When however he wants to extend the relationship to some other cases too, where it is much smaller -- further, to reduce the indeterminably great number of languages to the three main branches of the Indic, the Arabic and the Tatar families -- and finally, after he himself first determined so beautifully the total difference of Arabic and Indic, to derive everything from one common original source simply for the sake of unity; then we have not been able to follow this excellent man in these matters, and in this everyone will unhesitatingly agree who examines the present treatise attentively.

CHAPTER THREE

RASMUS RASK

AN INVESTIGATION CONCERNING THE SOURCE OF THE OLD NORTHERN OR ICELANDIC LANGUAGE

"Undersøgelse om det gamle Nordiske eller Islandske Sprogs Oprindelse" (Copenhagen, 1818), in *Rasmus Rask, Ausgewählte Abhandlungen*, ed. by Louis Hjelmslev, Vol. I (Copenhagen: Levin and Munksgaard, 1932)

Editor's Introduction

Perhaps the most brilliant of the early linguists, Rasmus Rask (1787-1832) made his primary contribution in accordance with a topic proposed for a prize by the Danish Academy of Sciences in 1811. The topic directed the structure of his monograph, and according to Pedersen led to some of its shortcomings. It requested competitors to "examine with historical criticism and indicate with appropriate examples the source from which the old Scandinavian language is to be derived most securely; also to indicate the character of the language and the relationship in which it stood from the oldest periods and during the Middle Ages on the one hand to the Nordic, on the other to the Germanic dialects; also to determine precise principles which must be followed in any statement of the origin and comparison of these languages." After discussing general principles, Rask surveyed the evidence with regard to neighboring languages: Greenlandic Eskimo, Celtic, Basque, Finnish, Slavic, Lettish, Thracian and the Asiatic languages. His survey of the relationship with Thracian (a term he adopted from Adelung to refer to the ancestor of Greek and Latin, hence one which we might equate with Indo-European) makes up approximately half of his monograph and contains the well-known statement relating Icelandic obstruents to those of Greek and Latin. Grimm himself indicated his indebtedness to this statement; after coming to know it he speedily rewrote the first volume of his grammar of 1819 and included in the second edition of 1822 the section presented below on the Germanic consonant shift. Rask's statement is presented here, with a few other excerpts to illustrate his fine grasp of linguistic principles.

As Pedersen and others have pointed out, Rask must be credited for his use of "system" and "grammatical criteria" rather than vocabulary in carrying out the request of the Academy. Although we applaud him for his methodological advances, we regret some of his terminology, for example, his name Thracian for "Indo-European". Since he did not know Sanskrit at the time he wrote his monograph, his group of Indo-European languages was still small, though in it he accurately provided the answer to the first request of the Academy. For the Germanic branch he used the term Gothic, which he divided into Scandinavian and Germanic (of which [Moeso-]Gothic was in turn a subbranch).

Less external is the terminology regarding "source" and "descendant of"; a literal interpretation of these suggests that Rask was quite wrong in his genealogical classification. Yet these terms Pedersen would like to interpret "systematically" not "historically". Students who wish to deal with the problem fully may go to the original, admirably edited by Louis Hjelmslev, and to Pedersen's sympathetic introduction. Some of Rask's other views correspond to those of Schlegel; like him Rask thought of inflectional languages as the most ingenious -- though unlike Schlegel he concerned himself little with typology.

The most widely discussed problem in relation to Rask is one of priority: has he been given inadequate credit for his accurate formulation of the Germanic consonant change, known

widely by the name of Grimm's law? The discussion in Holger Pedersen's *Linguistic Science in the Nineteenth Century*, pp. 248-254, 258-262, presents the problem with Pedersen's well-known conciseness. In these days of corporate scholarship, questions of individual credit do not seem as important as they did in the past, when even national prestige was involved. We are much more interested in trying to understand the views, and for them the terminology used by perceptive scholars of the past. We admire Rask for noting the correspondences; Grimm accepted these, supported them more fully and gave his well-known formulation. We also admire Rask for his efforts to learn language in the field; the data for his conclusions are largely the result of his own collecting. After completing his monograph, Rask undertook a journey to Russia, Persia and India, which led to more advanced views on the Indo-European languages. We also credit him for managing his data with a methodology that approximates the high requirements of successors: though in the essay he still used the term "letter" for sounds as well as for writing symbols, he attempted to get at the phonetic basis of the letters. The phonetic interpretation he then compared systematically. Of further emphasis in his comparisons was grammar. This emphasis is clear from the space he devotes to grammatical comparison (pp. 190-295) of the monograph as opposed to vocabulary (295-321).

Rask's interest in learning ever more languages consumed the rest of his life after his return from his trip to the east in 1823. His failure to incorporate his new ideas in a revision of the "prize monograph" as well as its availability only in Danish led to a widespread disregard of it. The centenary edition in Danish has made up in part for previous neglect; possibly for the one hundred and fiftieth anniversary of Rask's death a complete English translation might be arranged. Rask's perceptive examination of his data and the great preponderance of methodology that accords with ours in proceeding beyond that of his predecessors would justify the translation, though most scholars might with little difficulty make their way through the Danish original.

Investigations, pp. 49-51

Grammatical agreement is a far more certain indication (than is vocabulary) of relationship or original unity; for one finds that a language which is mixed with another very rarely or never takes over changes of form or inflection from this, but on the other hand the more readily loses its own. In this way English has not taken over any Icelandic or French inflections, but on the other hand has lost many of the old inflections of Anglo-Saxon; similarly Danish has not taken over German endings, nor has Spanish taken over Gothic or Arabic endings. This kind of agreement, which is the most important and most certain, has nonetheless been almost entirely overlooked until now in tracing the source of languages, and this is the greatest error of most things written to the present on this point; it is the reason why they are so uncertain and of such small scientific value.

The language which has the most ingenious grammar is the most unmixed, the most original, oldest and nearest to the source; for the grammatical inflections and endings are constantly lost with the formation of a new language, and it requires a very long time and intercourse with other people to develop and rearrange itself anew. In this way Danish is simpler than Icelandic, English simpler than Anglo-Saxon; in the same way New Greek is related to Old Greek, Italian to Latin, German to Moeso-Gothic, and similarly in all situations that we know.

A language, however mixed it may be, belongs to the same class of languages as another, when it has the most essential, concrete, indispensable and primary words, the foundation of

the language, in common with it. On the other hand nothing can be concluded about the original relationship of technical terms, words of politeness and commerce or that part of the language which intercourse with others, social relations among one another, education and science have made it necessary to add to the oldest stock of words; it depends on many circumstances, which can only be known from history, whether a people has borrowed these from other languages or developed them from its own. Thus English is rightly counted to the Gothic class of languages and in particular to the Saxon branch of the Germanic chief part of it; for all basic stems of the English stock of words are Saxon, such as: heaven, earth, sea, land, man, head, hair, eye, hand, foot, horse, cow, calf, ill, good, great, little, whole, half, I, thou, he, to make, love, go, see, stand; of, out, from, together, etc. Especially substitutes (pronouns) and numerals are lost last of all in mixing with unlike languages; in Anglo-Saxon for example all pronouns are of Gothic and specifically Saxon origin.

When in such words one finds agreements between two languages, and that to such an extent that one can draw up rules for the transition of letters from one to the other, then there is an original relationship between these languages; especially when the similarities in the inflection of languages and its formal organization correspond; e.g.

Gk phēmē	in Latin to	fama	and	holkos	to	sulcus
Gk mētēr	in Latin to	mater	and	bolbos	to	bulbus
Gk phēgos	in Latin to	fagus	and	amorgē	to	amurca
Gk pēlos	in Latin to	palus	and	Aeol. olkhos	to	vulgus

From this one sees that Gk ē in Latin often becomes *a*, and *o* becomes *u*; by bringing together many words one would be able to draw up many transition rules. And since one finds such great agreement between Latin and Greek grammar, one can rightfully conclude that an original relationship exists between these languages, which is also sufficiently known and does not need to be demonstrated here again.

Thracian

(pp. 177-8) After having considered the three eastern classes of languages: Finnish, which had little or no relation with Icelandic, Slavic, which was closely related, and Lettish, which seemed even nearer; we find to the south the Roman class of languages and the New Greek. The Romance is of greatest extent; to it belong Italian, Spanish, Portuguese and French, but all these languages are more notable for their development, harmony and literary riches than for age or remote origin. It is known that all of them arose after the fall of the Roman Empire, indeed long after, when the confusion which the wandering Gothic people caused to the old Latin began to subside, but in such a way that the old material completely maintained the upper hand and merely was rearranged in new form. Accordingly this language could in no way contain the source for the Gothic, which is much older; and the same can be applied to New Greek; but the Romance languages descend, as indicated, from the Latin, and the New Greek (hē rōmaīkē) from the old or real Greek hē hellenikē): we then come to the two old, rightfully famous peoples, the Greeks and Romans.

Adelung in his *Mithridates* has demonstrated at length and with care that all the peoples, who were situated between the Halys River in Asia Minor, as widely as broadly to the north and west up to Pannonia, where the Germanic stock began, are to be ascribed to a single stock of

peoples, whom he called the Thracian-Pelagian-Greek-Latin, but who in my opinion might be given the shorter designation Thracian, after the central point.

(pp. 187-8) [After stating phonetic similarities between Greek and Icelandic, Rask discusses some differences, such as the limited number of permitted final consonants in Greek and the loss of final inflections in Icelandic; he continues:] But not only in endings, also in the words themselves many changes took place; it will probably not be out of the way to note here the most frequent of these transitions from Greek and Latin to Icelandic.

Long *a* becomes *á* or *ó*, as: elakhus (little) - lágur (low); mater - módir.

Short *a* to *e*: damañ - temia; scabo - eg skêf; sakkos, saccus - seukur.

u to *o*: gunē - kona; purgos (tower) - borg; gusto - German ich koste.

Of the mute letters, they generally remain in words, becoming usually:

p to *f*, e.g.: platus (broad) - flatur (flat); patēr - fadir.

t to *þ*, e.g.: treis (read trís) - þrír; tego - eg þek; tu - þu.

k to *h*, e.g.: kreas (meat) - hræ (dead body); cornu - horn; cutis - hud.

b most often remains: blazanō (germinate) - blad; bruō (spring forth) - brunnr (spring); bullare - at bulla.

d to *t*: damaō (tame) - tamr (tame); dignus - tíginn (elevated, noble).

g to *k*: gunē - kona; genos - kyn or kin; gena - kinn; agros - akr.

ph to *b*: phēgos - Danish Bøg; fiber, - Icel. bifr; phero, fero - eg ber.

th to *d*: thurā - dyr; so also in Latin, theos - deus.

kh to *g*: khuō - Danish gyder; ekhein - ega; khutra - grýta; kholē - gall.

' to *s*: heks - sex; hama - saman; hupnos - svefn, Danish Søvn.

But often they are also changed in other ways; for example, medially and after a vowel *k* becomes *g*, as in: macer (read maker) - mager; ac - og; taceo - Icel. Þegi; and *t* to *d*, as in: pater - fadir, frater - bródir, and the like.

(pp. 190-2) [After dealing with the phonology of the Thracian languages, Rask surveys their morphology. Only his introduction is translated here; he goes on to survey the paradigms, spending most of his time on the substantives, much less on verbs.] Both languages which we know of the Thracian class, namely Greek and Latin, are so famous and well-known that it would be superfluous here to describe them extensively; but since they have been analyzed by various language teachers, accordingly from various points of view, they have been given a more unlike appearance than they really have. Presumably none of the learned men who have worked in this area have known the related, ancient and unusual languages: Lithuanian, Slavonic, Moeso-Gothic and Icelandic; these are very closely related to the Thracian, and could contribute so very much to clarify them. Indeed these have until now been much less analyzed and known than the Thracian languages. One can accordingly not expect to find greater agreements between the proposed grammatical systems of these and the Thracian languages than between the Thracian languages themselves. From the foregoing one should also have been convinced that there is much to improve in the grammars of these languages, in respect to system and manner of presentation. The same is true of Thracian or the so-called ancient language, and it is scarcely to be expected that anyone who knows only one or at most

two of these languages could find out the system which was the correct one for all; this can only be discovered through comparison of all of them. I have in the foregoing given briefly for each language the classification and arrangement that seems to me most correct, especially from the basis which seems most fitting for all of them. I will accordingly do the same here, at least to present the reader all of them from a single point of view, which is indispensably necessary, if one is to recognize and evaluate the similarities or dissimilarities between them.

Nouns and adjectives have one and the same manner of inflection in both the Thracian languages: in Greek they distinguish three numbers and in the singular five cases, which are best arranged as follows: 1) nominative, 2) vocative, which is generally only an insignificant modification of the nominative, 3) accusative, 4) genitive, and 5) dative. One might be uncertain which of the last two should be placed first, but because of the relationship of the accusative with the genitive in the Slavic languages, as of the natural likeness of the endings in the Lettish and Thracian languages, the arrangement given seems most correct. The dual has only two cases: the one is used for the nominative, vocative and accusative; the other for the genitive and dative. The plural has four; the nominative and vocative are always the same here. In Latin on the other hand these parts of speech have six cases in the singular, namely, in addition to Greek, 6) an ablative, which however is simply a modification of the dative. The dual is lacking entirely in Latin, but in the plural it has the same cases as in Greek, since the vocative is included with the nominative and the ablative with the dative. Gender and comparison are the usual three. With regard to method of inflection these words are distinguished in both languages into two main types or systems, as also in Gothic, Slavic and Lettish. The sub-division in each of these, as in the languages just mentioned, is made according to gender; Neuter, which is the simplest and most original, is to be set first, thereupon Masculine, which is directly developed from it; and finally the Feminine, which has the most peculiarities of its own.

In accordance with this principle of division the separate methods of inflection in these languages are as follows: [The first system contains the three genders; the second system is made up of a neuter and a common gender.]

(p. 295) This formal organization of the Icelandic language is much simpler than the Greek and Latin inflection, from which it has originated in its entirety. For there is hardly a single form or ending which is not found in them, except for those which have arisen from combinations of parts which however are individually found in the Thracian languages. After this one will also expect a significant similarity also in regard to the stock of words. Since I cannot give here an entire dictionary, however, I will limit myself to citing a number of individual words as proof. [He cites 352.]

(pp. 321-3) This collection of words which in the Thracian and Gothic languages, and especially in Icelandic, seem to have an original relationship to one another, could easily have been larger, but I omitted many, though they were obvious in both classes of languages, such as all interjections: ouai, Lat. vae, Icel. vei, from which vein and kvein as also veina and kveina, ai Icel. æ (read aj), pheu Danish fy, and many others; and I selected these not so much according to ease of detecting likeness, but much more according to meaning, to demonstrate that precisely the first and most necessary words in the language, which designate the first objects of thought, are the same in both classes of languages. For this purpose I also listed them according to subject matter. I do not assume that all will agree with me on every one of these; but even if one throws out all of those about which one might have some doubt, then nonetheless of 352, in addition to the 48 listed above, in all 400 words, enough will certainly

remain, that combined with the grammatical comparison given above they will prove as much as the 150 words with added grammatical notes which Sajnovics has cited as 'proof that the Hungarian and Lappish languages are one and the same'; as far as I know, no one has subsequently denied this. After this agreement which we have found in the stock of words and in inflection, as well as in accordance with the agreed historical indication of our fathers' immigration to the north from Scythia, and especially the last main colony, which is said to have brought in the language, literature and runes, which have such a striking likeness with the oldest Phoenician-Greek series of letters, which colony, as well-known, came from Tanais and the Black Sea: it seems that both the Northmen and the Germanic peoples are branches of the large Thracian stock of peoples, and that their language must also have had there its first origin, which also agrees with what is known about the languages of the Lettish stock and its relationship to the Greek. The Lettish stock is the nearest branch of the Thracian, next the Northern and the Germanic; the last seems to me somewhat farther away, which is also natural as a result of our fathers' eastern and southern tribal seat. But the difference is really not great; they stand about side by side, but in no way can the Northern be taken to stem from the Thracian indirectly through the Germanic; this would be contrary both to history and to the inner essence of the languages. Similarly one can by no means say that Icelandic stems from Greek. Greek is not the pure old Thracian. Least of all must one limit Greek to Attic, for it is just one of the latest Greek dialects, and far from the one in which relationship is shown most clearly. As great preeminence as Attic has in refinement and harmony, so great do Doric and Aeolic have in antiquity and importance for the investigator of language; for if these were lost, the identity with Latin, not to speak of Icelandic, could scarcely be proved satisfactorily. But what we can permit ourselves justified to conclude after the foregoing is that Icelandic, or Old Norse, has its source in the old Thracian, or that in its chief components it has sprung from large Thracian stock, of which Greek and Latin are the oldest and only remains, and that we can consider that its root. But for the complete etymological explanation of this we have seen that the Lettish and the Slavic classes of languages are of greatest importance, also that even Finnish was not without significant influence and use.

CHAPTER FOUR

FRANZ BOPP

ON THE CONJUGATIONAL SYSTEM OF THE SANSKRIT LANGUAGE

**In comparison with that of Greek, Latin, Persian
and the Germanic languages**

*From Über das Conjugationssystem der Sanskritsprache in
Vergleichung mit jenem der griechischen, lateinischen,
persischen und germanischen Sprache
(Frankfurt-am-Main: in der Andreäischen Buchhandlung, 1816)*

Editor's Introduction

It may be unfair to Bopp to give a selection from his initial work. But his chief importance is in clarifying the morphology of Indo-European, and even his final presentation has long been superseded. Accordingly the views which he first presented are those of greatest interest to us. Moreover, his analysis of the conjugational system of the Sanskrit language is by no means a negligible result of four years of independent work, carried on with little guidance from predecessors. The extracts presented here indicate however that Bopp's publication of 1816 was still preliminary to the important treatments in comparative linguistics.

For in 1816 Bopp is still pursuing the course of Friedrich von Schlegel. To be sure a much greater portion of his book is devoted to the language, pp. 3-157, but as much space is given to Indic literature, primarily to translations, pp. 160-312. Bopp's chief aim is accordingly an understanding of Indic culture, not of the Indic language, let alone that of the Indo-European family. His first work then resembles a comparative grammar of the Indo-European languages less than does the monograph of Rask. The publication in 1818 of Rask's work, which had been completed earlier, may have been as beneficial to Bopp in his groping toward a comparative grammar of the Indo-European languages as it was to Grimm.

To interpret Bopp's aims from the often tedious introduction of his teacher Windischmann, *Conjugational System* i-xxxxvi, may also be less than flattering to the mature Bopp; but it gives us an insight into contemporary hopes for comparative linguistics and accordingly some understanding of the tremendous energy with which it was pursued. According to Windischmann, ix-x, Bopp "had resolved to treat the investigation of language as a historic and philosophic study and not to be content with understanding what was written in any given language. We may rejoice at these efforts and intentions, which from a purely human point of view deserve to be named before many others, for through intimate association with the significant signs, by which the word, this child of the spirit, expresses the deepest emotions and feelings, as it does the clearest and most definite thoughts, indescribably much of the hindrances to true self-knowledge and self-culture are dispelled." Moreover, in study of languages, such as Gothic, and their structure, there was hope, according to Windischmann, for additional means to illuminate the history of the Indic and Germanic peoples and the differing cultures of each. Such considerations led Bopp to master ever more of the Indo-European languages-Sanskrit, Avestan, Greek, Latin, Lithuanian and Gothic for the first volumes of his *Comparative Grammar* of 1833 -- then Slavic, Celtic and Albanian for remaining volumes, and the second edition of 1857-61. The posthumous third of 1868-70

maintains some of the initial shortcomings of the early period of comparative linguistics virtually to the time of the neo-grammarians.

One shortcoming was the almost exclusive attention to morphology. We note Grimm's similar lack of interest for phonology. Raumer's attention to phonetics had its influence only on the successors to the great pioneers

Another shortcoming is Bopp's attempt to discern the origin of inflection in separate words, particularly the verb "to be". In its crass form, this is completely superseded. Yet many publications still emerge which seek the origin of inflections, like the Germanic weak preterite, in simple verbs such as *do*, even though highly conservative and careful linguists, e.g. H. Collitz, *Das Schwache Präteritum*, Baltimore, 1912, have cited almost overwhelming evidence against such views. The early notions on the development of language, from noninflected through agglutinative to inflected, have not been discarded even today, though we probably would find little receptivity for the view that certain inflections developed because of an inherent meaning of the symbol, such as *s* for the second person.

Franz Bopp is often credited with providing "the real beginning of what we call comparative linguistics" (Pedersen, *Linguistic Science*, p. 257). In keeping with this achievement his external career was distinguished. His publication resulting from four years of study in Paris, 1812-1816, led to general recognition. After visiting London and publishing there, he became professor of Sanskrit and comparative grammar in Berlin in 1821. Teaching and publication made up the rest of his life; his publications are on the whole admirable, except for a suggestion that the Malayo-Polynesian languages are related to the Indo-European. Apart from this lapse, editions, monographs and successive editions of his grammar, with translations into English and French, made him the dominant figure in Indo-European comparative grammar throughout the first half of the nineteenth century.

Chapter 1. On Verbs in General

By verb in the narrowest sense is meant that part of speech which expresses the connection of a topic with a property, and their relations to one another.

The verb, according to this definition, has no real meaning in itself, but is simply the grammatical bond between subject and predicate, through whose inner change and formation their mutual relations are indicated.

Under this concept there is only a single verb, namely the so called *verbum abstractum*, *sein*, *esse*. But also with this verb, to the extent that it is to express simply the relations between subject and predicate, we have to remove the concept of existence, which it comprehends in itself; in its grammatical determination this does not need to express the existence of the subject, because this is already expressed by the subject when we state it. Thus in the sentence: *homo est mortalis*, it is not the verb, *est*, which expresses the existence of the subject *homo*, but the existence is contained as the first and basic characteristic in the concept expressed by the word *homo*, just as the characteristic *mortalis* like others assumed to be known for the concept *homo* is associated through the copula *est*. In the sentence: *der Gott ist seiend*, the word *sein* represents two quite different functions. In the first it determines as grammatical bond simply the relation between the subject and the predicate; in the second it expresses the property which is added to the subject.

It seems to me therefore, that simply through lack of a completely abstract verb, a verb which embraces the concept of existence in itself is used in most languages for the sake of a

grammatical bond; and there might well be a language, which is not without a totally meaningless copula, through whose inflection or inner change the relations between subject and predicate might be expressed. In Sanskrit there are two verbs which correspond to the verb esse, namely asti and bhavati. Whether both are exchanged with one another equally frequently, and although the first is replaced by the latter in the tenses lacking to it, nonetheless for both synonyms a fine difference must exist, which may possibly have been distinguished more sharply originally. Nonetheless it seems to me from observation of the use of both, and from comparison of the substantives and adjectives derived from the roots of both, to emerge clearly that asti almost alone expressed grammatical union, that bhavati however is primarily used when existence is to be expressed. From the root bhū come the words bhāvana, svajambhū, prabhu, bhūtam, bhavān, etc., all of which point to existence. From the root as one can hardly find a noun derived other than the participle sat and its negative asat. The following verse from the Bāgavat Gita can probably not be translated faithfully into any language:

Nāsatō vidjatae bhāvō nābhāvō vidjatae satah.

The relation of the subject with its predicate is not always expressed through a special part of speech, but is unexpressed; and the relations and secondary determinations of meaning are indicated through the inner change and inflection of the word itself that expresses the attribute. The adjectives inflected in this way make up the sphere of verbs in the usual sense.

Among all the languages known to us, the sacred language of the Indians shows itself to be one of the most capable of expressing the most varied relations and connections in a truly organic manner through inner modification and forming of the stem syllable. But disregarding this remarkable capability of modification, occasionally it is pleased to incorporate the root of the verbum abstractum in which case the stem syllable and the incorporated verbum abstractum divide the grammatical functions of the verb.

Among the languages which are of common origin with the Old Indic we have to admire the capability of indicating the most varied determinations of relationship, most of all in the Greek. In the conjugation of the verbs it not only follows the same principle as the Sanskrit, but the inflections by which it expresses the same relations are exactly the same; and it combines in the same tenses and in the same way the verbum abstractum with the stem syllable.

The Roman language agrees with the Indic no less than does the Greek, and one could hardly find in it a relation expressed by an inflection which is not common to it and Sanskrit. In the conjugation of verbs however the combination of the root with an auxiliary verb has become the prevailing principle for it. In this combination however it does not express a part of the relation, which is to be defined, through inflection of the stem syllable, as this is the case in Indic and in Greek, but the root remains totally unchanged.

It is the purpose of this essay to show how in the conjugation of the Old Indic verbs the definitions of relationship are expressed through corresponding modifications of the root, how at times however the verbum abstractum is combined with the stem syllable to one word, and stem syllable and auxiliary divide the grammatical functions of the verb; to show how the same is the case in the Greek language, how in Latin the system of combination of root with an auxiliary has come to be dominant, and how only in this way the apparent difference of the Latin conjugation from that of Sanskrit and Greek arose; finally to prove, that in all the

languages which stem from Sanskrit or from a mother language in common with it, no definition of relationship is indicated by an inflection which is not common to them and that original language, and that apparent exceptions only arise from the fact that either the stem syllable is combined with the auxiliaries into one word, or that from participles the tempora derivativa which are customary already in Sanskrit are derived, in the fashion as verba derivativa can be formed from substantives in Sanskrit, Greek and many other languages.

Among the languages that stand in closest relationship with Sanskrit I recognize especially Greek, Latin, Germanic and Persian. It is remarkable that Bengalese, which surely has undergone the least foreign admixtures among the New Indic dialects, does not agree in its grammar nearly so completely with Sanskrit as do the above-mentioned languages, while on the other hand it attests a far greater number of Old Indic words. Yet new organic modifications have not taken the place of the Old Indic inflections, but after their meaning and spirit have gradually vanished, their use also diminished, and tempora participialia (among which I do not understand periphrastic forms like the Latin *amatus est*) replaced the tenses which were formed in Sanskrit through inner change of the stem syllable. Similarly in the New Germanic languages, several indications of relationship are expressed through periphrasis, which in Gothic were designated by inflections that were already used in Sanskrit and Greek.

In order to show in its full light the truth of these principles which are extremely important for the history of languages, it is necessary to become acquainted above all with the conjugational system of the Old Indic languages, then to survey and compare the conjugations of the Greek and the Roman, the Germanic and Persian languages, whereby we will see their identity, but will also recognize the gradual and graded destruction of the simple speech organism and observe the striving to replace it by mechanical combinations, from which an appearance of a new organism arose when their elements were no longer recognized.

Chapter 2. Conjugation of the Old Indic Language

We will go through the tenses of the Indic verbs here in the sequence in which they follow one another in the Sanskrit grammars, and in the process will give as briefly and compactly as possible the reason for every change of form and depict the manner how every modification of meaning corresponds to an individual modification of the word. From this it will become clear of itself that many tenses must be explained as compounds. Since however in my assertions I cannot support myself on the authority of others, for up to now nothing has been written about the origin of the grammatical forms, I will have to support them with cogent proofs.

Formation of the Present

In the *tempus praesens* the meaning of the root is limited through no added secondary indication; the subject has real use of the predicate designated by the root. Also from the root, which is the common mother of all parts of speech, the *tempus praesens* is formed through simple addition of the designations for person. The designation for the first person is M for the singular and plural, and for the dual V; designation of the second person is S or H which is related to it; designation of the third person is T for all three numbers. The endings, or the accents of the personal designations serve to determine the numbers, not the formation and characterization of the tenses.

Example: ad, eat

	Sing.	Dual	Plur.
3.	atti < adti	attah < adtah	adanti
2.	atsi-adsī	atthah-adthah	attha < adtha
1.	adai	advah	admah

Note. The D of the root becomes T before T and S in accordance with the rules of euphony. (end of p. 13).

Chapter 3. Conjugation of the Greek verbs (61-2)

In Greek, as in Sanskrit, certain random letters are added to roots, which as in Indic are maintained only in some tenses and disappear again in the others. One could, as in Sanskrit, divide the verbs into different conjugations in accordance with these, which then would largely correspond with the Indic in their characteristics. -- The first Indic conjugation adds *a* to the first root; thus patschati comes from patsch. With this one can compare those Greek verbs which insert *e*, *a* or *o* between root and designation for person. The third conjugation of Sanskrit repeats the initial letters of the root, e.g. dadāti, tischthati from dā and sthā. So in Greek dídōmi, héstēmi from da and stat. The fifth Indic conjugation adds *nu* to the root; e.g. sunuma 'we beget' from su. To this corresponds in Greek rhēgnumen, déiknumen, dáinumen from the roots rhēg, deik, dai. -- The eighth Indic conjugation adds *u*, e.g. tanuma 'we extend' from the root tan. -- The ninth conjugation adds the syllable *na* in Sanskrit, e.g. krināmi from kri. *N* is often inserted in Greek between the root and the designation for person, as in krínō, klínō, témnō, etc., from kri, kli, tem.

Chapter 4. Conjugation of the Latin Verbs (88-89)

In order to learn to know the principle of the Latin conjugation, it is necessary that we start out from the conjugation of the auxiliary verbs, partly because of their frequent combination with the other verbs, partly because in their simpler change the principle of the Latin conjugation is easier to recognize.

The Latin language has two verbs, which are used for combination between subject and the predicate expressed by an adjective or substantive, and for the expression of their mutual relation to one another. Their stem syllables are *es* and *fu*, corresponding to the Indic roots of the same meaning as and *bhu*. As in Sanskrit *bhavati* replaces those tenses that went out of use for *asti*, so it happened for Latin *fu*. The ancients said *esum*; the Etruscans (=Umbrians) for *sum*: *esume*. *Esu-me* is like Indic *as-mi* and the Greek *esmi*, *esmai*. -- The praeteritum of *esum* is *eram*, with change of the *s* to the related *r*, accordingly *eram* for *esam*. Also in Sanskrit and in Greek the personal designations with *A* are emphasized. But the past is not expressed through this emphasis, rather through modification of the root: through replacement of the augment, through reduplication or change of the stem vowel. *Eram* is different from *esum*; its use gives its past meaning, but this modification of the meaning does not correspond to a particular modification of the root.

Chapter 5. Conjugation of the Persian Language and the Old Germanic Dialects (116-17)

However much the inflections have gone out of use in other parts of speech of the Persian language, through which in Indic and the languages related to it important secondary specifications are indicated, yet especially in the inflection of verbs the close bond can be recognized which ties it to those languages whose system of conjugation we have examined. With the old Germanic dialects it affords in the principle of the change of verbs such striking agreement that for the sake of brevity I consider myself justified to place it with them in one class. In the Persian language and in all Germanic dialects, the *tempus praesens* is derived from the root through simple affixation of the personal designations, which are known to us from Sanskrit as from Greek and Latin. Yet these have not maintained themselves throughout, but are at times replaced through vowels, as in Greek and Roman; eventually the designation of a definite person becomes the common ending of all others, as will be clear from the following examples.

From the roots ber, luf, sok, mach, brenn there are made in Persian, Anglo-Saxon, Gothic, Frankish and Icelandic the following presents:

	Persian	Anglo-Saxon	Gothic	Frankish	Icelandic
1.	ber-em	luf-ige	sokj-a	mach-on	brenn-e
2.	-- -i	-- -ast	sokj-ais	-- -ost	-- -er
3.	-- -ed	-- -ath	sok-eith	-- -ot	-- -er

Pluralis

1.	ber-im	luf-iath	sokj-am	mach-omes	brenn-um
2.	-- -id	-- -iath	sok-eith	-- -ot	-- -ed
3.	-- -end	-- -iath	sok-and	-- -ont	-- -a

CHAPTER FIVE

JACOB GRIMM

GERMANIC GRAMMAR

From Deutsche Grammatik

(Gütersloh: C. Bertelmann, 1893), I, pp. 580-592

Editor's Introduction

If non-specialists know anything about historical linguistics, it is Grimm's law. The history of views on the consonant shift is virtually a history of linguistic theory until 1875; subsequently it is equivalent to the theory of historical linguistics, from the neogrammarian position (that each consonant should be treated individually) to that propounded today (that the entire shift be viewed as a whole). Yet our first reaction on looking at Grimm's celebrated statement may be surprise. He is groping through the consonants; his remarks on the liquids show great uncertainty. The vowels are quite obscure for him. And combined with the treatment are peripheral remarks about speech -- comments on the purpose of vowels -- which we would not welcome in any treatise today. Yet this formulation of the Germanic consonant shift has indeed had "momentous consequences for the history of language." Subsequent discussion is voluminous; few Germanists, Indo-Europeanists or even general linguists have failed to comment.

It was Grimm's conception of the shift as a unit which made such an impact on linguistics. Although his formulation lacks the neatness we might expect, he did account consistently for a large segment of the set of Indo-European and Germanic consonants. His consistent account was so overwhelming that no one doubted its validity. The items unaccounted for were considered exceptions and were made the object of research for the next half century.

Yet we may be even more surprised that there is no mention of a law. Grimm has given nine *rules*, relating the consonants of Germanic with those of Greek and Latin, less commonly with Sanskrit and other Indo-European languages. Instead of *rule*, *Regel* might equally well be translated *correspondence*. If we did use this translation, Grimm's formulation might be quite contemporary. He stated the evidence fully, including exceptions, posited the relevant correspondences, and indicated their relationships to one another. The statement is a classic example of the formulation of a problem in linguistics, and of its solution within the sphere of language.

Possibly an attempt at explanation is implicit, though even this is not certain. By viewing the shift as non-organic, Grimm apparently saw in it a deviation from the organism developed by the speakers of Indo-European languages. Just as inflection, in contrast with agglutination, seemed appropriate to the Indo-European languages, so did the system of obstruents in Greek and Latin. But we see none of the fanciful attempts at explanation which our handbooks summarize -- a shift due to change of geography, or climate and so on -- nor even the more sober attempts which seem appropriate to us, such as a general shift in keeping with one type of phonetic reshaping or with the modification of distinctive features. Grimm's concentration on taxonomy spared him all such ventures.

He was also fortunate in his ignorance of phonetics, which permitted him to class together consonants which were quite different in articulation, and to produce a statement which passes beyond details to the system. Examination of details, as by Raumer, Grassmann,

Verner, clarified exceptions, but it also for a time undermined the unity which Grimm saw in the shift, and which a structural approach has restored.

The translation has been deliberately kept stark to illustrate Grimm's pioneering. We might well interpret "guttural" to mean velar, as it often does even among linguists who should be better informed; but that it meant "throat-sound" to Grimm is clear from his German equivalent "Kehllaut". Though we may pride ourselves on superior terminology, our estimate of the capabilities of Grimm's contemporaries is not diminished by the ease with which they were to identify examples as Greek or Latin, with no special indication.

As we update Grimm's terminology, we may wonder at terms that have not been discarded. Grimm speaks of consonant gradation. We no longer do, but our entire treatment of the Indo-European vowels is based on the assumption of gradation. Grimm viewed vowels as virtually hopeless, but brought order into the consonant system by his use of grades. Subsequent linguists brought order into the Indo-European vowel system by using grades. In maintaining their terminology, are we also maintaining an antiquated framework for the vowels?

Though we consider Jacob Grimm (1785-1863) one of the greatest contributors to linguistics, his name is a household word for other achievements as well. The veneration in which he is held by scholars may be indicated by the retention of the page numbers of his original text of the grammar, which are maintained here, as in subsequent editions. His *Germanic Grammar* is still the most complete one we have. The large German dictionary, recently completed, was inaugurated by him and his brother, Wilhelm (1786-1859). His work in other fields: medieval literature, law, mythology, folklore, is as fundamental as his work in linguistics. After studying law at Marburg he held small government posts, which brought him at various times to Paris and Vienna. In 1817 he was appointed professor and librarian at Göttingen. Here he lectured in his areas of interest until 1837, when with six other professors he protested against the King of Hanover's abrogation of the constitution, and was dismissed. His political action at this time illustrates that his greatness was not confined to academic matters. After returning to Cassel for a few years he and his brother were invited to professorships at Berlin in 1840, and to memberships in the Prussian Academy of Sciences. Acclaim did not hinder his work, which involved all areas of linguistics from phonology to the painstaking activities of a lexicographer.

A Survey of the Consonants

The above survey informs us that the vowel relationships are uncertain and subject to various influences, but that their distribution and alternation are not arbitrary, rather, resulting from deeply established laws that have not yet been disclosed. The law of the ablauts will spread more light on this. One may view the vowels as the necessary coloring or animation of all words, as the breath without which they would not even exist. The real individuality of the word rests on the vowel sound; it affords the finest relationships.

The form, if I may say so, on the other hand the specification is established by the consonantism. Here the relationships appear far more certain and lasting; dialects, whose vowels for the most part deviate, often maintain the same consonants.

The four liquids are unchangeable; their fluid element preserves them intact during the most powerful upheavals. They undergo only occasional permutations, transpositions, losses or geminations, in spite of which their essential significance remains the same; i.e., although, for example, *chilche* occasionally appears as *chirche*, *r* and *l* remain fundamentally different in all other cases. To be noted:

1) On the one hand *l* and *r* are closely related, on the other *m* and *n*. When an exchange takes place, *m* is the earlier and more delicate, *n* later and coarser (cf. p. 386, 387). [These references are to Grimm's Grammar.] Conversely, the harder *r* may be older, the softer *l* younger. *M* stands in a special relationship with the labials, *n* with the linguals (cf. p. 536). Thus the OHG *au*, *ou* before *m* and labials, *ô* before *n* and linguals (p. 100); *l* and *r* are associated as readily with labials, linguals and gutturals. -- *L* and *r* disintegrate occasionally into *u* and *i* (and could therefore be called semivowels); never *m* and *n*, yet the influence of a lost *n* on the preceding vowel might be compared (*gâs*, for *gans*).

2) In the important association of *r* with *s*, of the combination *rd* with *dd* and *sd* (Goth. *zd*) *r*, *rd* appear as the younger forms which have gradually developed from *s*, *sd* (cf. p. 64, 65, 121, 167, 210, 244, 305, 317, 343, 387, 416).

Like the liquids, the three spirants *v*, *h*, *s* remain essentially unchanged throughout all the Germanic dialects. I deduce their inner relationship in part from the *ê* and *ô* which appear in front of them rather than *ei* and *au* (p. 91, 94), in part from the changes between *h* and *v*, *w* (p. 148, 403), *h* and *s* (p. 318, 416), and the association of the aspiration with the assibilation (*th*, *ts*, *z*); no direct exchange between *v*, *w*, and *s*; *h* and *v*, (the softest of all consonants,) disappear occasionally without replacement, even initially and particularly before liquids. (*v. addendum*)

Relationships are completely otherwise with the remaining consonants; a notable contrast between High German and all the other dialects becomes obvious. In the labial, lingual and guttural sounds, the Gothic (Saxon, Frisian, Northern) tenues correspond to the High German aspirates; the Gothic mediae to the High German tenues; and the Gothic aspirates to the High German mediae. The particulars may be expressed as follows:

Goth.	P.	B.	F.		T.	D.	ƀ		K.	G.	.
OHG	F.	P.	B. (V)		Z.	T.	D		CH.	K.	G.

A change has taken place by means of which each of these nine consonants in High German shifted similarly from its position.¹ There is no doubt that the High German situation must be viewed here as the later, the changed, and the Gothic (Saxon, Frisian, Northern) as the earlier. This has been proved by analysis of the Old High German letters on various grounds.

Observations:

- 1) The lingual series indicates the relationship most clearly; in Gothic *táins*, *dal*, *þáurnus* are as necessarily distinguished as in Old High German *Zein*, *Tal* and *Dorn*.
- 2) The labial order also fits as soon as one acknowledges the second aspirate *bh* for the HG *v* in initial position and admits this instead of the closely related real media. For *f*, *p*, *v*, the erroneous designations *ph*, *b*, *f* were introduced, or occasionally others. Compare Goth. *pund*, *baíran*, *filu* with the HG *funt*, *përan*, *vilo* (also written *phunt*, *bëran*, *filo*). The older arrangement had visible effect in the inconsistent writing system; the strictest High German pronunciation, in which *përan*, *pein*, *përag* were completely current, did not even rise to the pure media *bilo* for *filo*, *vilo*. Even hard, upper German folk dialects do not know and cultivate such a *b* for *f* (certainly, however, many *b* for the spirant *w*). This all applies however for the initial position; in medial position the media frequently seems to me to stand in proper position, for example, in *ëbar* (*aper*), *ëban* (*aequalis*) etc. (cf. below, p. 589, fn. b.).
- 3) For the series of throat sounds the aspiration is lacking in Gothic, etc.: in High German all three gradations are found, but how are the High German *k* and *g* (*ch* assumed for Goth. *k*) to be organically divided into Gothic *k*? This could hardly be answered from the German

language; the uncertainty of the Old High German writing system not only confuses *k* and *g*, but also *k* and *ch* with one another. At the same time however some clarification is provided by this that the OHG *k* which alternates with *g* never goes over to *ch*, and conversely, the *k* which alternates with *ch* never to *g*. So for example, *gunni* may not stand for *chunni* (genus) and *chans* never for *gans* (anser); for both, however, *kunni* and *kans*. Since in addition medial *ch* may not be exchanged with *k* (no *sprëkan* for *sprëchan*), then HG *k* for *ch* would be completely objectionable and of the two sounds, *g* and *k*, one would be superfluous and indeed theoretically this would be *g*. The High German language would thus not actually have any more throat sounds than the Gothic; *ch* would correspond to Goth. *k*, *k* however to *g*. Yet it appears to me that there is a third case where OHG *g* of necessity stands, i.e., where it cannot be replaced by *k* or *ch*; this is none other than the varying relationship between *h* and *g* (p. 427). Here the Goth. *g* plays a double role; in *þragjan* (currere), and *guma* (vir) a different *g* appears from that in *áugô* (oculus), and *tagram* (acrimis). This can become clear only through comparison of further originally related languages.

With such comparisons, which here cannot by any means be thoroughly pursued, but rather only are intended to put our Germanic sound-relationships into proper perspective one proceeds best from the consonants. If a thoroughly grounded statement is ascertained and accepted for these, then perhaps some insights might also be gained into the history of the vowels.

First we encounter the important principle: liquids and spirants agree in all essential relationships with the manner and arrangement of the German tongue. It seems that where the branches of the Germanic languages do not deviate from one another, Latin, Greek and Indic will not deviate. Sanskrit expressly recognizes the *r* and *l* as vowels, and uses *r* this way often, *l* more rarely. The weakening of the older *m* into later *n* is common everywhere; a large group of words with *m* in Sanskrit and Latin receive *n* in Greek (see addendum); exactly as the final MHG *n* becomes *m* again in medial position (*lein*, *leimes*; *arn*, *arnes*, p. 386), so *en* is related to *emen* (Lat. *eram*, *eramus*; compare *néon* with *novum*). Analogous modifications of the *s* to *r* are also easily found; especially Latin preferred the *r*, which is however always to be understood as the younger form. Alternation of the spirants *v* (digamma), *s* and *h* is demonstrated by *hespéra*, *vespera*; *heptá*, for *septem*; *hus*; *sus*; *hérpō*, *serpo*; *hekurós*, *socer*; *hupó*, *sub*; *sas*, *sâ* (Skt. *isea*), Gk *ho*, *hē*, Goth. *sa*, *sô*; *háls*, *sal*; *sasa*, (Skt. *lepus*), *haso* etc.; also the initial spirant disappeared completely, e.g., Lat. *anser* is found for *hanser* (Skt. *hamsa*, *cignus*), *odium* for *hodium* (Goth. *hatis*), *éar* Lat. *ver*, and the Gk *ídmen* (Skt. *vidmas*, Lat. *videmus*, Goth. *vitum*) earlier had a digamma before it. *V* and *s* alternate the least, cf. *sinister* with *winster*.

Yet more astounding than the accord of the liquids and the spirants is the variation of the lip, tongue and throat sounds, not only from the Gothic, but also the Old High German arrangement. For just as Old High German has sunk one step down from the Gothic in all three grades, Gothic itself had already deviated by one step from the Latin (Greek, Sanskrit). [See supplement.] Gothic is related to Latin exactly as is Old High German to Gothic. The entire twofold sound shift, which has momentous consequences for the history of language and the rigor of etymology, can be so expressed in a table:

Gk	P.	B.	F.		T.	D.	TH.		K.	G.	CH.
Goth.	F.	P.	B.		TH.	T.	D.		-.	K.	G.
OHG	B. (V)	F.	P. (V)		D.	Z.	T.		G.	CH.	K.

or otherwise conceived:

Gk	Goth.	OHG	Gk	Goth.	OHG	Gk	Goth.	OHG
P	F	B(V)	T	TH	D	K	-	G
B	P	F	D	T	Z	G	K	CH
F	B	P(V)	TH	D	T	CH	G	K

From this we see now how the Goth fills the gap arising from the departure of the throat aspirate: he uses the spiritus *h* initially rather than *ch*, and *h* occasionally also medially and finally, but frequently also the media *g*. In Old High German the *g* would appear here consistently everywhere and would be analogous to the *b* and *d* of the other series; it may however be a remnant of the earlier sound arrangements that the Gothic initial *h* has also been carried over to Old High German because it was taken for a spirant and not as aspirate. Only occasionally does *g* appear beside it. This use of the *h* for *ch* is also remarkably found precisely in initial position in Latin so that the gutturals, more precisely determined, show up as follows:

Gk	Lat.	Goth.	OHG
κ	c	h, g	h, g
γ	g	k	ch
χ	h	g	k

The necessary examples for the proposed nine comparisons are:

I. (P, F, B, V.) 1) Initial position: pax, pacis, pacatus; Goth. fahêds (gaudium, quies), ON feginn (contentus, laetus) --- pes, pedis; Gk poûs; podós Skt padas; Goth. fôtus; OHG vuoz --- piscis, fisks, visk --- porca (sulcus), OHG vuriha --- porcus, OHG varah --- Gk póros (iter, via), Goth. faran (ire) ---- pater, Gk patĕr, Goth. fadrs, OHG vatar --- patis (Skt conjux), Lith. pats, Gk posis (? Dor. Gk pótis), Goth. brūd-faþs (sponsus) --- Gk pûr, OHG viur --- Gk polá OHG vilo, Goth. filu --- Gk pléos, Goth. fulls, OHG vol --- Gk prōí, OHG vruo --- pecus, Goth. faíhu, OHG vihu --- pulex, OHG vlôh --- plecto, OHG vlihtu --- Gk pérđō, Lith. perdziu, Swed. fjerter, OHG vërzū --- Gk palámē, Lat. palma, AS folma, OHG volma Gk ptéron (for petéron, like Gk petáō for Gk ptáō) ON fiödhur, OHG vëdar --- Gk peúkē, picea, HG vihta --- pellis, Goth. fill, OHG vël --- pullus, Goth. fula, OHG volo --- pauci, Goth. favai, OHG vaohê --- primus, Goth. frumists, OHG vromist. --- 2) Medial position (The Gothic medial *b* for *f* is less precise than Northern and Saxon *f. bh*) Gk kápros, caper, ON hafr --- Gk loipós (reliquus), ON leifar (reliquiae), Goth. láibôs --- svapa (Skt somnus), Gk húpnos, ON svefn, OS suëbhan --- septem, AS sēofon, Goth. sibun --- aper, ON iöfor, AS ěbar OHG ěbar --- Gk hupér, super, Goth. ufar, ON yfir, OHG ubar --- rapina, AS reáf, OHG roub.

II. (B, P, F) 1) For initial position, I know no example to support my view that the Germanic words with initial *p*, HG *f* (*ph*) are lacking (above p. 55, 131, 212, 247, 397, 462). 2) Medial position: Gk kánnabis, cannabis, ON hanpr, OHG hanaf; should turba be compared with Goth. þaurp, OHG dorof; stabulum with ON stöpull, OHG staphol; labi with hláupan, loufan?

III. (PH, B, P) The aspirate of the older languages itself still requires closer attention; Sanskrit recognizes both *ph* and *bh*, which appear mixed in Gk *ph*, Lat. *f* and *b*. 1) Initial position: The Indic root *bhu*, the Gk *phu*, the Lat. *fu* in the verb 'to be', compare with the AS *bëon*, OHG

pim (sum) --- Gk phēgós, fagus, ON beyki, OHG puocha --- forare, ON bora, OHG poren --- frangere, fregi; Goth. brikan, OHG prēchan --- frui, fructus; Goth. brūkôn, OHG prûchôn --- frater, brôþar, pruoder --- flare, blasan, plasan, --- fero (in Skt the root bhr), Goth. baíra, OHG piru --- Gk phúllon, folium, ON blad, OHG plat --- Gk ophrús, ON brâ, OHG prawa. --- 2) Medial position: Gk eléphas, antos, Goth. ulbandus, OHG olpenta --- Gk kephalḗ, haubiþ, houpit --- Gk nephlélē, nebula, Goth. nibls?, OHG nēpal --- Gk gráphein, Goth graban, OHG grapan. These medials vacillate toward the first class; like: caput, AS heáfod, OHG haubit, cf. the ON nifl to which an OHG nēbal would correspond.

IV. (T. TH. D.) 1) Initial position: tauta (lett. gens, regio) Goth. þiuda, OHG diot --- tu, Goth. þu, OHG dû --- tenuis, tener, ON þunnr, OHG dunni --- Gk teínein, tendere; Goth. þanjan, OHG denen --- Gk treís, tres; þreis; drí --- tergere, ON þerra --- Gk térsēin (arefacere) Goth. þaursis (aridus) torridus, OHG durri --- tacere, Goth. þahan, OHG dagen --- Gk trékhein, Goth. þragjan --- Gk talân, tlân, tolerare, Goth. þulan, OHG dolen --- tectum, Goth. þak, OHG dach --- Gk taũros, ON þiôr --- tad (Skt id), Gk to (for tad), Goth. þat, OHG daz --- talis, ON þvílíkr. --- 2) Medial position: ratio, raþjô, redja --- frater, brôþar, pruoder --- Gk metá, Goth. miþ --- dantas (dens, dentis) tunþus, zand --- rota, ON hradhr (celer) OHG hrad (rota) --- iterum, Goth. viþra, OHG widar --- Gk héteros, anþar, andar --- perhaps Gk étēs, hetaĩros (socius) may be compared with OS gesith, OHG sindeo --- étos (annus) with the obscure Goth. ataþni (i.e. at-þni, OHG az-adani?).

V. (D. T. Z.) 1) Initial position: lingua, tuggo, zunga (cf. above p. 152) --- deus, divus, Lith. diéwas; Gk díś, díos (for theós is Cretan) ON týr; OHG ziu (cf. above p. 150, 151) --- dantas (Skt) Gk odoús odoú odóntos; dens, dentis; Goth. tunþus, OHG zand --- Gk dia-, Lat. dis-, Saxon to-, OHG zi- --- Gk damâñ, domare, Goth. tamjan, OHG zemen --- Gk drūs, Goth. triu --- digitus, cf. with the Saxon tēkan (signum) OHG zeichan --- Gk deiknúein, deíkein, indicare, Saxon tōgjan, HG zeigen --- Gk dólos, dolus, ON tál, OHG zâla --- ducere, Goth. tiuhan, OHG ziohan --- Gk dúo, duo, Goth. tva, OHG zuei. --- Gk dákrū, Goth. tagr, OHG zahar --- Gk deksiá, dextra, Goth. taíhsvô, OHG zēsawa. --- 2) Medial position: Gk hēdú, Goth. suti, OHG suozi --- ad, Goth. at, OHG az --- Gk hédos, sedes; sedere, Goth. sitan, OHG sizan --- Gk édein, edere; itan, ězan --- Gk eídein, eidénai, videre, Goth. tva, OHG wizen --- odium, Goth. hatis, OHG haz --- claudere, OHG sliozan --- laedere, HG letzen, --- radix, ON rôt --- Gk húdōr, Goth. vatô, OHG wazar --- Gk hidrōs, sudor, sveiti, sueiz --- pedes, fōtjus, vuozi.

VI. (TH. D. T.) The Latins have no *th* (except in foreign words), but often the Gk *th* has become the labial aspirate *f* of the same grade just as in Greek itself the Aeolic dialect shows *ph* for *th* (cf. Gk thumós, spiritus, animus, with fumus, Gk phúmos; thúein with fire, suffire) both remind one of the intersection of Goth. *þl* with *fl* indicated on p. 66, 67. 1) Initial position: Gk thugatēr, Goth. daúhtar, OHG tohtar --- Gk thúra, Lat. pl. fores, Goth. daúr, OHG tor --- Gk thḗr, Aeol. phḗr, Lat. fera, ON dýr, OHG tior --- Gk tharréin (audere) Goth. ga-daúran, OHG turran, cf. the preterite ga-daúrsta, getorsta with Gk thárros, thársos, thrasús. --- Gk thénar (vola manus) OHG tēnar --- Medial position: Gk méthu, AS mēdo, OHG mētu -- - Gk éthos, AS sido, OHG situ.

VII. (K. H,G. H,G.) In the second grade the Goth. *h* is found for *ch*; in the third the OHG *h* for *g*. 1) Initial position: claudus, halts, halz --- Gk kánnabis, ON hanpr, OHG hanaf --- canere cf. with hano (gallus, as this with ON kalla, OHG challôn, clamare, fari) --- caput, háuþip, houbit --- Gk kardía, cor, haírtô, hērza --- Gk kúōn, canis, hunþs, hund --- Gk koĩlos, hol --- celare, hilan, hēln --- Gk kálamos, calamus, halam, helm --- Gk kártos, karterós, hardus, hart ---

cornu, haúrn, horn --- collum, hals --- Gk krumós, (gelu), ON hrîm --- Gk klaíein, Goth. hlahan --- Gk krázein, crocitare, Goth. hrukjan --- Gk kléptēs, Goth. hliftus. --- 2) Medial position: Gk ókos, oculus, áugo, ouga --- acies, OHG egga --- lux (lucs) liuhad, lioht, cf. Gk leukós with liuhadeins --- Gk oĩkos, Goth. veihs --- lacus, AS lagu --- acus, aceris, OHG ahan, agan, --- Gk dákru, tagr, zahar --- tacere, þahan, dagen --- pecus, faíhu, vitro --- Gk hekurós, socer, Goth. svaihra, HG schwager, schwieger --- Gk mékōn (papaver), OHG mágan, NHG mohn (? Goth. mēhan). Medially this sometimes corresponds to Skt *sh*: e.g. dasha, Gk déka, Lat. decem, Goth. taíhun, Lith. deszimts.

VIII. (G. K. CH.) 1) Initial position: granum, ON korn, OHG chorn --- Gk génos, genus; kuni; chunni --- Gk génus, gene, ON kinn, OHG chinni --- Gk gonu, ON knê, OHG chnio --- Gk gunĕ, ON kona, OHG chona --- gelu (frigus) Goth. kalds, OHG chalt --- gula (guttur) OHG chĕla --- gustare, kiusan, chiosan --- gau (Skt vacca), ON kû, OHG chua --- 2) Medial position: Gk egō, ego, Goth. ĩk, OHG ih --- vigil, OHG wachar --- Gk agrós, agere, Goth. akrs, OHG achar --- Gk ágein, agere, ON aka --- Gk mégas, mégalos; mikils; michil --- rex, regis, regnum; reiks; ríchi --- jugum, juk, joch --- augere, áukan, auchôn --- Gk amélgein, mulgere, ON miólka, OHG mĕlchan.

IX. (CH, H. G. K.) In Latin *h* is here equivalent to *ch*. cf. Schneider, *Lateinische Grammatik*, p. 202: Gk kheimōn, hiems; Gk kheír, Lat. hir; Gk khĕr, herinaceus. Frequently however, OHG *g* to *k*, which I carry out here only in theory. 1) Initial position: Gk khĕn, anser (for hanser) Goth. gans, OHG kans --- Gk khĕō (fundo), Gk khutós (fusus) Goth. giutan, OHG kiozan --- Gk kholĕ, ON gall, OHG kalla --- Gk khthés, heri, hesternus, Goth. gistra, OHG kĕstar --- Gk khórtos, hortus, gards, OHG karto --- hostis (peregrinus) gasts, kast --- homo, Goth. guma, OHG komo --- Gk khthón like khthés for khés for khón and this for khóm, cf. khamái, humi, humus; to be compared with Goth. gauī, OHG kouwi, kou --- 2) Medial position: Gk ékhein, Goth. áigan, OHG eikan --- Gk trékhein, Doric trákhein, Goth. þragjan -- - Gk lékhos, Goth. ligrs, OHG lĕkar --- Gk leíkhō, líkhō (lambo) Goth. laígo, OHG lĕkōn --- Gk lukhān (insidiari), (Goth. lĕgōn ?), OHG lākōn. --- (see supplement).

Notes on this comparison of consonants:

1) Even if certain of the cited samples still appear to be dubious or uncertain, the majority may be considered as clearly demonstrated because of the analogy of the gradation; the correctness of the rules in general is unmistakable. Words in which two consonants agree are doubly certain (Gk trékhein, þragjan; pódēs, fôtjus); those in which one consonant agrees, another deviates, are suspicious; even more suspicious, those whose consonants showed essential equivalence in the three languages without gradation. In this case, relationship is either entirely lacking (e.g. AS pādĥ, padhas and Gk páthos, dolor) or the one language has borrowed from the other (e.g. scrĭban is scribere itself, fruht is fructus, hence not Germanic; the same is true for OS sicor, Lat. securus).

2) In the investigations of the words, likeness or resemblance of consonants which are in general related is less important than observation of the historical course of gradation, which does not become disturbed or reversed. A High German word with *p*, which shows *b* in Gothic and *f* in Latin is originally related in these three languages: each possesses it unborrowed. If, however, we were to find an *f* in a High German word, *b* in Gothic and *p* in Latin, then the relationship would be nonsensical, even though in the abstract exactly the same relationships of the letters are present. The Gk *t* requires a Goth. *þ*, the Gothic *t* however no Gk *th* but rather *d*, and so the identity throughout is based on the external difference.

3) Words, which the one or other language does not possess, could readily be posited for the nine consonant relationships, but not in the elements of vowels, liquids and spirants. All hypothesizing accordingly remains unprofitable; we might at most claim that for example Gk *dáphnē* would have to have *t-b* in Gothic and *z-p* in High German; Gk *phutón* *b-p* in Gothic and *p-d* in High German. These nine rules are only touchstones for words which are available. Analogy is generally not sufficient for new creations, for everything alive is incalculable and merges the laws of theory with the exceptions found in reality.

4) Such exceptions, i.e. instances, where the proposed comparisons fail, appear:

a) in the transition of the *tenues*, *mediae* or *aspiratae*, to *tenues*, *mediae* or *aspiratae* of another series. How often do the members of one series exchange with one another: *p, t*, (Gk *taōs*, *pavo*; Gk *pénte*, Aeol. *pémpe*; Gk *poīos*, Ion. *koīos*) *b, d, g* (Gk *obelós*, Dor. *odelós*; Gk *gê* Dor. *dê*: cf. above p. 445, 446) *ph, th, ch* (examples above p. 587).

b) because of the imperfection of the aspirations in most languages and the mixing with the related spirants and *mediae* which arises out of it. Sanskrit has aspiration of the *mediae* and *tenues* of each organ, so that *bh, ph; dh, th; gh, kh* are found. Jumbled relics of these appear in the other languages. The Greek speaker has *ph, th, ch*; the Latin only the first (and then it is modified; his *f* is close to the *bh*); *th* becomes *f* for him; *ch* becomes *h*. Also the Lithuanian and Latvian languages both lack *f, th* and *ch* (yes even the simple spirant *h*); Gothic etc. lack *ch*, which they replace with *h* and *g*. In other Germanic dialects, distinct traces of the *bh, dh* and *gh*, which can probably be found more clearly in the future than could happen in my presentation. The lack of initial Goth. *p*, HG *ph* (*f*), appears less striking with this point of view. Since in Greek and Latin the labials fluctuate, e.g. Gk *kephalē*, *caput*; Gk *néphos*, *nephélē*, *nubes*, *nebula*; thus each of the Germanic forms is justified, Goth. *háubiþ* beside *gibla* and the Saxon *heafod*; and it must in general remain undecided whether OHG *houbit* or *houpit*, *nēpal* or *nēbal* deserves preference. The Latins loved medial *mediae* (*habeo*, *nobilis*, *mobilis*, *fabula*, *cibus*, *hebes*, *scabies* etc.; origin in *v* is obvious in *novisse*, *movere*, etc.).

c) The sound shift takes place in the mass, but never neatly in individual items; words remain in the relationship of the old arrangements-the stream of innovation has passed them by. Connection with the unchangeable liquids and spirants has usually (not always) preserved them. Thus, α) some words of the Gothic etc. languages still have the stamp of the Latin and Greek order, e.g. *du, dis* (cited p. 152), compare with Saxon *tô* and OHG *zuo, zi, zër*; *daddjan* (Dan. *dîe*) was erroneously cited, which is related according to the sixth comparison with Gk *tháein*, and has nothing to do with the AS *tit*. Further examples are OS *sēdel*, instead of *sētel* (p. 217), the ON *pt* instead of *ft* (p. 314). The relationship between *dies*, *days*, *däg-dagr* may not be interpreted otherwise. β) some of the Old High German words have the stamp of the Gothic etc., as in the words enumerated p. 154, 155, 394. γ) some Gothic and Old High German (the latter accordingly unscathed through two sound shifts) agree with the Latin and Greek e.g. the cited AS *tit*, Eng. *teat*, OHG *tutto* (p. 155), Gk *títthē*. Further: *longus*, *laggs*, *lângr*; *angustus*, *aggvus*, *engi*; *gramen*, *gras* etc.² δ) of two consonants in a word one may be shifted, the other retained, e.g. in *tunga, zunga, lingua*, the *g* remained, while *d* (*dingua*) underwent gradation; the lingual does not check in *prudentia*, Goth. *frôdei* and Lith. *protas*; *gaudere* too may be closely related to Goth. *gatjan* (*facere ut aliquis obtineat restituere*, from *gitan*, like *nasjan* from *nisan*) and MHG *ergetzen*, and for the stricter form *katjan* (ON *kâtr*, *laetus*, beside *gëta* *acquirere* and *gëtaç* *acquiescere*) go to the MH *erchetzen*. This possibly misleading sentence should not be misused by the etymologists.

5) I have presented the Old High German sound shift (p. 127, 151, 177) as something non-organic, and admittedly it is a visible deviation from an earlier organism which is still present in vestiges. One must also consider Gothic in contrast with Greek and Latin as equally non-organic. The similarities of both changes puts them right in the proper light. They are great

events in the history of our language and neither is without inner necessity.³ It is also not to be overlooked that each gradation fills ever smaller circles. The peculiarity of the latter does not extend beyond the High German dialect. The earlier one encompassed Gothic, Saxon, Northern still; accordingly it had a more significant extent. And how restricted this appears when contrasted with the still older situation, which we must recognize for the Latin, Greek and Indic languages, and to which in general also the Slavic and Latvian tribes adhere, perhaps with some modifications. For example, since aspiration is lacking for the Latvians, Prussians and Lithuanians, they are accustomed to use a media for it or sibilants (see addendum). But they possess the unmodified (Latin and Greek) tenues and mediae, cf. the Lith. pilnas (plenus) (see addendum) pirmas (primus) pakájus (pax, pacis) piemũ (poimĕn) peda (vestigium) tris (tres), tu (tu) traukti (trahere) kampas (campus) kas (quis) kėlas (kėleuthos) akis (oculus) ratas (rota) dantis (dens) antras (Goth. anþar) wertas (Goth. vaírþs) derwà (ON tiara, NHG zehr) troksztī (NHG dũrsten) du (duo) sedeti sedere etc. Similarly in Slavic pasti (pascere) vepr (aper) piti (pĕin) pokoj (pax) mater (mater) sjekati (secare) videti (videre) dom (domus) smrt (mors, mortis) ptak (pterón) etc. For this reason, the Slavic and Lettish languages are without doubt closer to the Latin and Greek than the Gothic, and this is closer than the Old High German.

6) The result of the sound shift brings it about that HG *z* (for *t*) fully takes the place of the *th*, as HG *ph* for *p*, and *ch* for *c*. This High German equating of the *z* (*ts*) with *th* is even more remarkable, in part because in no monument known to me is an actual exchange between *z* and *th* apparent (no trace of an OHG thiman, thein for ziman, zein), and in part because in the High German dialect the pure spirant *h* is strongly favored and never is exchanged with the spirant *s*. This exchange prevails precisely in the Slavic and Lettish languages, in which so many of the original gutturals appear assibilated, cf., cor, cordis, hěrza with the Lith. szirdis (pronounce *schirdis*), Bohemian srdce; canis, hund with the Lith. szũ; centum, hundert with the Lith. zũ (pronounce *sh* or *dsh*) answers to the Gk *kh*, Lat. *h* as: ziema (kheĩma, hiems), zeme (humus, cf. humilis and khthamalós, khamalós), zmogus, (homo, pl. zmones, homines; OPruss. smunents, homo), zasis (khĕn, anser); zengti, zengimas is the Germanic gangan, gang. One should compare, however, the AS sceort, Eng. short for cęort and even the OHG scurz for churz (above p. 175) as well as the hissing pronunciation of the Frisian, English and Swedish initials *c*, *k ch*.

The relationships of the consonants accordingly provide adequate proof of original relationship of the compared languages. Might not also, based on this, at the same time contacts between the vowels be detected? -- the analogy between the High German and Gothic vowel situation not lead to the conclusion that Latin vowels too must be connected with Gothic? The connection will be even more uncertain and disrupted for this reason because in the Germanic dialects with the same consonantal gradation we meet such varying and manifold vowels. Nonetheless there are still unmistakable similarities like those given below.

Addenda

(580-581) The relationship of the semi-vowels *v* and *j* (p. 9) to the spirants *v,s, h*, (p. 10) is still obscure. First of all, the lingual order has no semi-vowel at all. Secondly, the gutturals have a semi-vowel *j* which is distinct from the spirant *h*. Finally, the question arises whether the semi-vowel *v* falls together with the spirant *v*? I have already touched on this puzzle on p. 187. It is to be noted that semi-vowels (i.e. vowels with consonantal value) only develop from *i* and *u*, not from *a*, obviously not from the nonoriginal *e* and *o*. And since further *l* and *r* can develop to *u* and *i*, they are semi-vocalic in a reverse sense, i.e. consonants with vocalic value.

Is it related to the richer endowment of the throat sound series that the aspirate is occasionally withdrawn from it?

(583, 32) *madidus*, *mador*, Goth. *natjan*, OHG *naz*.

(584, 15) If one also assumed a fourth grade, then the sound would return to the first grade. Isolated items might possibly be put there, such as the *ch* and *z* in *châpi*, *hagestolz* cited in the addenda to p. 185 and 526; these however are non-organic exceptions. Never does such a thing show up in an established regular series.

(585-588) Some more examples are added here for the nine comparisons.

I, 1. *pallidus*, Lith. *palwas*, ON *fölr*, OHG *valêr*; Slav. *post* (*jejunium*) OHG *vasta*; Lith. *pauksztis* (*avis*) Goth. *fugls*; Slav. *plst* (*coactile*) OHG *vilz*; Slav. *pjast* (*pugus*) OHG *vûst*; Gk *péras*, Goth. *fêra*.

I, 2. *nepos*, OHG *nëvo*; Gk *kêpos*, OHG *hof*, *hoves*; *copia*, *hûfo*; *hoplê*, ON *hôfr*, OHG *huof*, *huoves*.

II, 2. Lith. *obolys*, Russ. *jabloko*, ON *epli*, OHG *epfili*, Russ. *obezjana* (*simia*) Bohemia *opice*, ON *api*, OHG *affo*.

IV, 1. *trituro*, AS *þærse*, OHG *driscu*; *tonitru*, AS *þærse*, OHG *driscu*; *tonitru*, AS *þunor*, OHG *donar*; Slav. *trn*, *tern* (*spina*) Goth. *þurnus* OHG *dorn*.

V, 2. *kardía*, con, *cordis*, *háirtô*, *hërza*; *radix*, ON *rôt*; *hoedus*, ON *geit*, OHG *keiz*; *madidus*, OHG *naz*; *kónis*, *kónidos*, ON *nit*, OHG *niz* (instead of *knit*, *hniz*); *nidus*, Slav. *gniezdo*, AS *nëst*, OHG *nëst*; possibly *nodus*, Goth. *nati* (consisting of knots) OHG *nezi*.

VII, 1. Gk *kêpos*, *hof*; *copia*, *hûfo*; *crinis*, *hâr*; *cerebrum*, *hirni*.

VII, 2. *pulex* (*pulec-s*) Slav. *blocha*, OHG *vlôh*.

VIII, 1. Slav. *gnjetu* (*premere*, *depsere*) OHG *chnëtan*).

VIII, 2. Lith. *nogas* (*nudus*) ON *naktr*, OHG *nacchot*.

IX, 1. *hoedus* (= *hoidus*) ON *geit*.

(591, 22) In the Slavic initial position the media of the second or third grade occasionally prevails, especially in the combinations *bl*, *br*, *gn*, *gr*, e.g. *blocha* (*pulex*) *brat* (*frater*) (*bronja*) (*lorica*, *Dobr.* p. 115) OHG *prunja*; *gnida* (*kónis*, *kónidos* *Dobr.* 195); *graditi* (*cingere*, Goth. *gaúrdan*) etc.; to the Germanic *hl*, *hu* correspond *chl*, *chv*, e.g. *chvila* (*more*) *hvîla*; *chlev*, *hleip* and many others.

(591, 24) *pilnas*, *plenus*, Slav. *pln*, *poln*.

Notes

1. The modification of the initial and final sounds in Old High German, Middle High German and Middle Low German is not taken into consideration here. [[return to text](#)]
2. The OHG mit, miti agrees with the Gk metá, hût, hûti with cutis, but not with Goth. miþ, ON hûdh. I doubt if other words cited in the note p. 159 and other assumed OHG words can be judged in the same manner. The contradiction to the comparison of the linguals is noteworthy in the words patĕr, mĕtĕr; pater, mater, frater; Goth. fadrs (?), brôþar; AS fāder, mōder, brôdher (cf. p. 514, 544); OHG vatar, muotar, pruodar; the Germanic languages agree among themselves and the Lat. frater with them; but should it be pathĕr and mĕthĕr? Hardly; all three have the same original tenues in Sanskrit. [[return to text](#)]
3. Different from individual corruptions which were not thorough, e.g. from the Swedish and Danish displacement of initial lingual aspirates by tenues, while labial aspirates remain: or the Danish media which is found medially, beside which the initial position maintains the tenuis. [[return to text](#)]

CHAPTER SIX

WILHELM VON HUMBOLDT

ON THE STRUCTURAL VARIETY OF HUMAN LANGUAGE AND ITS INFLUENCE ON THE INTELLECTUAL DEVELOPMENT OF MANKIND

*From Über die Verschiedenheit des menschlichen
Sprachbaues und ihren Einfluss auf die geistige Entwicklung
des Menschengeschlechts (Berlin: F. Dümmler, 1836), Chapter 19*

Editor's Introduction

An excerpt from Humboldt's highly influential monograph can do little more than indicate the far-ranging manner in which he presented his views about language. The whole is tightly organized and should be read as a unit for accurate understanding of Humboldt's position. This selection illustrates some of Humboldt's concerns, among them questions which are still occupying linguists.

One is, how should we deal with language in change. A subsequent answer was to abstract the system from speech --language from parole--and make it the essential concern of linguists. By this view linguistic analysis could arrive at items and their arrangements; linguistic forms are arranged for selection and order. After the items and their arrangements are described, the historical linguist might compare two selected stages of a language and deal with the changes between them. Humboldt's view of language as an organism in constant change does not permit such a simple answer. He would have looked with favor on the attempts to introduce linguistic methodology which does not first require reduction of language to a state--which can manage processes in a descriptive presentation.

A second concern exemplified in the excerpt is the problem that Sapir dealt with under drift. Here too Humboldt is not dogmatic. He does not hypostatize; he would probably have objected to the notion of therapeutic sound change. He simply suggests that a principle can be noted; he discusses its functioning in language and leaves it up to others to make use of this guideline in their efforts to understand language.

The excerpt also illustrates Humboldt's well-known concern with typology. Like that of the Schlegel brothers, this was to be overwhelmed by the concentration on genealogical classification. The types were not exact enough to arouse enthusiasm. In discussing them, Humboldt does not propose that they are to be rated against one another, but rather against their adequacy in meeting the varied demands of the human intellect. Nor does he relate any type to historical progress or to stages of culture. The aim was simply to understand language. Other ideas are discussed more fully in other widely cited sections of the monograph such as the eighth on form [in which Humboldt asserts that language is not a finished product (*ergon*) but rather an activity (*energeia*)] and the eleventh on the inner form of language. These have been cited especially in connection with the Sapir-Whorf hypothesis. Humboldt held that the structure of a language reflects the culture of its speaker and that the differences between languages parallel those between speakers, but he did not specify the parallels nor did he insist that it was the language which brings about the differences. These views on the close relation between language and other components of culture appeal especially to linguists such as Weisgerber and his associates, who object to a purely mechanistic approach to language. Humboldt's primary publications dealt with language, but he was interested in the humanities in general. A close friend of Schiller and an early commentator on Goethe, Wilhelm von

Humboldt (1767-1835) belonged to the leading intellectual groups of his day. Though he studied political science, he devoted himself to his interests in literature and esthetics until 1801 when he entered service with the Prussian state; repelled subsequently by its reactionary policies, he returned to his private pursuits in 1819. He was proclaimed for his knowledge of languages, among them Basque, which he made known among linguists. Although he did not travel as widely as his younger brother, Alexander (1769-1859), his control over languages extended beyond those of Europe, as illustrated in the references of the excerpt. Like the ancient Kawi language of Java, to the grammar of which the monograph is an introduction, languages were of primary interest to Humboldt for his chief concern, the relation of language and culture.

19. On the Primary Differences between Languages in Accordance with the Purity of Their Principle of Formation

Since language, as I have already mentioned frequently above, always possesses only an ideal existence in the heads and spirits of men, never a material one -- even when engraved on stone or bronze -- and since the force of the languages which are no longer spoken depends largely on the strength of our own capability to revivify them, to the extent in which we can still perceive them, in the same way there can never be a moment of true standstill in language, just as little as in the ceaselessly flaming thought of men. By nature it is a continuous process of development under the influence of the actual intellectual force of the speaker. Two periods which must be definitely distinguished arise of course in this process: the one in which the sound-creating force of the language is still in growth and living activity; the other in which an apparent standstill takes place after complete formation of at least the external form of language and then a visible decline of that creative, sensual force follows. But even from the period of decline new principles of life and new successful reformations of language can develop, which I will touch on in greater detail below.

In the course of development of language generally, two mutually limiting causes work together: the principle which originally determines the direction, and the influence of the material which has already been produced, whose power always stands in reverse relation to the force of the principle which is asserting itself. There can be no doubt of the presence of such a principle in each language. Just as a people, or a human capable of thought in general, adopts elements of a language, in the same way it must combine them into a unity, quite instinctively and without a clear realization of the process; for without this operation thinking by means of language in the individual and mutual understanding would be impossible. One would have to make this very assumption if one could rise to an initial creation of a language. This unity however can only be that of an exclusively prevailing principle. If this principle approximates the generally language-forming principle in man to such an extent that this permits its necessary individualization, and if it penetrates the language in full and unweakened power, then it will run through all stages of the course of its development to such an extent that in place of a diminishing power a new power will arise again and again which is suitable for the continuing course. For it is characteristic of every intellectual development that its power does not actually die but simply changes in its functions or replaces one of its organs with another. If however something which is not based on the necessity of the form of the language is already mixed with the initial principle, or if the principle does not truly penetrate the sound, or if something which is also wrongly formed joins a not purely organic material and leads to greater deviation, then a strange power becomes opposed to the natural course of development, and the language cannot gain new strength through the pursuit of its

course, as should be the case for every proper development of intellectual forces. Here too, as in the designation of the manifold associations of thought, language needs freedom; and one can regard it as a secure sign of the purest and most successful linguistic structure if in it the formation of words and constructions undergoes no other limitations than are necessary to combine regularity with freedom, that is, to assure for freedom its own existence through limitation. For the course of development of intellectual capability generally stands in natural harmony with the correct course of development of language. For since the need of thinking wakens language in man, in the same way that which flows purely from its conception also by necessity advances the successful advance of thinking. If however a nation equipped with such a language would sink into intellectual inertia and weakness for other reasons, it would be able to work itself out of this state more simply through its language. Conversely the intellectual capability must find in itself the lever for its development, if it is equipped with a language deviating from that correct and natural course of development. Then the means created by this capability will have an effect on the language, not to be sure a creative one, because its creations can only be the product of its own life-force, but constructing in it, lending its forms meaning, and permitting a use which it had not placed in them and to which it would not have led.

We can then determine a difference in the countless variety of current and lost languages which is of decisive importance for the continuing education of mankind, namely that between languages which have developed powerfully and consistently from a pure principle in lawful freedom and those which cannot boast of this advantage. The first are the successful fruits of the linguistic instinct which flourishes among mankind in manifold exertions. The latter have a deviant form in which two things combine: lack of strength of the feeling for language, which always exists in pure form among man originally; and a one-sided malformation which arises from the situation that to a form of sound which does not by necessity flow from the language others are combined, attracted by this malformation.

The above investigations provide a guide-line to study this in actual languages and to present it in simple form, however much one thinks he sees a bewildering mass of detail in them initially. For we have attempted to show what is important in the highest principles and in this way to establish points to which linguistic analysis can be raised. However much this path may still be clarified and smoothed, one comprehends the possibility of finding in each language the form from which the character of its structure flows; one can also see in the material sketched above the measure of its advantages and its deficiencies.

If I have succeeded in depicting the inflectional method in its total perfection, in showing how it alone provides the true, inner firmness for the word with regard to the intellect and the ear, and at the same time distinguishing securely the parts of the sentence in accordance with the necessary intertwining of thoughts, then there is no question that it exclusively preserves in itself the pure principle of linguistic structure. Since it takes each element of speech in its twofold value, in its objective meaning and its subjective relationship to the thought and language, and designates this double relationship in its proportional weight through forms of sound designed for the purpose, it increases the most original essence of speech, articulation and symbolization, to its highest grades. Accordingly the question can only be, in which languages this method is preserved most consistently, completely and freely. No real language may have reached the pinnacle. But above we saw a difference of grade between Sanskrit and the Semitic languages: in the latter, inflection in its truest and most unmistakable form and connected with the finest symbolization, yet not carried through all parts of the language and limited through more or less accidental laws--the bisyllabic word form--the vowels used

exclusively for designation of inflection--the hesitation about compounding; in the first, inflection preserved against every suspicion of agglutination through the firmness of the word unity, carried through all parts of the language and prevailing in it in the highest freedom.

Compared with the process of incorporation and loose attachment without a true word unity, the method of inflection seems to be a principle of genius, proceeding from the true intuition of the language. For while such languages are anxiously concerned with uniting the individual entity into a sentence, or with representing the sentence immediately unified, the method of inflection indicates directly the components in accordance with a particular thought construction, and by its nature cannot separate the relationship of a component to the thought in speech. A weakness of the languageforming instinct at times does not permit the method of inflection to go over to the sound, as in Chinese, and at other times not to prevail freely and alone, as in the languages which individually follow the process of incorporation. The effect of the pure principle can however be checked also through one-sided malformation, when an individual form of construction, as for example the specification of the verb by means of modifying prefixes in Malay, becomes prevalent to the neglect of all others.

However different the deviations from the purest principle may be, every language can still be characterized for the extent to which the lack of designations for relationship is visible in it, and the attempt to add them and raise them to inflections, and the expedient of characterizing as a word what speech ought to present as a sentence. From the mixture of these principles will proceed the essence of such a language, but as a rule an even more individual form will develop from the application of them. For where the full energy of the guiding force does not preserve the proper equilibrium, there a part of the language readily attains a disproportionate development with unfairness to others. From this and other circumstances individual excellences can also arise in languages in which one cannot otherwise recognize the character of being excellently suited organs of thought. No one can deny that Chinese of the old style carries an impressive dignity through the fact that only weighty concepts join one another directly, and in this way it attains a simple greatness by seeming to escape to pure thought through speech in discarding all unnecessary secondary relationships. The real Malay is not unjustly praised because of its ease and the great simplicity of its constructions. The Semitic languages preserve an admirable art of fine distinctions of meaning through many vowel gradations. Basque possesses in its word formation and in its constructions a special strength which proceeds from brevity and boldness of expression. Delaware and other American languages combine into a single word a number of concepts, for the expression of which we would need many. But all of these examples only prove that the human intellect, however unbalanced the course it may take, can always produce something great and productive of fruitfulness and enthusiasm. These individual points do not decide the preeminence of languages to one another. The true preeminence of a language is simply to develop from a principle and in a freedom which make it possible for it to maintain all the intellectual capabilities of man in vigorous activity, to serve them as a satisfactory organ, and to stimulate them constantly through the sensuous fullness and intellectual regularity which it preserves. Everything of benefit to the spirit which can develop from language exists in this formal characteristic. It is the bed in which the spirit of language can propagate its waves, in the secure confidence that the sources which they lead him to will never be exhausted. For he actually glides on it as on an indeterminable depth from which he can draw more and more, when more has already flowed to him from it. Accordingly this formal measure can be applied to languages only if one tries to bring them under a general comparison.

CHAPTER SEVEN

RUDOLF VON RAUMER

LINGUISTIC-HISTORICAL CHANGE AND THE NATURAL-HISTORICAL DEFINITION OF SOUNDS

*"Die sprachgeschichtliche Umwandlung und die
naturgeschichtliche Bestimmung der Laute,"*
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Editor's Introduction

The great advance in historical linguistics after the early publications of Grimm, Bopp and others was in knowledge of phonetics. Usually we assume that this increased knowledge clarified historical problems, as in accounting for the "first set of exceptions in the consonant shift" -- the retention of the voiceless stops after fricatives, for example in Gothic *ist* = Lat. *est*. But from von Raumer we learn that the influence also went in the other direction, that the problems which arose in historical linguistics led to an increasing need for competence in phonetics. In keeping with this need to move away from the "shuffling of letters," von Raumer set out to arrive at an accurate statement of articulatory phonetics.

The essay presented here recapitulates many of the conclusions presented by von Raumer in his monograph on *Aspiration and the Consonant Shift*, published when he was 22. In this he attempted to clarify the relationship of the Greek stops to the Germanic; he concluded that *ph th kh* were aspirates, like the related *bh dh gh* in Sanskrit. By this clarification he defined with greater precision the variety of sounds that Grimm combined in his aspiratae. He also made the suggestion for which Grassmann later was given credit -- that Sanskrit never shows aspiration in two successive syllables: *Aspiration and the Consonant Shift* p. 74, § 64: "For since Sanskrit never aspirates two successive syllables, one can assume as the original form of *bud'* with equal justification *b'ud'*. Then *biudan* would simply be the usual transition of *b'* to *b*." But this insight of von Raumer's was not noted by his contemporaries. Apparently review of all the relevant examples, as by Grassmann, was necessary to attract the notice of linguists. In devoting attention to phonetics, von Raumer dealt with the spoken dialects, citing the pronunciation of Low German, Bavarian, Swabian variants. This attention to the dialects was followed by specific concentration on them, as his concern with phonetics led to the definitive treatments of Sievers and Jespersen at the end of the century.

Rudolf von Raumer (1815-1876) had a quiet career, completing his studies at the University of Erlangen and holding a position there until his death. With a chair at a university which was not a center for linguistic study he was somewhat of a loner, who did not participate in the struggles between the traditional grammarians and the more rigorous linguists. Possibly his aloof position also led to the neglect of his writings. Both in content and style, however, they seem more modern than most linguistic works of his time. In spite of his problems in developing a linguistic vocabulary and his occasional faulty reasoning (as in his interpretation of Gothic *þ* as an aspirate) we consider him one of the important contributors to the developing methodology of historical linguistics.

Foreword

Through the discoveries of historical linguistic investigation, the significance of phonetics has been placed in a new light. The more the importance of phonetics becomes recognized, the more apparent becomes the need to understand as clearly and precisely as possible its subject matter, namely the sounds themselves. This understanding, insofar it is in the sphere of direct observation, lies in the area of the physical sciences. Therefore it is highly desirable that important scientists should devote themselves to the study of this subject. Among the many valuable studies, which have been recently undertaken in this area, I intend to dwell only upon those which Johannes Müller and Ernst Brücke have achieved for a determination and arrangement of the sounds of language. Investigations of this type need above all a common solid foundation. And exactly that has been furnished by Brücke's publication¹ in a manner as clear as it is accessible. Only after agreement has been reached on such a basis can one discuss the more complex and deep-seated questions of scientific as well as historical investigation of sounds. If in regard to some of these questions I maintain previously proposed findings opposed to Brücke's views, I ask that this not be considered as personal obstinacy. I have subjected my assertions to a renewed careful examination. But the result of this examination has only convinced me anew, that my views concerning aspiration and the sound shift, stated in 1837, are essentially correct. The relationship, however, in which this particular sound development stands to the various types of sound change in general, will be clarified partly by the following treatise, partly by comparison of it with my other linguistic works.

I. The Natural-historical Determination of Sounds

1. The natural-historical determination of sounds must first devote itself solely to the sounds of the present as object of immediate observation. The chief aim of such observation is the manner of utterance of the sounds. Differences, which the ear perceives or believes it perceives, are not to be dismissed. But in the realm of precise natural-historical observation they are only then to be dealt with, when one can establish with certainty their diversity of production.²

2. We distinguish primarily the tones of the human voice and the sounds of human speech. The tones are produced through the vibration of the vocal cords in the glottis; the sounds are produced through the deflection of the exhaled airstream against the organs lying between the epiglottis and the lips. Of the tones produced in the glottis, one distinguishes between loud and soft speech (*vox clandestina*). Loud speech is produced when we accompany utterance of sound, as far as it is possible, with tones from the vocal cords. Soft speech is produced when we speak without simultaneous sounding of the vocal cords. We accompany soft speech too with a noise, differing from the production of sounds, which we can clearly perceive especially in whispering the vowels.³

3. The sounds are divided into classes on the basis of three different criteria, namely 1) according to the position of the organs, 2) according to the type of air influx, 3) according to the organs, by which they are produced.

4. According to the position of the speech organs, the sounds are divided into 1) those which require for their utterance a complete closure of the organs (stops, *literae explosivae*), and 2) those which are produced without a complete closure of the organs (continuants, *literae continuae*⁴). The latter sounds are divided again into those, which are produced by air passing through such a narrow passage, that the noise of air deflection becomes clearly audible

(consonantal continuants, consonantes continuæ) and those for which, because of the wideness of the opening this is not the case (vowels).

5. The second criterion of classification is the type of air influx. Usually one divides the consonants into hard and soft, so that, for example, the German *p* is called hard, the *b* soft, and likewise *β* (in *gießen*) hard, and the *s* (in *sagen*, *Wesen*) soft. The objection is raised against this division, however, that it is wavering and without clearly fixed limits, for what one person calls hard, another will consider soft. Another criterion has therefore been advanced, which provides a definite limit, namely whether the tone of the voice can be combined with the utterance of a sound or not. Sounds are accordingly divided into voiced and voiceless. The difference is most noticeable in the pronunciation of some continuants, for example, the *s* and the *β*. While one sustains the (so-called soft) *s*, one can simultaneously produce a singing tone; as soon as one passes to the (hard or sharp) *β*, however, the singing tone immediately ceases. This difference, which was known already by the old Indian grammarians, is an excellent criterion, because it replaces an uncertain and indefinable difference for the ear with a certain and verifiable distinction in utterance. But since the tone of the voice only accompanies the sound and is not essential to it, one will do better by seeking the reason why it becomes impossible for certain sounds to combine with the tone of the voice, and then to take this cause as the criterion for distinction. This cause, however, is none other than this: certain sounds are produced by blowing (flare), while others are formed through breathing (halare). But blowing and singing exclude one another; one can convince himself of this at once, if one tries to sustain a singing tone when one passes from breathing to blowing.⁵ The difference then that one designates by voiceless and voiced⁶ I would prefer to express by blown (literae flatae) and breathed (literae halatae).⁷

6. Concerning the division of the sounds according to the organs or the places of articulation, I refer to Brücke's exhaustive presentation; for illustration, however, I wish to give at this point merely a survey of the common stops and spirants (consonantes continuæ spirantes) of the general New High German language. I limit myself to these two classes, because primarily they are to be considered in the course of this paper. I append the column for vowels merely in order to indicate the position of the consonantal continuants between the stops and the vowels.

Place of Articulation	Stops (Explosivæ)		Consonantal Continuants (Conson. continuæ)		Vowels (all halatae)
	blown (flatae) (= voiceless)	breathed (halatae) (= voiced)	blown (flatae)	breathed (halatae)	
					are not always assignable to individual places of articulation with the same certainty as the consonants.
I. Throat sounds (gutterales)	k	g	ch (in <i>Sache</i> , Brücke's X ²)		
II. Palatal sounds (palatales)			ch (in <i>Sichel</i> , Brücke's X ¹)	j (in <i>jeder</i>)	

III. Cerebral sounds (cerebrales)			sch (in <i>schön</i>)		
IV. Dental sounds (dentales)	t	d	ß (in <i>gießen</i>)	s (in <i>sagen, Wesen</i>)	
V. Labial sounds (labiales)	p	b	f	w ² (= French V) w ¹ (the <i>u</i> in <i>Quelle</i>)	

This table of the common stops and spirants of the general New High German language conforms to the one given in my paper on aspiration and the sound shift. Only in one single instance do I disagree thereby with Brücke, in reference to the cerebral sibilant (*sch* in *schoen*). I have repeated the experiments, which in conjunction with the old Indian grammar, disposed me to assign this sound to the cerebrals, and they have only convinced me again that its place of articulation lies between that of *ch* (in *Sichel*, Brücke's X¹) and that of β (and *s*). One can convince himself of this fact, if one produces our spirants, one after another with vox clandestina, whether the sequence be from back to front or from front to back. One may first narrow the air passage in one such sequence by beginning with the *ch* in *Sache*, passing then to that in *Sichel*, thereupon to the *sch* and finally the β . Immediately upon reaching the β , one should return to the *sch*. It will be very easy to notice that the place of articulation of the *sch* lies somewhat farther back than that of the β . This is the most usual pronunciation of the NHG *sch*. The determination of this sound becomes somewhat complicated, however, in that there is a third sibilant besides β and *sch*, which is pronounced somewhat farther back than the usual German *sch*. Sanskrit has this sound in the palatal sibilant श्र, according to Bopp's designation 's. It is produced by approaching the palate with the tongue in the same area, where we pronounce the *ch* in *Sichel*. But while we hold the part of the tongue, which lies in front of the place of articulation, as far as possible from the palate in pronouncing *ch* (in *Sichel*), in pronouncing the palatal sibilant we must approach the palate with the tongue. Through a gradual transition from the positioning of the organs of articulation of the palatal sibilant (श्र, s') to that of the pure cerebral sibilant (श्र = s', *sh, sch*), we obtain an uninterrupted series of traditional sibilants lying between the palatal s' and the cerebral s'. A portion of our fellow-countrymen use these sibilants in place of the pure cerebral s' (= *sh, sch*).

II. The Historical-Linguistic Change of Sounds

1. In the course of time the words of language have changed their sounds. So much is certain and, moreover, this is one of the most important facts for the history of languages. We ascertain that the sounds of words have changed when we compare the older state of languages with the more recent. The process of the change itself however has not yet been investigated enough. If we penetrate deeper into the darkness which in many ways veils these questions, we find a huge multitude of highly different processes at work. And that is even more troublesome, we find that to isolate these processes becomes even more difficult, because often quite heterogeneous occurrences lead to almost the same result.

2. When the change of languages and especially of language sounds is spoken of, there are almost immediately references to the "spirit of the language" and its wonders. I have no intent whatsoever of deprecating the profundity with which the more recent research distinguishes itself. But I think it is about time that we turn our attentions to reality and its phenomena with

clear and impartial minds. When we do, we find that the "spirit of the language" in itself and apart from people does nothing, but rather that all changes in language actually are produced by the people. To just what extent their production is really a product of man remains a matter of conjecture. It is enough that the changes themselves are objects of observation as soon as they become apparent.

3. If first of all we direct our observation to that which happens before our very eyes, or better, before our ears, we will discern the following facts:

1) Every single person changes his speech in the course of his life. As a child, before the complete development of his speaking ability, he speaks many words with sounds, which he later abandons. If he attains an old age and loses his teeth, not only does the sharpness of his articulation disappear, but also in more than one instance real modifications of the previously pronounced sounds become apparent.

2) From this alone it follows that not even a single family, which consists of old people, adults and children, speaks one and the same language.

3) But even the adults among themselves never have exactly the same language, not even phonetically. This follows necessarily from the principle of individuation. Every human being has his own peculiarly formed organs of speech as well as his own particular facial features. Now the production of sounds is conditioned by the form of the speech organs, which confine the sound-producing air stream. Therefore, although our ear does not perceive the resultant difference, it is nevertheless present. But in many cases our ear is very readily able to detect the difference.

4) A further and not infrequently occurring difference results from the fact, that one person articulates a sound at a somewhat different place than another, and therefore, strictly speaking, actually produces an entirely different sound.

4. If we consider the possibilities which could result from the above discussed differences among relatively great numbers of people, we find them to be of most varied kinds. If the change of a sound heard in an individual's speech is caused by the inability of the vocal organs to produce the heard sound, this individual is forced to face the particular change wherever the sound in question occurs. Let us consider then an entire family, or an even larger social group consisting only of individuals which suffer from the foresaid disability. The sound pronounced earlier will necessarily disappear in this entire group, and the other sound will take its place.

On the other hand, however, let us consider a family in which one member, for example the father, has that peculiarity of speech, but the mother does not. The case may then occur that the children imitate either the father entirely or the mother. But it can also be that, being capable of imitating both, the children imitate their father in some words, the mother in others, and in some words perhaps they waver between one parent and the other.

5. If the change of the heard sound is not based on the inability of the speaker to produce the sound, but rather only on the fact, that the changed pronunciation is easier for the speech organs than the traditional one, then usually the results will also be different than in the previously discussed instances. It is possible then that certain members of the group will retain the old pronunciation. But since the change is not due to an individual peculiarity of the

speaker, but rather to the mechanism of the human speech organs in general, among the other members of society it will also be effected, not merely through imitation, but also through the structure of their own speech organs. This is the case in most instances in which one sound is altered by the environment of another.

6. A large part of the changes, which the sounds of words undergo in the course of time, can be accounted for in the ways discussed above. Especially if one remembers in addition, that the mere inexactness of hearing and speaking causes sound changes, which are very similar to the four discussed already. We find however another type of alterations belonging to a class of sound changes different from those previously discussed. And these changes are namely those in which, firstly, there is no question of mere inexactness of transmission, because they are immanent within the entire vocabulary or at least a very large part of it. Secondly, in these changes there exists no inability to produce the earlier sound, because the same sound, which is abandoned in one place, reappears at another. And thirdly, in these changes it has not been possible to prove an influence of neighboring sounds as the cause of the change. In this category belongs the most remarkable sound change in the Germanic languages: the sound shift of the mutes.⁸

7. The ways in which one sound changes into another can be twofold. Either a certain sound changes swiftly into another particular sound, or it passes gradually through a continuous series of intermediate sounds. In the case of sound changes through neighboring sounds, especially among vowels, there is often this gradual transition. For the sound changes discussed under number 6, this gradual transition is especially applicable.

8. It is naturally not my intention above to exhaust the diverse types of sound change. Otherwise, sound change through analogy, for example, would also have to be treated. But I would prefer to reserve this and other related questions for another occasion.

III. Which Means Do We Have at Our Command for Investigating Sound Changes?

1. We are not speaking here of the confirmation of the fact, that the sounds of words have changed. Neither is it a question of the form of words in one language or another. Rather, we are concerned about the process itself, by which the one form of words and sounds has replaced the other.

2. Neither is it a matter here of how word forms, which were already present in the spoken language, came to be taken into the written language. We are asking, rather, how one form of a word replaced another in the spoken language itself.

3. Although the question then about this process itself is different from the question concerning sounds which in one language are to be found in place of others in another language; the research on the latter question forms the basis for the investigation of the former. Indeed the excellent activity in the realm of comparative phonology and its admirable results lead us to believe that we shall also be successful in getting more clues about the above-mentioned processes. It is our very worthy linguists, whom we have to thank for the many results, and whose work has laid the foundation for all further investigations. Above all, it has been the comparative studies of the Indo-Germanic languages which have paved the way for us. I mention only the works of Rask, Bopp and Pott concerning the connection of the Asiatic and the European branches of the Indo-Germanic languages, the epochal Germanic

grammar of Jakob Grimm, and the research in the Romance languages by Diez, in the Slavic languages by Miklosich and Schleicher, in the Celtic languages by Zeuß.

4. All of these works not only furnish the material for the investigation of sound change, but they also pave the way to this objective through the contributions, which they make toward the solution to what Diez, in the second edition of his Grammar of the Romance languages, has recently accomplished in this field. In fact the works of Diez quite clearly direct our attention toward both points; research must now be primarily focussed on these. The first of these is the investigation of the living dialects in the most specific and the most general sense of the word, and secondly, the physiological investigation of not only the living languages, but also of the languages no longer spoken.

5. Besides the very worthwhile treatment of dialects of entire ethnic groups, the investigation of living dialects will have to concern itself above all with the most accurate examination and representation possible of the particular diction of individuals. These studies will give us the possibility of drawing conclusions from the thousand-fold synchronic diversity on the diachronic succession.⁹

6. The second requisition: the investigation of sounds in nonliving languages is always attended by great difficulties. And yet this inquiry is the indispensable pre-condition if we want to advance from the mere demonstration of alphabetical modification to the investigation of sound change. The means at our command for converting the written letters of old languages into living sounds are quite diverse. To some extent they are provided in the structure of the languages themselves. Physiological and euphonic sound changes within the language concerned also offer numerous clues. Moreover, there is the value of the sounds in meter, which gives us so much information, especially in the classical languages and Sanskrit, and their positions in rhyme, which is so important for many languages of the Middle Ages. We do not want to review here all of the particular aids for determining the sounds of dead languages: the introduction of individual words in other languages, their transcription in another alphabet, and so forth. Rather, we shall limit ourselves to emphasizing only two means of determination relevant to the old chief languages of the Indo-Germanic family: the statements of the old native grammarians and the linguistic-historical change of the sounds themselves.

7. The importance of the old grammarians for determining the sounds is generally recognized. The general complaint, however, is that their assertions are partially ambiguous and partially difficult to understand. It is evident that this complaint is not entirely without foundation, in that the most discerning and candid scholars have arrived at quite different conclusions in many of the most important points. It should be pointed out, however, that the Indian grammarians are incomparably more accurate, more comprehensible and more explicit in their definition of sounds than the Greeks, who are in their own way also quite discriminating.

8. When I designate the historical-linguistic change of sounds as one of the means for determining sounds no longer spoken, I must first protest against a misunderstanding. In reference to Max Müller's estimable article on the languages in the area of the oriental war, Brücke says:¹⁰ "It must be noted that Max Müller considers the *e* and *o* to be diphthongs which differ from the true diphthongs, like the English *J* and *ou* in *out* only in degree. It is hardly comprehensible how a man of Max Müller's intelligence could defend such an error, however widely accepted, after he had read the investigations of Willis. The cause of this particular error is, as it appears to me, another error of even greater range, which he

unfortunately shares with many other linguists. They believe that the nature of a speech sound can only be determined by historical and comparative philological research, for only this can be meant by the author when he refers to theoretical analysis. This determines how sounds replace one another at different times and among different peoples. But even if this occurred according to more immutable laws than it actually does, even then the analysis of individual sounds with regard to the conditions, under which they arise would be left to direct observation and scientific experiments." I subscribe fully to this statement of the discerning physiologist, and wish moreover that he would some day subject to a scientific examination the definition of sounds found in our otherwise quite laudable grammatical works. He would encounter there a great number of things which are almost more incredible than the above cited views of Max Müller¹¹ concerning the alleged diphthongal nature of the Sanskrit ē and ō. I have therefore no intention of wanting to determine the nature of sounds according to linguistic-historical processes that would be contradictory to natural-historical observation. What I assert is rather: When we are uncertain about which sound is expressed by the symbol of a non-living language, among other arguments we can consider the question: What development has the sound of this symbol undergone in the course of linguistic history? From the answer to this question we can draw conclusions on the nature of the old sound. It is quite apparent, that by this method we would never enter into conflict with scientific conditions of sound production. For our entire investigation is to serve only the purpose of finding the historically true sound belonging to the symbol among the many scientifically possible ones. I shall demonstrate this with an example. Old High German had two *i*'s, a short and a long. Etymologically, the short *i* corresponds to a Gothic (short) *i*; the long one to a Gothic *ei*. For example, Old High German *stilu* (furor) is in Gothic *stila* (with a short *i*); on the other hand, Old High German *stīgu* (scando, with long *i*) is in Gothic *steiga*. Now if someone should want to conclude that the OHG *ī* is a diphthong, because it came from Gothic *ei*, then he would be guilty of the error of Max Müller, which Brücke rightfully criticizes above. If he says however: "The OHG *i* is long, where it corresponds etymologically with a Gothic *ei*; but where it stands in the position of a Gothic *i* (always short) it is short," then he will be right, insofar as direct proofs contrary to this assumption can not be adduced from elsewhere.

IV. The Natural-Scientific Determination of the Aspirates and the Germanic Sound-Shift

1. One of the most remarkable sound changes in the entire area of Indo-Germanic languages is the transformation which the mutes have undergone in the Germanic branch of this great language family. This transformation is not only among the most remarkable because it is one of the most important for etymological research, but rather because it runs through an entire family of sounds with amazing regularity and, moreover, has occurred in the course of centuries not once, but twice, according to the very same principles. This transformation, to which Jacob Grimm gave the name "sound shift," consists therein, as is well-known, that the Germanic languages of the Gothic stage have a tenuis in place of a Greek media, and in place of a Greek tenuis, an aspirata, and finally in place of a Greek aspirata, they have a media. But the same transformation, which Gothic experienced in relation to Greek, Old High German undergoes a second time in relation to Gothic. In spite of all restrictions and exceptions, which the course of this development undergoes, we have accordingly in this transformation a process which is undeniably based on the nature of these sounds.

2. In order to comprehend the progress of this development, however, it is absolutely necessary to determine correctly the nature of the sounds concerned in it. The tenuis or blown (= voiceless) stops cause us no difficulty. The languages still living today have them as well

as the dead languages, and the essential agreement of our *k, t, p* with the Old Greek *k, t, p* is not disputed. The mediae would give us somewhat more difficulty, if at the outset we have to attempt to determine relatively exactly the meaning of this concept, which the Old Greek grammarians identify with the expression *mésa*. For the moment, however, we can put aside this investigation, for the specific peculiarities of Greek pronunciation are not our concern in dealing with the law of the sound shift, but rather the sounds, which in the original Greek stage etymologically corresponded to the Gothic *tenues*, were the breathed (= voiced, = soft) stops, accordingly in the main our *g, d, b*.

3. The difficulty lies in the determination of the sound of aspirates. Twenty-one years ago I made the attempt to grasp the law of the sound shift more accurately by proceeding beyond the mere etymological comparison of letters and trying to penetrate into the historical-physiological process of the sound change itself.¹² Among the results of this investigation was a more exact determination of the Greek and Sanskrit aspirates, a precise distinction of them from mere spirants (friction noises) and the proof, that precisely the aspirates played a major role in the process of the sound shift, a role, which the spirants, being quite different from the aspirates, were incapable of assuming. The main difference between aspirates and spirants was found to be, that the aspirate was a stop (*explosiva*) with after-sounding, while the spirant is a continual sound (*continua*), produced not through the closure, but rather through the mere constricting of the speech organs.

4. Now after many years of further research I would, of course, modify in many respects the views which I expressed in my article of 1837. Yet I still hold to the entire course of the investigation as well as to its essential conclusions, believing I can refute everything which has been said against my findings. The conclusions published by me would receive the strongest blow if the views which a perceptive physiologist recently postulated concerning the nature of the old aspirates had any basis. For Brücke is of the opinion in his article mentioned frequently above, that the old aspirates, the Indian as well as the Greek, were merely fricatives (*spirantes*). He attempts to support his opinion with the most diverse arguments, and I feel myself obliged, therefore, to analyze more closely his argumentation.

5. We shall first discuss the Sanskrit aspirates. Here Brücke begins his exposition with an argument, which he draws from the orthographical designation of the Sanskrit aspirates. "In the *Dêvanâgarî*," he says, "their signs have nothing in common with those of the respective stops; only the sign for *t²* (*t* of the cerebral group) has an unmistakable resemblance with that of its aspirate. This must be pointed out, because the almost complete lack of correlation of the signs is not entirely without importance for the evaluation of the nature of the sound."¹³ To the same degree as the latter is of importance precisely for the *Dêvanâgarî*, Brücke's argument will obviously refute his own views, as soon as the signs for the unaspirated stops reveal themselves to be in evident correlation with the signs for the corresponding aspirates. With a great number of signs, however, this correlation is not subject to the least doubt, and moreover is restricted by no means merely to the *t* of the cerebral series. One glance at the *Dêvanâgarî* signs will convince us of this fact. Let us compare in the guttural series क (ka) and ख (kha), in the palatal series ज (ja) and झ (jha), and in the labial series प (pa) and फ (pha). How one wants to explain the origin of this similarity depends naturally on the views one has in general on the origin and development of the *Dêvanâgarî*.

According to the present grammatical tradition of the Indians, "each aspirate is pronounced like its corresponding non-aspirate, but with an accompanying, clearly perceptible *h*."

Consequently one may not pronounce ख (k^h) like a German *ch*, फ (p^h) not like *f*, or थ (t^h) like an

English *th*; but according to Colebrooke क् (k) is read like *kh* in *inkhorn*, फ (p) like *ph* in *haphazard*, and थ (t) like *th* in *nuthook*. The relationship is the same with the other aspirates."¹⁴ Even Brücke cannot deny this. He is of the opinion, however, that the present pronunciation of the Sanskrit aspirates is not the original, that they were rather mere fricatives (spirants): क् (k) sounded like our *ch* in *Spruch*, फ (p) like *f* and so forth.¹⁵

To determine whether this is in fact true, we shall have to consult the older Indian grammarians. In the annotation to Pânini's Grammar we find a survey of the Sanskrit letters with indication of the manner of production in regard to the several speech organs as well as the position of these organs.¹⁶ Here all of the aspirates k', g', etc., as well as the corresponding non-aspirated stops are counted among the letters, whose utterance requires sprista, that is, the contact of the organs.¹⁷ I would not know, how one could any more clearly characterize the nature of the stops. But perhaps Brücke wants to maintain that the annotations to Pânini are not old enough for him, rather that they stood under the influence of that later change in the pronunciation of the Indian aspirates which was assumed by him. Let us look then for the earliest evidence of Indian grammar. In the Prâtisâkhya of the Rîgvêda a representation of the sounds of Sanskrit has been preserved, which leads us quite far back in Indian antiquity. The very alphabet which precedes the first *patala* shows us how closely the aspirates were associated with the corresponding non-aspirates even in those very earliest times. For the letters are represented in such a way, that every aspirate forms a single word with the corresponding non-aspirate, which, through the dual ending (au), indicates the copulative composition of both letter-names. Thus ka and kâ are joined to form the word kakâu, ga and gâ to form the word gagâu, and so on.¹⁸ Decisive, however, is the naming and definition of the aspirates in this old grammatical work. For the ten Sanskrit aspirates (k', g', ç', ç', ð', ð', t', d', p', b') are brought together with the ten corresponding unaspirated stops and the five nasal consonants under the expression sparsâs. This expression comes from the same word spris' (tangere), to which the word sprista (contact) in the annotations to Pânini belongs. All of these sounds, including the aspirates, are accordingly designated as contact sounds by the old grammarian and are quite expressly distinguished from the semi-vowels (*j, r, l, v*) and the breathed sounds (ûsmâ), to which *h* and the sibilants are ascribed. As a clinching argument, one old annotation interprets the passage to the effect, that the sparsâs are the letters in the utterance of which the speech organs touch one another.¹⁹ For all fifteen sounds, which with the aspirates form one and the same class, there is no doubt of this contact; for also in the nasal consonants the actual speech organs are entirely closed and only the nasal passage remains open. It is therefore quite clear what the old grammarian means with the designation sparsâs contact sounds. Furthermore there can accordingly be no doubt, that also the aspirates were produced in his time through actual contact of the speech organs, that is, as stops.

I believe herewith to have given the proof, that the Sanskrit aspirates were stops, and it only remains to put in its right place an argument especially emphasized by Brücke. Max Müller says in the above-mentioned publication:²⁰ "According to the Sanskrit grammarians we produce the aspirate as a modified tenuis, and not as a double consonant, in that we begin to pronounce the tenuis, but instead of breaking it off sharply, we allow it to be produced with what they call the corresponding wind (flatus, incorrectly rendered as sibilans)." From this Brücke wants to conclude:²¹ "Let us first turn our attention to this passage,"²² he says, "so far as it is concerned with the tenuis aspirates, that is, the voiceless aspirates. So far it does not give cause for the slightest doubt, since Max Müller mentions on p. 27, that the fricatives are called winds by the Sanskrit grammarians. In this passage the derivation of the voiceless fricatives from the voiceless stops is described. No one could invent a description of such

simplicity and truth, if these fricative sounds did not exist in the language. The present pronunciation of the voiceless aspirates is consequently not the original." Rather according to him, the Sanskrit aspirates must have been voiceless fricatives, namely क़ (k'a), our *ch* in *Spruch*, च़ (c'a) our *ch* in *sprich*, etc.

This entire argument, however, seems to me to suffer from an inner contradiction. Even according to Brücke, the Indian grammarians have a clear and correct concept of the fricatives. They classify the sibilants, the *h* and a few others as belonging to these fricatives (ûśmâ, a term of the Indian grammarians, rendered wind by Max Müller). But precisely the aspirates, which are our concern here, they do not include, but rather classify them among the sparsâs, that is, sounds which require complete contact of the speech organs. What could be clearer, than that the Sanskrit aspirates were, in fact, not fricatives (spirants, ûśmânas), but rather stops?

As concerns the description of their production, which Max Müller passes on to us from the Indian grammarians, surprisingly enough it agrees completely with the statement I gave of the Old Greek aspirates twenty-one years ago. According to the description of the Indian grammarian, we have a Tenuis with a following, yet incompletely developed spirant, which, as regards the organs concerned, corresponds to the Tenuis. Twenty-one years ago I proposed to represent this undeveloped spirant with a proposed ħ and delineated the sound in question as follows:

Non-aspirated Mutes		Spirants	
p	b	f	v
t	d	β	s
k	g	ch (<i>spruch</i>)	hh

From these result the hard aspirates phv, ths, khhh. If the following spirant develops completely, then we obtain the double consonant *pf*, *tβ* (new High German *z*) and *kch*, which still occurs in many dialects of German-speaking Switzerland. The difference between the aspirate and the corresponding double consonant is this: with the double consonants (*pf*, *tβ*, *kch*), after production of the Tenuis the speech organs are brought into the steady position, which is necessary for the utterance of the clearly developed spirant. They are held in this position for a time, so that the spirant produced by it is distinguished from the preceding tenuis as a separately articulated sound. Because the speech organs have this steady position, one can also hold them there as long as one likes and, for example, make the uninterrupted sound: *pffffff*, *tβββββ* and so on. The situation is quite different, however, with the undeveloped after-sounding of the aspirates. This is produced only through the slow opening of the organs after the closure of the Tenuis. The organs do not remain for one moment in the same position. Therefore no clearly determined, separable sound can be produced; and just so, this sound, which is involved in a continuous change from the time of its origin until it fades away, cannot be maintained steadily. For it begins with the point of opening and ends with such an expansion of the speech organs, that the stream of flowing air no longer makes audible friction.

In order to make myself as clear as possible, I have restricted myself intentionally to the simplest circumstances.

6. I have already treated the nature of the Old Greek aspirates quite extensively in my work concerning aspiration and the sound shift.²³ From the agreement of the Old Greek grammarians with the development of the sounds within the Greek language itself as well as in the relationship of Greek to the other Indo-Germanic languages, I demonstrated the Greek aspirates to be the sounds already given in the previous paragraph: *p̄hv*, *t̄hs*, *k̄hhh*. I would not know very much to add to what I said then and I confess that Brücke's publication, which in other respects is highly instructive, has not shaken me the least in my convictions on this point. Brücke starts out from the fact that the Old Greek grammarians intended the same distinction with their division of the letters into *phōnēnta* and *áphōna*, as he makes in connection with the Indian grammarians between voiced and voiceless sounds. But just one condition should have prevented him from making this assumption. The Old Greek grammar does not merely have *phōnēnta* and *áphōna* but also *hēmíphōna*. Now what shall we do with these? By Brücke's view they must have been intermediary between voiced and voiceless sounds. Admittedly there is no such thing. We maintain the assumption therefore that reproduces *phōnēnta* as *vocales*, *hēmíphōna* as *semivocales*, and *áphōna* as *mutae*. By *vocales*, the vowels are understood; by *semivocales* those sounds, which are formed through the narrowing of the speech organs. The division of the latter into *khilá* (*tenues*), *daséa* (*aspiratae*), and *mésa* (*mediae*) we explain as follows: *grámma khilón* designates the letter, whose sound is cut off sharply without after-sounding; *dasú* designates the stop with a strong air gust after the opening of the closure; finally *mésón* designates a sound, which to be sure does not have the strong after-sounding of *grárnma dasú*, nor also the sharp cutting off of all after-sounding like the *grámma khilón*. From this assumption one can best explain the development, which not only the *daséa*, but also the *mésa* have undergone in New Greek.

7. If we take these results as a basis, which the investigation of the Sanskrit and Old Greek aspirates has furnished us, we find that our present High German language actually does not have any aspirates. The essence of the aspirates consisted therein, that it was a stop with an undeveloped after-sounding. In this class our *f*, *β*, and *ch* (in *sprich* as well as in *Spruch*) do not belong. For they are continuant sounds (*continuae*), produced through narrowing, not closure of the speech organs. Neither are our *pf* and our *z* (= *tβ*) aspirates. To be sure, they begin with a stop, but do not follow this with such an only half-developed after-sounding as we described above (§ 5), but rather a clear, fully-developed spirant. Our *pf* and *z* are therefore double sounds, which the Indian and Greek aspirates were not.

8. The Germanic languages of the Gothic stage no longer have a guttural aspirate; of the labial, they have preserved only a small part, and these medially. On the other hand, they have the dental aspirate initially as well as medially. The *h* and *f*, which these languages have in the positions where we might normally expect aspirates, are not aspirates but spirants. A remnant of the labial aspirates, Old Saxon possesses in its medial **Ḅ**. All of the older Germanic languages of the Gothic stage have the dental aspirate *th* (*þ*). It has, however, been partly lost in the modern languages such as Swedish, Danish, and Low German; in others its change and eventual loss has been going on for centuries, as in English, which still shows a slight trace of the genuine old aspirate only in those instances, where the pronunciation of the *th* begins with the stop.

9. If we relate what we learn about the nature of the aspirate from the Indian and Greek grammarians with the results of etymological research, we recognize by a clear example how a real history of sound changes only results from the combination of scientific determination of sounds and etymological comparison of words. In place of the Greek and Sanskrit aspirates

we find etymologically the soft (=voiced =breathed) stop in the Germanic languages of the Gothic stage. For example:

Greek *kh* = Gothic *g* (e.g. *khéō*, Gothic *giuta*)

Greek *th* = Gothic *d* (e.g. *thúra* Gothic *daúr*)

Greek *ph* = Gothic *b* (e.g. *phérō* Gothic *baíra*)

The same change is repeated for the second time in the relationship of High German to the Germanic languages of the Gothic stage. But only the dental *th* of the Gothic stage changes to High German *d*; the *h* does not go to *g*, nor the *f* to *b*. While the numerous Gothic *th*'s consistently become *d* in High German (Gothic *thanjan*, High German *denen*, Gothic *thata*, High German *daʒ* etc.), the *h* and *f* remain unchanged (Gothic *haubith*, High German *haupt*; Gothic *harjis*, High German *heer*; Gothic *fōtus*, High German *fuß*; Gothic *faran*, High German *fahren*). What can be clearer than this process? The true aspirate contains the stop in itself, which remains after the cessation of its after-sounding. The Greek-Indian aspirates therefore become soft stops in Gothic, and similarly, centuries later Gothic *th* becomes High German *d*. On the other hand, the spirants *h* and *f* do not contain such a stop and consequently do not become High German *g* and *b*, but remain as they are.

10. We still have to show how precisely a media came from the aspirate. There is, of course, no question of a general necessity. The hard aspirate can also leave the hard stop by giving up its after-sounding. Such has been the case of the Old Norse *th* in Swedish. According to a very widespread but erroneous theory, one is inclined perhaps to say that it is impossible for aspirates, as we conceive of them, to begin with a soft stop. One will say: "The hard stop requires a greater amount of air than the soft. Now if the quantity of air pouring forth is increased further with the aspirate, how can it possibly begin with a soft stop?" But this argumentation is based on an erroneous physiological assumption. The hardness of the stop is dependent, to be sure, upon the amount of air emitted, but not upon this alone; it is at the same time also dependent upon the further condition, that the expelled current of air finds a firm closure of the speech organs, which can be opened only by strong pressure. If on the other hand the closure yields somewhat in firmness while the mass of onrushing air pressure either remains the same or even increases, two phenomena happen, which condition each other. First of all, a part of the breath rushes out only after the stop is opened and so creates the circumstances necessary for producing the true aspirate. Secondly, the stop will lose some of its hardness precisely through this premature yielding of the closure. For only the breath, which rushes on before the opening of the closure, conditions the hardness of the sound. So we see almost before our very eyes, the hard, non-aspirated stop (*tenuis*) gradually becoming through further intensification, an aspirate with a softer stop. For it is, in fact, the further strengthening of the breath beyond that of the *tenuis*, which causes the earlier opening of the closure. In this way the phonetic-historical series *t - th - dh - d* can result, as well as, more directly, the group *t - dh - d*. Old Saxon provides us with the documentary proofs for the whole process.

Notes

1. *Grundzüge der Physiologie und Systematik der Sprachlaute*, by Ernst Brücke. Wien, 1856. [[return to text](#)]
2. I agree here with Brücke's views. [[return to text](#)]

3. The noise caused by the narrowing of the glottis has been explained thus: "the vocal cords are not set into motion to produce tone, but rather the air as it passes through them causes a friction noise" (Brücke, p. 8). If my observation does not mislead me, this is not exactly the situation. For when one passes from a singing tone to the noise of whispering, one notices that the latter is not produced at the same point as the singing tone, but somewhat further up. [[return to text](#)]
4. In this expression I deviate somewhat from the usual usage. [[return to text](#)]
5. This opposition of blowing and breathing extends far beyond the distinction of sounds, which is actually only one manifestation of it. There are, moreover, two ways of whistling, one by breathing, the other by blowing. Whoever whistles by blowing, he will obstinately maintain that it is impossible to whistle and sing simultaneously. And he is right, insofar as he is speaking only of his own way of whistling. If, however, his assertion is extended to every way of whistling, then he will be easily refuted by the breather-whistler, who will whistle the soprano of a song to him while simultaneously singing the alto. [[return to text](#)]
6. Compare Brücke, pp. 7; 31; 55ff. [[return to text](#)]
7. These two classes are distinguished by the possibility of combining the singing tone with one, which the other does not permit. This is the usual difference in utterance. We will see, however, that for the hearer these two classes overlap under certain conditions, in that a soft blowing produces an effect similar to simple breathing. [[return to text](#)]
8. It is naturally not my intention above to exhaust the diverse types of sound change. Otherwise, sound change through analogy, for example, would also have to be treated. But I would prefer to reserve this and other related questions for another occasion. [[return to text](#)]
9. I made a suggestion toward this end in *Fromanns Deutschen Mundarten*, 1857, and should like to recommend once again this suggestion as well as this most valuable journal to all those informed about language. [[return to text](#)]
10. *Grundzüge* etc., p. 117. [[return to text](#)]
11. It is understood that in these polemics the otherwise very meritorious works of this excellent linguist are not being impugned. [[return to text](#)]
12. *Die Aspiration und die Lautverschiebung*. Eine sprachgeschichtliche Untersuchung von Rudolf von Raumer. Leipzig, 1837. [[return to text](#)]
13. Brücke, *Grundzüge* etc., p. 82. [[return to text](#)]
14. Bopp, *Kritische Grammatik der Sanskrita-Sprache*, Berlin, 1834, p. 15 ff. [[return to text](#)]
15. Brücke, p. 83. [[return to text](#)]
16. *Pāninis acht Bücher grammatischer Regeln*, Her. von Böhtlingk. Bd. 1. Bonn, 1839, p. 3. [[return to text](#)]
17. I describe the Dêvanâgarî letters in accordance with Bopp. [[return to text](#)]
18. See the edition of this Prâtiçâkhya by Regnier, *Études sur la Grammaire védique in Journal Asiatique*. Paris, 1856. Février Mars, p. 169. [[return to text](#)]
19. Regnier, op. cit., p. 194. [[return to text](#)]
20. *The Languages of the Seat of War in the East*. London, 1855, p. XXXII. [[return to text](#)]
21. P. 83. [[return to text](#)]
22. That is, the just cited words of Max Müller. [[return to text](#)]
23. Compare also my publication: *Über deutsche Rechtschreibung*. (Vienna, 1855), p. 65 ff. [[return to text](#)]

24. To repeat the extensive proof, which I gave in my article on aspiration and the sound shift in support of my view would require that I merely reprint here the greater part of what I said there. For were I to leave out a single ancient quotation or an associated argument, then the exposition given there would only lose in effectiveness.

CHAPTER EIGHT

AUGUST SCHLEICHER

INTRODUCTION TO A COMPENDIUM OF THE COMPARATIVE GRAMMAR OF THE INDO-EUROPEAN, SANSKRIT, GREEK AND LATIN LANGUAGES

*From Compendium der vergleichenden Grammatik der
Indogermanischen Sprachen (Weimar: Hermann Böhlau, 1871),
xlviii, 829pp., pp. 1-9*

Editor's Introduction

Schleicher is generally regarded as totally superseded. Since he flourished immediately before the neogrammarians, it is scarcely remarkable that their reputation has eclipsed his. Probably the most commonly maintained segment of his writings is his model for displaying languages, the family tree, though it too is held to be superseded by other interpretations of language spread and interrelationships, such as the wave theory. In part Schleicher seems supplanted because so many of his ideas were taken over by his successors.

1. Even though the Stammbaum in its simple form falsifies language interrelationships, Sherman Kuhn has pointed out it is the model by which genealogical classifications have been achieved.

2. The reconstructed form of a proto-language, rather than the earliest known form of a selected language which has developed from it, is now the accepted way of indicating linguistic relationships. In Indo-European linguistics Schleicher broke the practice of citing Sanskrit for this purpose and introduced the starred form.

3. But possibly the most important influence he has had is that on the neogrammarians -- his aim (credited to them) to account for relationships to the extent possible and then to admit residues. In his brief sketch of the history of Indo-European linguistics, *Compendium* 15-16, he has the following comment:

At present two tendencies confront each other in Indo-European linguistics. The adherents of the one have taken as their principle strict adherence to sound laws (e.g. G. Curtius in Leipzig, Corssen in Berlin, the author of this *Compendium*, and others); the other trend (Benfey in Göttingen, Leo Meyer in Dorpat, and others) believes that it need not be essentially hindered in the clarification and explanation of language forms by the sound laws that have been determined up to now. In this way it is possible for the adherents of the latter trend to explain many things which seem dark to the others. Particularly from this approach a number of stem-forming suffixes of Indo-European are taken back to a single original form. The two schools also are importantly differentiated through this procedure. The former accepts as old and original much that the second permits to be looked on simply as a change of an original and primitive form. The further historical development of our discipline will show on what side the certain, truly scientific basis for the future flourishing of linguistics is to be sought.

When one notes that August Leskien assisted in the production of the second edition and with Johannes Schmidt brought out the third, it is not difficult to recognize one source of neogrammarian ideas and the continuity of development in linguistics, even though Schleicher did not sharply formulate a need for complete accounting for phenomena and explanation of residues.

The Introduction to the *Compendium* is given here in a translation from the third German edition, prepared by Herbert Bendall and published by Trübner and Company, London, 1874.

Although one of Schleicher's essays may have been useful in representing his theoretical views, the introduction may reflect various reasons for Schleicher's importance. Schleicher looked on language as a whole. His introduction states specifically that linguists should deal with the construction of sentences -- a statement found again in the excerpt from Sievers below; but Schleicher also admits that he cannot handle sentences adequately, and hence he confines himself to sounds and forms. This limitation was largely maintained for the next eighty years, with the emphasis on phonology that Schleicher introduced. He also attempted to get away from the detail of language to its form, using for this purpose formulae. In this attempt he foreshadows the repeated efforts to increase rigor in linguistics. His formulae for descriptive linguistics, referred to below in the extract from Whitney, were not maintained though his reconstructed -- or fundamental -- forms have been. It should be noted that Schleicher looked on these as abstractions, not as real language material; he says specifically that he does not assert they ever existed. Everywhere Schleicher's presentation is sober and clear. In the third edition of the *Compendium* he introduced external techniques which have become general, such as glossing citations in the language of the writer rather than in Latin. His conclusions have in part been superseded, as in his identification of Armenian as a dialect of Iranian. But through his lucid summary of the data that had been assembled Schleicher provided the basis for the tremendous expansion of control over historical linguistics during the last quarter of the nineteenth century. August Schleicher (1821-68) may not have achieved a definitive work because of his short life. The first edition of his *Compendium* was published in 1861, on the basis of fifteen years of lecturing. Earlier he had published a morphology of Old Church Slavonic, 1852, and a grammar of Lithuanian, 1856-7, produced as a result of field work. For the second edition he modified the *Compendium* largely in externals. The third was published posthumously from his annotated copy. Since he examined the bases of linguistic study -- the relevance of Hegel, or Darwin -- and since he made use of the compendious grammars being produced for the various Indo-European dialects -- for the Romance languages by Diez, 1836-44, for the Celtic by Zeuss, 1853, and for the Slavic by Miklosich, 1852ff. -- he may have removed from his *Compendium* some of the shortcomings maintained from his predecessors if he had not died relatively early.

Introduction

I. Grammar forms one part of the science of language: this science is itself a part of the natural history of Man. Its method is in substance that of natural science generally; it consists in accurate investigation of our object and in conclusions founded upon that investigation. One of the chief problems of the science of language is the inquiry into, and description of the classes of languages or speech-stems, that is, of the languages which are derived from one and the same original tongue, and the arrangement of these classes according to a natural system. In proportion to the remainder but few speech-stems have hitherto been accurately investigated, so that the solution of this chief problem of the science must be looked for only in the future.

By grammar we mean the scientific comprehension and explanation of the sound, the form, the function of words and their parts, and the construction of sentences. Grammar therefore treats of the knowledge of sounds, or phonology; of forms, or morphology; of functions, or the science of meaning and relation, and syntax. The subject of grammar may be language in general, or one particular language or group of languages; grammar may be universal or

special: it will in most cases be concerned in explaining the language as a product of growth, and will thus have to investigate and lay down the development of the language according to its laws. This is its exclusive province, and therefore its subject is the laying-down of the 'life of language,' generally called historical grammar, or history of language, but more correctly 'science of the life of a language' (of sound, form, function, and sentence), and this again may be likewise as well general as more or less special.

The grammar of the Indo-European languages is therefore a special grammar: because it treats of these languages as products of growth, and exhibits their earlier and earliest gradations, and would therefore be more accurately called a special historical grammar of Indo-European language.

Note 1. By comparative grammar is meant not that grammar which is merely descriptive, but that which throws light on speech-forms as far as possible, because as a rule it is not confined to the treatment of any one particular language.

Note 2. The following work embraces only two parts, scientific treatment of sounds and of forms. Indo-European function and sentence-formation we are not at present in a position to handle in the same way as in the case of the more external and intelligible branches -- sounds and forms.

II. To assume one original universal language is impossible; there are rather many original languages: this is a certain result obtained by the comparative treatment of the languages of the world which have lived till now. Since languages are continually dying out, whilst no new ones practically arise, there must have been originally many more languages than at present. The number of original languages was therefore certainly far larger than has been supposed from the still-existing languages. The easiest preliminary distribution of languages which we can make is suggested by their morphological constitutions.

There are:

1. Languages which are simply composed of invariable disjointed meaning-sounds, monosyllabic, e.g. Chinese, Annamese, Siamese, Burmese. Such sounds we denote by R (radix). The Indo-European language would be in this stage of development when the word ai-mi (I go, εἶμι) was sounded not so, but as *i* or *i ma* (formula R, or R + r).
2. Languages which can link to these invariable sounds of relation, either before, or after, or in the middle, or in more than one place at once (denoted here as s. [suffix], p. [prefix], i [infix]). These are confixative languages, e.g. Finnish, Tatar, Dekhan, Basque, the languages of the aborigines of the New World, of South Africa (Bântu), and most languages in fact. In this step of development the word ai-mi would be *i-ma* or *i-mi* (Rs).
3. Languages which for the purpose of expressing relation can regularly vary their roots as well as their confines (which have sprung from independent original roots), and can at the same time preserve intact the means of compounding. These are inflexive languages. Such a root is regularly varied for the end of expressing relation is here denoted by R^x (R¹, R², etc.), a similar suffix by s^x.

Hitherto we have become acquainted with only two speech-stems of this class, the Semitic and the Indo-European. The latter has for all words only one formula, viz. R^x s^x (s^x meaning

one or more than one regularly variable suffix), and consequently a regularly variable root with a regularly variable expression of relation at the end of the suffix, e.g. ai-mi, εἶμι, √ι.

The Indo-European is therefore a suffix-language, together with the neighboring languages of the Finnish stem, including Tataric, (Turkish) Mongolian, Tungusian, Samoiedish, as also with the Dravidian (Dekhan) -- all included in the formula Rs.

Note 1. The Semitic, which is not akin to the Indo-European, has more word-forms, namely R^x and pR^x , forms quite strange to Indo-European, which has only one. Besides, its vowel-system is perfectly distinct from the Indo-European, not to mention other marked differences. Cf. Aug. Schleicher, "Semitisch und Indogermanisch" in *Beitr.* ii. 236-244. An attempt to deduce the fundamental language of the Semitic speech-stem has been made by Justus Olshausen in his *Lehrbuche der hebräischen Sprache*, Brunswick, 1862.

Note 2. The *augment* in Indo-European is no relation-affix, no prefix, but an adherent, though originally independent word, which may moreover be omitted.

III. The life of a language (generally called its "history") falls under two heads:

1. Development in prehistoric times. As man has developed, so also has his language, i.e. the expression of his thoughts by sounds: even the simplest language is the product of a gradual growth: all higher forms of language have come out of simpler ones, the confixative of the monosyllabic, the inflexive out of the confixative.

2. Decline in the historic period. Language declines both in sound and in form, and in its decay changes of meaning take place alike in function and construction of sentences. The transition from the first to the second period is one of slower progress. To investigate the laws by which languages change during their life is a most important problem in the science of language, for unless we are acquainted with them we cannot possibly understand the languages in question, especially those which are still living.

Through different developments, at different points in the province of one and the same language, the self-same tongue branches out into the ramifications of the second period (whose beginning however is likewise earlier than the origin of historic tradition), and diverges into several languages (dialects); this process of differentiation may repeat itself more than once.

All these changes took place gradually and at long intervals in the life of the language, since generally all changes in language unfold themselves gradually.

The languages which spring immediately from an original language we call fundamental; almost every fundamental language has split up into languages; all these last-named languages may further branch into dialects; and these dialects into sub-dialects.

All the languages which are derived from one original-language form together a class of speech or speech-stem; these again are sub-divided into families or branches of speech.

IV. The name of Indo-European has been given to a distinct set of languages belonging to the Asiatico-European division of the earth, and of a constitution so consistent internally, and so

different from all other languages, that it is clearly and undoubtedly derived from one common original language.

Within this Indo-European class of speech however certain languages geographically allied point themselves out as more closely related to one another: thus the Indo-European speech-system falls into three groups or divisions.

These are:

1. The Asiatic or Aryan division, comprising the Indian, Iranian (or more correctly Eranian), families of speech, very closely allied to one another. The oldest representative and fundamental-language of the Indo-European family, and generally the oldest known Indo-European language, is the Old Indian, the language of the oldest portion of the Vêdas; later on, after it had become fixed in a more simplified form, and subject to certain rules, as a correct written language, in opposition to the peoples' dialects, called Sanskrit. We are not acquainted with Eranian in its original form: the oldest known languages of this stem are the Old Baktrian or Zend (the Eastern), and the Old Persian, the language of the Achaimenid cuneiform inscriptions (the Western). To this family besides is related the Armenian, which we know only from a later date, and which must have branched off even in early times from the Eranian fundamental-language.

2. The south-west European division, composed of the Greek, next to which we must perhaps place the Albanian, preserved to us only in a later form; Italian (the oldest known forms of this language are the Latin -- especially important for us is the Old-Latin, as it was before the introduction of the correct literary language formed under Greek influence -- the Umbrian and the Oscan), Keltic, of which family the best known, though already highly decomposed, language is the Old Irish, Erse dating from 700 A.D. Italian and Keltic have more in common with one another than with the Greek.

3. The North-European division, composed of the Sclavonic family with its closely-allied Lithuanian, -- the most important language for us of this group, -- and the German, widely separated from both. The oldest forms of this division are the Old-Bulgarian (Old Church-Slavonic in MSS. dating from 1100 A.D.); the Lithuanian (and of course the High-Lithuanian, South-Lithuanian, Prussian Lithuanian), first known to us 300 years ago, but clearly of far greater antiquity; and the Gothic from the fourth century. Beside the Gothic, however, are the oldest representatives of German and Norse, Old High German, and Old Norse, which we may bring forward when they present earlier forms than Gothic.

The greatest number of archaic particulars in point of sounds and construction of language is found in the Asiatic division, and within it, in the Old Indian; next in point of archaicisms (i.e. preservation of similarity to the original language, by having fewer strongly-developed and peculiar forms) comes the S.W.-division, in which Greek is found to be most faithful; and lastly the N.-European group, which, if regarded as a whole, may be shown to have the most characteristic development, and to be the least faithful to the original language.

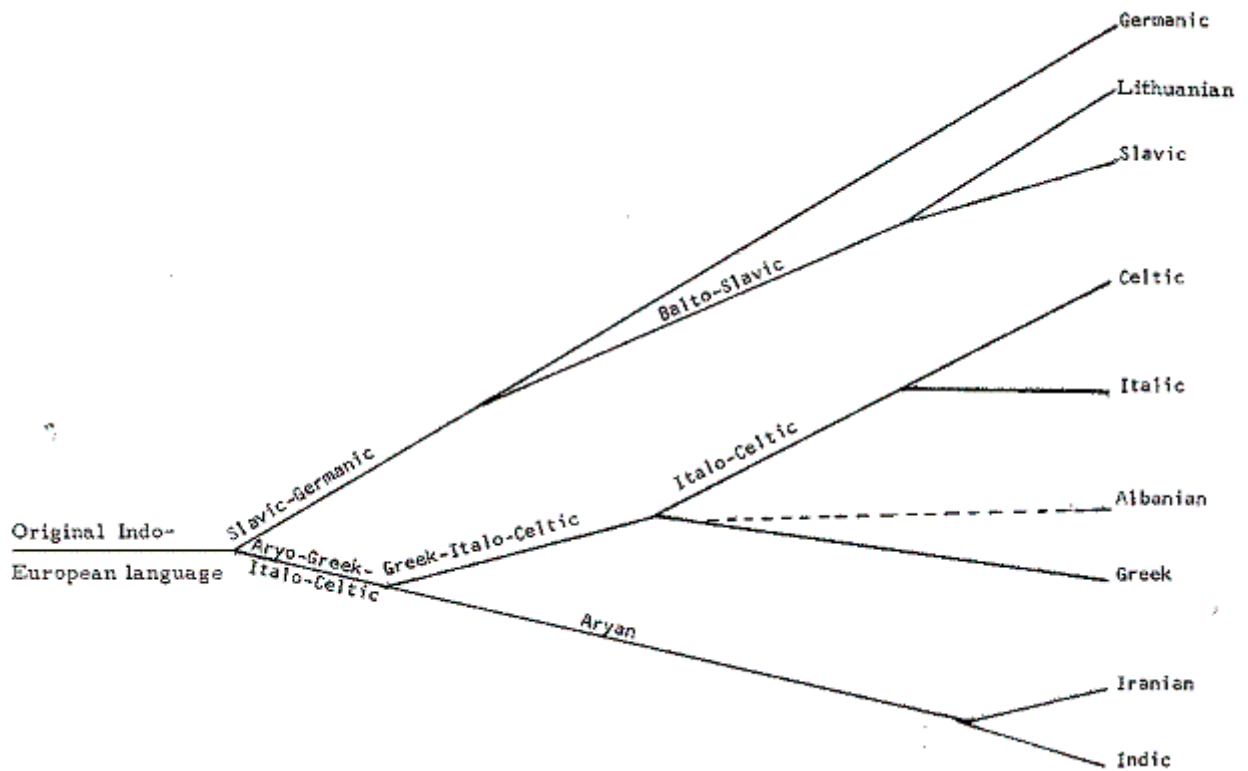
By combining these facts with the above-named relationships of the Indo-European languages, and drawing inferences as to the process of separation of the Indo-European body of language in ancient times, we get the following result: The Indo-European original language differentiates first, through unequal development in different parts where it prevailed, into two fundamental-languages, viz. The Sclavo-Teutonic, which afterwards

divided itself into Teutonic and Sclavo-Lithuanian, and the Aryo-Graeco-Italo-Keltic, the remaining portion of the Indo-European language, which divided itself into Graeco-Italo-Keltic and Aryan; and the Graeco-Italo-Keltic soon split up into Greek and Italo-Keltic, while the first, the Aryan, remained undivided for some time. Later still the Sclavo-Lithuanian, the Aryan ([ndo-Eranian) and the Italo-Keltic, further divided themselves. It may be that at most or at all of the divisions there arose more languages than we now know of, since probably many Indo-European languages have died out through the lapse of time. The further eastward an Indo-European people lives, the more archaisms are found in its language; the further westward they have gone, the fewer archaisms, and the more numerous new-formations are found in the language. From these and other indications we infer that the Sclavo-Teutonic race first began its wanderings westwards; next followed the Graeco-Italo-Keltic; and of the Aryans who remained behind, the Indians journeyed south-eastward, the Eranians south-westward. The home of the Indo-European original race must be sought in the highlands of Central Asia.

It is only of the Indians, who were the last to leave the parent stem, that it is quite certain that they expelled an aboriginal race from their later dwelling-place, a race of whose language much passed into their own; a similar process is highly probable in the case of many other Indo-European peoples.

The most ancient divisions of the Indo-European, up to the origin of the fundamental languages belonging to the families of speech formed from the speech-stem, may be seen in the following table. ... The length of the lines shows the duration of the periods, their distances from one another, the degrees of relationship.

Note. In the present work an attempt is made to set forth the inferred Indo-European original language side by side with its really existent derived languages. Besides the advantages offered by such a plan, in setting immediately before the eyes of the student the final results of the investigation in a more concrete form, and thereby rendering easier his insight into the nature of a particular Indo-European language, there is, I think, another of no less importance gained by it, namely that it shows the baselessness of the assumption that the non-Indian Indo-European languages were derived from Old-Indian (Sanskrit), an assumption which has not yet entirely disappeared. This view has found supporters up to the present date, especially as regards Old-Baktrian (Zend). The term 'Sanskritist', not seldom applied to Indo-European philologists (meaning that we concede to Sanskrit a position which it does not deserve, by deriving other languages from Sanskrit, or explaining them by it, instead of studying them fundamentally), is likewise shown to be quite inapplicable by the plan employed in the Compendium. The disadvantage of having in certain cases Indo-European original forms inferred which are more or less doubtful, does not weigh at all against the advantages which, according to our view, are attained by the arrangement of the subject used hereafter.



Schleicher's Family Tree

A form traced back to the sound-grade of the Indo-European original language, we call a fundamental-form -(f.f.) [e.g. Lat. generis, f.f. ganasas; Gk γενους, f.f. ganasas]. Hence it is only when forms of different sound-grades are brought to one and the same sound-grade, that we can compare them with one another. When we bring forward these fundamental-forms, we do not assert that they really were once in existence.

CHAPTER NINE

C. LOTTNER

EXCEPTIONS TO THE FIRST SOUND SHIFT

*Originally "Ausnahmen der ersten Lautverschiebung,"
from Zeitschrift für vergleichende Sprachforschung auf dem Gebiete
des Deutschen, Griechischen und Lateinischen 11.3 (1862), 161-205*

Editor's Introduction

Lottner's cataloging article has never been given the acclaim of Grassmann's or Verner's, which it prepared for. Yet Lottner carefully screened the evidence and listed the three large sets of "real" exceptions, after eliminating the apparent ones traceable to "false comparisons", onomatopoeic words and borrowings. In his treatment of the apparent exceptions Lottner reflects the status of historical linguistics shortly after the middle of the nineteenth century; for that reason, and because the first section of his article is his permanent contribution to clarification of the first sound shift, this section is presented rather fully here. The "real exceptions", which Lottner discusses in the remaining sections of his article, may be found in the articles of Grassmann and Verner. After Lottner's publication there was no further confusion about the apparent exceptions. His clarification of these, and his thorough descriptive presentation of the evidence remain the essence of his achievement.

This is not to say that Lottner's article is thoroughly praiseworthy. The tone of it is occasionally intemperate; at the conclusion he added a short paragraph apologizing to Curtius for an unwise phrase in an earlier article. He also misled Grassmann about the "third set of exceptions," which were clarified by Verner, by introducing the glib notion of a Wahlverwandtschaft -- elective affinity -- between the resonants and the mediae. Yet with its faults, the article is an example of the interplay of descriptive and historical linguistics: Lottner's descriptions simplified the explanations of Grassmann and Verner. The article also illustrates that linguistics did not advance by a series of leaps; rather, careful scientific attention to the data led in time to its mastery.

C. Lottner submitted the article from London. To my knowledge he made no further contributions to historical linguistics. From their acknowledgements we conclude that the article was important for both Grassmann and Verner.

Prefatory Note. In general, only those Germanic languages are considered whose consonants have really experienced only the first sound-shift. On the other hand, High German has only then been taken into account when it illuminates the Germanic original form which in Old Norse, Anglo-Saxon, etc., was distorted according to specific sound laws. Words which are only High German are not treated for the time being.

The exceptions to the first sound-shift fall into apparent and real exceptions.

Those words may be treated as the first class among the apparent exceptions with which the entire assumption of a violation of Grimm's law originates simply from the fact that one has compared things that should have remained un-compared. It is of course impossible to list all cases of such erroneous comparison since error and caprice lack definite demarcations. I am therefore content to observe a few examples of this kind where erroneous comparison has

enjoyed a certain popularity, whether by virtue of its apparent plausibility or on account of its author's reputation. Of this sort are Gothic: *kara* 'care' which has nothing to do with Lat. *cura*, since the latter arose from *coira*, as is proved by OLat. *coerare* to which probably belongs Gk *-koíranos* (cf. *Landpfleger*, 'prefect'). The Germanic word means primarily 'fear, anxiety, lament' (therefore OHG *charôn lamentari*, our NHG *char-freitag*), and it thus goes with the old root *GAR* 'be heavy', which is present in Skt *guru* 'heavy' (from *garu*; comparative *garíyas*) = Lat. *gravis*, Gk *barús*, and from which Goth. *kauris* 'difficult' is to be derived. Yet in Germanic the meaning 'to be heavy about something', 'to take care about some thing', must have developed in this root at an early time. For that is the only explanation for ON *kaer-r* 'dear', the original form of which is *KÁRIA* and which will have to be understood as 'something worth being cared for' with the same suffix *ja* which is present in Goth. *andanêmjja* 'acceptable, pleasant', in Goth. *unquêþja* 'impossible to utter, inexpressible', in Lat. *exim-ius* = *eximendus* and in the many corresponding formations of Sanskrit (such as *bhâr-ya* 'ferendus'). This Scandinavian *kaerr* therefore does not in the least have anything to do with Lat. *cârus* which, despite the long vowel, is probably to be compared with OIr. *caru*,¹ *carimm* 'I love'. -- The comparison of Goth. *leik* with Skt *dêha* "body" -- the transition from *d* to *l* is as indemonstrable for Gothic as the *k* vs. *h* is objectionable -- was able to gain a dubious reputation only on account of the great reputation of the founder of comparative grammar. The same is true of his relation of Goth. *-leiks* 'like' (isolated *galeiks* = OE *líc*, *gelíc* ON *líkr*, *glíkr*) with Skt. *-dṛṣa*, because the regularly corresponding Lith. *lygus* is much more plausible and because the root *dṛṣ*, i.e. *dark* (Gk *dérkō*) 'see', from which that Sanskrit word originates, is also regularly represented in our AS *torht* 'light' = OHG *zor(a)ht*. Goth. *natjan* 'moisten' would have hardly been compared with Gk *-noíia* if one had not dismissed all too easily the connection of the latter with Gk *nótos*. To compare Goth. *raþs* 'easy' with Gk *hráidios*, as the otherwise admirable Gabelentz and Loebe do, is a monstrosity, because the latter is contracted, as Homer's Gk *hréidios* shows and furthermore, it began with digamma in Lesbian. Our Germanic word belongs to the root *RAT*, in Skt *ratha* 'wagon', Lat. *rota*, OHG *rad*, Gallic *riton* (to be deduced from *petor-ritum*) and therefore means something that 'begins'. The root itself may have been developed from *AR* (Skt *ṛ* "go" Gk *or-* etc.). -- Goth. *auhns* "stove" has often been compared with Skt *aṇa* 'fire', but since Aufrecht has related it nicely to Skt *aṇa* 'stone' the former comparison must be considered obsolete. *Bidjan* 'ask for' scarcely has anything to do with Lat. *petere*, because the basic meaning of the latter is 'to fly at something,' (= Skt *pat* 'fly, fall'), whereas Goth. *badi* 'bed' seems to indicate as the original meaning of our word: 'sternere, se prosternere'. Goth. *kalds* 'cold', or rather its stem-verb ON *kala* 'be cold' is quite regular with regard to Lat. *gelu*, *gelidus*, Skt *gala* 'cold, coldness, water'. For that reason OSlav. *chladū* 'cold' is either not related at all, or it is borrowed. Lith. *szaltas* 'cold', *szala* (3rd p. sg.) 'be cold, become cold' is however quite a different word, which, with respect to the root, Zend *ṣareta* 'cold' and Skt *ṣīra* 'cold' resemble. But the two latter words point back to an original root *KAR, KAL*; whether this root is to be treated as identical with *GAL*, I do not know. At any rate, the difference occurred already before the language separation and we Germanic people must be absolved from the reproach of an irregular sound-shift ... (166). With these and similar comparisons we lose ourselves completely in a territory where any words are picked up according to their sound-similarity and, with an indubitably blessed, but highly unscientific naïveté, are assumed to be related.

Apparent exceptions to the sound-shift can also stem from the fact that the words under comparison are connected psychologically, but not historically, i.e. that they are imitations of sounds, or they fall into that category which Buschmann designates by the name 'sound of nature'. After the thorough discussion by that scholar it may be considered certain that the consonants *T, P*, or in other words the syllables *ap, pa, at* and *ta* even in non-related languages

form the basic elements in the names of the father (more infrequently in that of the mother) because of the identical physiological make-up of the speech organs and because of identical psychological impulses. Although the Indo-European languages possess words from very early times to express these relationships, it must nevertheless be admitted that some of the many parental names have been formed anew only after the time of the language separation. If therefore Goth. *atta* 'father' corresponds too well to Gk *átta* OSlav. *otĩci* (OBohem. *ot*), then neither relationship nor borrowing is to be assumed here, but the Gothic word has simply sprung from the everflowing fountain of nature sounds. Furthermore, it can be seen from the treatise of the aforementioned scholar that the nasals N and M play the same role in the name of the mother (again, here too, less frequently in the name of the father) as P and T did in the case of the father. It must also be noted that all of these readily pronounceable elements, notably *m(a)* and *p(a)*, serve at the same time as children's words for 'food' and 'nourishment' and therefore frequently as expressions for the mother's breast. Such words are our *pappen*, *pappe*, Engl. *pap* 'female breast', Lat. *papilla*, Lat. *mamma*, *mamilla* 'mother's breast' but *mamma*, *mammula* also meaning 'mother, grandmother'. For our purposes, we must be concerned with still another word for 'mother's breast' (beside the abovementioned apparently very irregular *pappen*) which staggers just as unsteadily and wildly through the various consonant stages, namely OE *titte*, NE *teat*, to which fits NHG *Zitze*, but also OHG *tutta*, MHG and NHG *tutte*, Gk *tĩttē* (compare in Dieffenbach a number of related words under Goth. *daddjan* 'to nurse'). Yet this latter is perhaps no longer the immediate creation from a sound of nature, but rather the reduplication of an old root *dĩ*, which corresponds to Skt *dhē* 'to nurse' (from which, *dhēnu* 'cow') and also to *dhā* (in *dhā-trĩ* 'wet nurse'), compare Gk *thēsai*, *thēsai*, *tithene*, *thelus*, Lat. *femina* (?), *fellare*, Umbr. *felio-* 'sucking', OIr. *dĩnu* 'agna', stem *dĩna(n)t*, Lat. *filius* (cf. Gk *thēlē*, *thēlázō*; and Lett. *dehls* 'child'), OSlav. *doiti* 'to nurse', *dē-te* 'child.' OHG *tila* = Gk *thēlē*; (cf. OHG *taan* = Gk *thēsai*) is certainly related and must be distinguished from those new formations made of sounds of nature. In all of the latter words the exact sound correspondence stands for a genuine historical relationship. But that the above-noted chaos of sounds in otherwise closely connected words of identical meaning can find a sufficient explanation through the assumption of simple psychological relationship, is most clearly demonstrated by similar sounding words from non-Indo-Germanic languages by Dieffenbach, such as Basque *thilia*, *dithia*, *titia*, Hung. *tsets*, Eston. *tis*, all of which mean 'female breast'. To these may be added several onomatopoeic words in which an apparently irregular sound-shift takes place, e.g. ON *klaka* 'queri (de avibus)' = *klökkva* 'lament', NE *clank*, OHG *klingan* as against Lat. *clango* Gk *klaggē*, *klázō*, to which may be joined Goth. *hlahjan* 'laugh', which originates from a similar formative impulse. In addition, compare NE *clatter*, *clap*, NHG *klirren*, *klopfen*, *klappern*. OE *cancettan* 'laugh' and also *ceahhettan* do not go with Gk *kagkházō*, *cachinnari*. Much more of this kind could be cited, if one wished to include living folk dialects. A peculiar example of this merely psychological relationship is NE *lick*, OE *liccjan* = NHG *lecken*. It is quite impossible to place this with Skt *lih*, Gk *leĩkhō*, Lat. *lingo*, OIr. *ligum* etc., since this root is present with regular shift in Goth. *laigon*. In addition, there is in Lithuanian and in Slavic a Lith. *lak-ti*, OSlav. *lokati* and beside it Lith. *laižyti* (OSlav. *lizati*) which correspond regularly to the Greek-Sanskrit root. If one notes that similar sounds serve also in non-Indo-European languages as a designation for the act of licking (e.g. Hebr. *kk̄l*, Finn. *lakkia*), and that in Germanic itself there is a third form which deviates completely, but is still related in sound: ON *sleikja* -- Gk *láp̄tō*, Lat. *lambo*, *labrum*, NE *lap* 'lick', *lip* = OHG *laffan*, *lefsa*, NHG *lefze*, *Lippe* (the latter actually Low German) are admittedly more remote but must not be ignored either -- then all this leads one to conclude that only Goth. *laigōn* is historically connected with Skt *lih*, whereas the other forms with a seemingly irregular *k* are new root formations, or if one prefers it this way, that the old root *lih* is in fact present in them, but is disturbed in its regular sound shift through the influence of

sound imitation and thus has been distorted to LIK, LAK (the latter with a quite preposterous *a* from *i*). This easy mode of explanation would have arisen a long time ago if the strange hypothesis had not spread in comparative linguistics that root formation cannot possibly have occurred after the Indo-European peoples had separated. I cannot grasp why such a purely exterior event like the disintegration of peoples should have suddenly cut off the capability to create language. It is paramount to denying the writer of this article the capability to create new compounds and derivatives in his mother tongue just because he emigrated to England. I should like to go on record that I have strongly protested against this mechanical, as well as lifeless and unhistoric, interpretation of the aforesaid conception which assumes the existence of a special "root-forming" era.

A similar situation is found in ON *gaukr* 'cuckoo', also MHG *gouch*, which just does not fit NHG *Kuckuck*, NE *cuckoo*, or Lat. *cuculus*, Gk *kókkuks*; all these irregularities can be explained simply by the fact that imitations of the animal's voice have been made over and over again. Only the same assumption will explain the strangely corresponding and deviating names of the crow, partially also those of the raven; compare Lat. *corvus*, Swed. *korp*; OHG *hraban*, ON *hrafn*, can just barely be related to the Latin word (although our *b* does not correspond to Lat. *v* either). Further, there is OE *crâve*, ON *krâka*, Gk *korǫnē*, Lat. *cornix* and further the verbs NHG *krächzen*, Gk *krázō*, Lat. *crocito* and finally, though applied to the 'rooster', OE *crâvan*, our *krâhen*. All of these are but bound together by a psychological tie.

A great number of apparent violations of the sound shift must be attributed to borrowings within or from the Germanic languages. Most of their foreign words are clearly of Greek, Latin and recently also of French origin. It is not possible to list all of them; I am content to cite those which appear in Gothic. They are from Latin: *akeit* 'vinegar', *annó* 'annual pay', *arka*, *asilus*, *aurkeis* (*urceus*), *faskja*, *kaisar*, *kapillon* 'shear', *karkara*, *katils* (*catinus*), *kavstjo* (*cautio*), *kubîtus* 'resting place at the table', which is related to *anakumbjan* 'to lie at the table', *laiktjo*, *lukarn*, *maimbrana* 'parchment, membrane', *militon*, *papa*, *paurpaura*, *praitoria*, *pund*, *spaikulator*, *unkja* and probably also *vein*. From Greek they are: *aggilus*, *arkaggilus*, *aikklesjo*, *aipiskaupus*, *aipistaule*, *aivaggeli*, *aivlaugia* (Gk *eulogía*), *aivxaristia*, probably also *alev* 'oil', *anaþaima*, *apaustulus*, *azyme*, *balsan*, *barbarus*, *daimonareis*, *diabaulus*, *diakaunus*, *hairaisis*, *jota* (Gk *iôta*), *nardus*, *paintekuste*, *parakletus*, *paraskaive*, *paska*, *pistikeins* (Gk *pistikós*), *praizbytarei*, *praufetus*, *psalma*, *saban* (Gk *sábanon*), *sabbato*, *sakkus*, *satanas*, *sikls*, *sinap*, *skaurpjo*, *smyrn*, *spyreida* (Gk *spurís*), *synagoge*; further *ulbandus* 'camel', with a changed meaning and strangely enough with regular sound shift from Gk *eléphant*. - - - I pass over the borrowings of the younger dialects from the two Classical languages, as well as over the few cases where the borrowings take place into them. I also omit the many Germanic words which have gone into the Romance languages, since all of these have been exhaustively treated by Diez. Yet on the whole I must say that it is completely wrong to assume complete isolation of the Germanic peoples of heathen times. Just one word like *ulbandus* should speak against this, since it must have been in use for a long time in order to be Germanicized in such a form. But we also know that the Germanic heathens took over the seven day week from the Romans -- where else would the pagan names of the weekdays come from? We know from Kirchhoff that the runes originate from the Roman uncials. There are Roman coins in Old Scandinavian graves from the time of Tiberius to Marcus Aurelius; and in the oldest Eddic songs we already have evidence of Roman words: *tafla* 'tabula', *tefla* 'to play a game at a board' are to be found in the *Vǫluspá*; *ketill* 'kettle' appears in the *Hymiskviða* and has deeply penetrated the northern heathendom, as is shown by the names *Ás-ketill*, *þôr-ketill* 'god's kettle, Thor's kettle'. Even the Roman state affairs and Roman religion have influenced us early; Kemble detected the Old English name *Säter* not only in *Säteres dæg* (Saturday), but also in the names

of places, compare Säteres byrig (Saturn's castle). Saturn must therefore have enjoyed a certain popularity, if not in fact veneration, and Caesar, as is well-known, rose to the honor of being moved into the Old English genealogies as the son of Vöden. Under these circumstances it will be advisable in the future not to be too eager to disregard the possibility of borrowing even for very old Germanic words which have apparently escaped the sound-shift.

It is of course to be expected that there was an early exchange of words between the Germanic peoples and their neighbors to the east and west. As regards the Celts, our connections with them were obviously quite lively in the pagan era. This is proved by the fact that the king of the truly Germanic Marcomannen, for instance, had the decidedly Celtic name Maroboduus. In addition, there are the great number of Gallic names ending in *-rîx*, *-rîg-is* and *-mârus* to which the many Old Germanic names ending in *-ricus*, *-merus* correspond very precisely. Compare, for example, Gall. Segomârus with OGmc Sigimerus, a condition which can only be explained through the factor of mutual influence. But since Celtic not only resembles Germanic in lowering the old aspirates to mediae, but also shows beginnings of a sound shift of the mediae to tenues, for these reasons it is in most cases extremely difficult to determine which one of the two languages has borrowed from the other, and often whether borrowing or original relationship exists. Besides, most words of this kind will be discussed below, because the irregularity present in them can best be explained by a comparison with words of the other originally related languages. Therefore I mention here only Gall. *bracca* 'trousers', from which is borrowed ON *brôk*, OE *brôc*, NE *breech*. Furthermore, the strange Goth. *kelikn* Gk *púrgos* which is no doubt identical with *celicnon*, a word that recently appeared on a Gallic inscription. The fact that the word stands alone in Gothic, as well as its strange suffix and the completely un-Germanic appearance and sound, speaks for borrowing from Celtic.

Since earliest times Germanic has many specific agreements with Slavic and Lettish; much of this is admittedly due to an original kinship, but very early borrowing is not rare either. The Slavic-Lettish languages resemble the Celtic in their consistent lowering of the old aspirates to mediae, and they also coincide otherwise (see below) in an anticipating manner with our sound shift. These circumstances make it also extremely difficult to decide whether borrowing took place and if so, from where ... (174) Although I deal here only with those Slavic-Germanic loanwords which, not being recognized as such, seem to constitute exceptions to the sound shift, I cannot refrain on this occasion from drawing attention to the strange fact that we have indeed borrowed from Slavic a great many expressions dealing with commerce, comforts and amusements (buying, names of coins, debt, market and translator, the beaker and the dance), but the Slavs on the other hand have taken from us the word for ruler (likewise the Finns their *kuningas*). The historic position of the two peoples corresponds fully to this phenomenon: throughout the Middle Ages the Germans treated the Slavs as servants; therefore our *Sklave*, earlier in the fifteenth century without *k*, *Slave*, NE *slave*, Swed. *slaf*. The Scandinavians established for the Slavs their Russian empire. It remains to be seen whether this political position of the two peoples is going to change in the future.

Borrowings have also taken place from one Germanic language into another, i.e. 1) from Low German into High German, 2) from Scandinavian into English, 3) from Low German into New Scandinavian, and 4) from New High German into Low German and New Scandinavian. Yet, in 2) and 3) the borrowing and receiving dialects are at the same stage of the sound shift. This is admittedly not the case with the borrowings of the first and fourth class, and some of these indeed give the appearance of a disturbance of the sound shift (e.g. Swed. *dyster*, borrowed from NHG *düster*, does not correspond to OE *þýster*, Lith. *tamsus*, Swed. *an-dakt* =

NHG Andacht, not to Lat. tongere). But a more detailed treatment of these mutual borrowings of the Germanic peoples must be reserved for another time.

A great number of apparent irregularities in the sound-shift also come into being through the irregularities of the related languages. To start from the beginning, it is known that Sanskrit has an entire class of aspirates, namely the voiceless aspirates, which only the Iranian languages share with it. With every example one must first determine whether -- which seems mostly the case -- these voiceless aspirates come from an original tenuis or -- which admittedly occurs in some cases -- originated from an aspirated media. For this Greek will generally guide us safely. Thus everything is in good order for the Sanskrit root path, from which comes panthan 'path', equal to the Germanic root fanþ, which will have to be treated later because of other irregularities, because Gk pátos, patéō witnesses the existence of the original tenuis. But Skt nakha 'fingernail' is likewise quite regularly represented by OE nāgel, since Gk ónukh- shows here the age of the aspirate. There are, however, also other cases where the Germanic only seems to be irregular with regard to Sanskrit, for example Goth. hairto 'heart' vs. Skt hṛd, hṛdaya. Since all European languages have here either k or its regular substitute (Gk kardía, Lat. cord-, 0Ir. cride, OSlav. srǫdĭce, Lith. szirdis) there really is no alternative to admitting an irregularity in Sanskrit (and Zend).

Another series of exceptions can be explained when one looks at the history of the sound shift law. It seems to me that Curtius has demonstrated that the sound shift began with the lowering of the aspirates to mediae, which in turn led to the raising of the genuine mediae into tenues, and further the old tenues into aspirates. I should like to point out in anticipation of the conclusion of this examination that there will then be another reason in support of his view. But it would be false to believe that this lowering of the old aspirates owed its origin to a sudden caprice of the Germanic people, for it is very deeply ingrained in our whole language development. Zend already shows *b* for the old *bh* and frequently also *d* for the old *dh*. In OPers. *bh*, *dh* and *gh* always change to mediae. On European soil this same degeneration is very old in some words; and earlier I have pointed to the conformity of all European languages in this respect, which is attested several times as one of the reasons which compel us to assume that there was a lasting association of the Europeans after their separation from the Asiatics. Goth. *ik*, *mikils*, -*k* (suffix in *mi-k*, *þu-k* etc.), *kinnus* all correspond to Gk *egō*, *megalo-*, *ge*, *génus*, to Lat. *ego*, *mag-is*, *gena* (the Celtic, Slavic and Lettish languages prove nothing in this matter since all old aspirates become mediae in them), while Sanskrit offers *aham*, *mahat*, *ha* (Ved. *gha*) and *hanu*. The situation is also similar with Skt *vṛh* 'to grow' 2) 'to work' -- Zend *verez-* but Gk *werg-*, Goth. *vaurkjan*; also with Skt *vṛdh* 'to grow', but Gk (*b*)*ríza* from *wridja*, *hrádeks*, *hrádamnos*, with which goes Goth. *vaurts*, OE *wyrt*, and further ON *rôt*, NE root, while OE *rôd* 'pertica', NE rood, rod, OHG *ruota* agree with the Sanskrit sound level. From Gk *megalo-* it can be affirmed against all doubt that the root had originally *gh*, for this root is in Sanskrit *manh* 'crescere, augere' and has maintained Gk *kh* in *mêkhos*, *mêkhanē*, with which in turn Goth. *magan* agrees. It may also be assumed as proved that Gk *ge* arose out of older Gk *khe* only on European soil, in the event that Gk -*khi* (in *hêkhi*), which can not possibly be considered a case suffix, is related to it as Skt *hi* is to *ha* (all these little words are enclitic). With all the other examples there remains the slight possibility that originally a *g* stood here and that the *h* of Sanskrit is a special irregularity.

Aside from these anticipations of the sound-shift, which pervade all European languages, each language has also specific preludes to the sound shift, as well as some peculiar irregularities of its own. [Lottner goes on to list these pp. 177-182].

(182) Finally, apparent irregularities come into being through dialect peculiarities of the individual Germanic languages, through which the system of their mutes is more or less altered. To this belongs above all the second sound shift of the High German which has affected some of its individual dialects more, others less, but none completely. Therefore determination of the original Germanic form meets with considerable difficulty where words have only been preserved in High German. The second sound shift, as is well-known, has penetrated the dental group most thoroughly, and of these the *z* (= Goth., OE, ON *t*). But there is an exception here too, to which insufficient attention has been paid: the groups *tr*, *tl* always remained unshifted. This not only explains our *treu*, OHG *triuwi* vs. NE *true*, ON *trúa*, Goth. *trauan* etc., but also cases like OHG *bittar* vs. OE *biter*, ON *bitr*, Goth. *baitrs*, where a vowel was inserted at later times. --- A great number of apparent exceptions to the first sound shift originate in Old Norse and in Old English through the almost consistent change of medial *b* to *f* (changed further in English, Low German and Danish to *v*, in Swedish to *fv*), whereas Old Saxon has preserved the intermediate grade *bh*. Thus, OE *leof* 'dear', ON *liufr*, OE *lufjan* 'love' appear to be on the same grade with Skt *lubh* 'cupere'. Likewise, ON *stafr* 'staff' OE *stäf* seem to fit exactly Skt *stambh* 'fulcire', but HG *lieb*, Stab, Goth. *liubs*, *stabs* show that everything is in order. In most cases of Old Norse medial *d* becomes *þ*, *ð*, and in Anglo-Saxon this may happen under certain conditions which, of course, gives rise to new apparent exceptions. 2) In New Norse (as well as in Low German) *th* is lost and is replaced by *t* or *d*. It is replaced by the former when the English form begins with a hard *th*, and by the latter when the English pronounce a soft *th* (thus Swed. *du*, *de*, *den*, *dem*, *desse*, *än-då* = Engl. *thou*, *the*, *they*, *them*, *these*, *though*). For this reason Swed. *du* 'you', *tänka* 'think' are apparently irregular when compared with Lat. *tu*, *tongere*, but in Old Norse we quite regularly have *þu*, *þenkja*. Finally, medial tenues between vowels, and final tenues after a vowel, change in Danish to mediae (rarely also in Swedish). Thus, Dan. *bog* 'book', *vide* 'know', *aede* 'eat' correspond, for example, to Gk *phêgos*, *wid*, *ed*, but compare Swed. *bok*, *veta*, *äta*, ON *bök*, *vita*, *eta*. All these special irregularities are, of course, to be revoked and the state of Primitive Germanic sounds to be restored before a comparison is possible, also when the dialect form is apparently more regular than the primitive form arrived at by a comparison of the other Germanic languages. It is, for example, uncritical to cite OE *seofon* 'seven' for the correct sound shift with regard to *septem*, because Goth. *sibun* as well as the High German form demonstrate clearly that here Primitive Germanic had a *b*.

The Gothic sound conditions of the mutes are identical with Primitive Germanic in by far the most cases, but not always, just as little as the grammar of this dialect does not always have the oldest forms. Some examples of irregular sound shift in which Gothic is corrected by other dialects will be given later. Here I cite but the two peculiar examples in which the Gothic alone has maintained an unshifted *d*, namely *du* 'to' = OSlav. *do* 'to', da Gk *hína*, OIr. *do* and, according to Stokes, probably also Lat. *-du* (in *in-du* = NE *in-to*), whereas OE *tô* and OHG *zuo*, *za*, *zi* have been shifted; and Goth. *dis-* = Lat. *dis-*, but OHG *zir-* which presupposes an earlier regular *tis*.

After elimination of the apparent exceptions we can now proceed to consideration of the real exceptions.

I. Irregularities of the original tenues:

a) The tenues remain regularly (184-187).

[First Lottner cites the groups *sp*, *st*, *sk*, which he says are well-known; then *ht* and *ft*. Apart from these he finds little material.]

b) The old tenuis appears as media (187-197).

[Here he finds the greatest number of exceptions, especially in medial position. He cites, though not coherently, the well-known words, such as "Goth. sibun 'seven' = Skt saptan", "Goth. taihun 'ten' beside -tigus (-zig) Lat. decem". Nor can he account for subsequent changes, such as the devoicing in Goth. hlaifs beside the hlaib- of the oblique cases. Accordingly he is nowhere near a solution. In his final comment on medial mediae instead of expected aspiratae he points to the "elective affinity" between liquids and mediae and to the interchange between "aspiratae" and mediae in the same word, citing for example,

OE	veorðan	vearð	vurdon
OHG	ziohan	zôh	zugum zogan
NHG	leiden		gelitten

He concludes the section with the sentence: "Although to be sure examples occur, in which the older aspirates can no longer be demonstrated, it may not be too daring to presuppose in general the transition of the tenues through aspirates to mediae as a former intermediate stage." It remained to Verner to correct the phonetic statements and associate the phenomenon with the Indo-European accent.]

II. Irregularities of the original mediae (197-202):

[This section was very useful for Grassmann. Although some of Lottner's equations had to be discarded, others are:

Goth. grēdus	"hunger, greed"	- Skt. gardth	"be greedy"
Goth. bindan		- Skt. bandh	
OHG bodam	"floor"	- Skt. brudhna,	Gk puthmĕn

The ON botn and OE botm perplexed Lottner, as did the Greek tenuis. In this section too he associated the irregularities with the liquids, but noted that there were many fewer than for tenues.]

III. Irregularities of the original aspirates (202-3):

[In this short section Lottner's examples are largely erroneous comparisons, which he himself calls uncertain.

After a brief summary Lottner concludes with a statement on the relative chronology of the sound shift.] (204) "It has been disputed where exactly the sound shift began. Grimm finds boldness in the shift of the mediae to the tenues, and accordingly seems to view this as the starting point; I heard Bopp present the entire shift as a weakening of sound, completely opposite to Grimm, and he put the change of the tenues to aspirates at the beginning. The third assumption, that the aspirates became mediae first of all, Curtius capably demonstrated as the most probable by comparing the originally related languages. Through the observation that the aspirates were shifted with greatest regularity, with somewhat less regularity the mediae and least of all the tenues, this view of Curtius gains new support."

London, 10 November, 1860.

Notes

1. The older form *caru* Stokes attests in *Félire Oingosso Céili dé* -- "á ísu notcaru" -- "O Jesus, I love you." [[return to text](#)]
2. It is peculiar that in English the Old English medial dental mediae often appear as *th*; thus in *together, weather, father, mother*, all very common words; OE *āt-gādere, vedr, fāder, mōdor* (the three last as exceptions to the sound shift; see below). Is this Scandinavian influence?

CHAPTER TEN

HERMAN GRASSMANN

CONCERNING THE ASPIRATES AND THEIR SIMULTANEOUS PRESENCE IN THE INITIAL AND FINAL OF ROOTS

*"Ueber die Aspiraten und ihr gleichzeitiges Vorhandensein
im An- und Auslaute der Wurzeln," Zeitschrift für
vergleichende Sprachforschung auf dem Gebiete des Deutschen,
Griechischen und Lateinischen, 12.2 (1863), 81-138*

Editor's Introduction

Grassmann's is one of the celebrated articles of linguistics. Rightly, because it largely led to the conviction that reconstructed languages must be set up for any language family. Before Grassmann, Sanskrit had served as the measure against which forms in the other languages were compared. On the surface it may seem that all earlier scholars viewed Sanskrit as the source of the various other Indo-European languages; but their writings indicate that they were not quite so simple. Because of the transparency of its forms Sanskrit seemed closer to the agglutinative period, through which the Indo-European languages were thought to have passed, than did any of the other languages. The unparalleled antiquity of its materials supported this view. Accordingly, sounds and forms of the other Indo-European languages might well be contrasted with those of Sanskrit. By demonstrating that Germanic actually was "older" in one phonological pattern than was Sanskrit, Grassmann undermined the position of Sanskrit as the language which was the earliest attainable in Indo-European linguistics. By this demonstration Grassmann also undermined the notion that language developed from an analytic to a synthetic structure through an agglutinative. With it he did away with the close relationship that had been observed previously between genealogical and typological classification. After the publication of his article we find fewer and fewer references to the typological structure of a language in comparative treatments; and when typology is taken up by Finck in the definitive treatment of the nineteenth-century approach there is no reference to genealogical classification. The appealing notion of a straightforward development of language had been abandoned.

These contributions to general linguistic theory were achieved by explanation of one phonological problem in Indo-European studies. We have noted how von Raumer had hit on the explanation earlier, but had stated it so briefly that it remained without impact. We have also noted Lottner's important preparatory work. Neither reduces Grassmann's achievement. His article is admirably composed. First he examines previous attempts at explanation, then the data. His examination of both is complete. When he presents his conclusions there is no question of their validity.

His convincing explanation led linguists to deal with entire forms, not merely with single segments. In this way it prepared for the concern with entire utterances, demanded by Sievers. Unfortunately this concern with entire forms and with entire utterances was often neglected subsequently in the attempt to solve the numerous minor problems within the various languages.

It is also noteworthy that Grassmann, with his background in mathematics, objects to fanciful theory -- the equilibrium theory. He insists on an "organic" approach; speech sounds must be classified in accordance with their organs of articulation. For an understanding of linguistic

change a knowledge of articulatory phonetics is indispensable. To be sure, he stumbles over Lottner's notion of a *Wahlverwandtschaft* between mediae and liquids; but such a notion is not completely in contrast with articulatory phonetics, for both sets of sounds are voiced and usually lenis in articulation. Grassmann's achievement is great, even though he left a field for Verner to conquer. His overall procedure is unobjectionable. All "exceptions" have been dealt with. One could not ask for more rigorous methods.

Hermann Grassmann (1809-1877) was a banker who was compelled to retire because of tuberculosis [see N.E. Collinge, *The Laws of Indo-European*, Amsterdam: John Benjamins, 1985, p. 47]. In his leisure he occupied himself with mathematics and linguistics. He made important contributions to both fields. His work on non-commutative algebra is an important contribution to mathematics. For linguistics, besides his clarification of the reflexes of the Indo-European aspirates, he prepared a complete dictionary of the Rig-Veda which is still indispensable for Indo-Europeanists and for Sanskritists. Other works which would be major for most scholars round out his list of achievements, such as his complete translation of the Rig-Veda. He remains one of the great figures in linguistics.

The question of whether there were originally roots in Indo-European with aspirates initially and finally has in my opinion not yet been decided. It is not surprising that, before Sanskrit and also the comparative investigation of languages gained influence on Classical philology, many grammarians—impelled by the moving about of aspiration, e.g. in *trékhō*, *thréksomai*—assumed roots in greatest abundance for Greek with initial and final aspirate and in this way defaced Greek grammar in part with roots that never existed, as linguistic comparison showed; for Goth. *þragja* as well as the Celtic root *trag*, PBB 1.167 beside Gk *trékhō* forbid setting up a form *threkh*** as the original form of the root. It was natural that the investigators starting out from comparison of languages, in their first unhappiness about such monstrosities rejected all roots with original initial and final aspirates; and subsequently the principle that there were no roots of this type was held as a kind of axiom in linguistics, though in more recent times an inclination to that older point of view may again be recognized in various places (cf. Ahrens, *Griechische Formenlehre* §152, Schleicher *Compendium* §143). But as far as I know an actual investigation has not yet been undertaken about the matter.

Encouragement of such an investigation is to be the main purpose of the present essay. Yet it is impossible to take up the matter without touching the disputed question whether the hard or the soft aspirates were the original. For even if the most essential results of the investigation are not dependent on the answer to this disputed question, the entire point of view and the form of the presentation in its details will be quite different, depending on the answer to this question, so that it is not possible to avoid it here. I will therefore first treat this question and only afterwards proceed to the actual task.

First essay: On the presence of hard and soft aspirates before the linguistic separation. (82-110).

[In this essay Grassmann assumes two kinds of aspirates, the voiceless as well as the voiced, specifying that he is dealing with the original Indo-European language. At the end of the essay he states that the Germanic shift began with the loss of the aspiration, sharing this phonetic modification with Sanskrit and Greek. The change of tenues in Germanic he views as related. And only the change of mediae to tenues does he consider without parallel in the other languages, though he states that it took place to restore the balance which was lost in the first two modifications.]

Second essay: On the original presence of roots whose initial and final contained an aspirate. (110-138).

With regard to the question about the original presence of roots with aspirates in initial and final position it is above all necessary to note the two following well-known euphonic laws of Greek and Sanskrit, which I give here for the sake of clarity.

If a root ends with an aspirate and begins with a consonant capable of aspiration, and if its final loses its aspiration through the operation of some other sound law, the aspiration moves to the initial. But this is true of Sanskrit only when the final of the root is a soft aspirate and when the initial is a non-palatal media; and for Greek only when the initial is τ.

For Greek only τεύχω, τυγάνω with their common future τεύξομαι etc. and τρῦχω, future τρῦξω provide exceptions. For the former, as shown above, χ results as a later modification of the original κ, which is also maintained in the derivations and in the aorist τετοκεῖν, but this cannot be demonstrated for τρῦ-χ-ω (from τρῦ-ω). This law is also valid in Greek when the final represents an originally hard aspirate, as in ταχύ, Comp. θάσσων (see the first essay), and also when the root never contained an aspirate initially as well as finally at the same time, as in τρέχω (= Goth. þragja), fut. θρέξομαι. The second law we can express in general as follows:

If aspirates that belong to the same root occur in two consonant groups of a word which are separated by a vowel, then one of them, usually the first, loses its aspiration. Only rarely does this happen when the aspirates belong to different roots, or to different suffixes, or one of them to a root and the other to a suffix, or when more than one vowel stands between the consonant groups (as in ἔκε-χειρία, τηλεθοων).

There is no doubt that reduplication originally arose from a repetition of the entire root syllable, as especially the formation of intensives illustrates (e.g. dar-dhar-shi 'you hold firm' from dhar, dhṛ, (παμφαίνω from the theme φαν); originally then the aspirate must have been repeated as such too, and only later when the repeated root combined into one word and the above-stated law of euphony entered into effect did one of the aspirates give up its aspiration. Indeed we find this aspiration often maintained still in onomatopoeic words, but in these the above law, which would disturb the intended imitation of the sounds of nature, is not applied (gharghara, ghurghurā, gharghurghā, ghurghura, jharjhāra, jhinjhi, etc.)

The decision with regard to the form of the root itself is not so simple. It would follow from the above law that there would be no roots in Greek and Sanskrit which simultaneously showed an aspirate initially and finally in the state of the language transmitted to us. Now this is the case throughout apart from some secondary dialect forms, cited by the Indic grammarians and apart from the Greek forms ἔ-θαφ-θην, τε-θάφ-θαι, τε-θάφ-θω, τε-θάφ-αται (from θάπτω), and τε-αράφ-θαι, ἔ-θρέφ-θην (from τρέφω). Nonetheless it would be unjustified to draw conclusions from this about the original presence of aspirates in initial and final position. It is even less justified to assume without further consideration, as a kind of axiom, that that euphonic law existed from the very first beginnings of the development of language. Bopp makes this last mistake, when in his comparative grammar (§104) he states as grounds against assuming roots with initial and final aspirates that in the very original arrangement of the roots (directed by the cited euphonic law) the language would have guarded against the simultaneous occurrence of aspirates in initial and final position. But it is precisely the question whether that euphonic law existed from the beginning, and in principle

this is most unlikely. The sure answer to this question may only be gained on a historical basis. Now this law shows up in only two language areas: in Aryan and in Greek. In the Italic languages by contrast it does not prevail, as Latin *fefelli*, the Oscan forms *fufans*, *fefacust*, *fefacid*, *fetho*, *hafiest* prove. To be sure *f* and *h* are not genuine aspirates, but they take the place of these; and if indeed that euphonic law was valid already before the separation of the Italic branch from the entire family, it is hard to see why later on again the two spirants which take the place of aspirates should have been restored, even though the one of them had already forfeited its aspiration. Even more decisively, Gothic points to the later origin of that euphonic law and to roots with original initial and final aspirates. For if the law existed already before the separation of the Germanic branch, then on the one hand, since Gothic mediae correspond to the old aspirates, the reduplication of mediae had to be avoided, and on the other hand there should have been no roots in Gothic with initial and final mediae. Neither is true. With regard to the first we can cite Goth. *gaigrot* from *gretan*, which does not belong to Skt *krand* as will be shown below. With regard to the second it turns out that of all nine possible groups of roots with initial and final mutes none is represented as widely as that with initial and final mediae. To look on this as a mere play of chance seems impossible; and consequently we may assume it to be securely established that the questionable euphonic law was not yet in existence before the separation of not only the Germanic but also the Italic branch. A linguistic phenomenon that points to the contrary has not yet been adduced by anyone, as far as I have learned. Nonetheless the frequent recurrence of Gothic roots with mediae initially and finally forces one to the conclusion that there were roots with aspirates initially and finally in the common language branch. Yet the individual roots have to be compared before this conclusion can be drawn with certainty.

If the hard aspirates of Sanskrit are excluded for the time being, especially those roots come into consideration, which begin with a media in Sanskrit and conclude with a soft aspirate. First I consider those beginning with *b*. I begin with an example among them which can be pursued with utmost certainty through all four language branches which are considered here, and which to a certain extent can be viewed as representative of the others; for the phonological phenomena which appear in it are repeated almost throughout in the others in a precisely corresponding manner, namely:

1. *budh-ná-s* πυθ-μήν *fund-u-s* OS *bod-m*,

where the remaining Germanic dialects likewise all show the initial *b*, while *d* and *t* vary among them in an irregular manner. The initial media of Sanskrit is replaced in Greek by the tenuis, in Latin by the aspirate, in Germanic by the media. Of these sounds only the Latin aspirate stands in accord with the German media; all other five replacements are anomalous. But nonetheless the same series of phenomena is repeated in almost all roots of the named type. Therefore, to avoid these anomalies, on the grounds that Sanskrit has preserved the original grades of sound, one has devised theories through which one attempts to explain these irregularities for every single one of the remaining language branches. To this end, first Pott and in greater detail Benary in his *Phonology* have set up for Greek the equilibrium theory, which has been adopted by most of the more recent investigators of languages (as also by G. Curtius, *Schleicher Compendium* §143). Benary explains the phenomenon, that for example Skt *budh-* is equal to Gk πυθ- through the fact that since the aspirate became hard in Greek the tenuis arose medially instead of the media in order to restore the equilibrium (p. 195). This equilibrium he finds disrupted, if from *budh*, which contains two soft sounds, *βυθ- had developed, which would contain one soft and one hard sound (β); and this equilibrium is to have been restored through the hardening of the β to π. I cannot make any

other sense of this expression (of the disrupted and then restored equilibrium), than that the hard sounds are placed as equivalent among themselves, and similarly the soft sounds among one another; on the other hand the hard as not equivalent to the soft -- and that the Greek language had a preference for equilibrium of the initial and final of roots. Let us examine this preference for equilibrium in greater detail. Four types of equilibrium are conceivable for Greek. First, both sounds can be soft, that is, initial and final can be mediae; second, the initial can be a tenuis, the final an aspirate; or conversely, the first can be an aspirate, the final a tenuis; or, last, both can be tenues. With regard to the first combination of sounds there is apparent in Greek a comprehensive, but, as far as I know, not yet observed law according to which there is no root in Greek with two mediae and a simple intermediate vowel or a vowel expanded by a nasal. It is obvious that in the reduplicated forms, as in δίδωμι, δαιδάλλω, δευδίλλω, or in derivations like βᾶ-δην, βα-δ-ίζω, two mediae can arise at both sides of the vowel, without thereby affecting the law. The single exception would be the *hapax legomenon* of Theocritus δαγύς 'wax doll of magicians', if the reading for it (besides δατύς) were not doubtful, and a foreign origin not probable. Things are not much better in the second and third equilibrium form. Actually there seems to be hardly a Greek root which originally began with a tenuis and ended in an aspirate, or conversely -- of such a kind that in the remaining languages the regular representation would take place. Rather, we see the first of these forms regularly paralleling the form of Sanskrit: media, vowel, soft aspirate and in accordance with the above representation paralleling the forms of the other languages related to it, as the above example illustrates. As the only cases, which might provide a more extensive correspondence of the sort that the tenuis initially and the aspirate finally in the root appear original, I have found: τρεχῶ = Goth. þrag-ja, in which however the Lith. strokas 'haste' makes an originally initial *s* probable; and perhaps κεύθω (theme κῶθ), compared with OE hyd-an, hed-an, OHG huot-jan; but this second example is also highly uncertain, since the Greek κεύθω stands in much closer relationship to the Skt gudh, guh 'conceal', which has the same meaning, and since there are only highly uncertain traces of a root *kuh in Sanskrit, about which in addition we do not know whether the *h* corresponds to a *dh* or to another aspirate (kuha, kúhaka, kuhana, kuhayāmi, kuhū, kuhara, kuhūla = kukūla, kūhanā, kūhā = kujjhaḥi-kā, which have the meanings ' juggler, deception, deceive by cheating, new moon, cave, fog, etc.' -- see the Petersburg Lexicon). In any case the second and third equilibrium forms, which originally show a tenuis initially and an aspirate finally, or the reverse, are accordingly only poorly represented, if at all. Only the fourth equilibrium form with tenuis initially and finally is normal in Greek, but it is greatly outnumbered by the numerous roots in which no equilibrium of the designated type takes place; and indeed all five types of non-equilibrium occur, and most of them in great abundance. A preference in Greek for the equilibrium between the initial and final of the root is accordingly out of the question. One would accordingly have to modify the Benary law to this effect that the Greek language attempts to maintain through all changes the relationship of weight between initial and final, as it exists at any time, and especially when both stand in equilibrium; but even about this we find no trace outside the area in support of which the entire theory is to serve. From Benary's conception that of Schleicher (op. cit.) differs only in choice of words, for the weak sounds are designated as voiced, the hard as voiceless; equilibrium is designated as similarity of sound and the production of equilibrium as assimilation. In order to explain the irregularity found in Latin (Lat. fund-u-s = Skt budhna-s), Benary has made accountable the shift of the aspiration from the final to the initial, and this assumption has also been adopted by most of the more recent investigators of language. But such a shift has not been demonstrated anywhere in the area of the Italic languages. Moreover, the analogy of Sanskrit is not decisive here, since the corresponding phenomenon in Sanskrit is tied to certain conditions which do not enter in here; and in addition, Latin treats the medial aspirates, in contrast with Sanskrit, almost everywhere

like mediae. Finally for the anomaly of Gothic and Germanic in general no theory has as yet been made cogent, but here the anomaly is permitted to stand as such, as for example Curtius in No. 326, 327, 328, 329, 145, 318, 138, Schleicher in §143. All these anomalies disappear and those highly dubious theories which have been devised for their explanation become superfluous if one assumes in the examples under consideration original roots with aspirates initially and finally, which were modified in all those languages in accordance with the general laws which apply in these languages. If for example we assume in the above-cited *budh-ná-s*, *πυθ-μήν* etc. two original aspirates (*bh*, *dh*), then in Sanskrit and Greek in the development of the above-discussed euphonic law, one, and generally the first had to give up its aspiration; in this way, since the aspirate was soft in Sanskrit, hard in Greek—at least from a certain time on there a *b*, here *π* had to arise, the latter (at least if the time when the euphonic law came into force was after this point in time). In Latin, on the other hand, where as shown above this law did not prevail, the aspirate was maintained as *f* and in Germanic it shifted regularly to *b*. Instead of the three anomalies which also did not stand in any sort of relationship to one another, one has with this assumption organic changes everywhere, and there is no need to explain the phenomena through artificial hypotheses which lack any other support, nor, despairing of a solution to consider the changes as non-organic. For Greek we must examine the phenomena in still greater detail. It turns out that when the first aspirate of the root loses its aspiration initially before vowels, the tenuis appears without exception; on the other hand where the second (root-final) loses it, the media arises. The latter occurs, as will be discussed further below, for example in *θυγ-άτηρ*, *φράσσω* (theme *φραγ*), *φεύγω*, *θέλω*, (*θελών* beside *τελών*), *φιδ-άκ-νη* beside *πιθ-άκ-νη*, *φέβομαι*, *φοῖβος* (the latter probably a reduplicated formation from *bhā* 'shine') and probably also in *θιγγάνω*. It follows from this that at the time when the above-mentioned euphonic law occurred, the aspirate was already hardened initially; medially however it had still preserved its original nature (as a soft aspirate). The initial aspirates before *ρ* and *λ* also seem to have remained weak at that time still; evidence for this is given by *γράφω* = Goth. *grab-a*, *βρεχμός* = OE *brāgen* (see below), and also *γλάφω* and *γλύφω* (compare below also *δολιχός*). Accordingly, from the above-mentioned development we have to assume that the euphonic law -- according to which the simultaneous appearance of aspirates in the initial and final of the root was avoided through the fact that one of the two aspirates was deprived of its aspiration -- developed independently in the two separated branches of the Greek-Aryan language branch, and that particularly between the time of separation of Greek from Aryan and the development of this law in Greek the period must have elapsed in which the initial aspirate was hardened, except before *ρ* and *λ*. This law arose in both branches from the striving which is based on the nature of the aspirates to avoid the heaping of aspirates in the same word. The two languages did not follow the same course in this process, and particularly the Aryan languages resisted also the direct coming together of the two aspirates, while Greek did not, except for homorganic aspirates; yet the Aryan languages attempted to transfer with much greater consistency to another sound of a word the aspiration lost in one position, and by this to maintain the traces of that aspiration (e.g. Skt *labdhá-s* from *labh + ta-s*, Gk *γραπ-τός* from *γραφ + τό-s*, Skt *ghoxyāmi* from *guh + syāmi*, Gk *κέύσω* from *κυθ + σω*, both with gunation of the root vowel). Nonetheless the agreement of both branches in their treatment of the aspirates is overwhelming, and particularly in comparison with the other branches of the Indo-European language family. While these gave up the aspirates partially or completely without providing a substitute for them, the others only worked against their heaping up, but still attempted, to the extent permitted by the striving for euphony which was constantly developing toward greater perfection, to preserve the aspiration as faithfully as possible. As in general in both of these branches, also where they apparently developed independently of one another, but most prominently in Sanskrit, on the one hand a wonderfully fine feeling for euphony developed,

and on the other hand the striving remained along with this to bring to view unimpaired all phonological characteristics of the roots, especially in all of the formations and derivations which sprang out of them, and in this way to maintain the roots in their original and complete life. And this agreement of both language branches is also simply another of the many phenomena, in which the far-reaching agreement between the Greek and the Aryan (pre-Brahmanic) spirit appears to us in language, poetry, myth and life, and gives evidence of the tremendous intellectual development which the Greek-Aryan people underwent after the departure of the other peoples. After these digressions, which seemed to me necessary for the understanding of the whole, I return to the comparison of the individual roots and first of all to those with an original initial *bh*. The citations refer to Curtius, *Grundzüge* (C), where the number is cited; to Schleicher's *Compendium* (S), where the paragraph is; to Leo Meyer's comparative grammar (M) and to Lottner's essay in Volume 11 of this journal (L), where the page is cited.

2. buhd πυθ ---- bud) C. 328, M. 394
 bódhāmi πυνθάνομαι ---- binda) S. 143

The Latin putare does not belong here, as was shown above.

3. bandh *πενθ, *πειθ *fad(?) band) C. 326
 badhnâmi binda)
 bandh-u-s πενθ-ερό-s
 bandh-a-s πείσμα fas-ci-s(?) HG band, bind-a

Latin *fūnis* probably belongs to the secondary form with *u*, Skt **bundh*; and Gk *πίθο-s* 'vat', *πιθάκη* = *φιδάκη*, Lat. *fidelia* and possibly also Lat. *filum*, if it is to be explained from **fid-lum*, seem to point to a secondary form with *i*. The following root also seems to set out from the same basic meaning.

4. ---- πιθ (fid-es) bid, bad) C. 327
 πειθω fīd-o bidja)

where Gothic to be sure shows the theme *bad* for the preterite, but in the present (*bidja*) and in the derivations (*bida*, *bidagva*) it seems to point to a theme *bid*.

5. badh, bādh παθ, πενθ fend *badv (Grimm, KZ 1.437)
 bādhe πά-σχω -fendo (N *böd* 'battle' OE *beadu*)

Here Greek differs appreciably in meaning from the other languages, for Skt *badh* or *vadh* 'strike, kill', *badh* 'torture', Lat. *fendo* as it appears in *offendo*, *defendo* means 'push'. With this is associated Lith. *bēdá* 'need, misery' = Russ. *bēda*, 'misery, woe', OSl. *bēdá* 'compulsion'; also, to the form *badh*, the Slavic *boda* 'stab, push'. But the transition of meaning to Greek *πάθο-s*, *πάσχω* appears clearly in the Lithuanian and Slavic words. That Lat. *pati* doesn't belong here has been shown above.

6. bāhú-s πῆχυσ- ---- N *bōg-r*) C. 176, S. 143

Even from this peculiar situation it is probable that initial *b*, except in onomatopoeic words, had not existed before the separation of the languages, and that accordingly those words with initial *b* (Gmc *p*) in those languages originally had another initial. For Latin and Greek it turns out that initial *b* either arose from *gv* (βαρῦ-s, βαίνω, βοῦς, Lat. bos, βοάω, βίο-s, βιό-s, βία, βάλλω, βορά, βιβρώσκω, and probably βαθύ-s, βάπτω), or from *dv* (bis, bellum, bonus), or from *v* (βούλομαι, βελτίων, βολβό-s, βλαστό-s, βρίζα, βρέχω, βρόγχο-s) or from *m* before *l* or *r* (βροτό-s, βραδύ-s, βλώσκω, βλίσσω, βλάξ, βληχρό-s, βραχύ-s according to L. Meyer) or from *bh* (βρέμω, βάζω, βασκαίνω, βρούω, βλύω, βλέπω, bulla, balaena) or from *p* (βόσκω, bibo, buxu-s). And the remainder, which cannot be explained in one of these ways, or seems to be borrowed, is quite isolated and still awaits an explanation. Similarly it is also probable that the Sanskrit *b* too arose from other sounds initially, because otherwise it would be impossible to understand why its representatives do not show up in the related languages. Now we also see here, as in Greek, that *b* arises from *m* before *r* in Skt brū; 'speak', for Zend mru corresponds to this, and before *r*, *m* can indeed go over to *b*, but not the converse. Further, as also in Latin *v* and *b* frequently interchange (bāro = vāro, batillum = vatillum), so in Sanskrit this interchange between *v* and *b* appears broadly distributed, but in such a way that in part *v* seems to be older, in part *b*. If one takes the rest of the Sanskrit words beginning with *b*, which either have no secondary form beside them beginning with *v*, or in which *b* seems to be older than *v* (which is the more common), the remainder consists almost without exception of words in which an aspirate (with or without nasal) or an *l* follows the first vowel. The latter are bal and bil beside the obvious dialectal secondary forms *bhal and *bhil. Since the first two are also not directly attested, one must determine their meanings from derivations. In the first place, bala-m 'strength' with its derivations does not belong here, since Latin valor etc. demonstrate *v* as original initial. Now we see bali-s 'nourishment, food', bāla-s 'boy, child', bālā 'girl' establish the meaning of bal which is cited by the grammarians: "sustentare nutrire" (= bhṛ), for which the example bālayati bālam pitā 'the father feeds the child' is cited. This leads at the same time to the origin from Skt bhar, bhṛ, for *r* changed to *l*, as it did so often and first generated the form *bhal, and then the *bh* lost its aspiration through the influence of the *l* at the end of the root. The exact equivalent is true of bil, from which bíla-m 'gorge, grotto' arose, and which the grammarians quite correctly explain from bhid 'split' beside the root *bhil, which is cited by them too but not attested in derivatives either. The root bhid must also be viewed as the original form for bil (see Benfey's Glossary to the Sāmaveda), for *d* developed to *l*, as happens not infrequently in the final root; accordingly *bhil arose first of all, whereupon the initial aspirate lost its aspiration through the above mentioned influence of the *l*. This influence of the *l* following the vowel on the initial (soft) aspirate is also confirmed by the fact that apart from the cited roots *bhal and *bhil the grammarians cite no root which begins with a weak aspirate and ends with *l*. The few words of the form: "weak aspirate, vowel, *l*" are either onomatopoeic, like ghulaghulārava 'a kind of dove', jhillī 'cricket' etc., or dialectal secondary forms, chiefly adduced only by the grammarians, like ghola-yāmi 'mix together', a Prakrit reformation of ghūrṇayāmi or jhāla 'heat of the sun' beside jvala-s (from jval); dhūli 'dust' is the only word of this type that has a more general distribution. According to this it seems justified therefore, to assume for Sanskrit a dislike for such combinations and to hypothesize that the *l* following the vowel in the classical language deprived the originally (soft) aspirate of its aspiration, so that particularly bal and bil point back to the original initial *bh*. The remaining evidence for initial *b* after removal of the named forms, is limited according to the glossaries of Bopp and of Benfey (to the Samaveda) to the following words (when we exclude the words cited only by

grammarians: baṇij 'merchant', where the *b* is weakened from *p* (paṇ 'sell, play dice'), the Vedic asseverative particle bat, which probably goes back to the original initial *v* (see Benfey, Glossary), bānā-s = vānā-s 'arrow' = bundā-s, brbād-uktha for bṛhad-uktha. I now proceed to the other initials.

14. dih (θιγ) fig dig) C. 145
 déhmi (θιγγάνω) fingo deiga) M. 385

That Goth. *deiga* belongs together with Lat. *fungo*, with which Curtius also associated it recently, is proved by the nicely fitting meaning as well as the form. The *g* in Germanic shows itself to be very persistent in all dialects, and it is also maintained in Goth. *deiga* 'πλάσσω', *digans* 'οσταρκινό-s' *daig-s* 'φύραμα'; only the isolated *gadikis* 'πλάσμα' shows a deviation. Germanic accordingly points definitely to a final aspirate, the corresponding Sanskrit form would therefore have to read *digh* or *dih*. The Sanskrit root *dih* has the meaning: 'coat with white material' and accordingly agrees nicely with the basic meaning of *fungo*. That Skt *h* stands for *gh* is proved among other things by the secondary form *san-degh-a* for *san-deh-a*. The sounds are in complete agreement when the form with two aspirates is taken as original. The Greek θιγγάνω also agrees in sound, since as demonstrated above the root-final aspirate, if it loses its aspiration, goes over to the media. But the meaning is by no means in such exact correspondence with that which the other languages develop, that there may not still be doubt. From the root *dih* develops in Sanskrit *deha-s*, *deha-m* 'body', which however does not yet occur in the Vedas with *dehî* (as feminine formation from it) with the meaning 'mound, dike, wall'; with this agrees *dehalî* 'mound before a house, step, lintel, terrace', as also *dehikā* 'an insect that throws up earth'; *upa-dehikā* 'a kind of ant', *ud-dehikā* 'termite'. And this meaning of 'heaping up' or 'formation of earth' we also give as the basis for *deha* 'body'. To *deha-s* corresponds quite exactly Gk τῶχο-s and with neuter suffix τεῖχ-os, the basic meaning of which would also be 'earthen wall'. Against the interrelationship with Gk τεύχω (Curtius, No. 135), the vowel provides the most decisive evidence, for *oi* and *ei* are the regular gunations of *i*, the first regularly with the suffix *-o-*, the latter always with the neuter suffix *-os*.

15. dáh-āmi 'burn' ---- ---- OHG tāht 'wick'
 áh-an 'day' Goth. dag-s

for which I adopt the interpretation of Skt *áhan* from **dah-an* (Bopp, Glossary). That Gk δαίω, δαίς does not belong here, as L. Meyer (*Comparative Grammar* 385) assumes, but rather stands for **δαFjō*, *δαFís*, and belongs to Skt *du* 'burn', from which Skt *dava-s*, *davathu-s* *dāvá-s* 'burning' develops, has already been indicated by Curtius (*Grundzüge*, No. 258); and that Lat. *fax* does not belong here, because of the contrasting final *c*, has been demonstrated above.

16. duhitár θυγάτηρ dauhtar C. 318,

in which Greek has modified the second aspirate and indeed regularly; the Goth. *h* is conditioned by the following *t*. With this belongs the root:

17. duh ---- ---- dug
 dogh-mi daug

Skt duhitar points back to the root duh; Goth. dauhtar to the Gothic root dug; both correspond exactly in sound. But the meaning of Goth. dug-an (συμ-φέρειν, χρήσιμον, εἶναι) with which Grimm, *Grammar* 2.23, rightly puts dauh-t-s 'guest meal, δοχή', seems to be quite remote from the concept of the Sanskrit root duh 'milk, give milk'; and the English dug 'teat, udder' could be suspected of borrowing from Celtic, deogh- 'mammās sugere'. But the abstract concept of Goth. dugan must have risen from a sensuous meaning; and the root duh of Sanskrit places this transition before our eyes. In this way the meaning 'milk' is transferred to abstract concepts: 'to exploit something, draw a use or profit from it'; and the meaning 'milk', that is 'to give milk' to the abstract concepts: 'to provide something desired (useful)'. And from this concept the meaning: 'provide a use, be useful', as Goth. dugan shows it, as well as the concept of entertainment (dauht-s as translation of δοχή could very readily develop. Lat. ducere, Goth. tiuhan clearly does not belong here.

18. druh (θελγ) fraud OHG trug
 drhúyāmi (θελγω) triugu (ON draug-r)

With regards to the meaning, as well as the Gk θέλω (the vowel of which still raises a question), I point to Kuhn's discussion in this journal (1.180), and note only that the basic concept is: 'to injure someone, especially through trickery, treachery, witchcraft'; and that ON draugr 'ghost, shadow of the dead' agrees precisely with Skt druh 'monster, witch', Zend druj 'evil spirit'. Lat. fraus, which agrees excellently in meaning (compare Skt drógha-s, droha-s 'insult, deception') I have put here experimentally; the organically corresponding form would have to be *fraug-. Since however an exchange of the aspirates of various speech organs is not at all infrequent, and since Lat. *d* in fraud would represent an aspirate, this attempt did not seem too daring. In Germanic a homophonous root, but starting from another meaning, seems to have mixed with this, namely Goth. driuga (theme drug) 'do military service' compared with OE dryht, ON dröt 'companions, retinue', and especially with Lith. drauga-s 'companion', draugé, and in compounds: draug- with OSl., Russ. drugū 'companion, friend' also in the sense 'another'. We do not find anything in Sanskrit corresponding to these meanings, which go back to the concept of companionship, if one does not want to adduce the words cited by the lexicographers: druha-s 'son', druhi 'daughter'. Lat. trux would indeed correspond initially with our root in accordance with the treatment above, by which initial Lat. *tr* can have arisen from older *dr*, originally *dhr*; but its final, as shown above, point to another origin for it.

19. ---- τυφ-λό-s ---- Goth. daub-s, dumb-s (L. 199)
 20. *drāgh trahe draga
 dīrgh-á-s δολιχ-ό-s

From the root *drāgh (drāghe) 'make long' etc. are derived dīrghá-s 'long', compar. drāgh-īyas, superl. drāgh-istha-s; drāgh-imán or drāgh-mán 'length', drāgh-áyāmi 'extend'. Of especial interest here is the secondary form with two aspirates cited by the grammarians which offends against the euphonic law: dhragh-e, from which the scholiast for Panini forms the perfect dadrāghe. It must be noted for Gk δολιχό-s, to which OSl. dlūgŭ, Russ. dologŭ corresponds, that in accordance with the above the soft aspirate of Sanskrit often changes to the media in Greek before ρ and λ, a change that is not hindered by the (subsequently) intercalated ο. The *tr* in Latin has been discussed above. Compare Leo Meyer (in this journal 6.223), who however associates HG träge, incorrectly, since this already at the Gothic stage has *tr*, which as is well-known is not shifted.

21. (jabh) κεφαλή ---- OHG gebal

OHG gebal, gibilla means 'skull', as does the related gibil, gibili and ON gafil 'gable', with which also NHG gipfel is connected. It is difficult to separate from this gabala, OE gaflas pl., ON gaffal 'the fork', and also OE geaflas pl.; this leads us to the root, Skt jabh, jambh 'open the maw, snap at something'; in connection with its development of meaning the treatment of Kuhn, KZ 1.123ff., is to be compared. As well the Greek, in forms like γαμφ-ηλαί, γαμφ-αί, γόμφο-s = Skt jámbha-s, γόμφο-s = jambhya-s, as also the Germanic, in forms like OE ceafle, ceafas pl. 'throat', ON klaptr 'snout, throat, cheek-bone' etc., in comparison with the forms cited above, point to a split of the root jabh attested in Sanskrit - a split previous to the linguistic separation -- into a form with original aspirate initially (Gmc gab-, Gk κεφ) and into another with the corresponding media.

22. gadh ---- ---- *gad

The Sanskrit root gadh (according to the grammarians 'to be mixed') occurs in the Vedas with *ā* and *pari* in the participial form *â-gadh-ita*, *pâri-gadh-ita*, which according to the editors of the Petersburger Dictionary probably has the meaning 'attached', 'surrounded'; *gâdh-ia-s* 'that which one must hold fast, to exploit' also belongs to this. Grimm (No. 5456) ascribes the meaning 'jungere' to the Germanic root *gad, which occurs in OS *gigado*, OE *gada*, *gegada*, *gâdeling* 'associate', in OHG *gagat* 'associated', in Goth. *gadiligg* 'ἀνέψι-os', in OS, OE *gador* 'together' in OE *gegâde* 'assembly', in NHG *gatte*, *gatten*, *gattung*, *getter*, *gitter*, ON *gadda* 'join together', Swed. *gadda sig* 'conspire'. The basic meaning seems to be that of firm, close association, possibly precisely in the special conception of 'attaching, joining to one another'.

23. ---- ἀγαθός ---- gōds (L. 197)

The Gothic word points to an original form with two aspirates and the root vowel *a*, to which the Greek agrees, apart from the preposed *a*; for at the time when the one aspirate deprived the other of its aspiration the medial Greek aspirate in accordance with the statements above was soft, the initial hard; accordingly either ἀγαθός-s or ἀκαθός-s (Hesychios) had to result, depending on whether the *a* was preposed before or after that time. As root we may hypothesize No. 22, with possibly a transition of meaning through the intermediate concept 'aptus'.

24. ---- γράφω (scribo) graba (L. 197)

With this the secondary forms with *λ*: γλάφω, γλύφω Lat. *glaber*, *glūbo*. With regard to the initial, for Nos. 24 and 25 the first essay is to be consulted.

25. ---- ---- gradu-s grid-s, ON grada (L. 198)

To the two roots given in 24 and 25 belong forms with initial *s*, namely Lat. *scrib-o* (to γράφω) and OE *scrīd-e*, OHG *scrīt-u* (to *gradior*), both with transfer to the *i*-series; further, Lat. *scalp-o* (to γλάφ), *sculp-o* (to γλύφ-ω); and as original initial either *sk* is to be assumed, and then it must be posited that it changed in part to the weak aspirate before *r* and *l* even before the linguistic separation, or more probably that *gh* was the original initial, before which an *s* had been introduced as a type of compensation for the abandoned aspiration.

26. gṛdh ---- ---- gred-u-s (L. 198)

The meaning of the Sanskrit root gṛdh, gṛdh-yami 'be greedy for something' is mirrored in Goth. gredu-s 'hunger', ON grad-ug-r, OE grædig 'greedy'.

All words cited above go back to original root forms with two soft aspirates, which in the Germanic and Italic languages are treated precisely as such, and of which in the Aryan and Greek languages one, generally the first, loses its aspiration. Some instances still remain to be treated, in which the hard aspirate, whether it was originally present or developed only later from the tenuis, exerted in the same way an influence on an originally present, soft aspirate, so that it lost its aspiration. For we note that like roots with two soft aspirates, those with hard aspirate initially and soft finally, or the converse, are avoided in Sanskrit (and Greek), apart from some individual ones which were probably taken from the dialects, and in addition partly secondary forms of grammarians resting on uncertain readings. Actually, Germanic makes this assumption very probable for the following two roots:

27. chid σχιδ scid skaid)
 chinadmi σχιζω scindo scaïdo) C. 295

Here Germanic (Gothic) points to the original root final *dh*. But from this does not necessarily follow a root with two aspirates; rather it is possible, indeed probable, that the original initial was *sk* and only in the common Greek-Aryan language branch did the tenuis, as we see happen so frequently, also subsequently, after the separation of the two branches, change under the influence of the preceding *s* to the hard aspirate, which then merged with *s* in Sanskrit to *ch*. Then we would have to assume an original form *skidh, whose final aspirate had to change to *d*, Gk δ, after the *k* was aspirated and the euphonic law became effective, by which the simultaneous occurrence of aspirates initially and finally in roots was avoided.

28. chad ---- ---- skad-u-s

The meaning 'shadow' goes naturally with the meaning 'cover up, cover over, conceal' also 'darken' of the Sanskrit root chad (chādāyāmi). In accordance with the statements about the previous root we would here have to assume an original form *skadh.

If at this point we review the exceptions to the first consonant shift, as Lottner so usefully assembled them recently, we see that they almost vanish completely, apart from a small number of dialectal variations and from the instances to be mentioned below which rest on a type of elective affinity between the liquids and the following media. If we examine first the initial, then of the instances in which the media is said to remain unshifted (p. 197) the following disappear, in connection with which I always refer to the number in the foregoing treatment: 1. god-s (No. 23), 2. graban (No. 24), 3. gredu-s (No. 26), 4. root drug (No. 18), 5. dauhtar (No. 16), 6. bindan (No. 3), 7. biudan (No. 2), 8. ON botn (No. 1), 9. ON bog-r (No. 6), 10. OE geaflas (No. 21), 11. Goth. gibla, ON gafl (No. 21), 12. dumb-s, daub-s (No. 19), 13. dag-s (No. 15), 14. OE beado (No. 5), 15. OE drygge 'dry'; for Skt *drākh 'be dry', which is not yet attested, actually shows the original aspirate in the form *dhrākh (same meaning), which to be sure is similarly unattested. And this example was passed over above only because the root simply is unattested and no derivatives from it appear; also the vowel *u* of

Germanic, like the irregularity of the final arouses some suspicion. Among the remaining exceptions, Goth. *gagga*, OHG *gā* must definitely be excluded, however much it is placed together with Skt *gā*. For since Skt *gā* (Gk βάλω, etc.) is represented by the Germanic root *kvam* (Goth. *kviman* etc.), and since Skt *gā* (Gk βιβά-s) stands in very close relationship with it, for this reason alone one cannot accept that equation; Skt *gā*, Gk βα would have to yield Gmc ** *kvā*. Now for the Germanic root *ga*, the exactly corresponding root with the same meaning is found in Skt *hā*, *jihāmi*, and there seems to be no reason for not equating the Germanic *gā* and the reduplicated *gaggan* with it; this equation is established to a certain extent through Lith. *ženg-iu* 'stride', for Lith. *ž* is virtually the regular representative of Skt *h*. Obviously Skt *hā*, *jāhāmi*, *jāhīvas* (1. du), ptc. *hīnā-s*, which have the meaning 'desert' and, in the related languages and to some extent also in derivatives in Sanskrit, the meaning 'to separate, gape', are closely connected; yet in this root an *i* or *j* often develops after the initial (*χα-, *hia-re*, ON *gi-a*, HG *gi-en*. That Goth. *gras* does not belong to Skt *gras* 'devour' has been shown in the first essay in connection with the replacement of the initial aspirate through Latin media (No. 2); and that ON *bullā* = Lat. *ebullire* provides no exception has been demonstrated there (No. 11). Relationship of OE *gilpan* with Skt *garva*, *garba* had already been doubted by Lottner and indeed justly; rather, Skt *garva* 'pride' is to be associated with Skt *gurū* 'heavy, weighty, honorable', compar. *gārīyas*, for which the form and the meaning fit excellently. Moreover ON *gala* 'sing, croak', *gella* 'yell' are hardly to be placed with Skt *gr*, *jr*, for these, as Lottner correctly remarks, p. 165, are represented by ON *kalla*; but for these the onomatopoeic Skt *gharghara* 'crackling, rustling, laughter', *ghargharā* and *ghargharikā* 'bell, lute' might possibly be adduced. In connection with placing *diup-s* 'deep', *daupjan* 'baptize' with Gk δύπτω it must be noted that δύπτω is an extension, though a late one, of δύω, and that Lith. *dub-u-s*, *dumb-u* gives us no clarification about the original sounds. Goth. *dal* 'valley', *dail-s* 'part' belongs to be sure with Skt *dal* 'burst', *dale-m* 'torn-off piece, part'; but because of the final *l* (see above) it is dubious whether *d* or *dh* was the original initial; *dhalila* (the name of a valley in northern India) might well speak in favor of the latter. To be sure, Skt *dal* is related to *dr*, *dar*; but just as OE *derjan* 'harm' stands beside *teran* 'tear', *terjan* 'incite', the corresponding parallelism between initial *d* and *dh* might well extend into the time before the linguistic separation. Goth. *gavi* 'county', however attractive the relationship with Gk γαῖα may be, is nonetheless not to be placed here but rather following Grimm with Gk χαμαί etc. (see above), and the frequent change of *m* to *v* at the final of roots must be assumed (cf. Schweizer, KZ 2.305 and 7.155). Finally, placing ON *draum-r* HG *traum* with Skt *drā* 'sleep' Lat. *dormire* is dubious in every respect. Gmc *au*, OE *eá* before labials generally points back to a lost palatal [HG *baum* = *bagm-s*; *haubi-þ* = Skt *kakubha*; ON *taum-r* 'bridle' = **tuhm* from *tuh* 'pull', cf. HG *zuhil*, *zügel*, 'bridle'; so also OE *teám* 'suboles, what is reared', Grimm, *Grammar* 2.146, from the same root; OE *hreám* 'cry' beside Goth. *hruk-jan*; OE *seám*, OHG *saum* = σάγμα]. A readily available root for *draum-r* is the above-treated *drug* (No. 18), and the naming of a dream for the deceptive or shadowy figures (cf. ON *draug-r* above) with which it bewitches the mind (cf. Homer's θέλγειν) is highly suitable; similarly OE *dreám* 'music' would represent music as that which charms and enchants the mind.

As exceptions, in which Gothic mediae are to have replaced the old tenues, Lottner (p. 187) adduces only two examples for initial position, which he himself however subsequently designates as dubious: *gretan* 'weep' to Skt *krand* and *dragan* to Lat. *traho*. That the latter does not form an exception has been shown above (No. 20). The basic meaning of *krand* is 'roar, bellow', partly of animal cries (of the horse, the ox, the screaming bird), partly of the roaring of the ocean, of the thundercloud, of crackling fire, of the creaking wheel; then also of the cries of man, particularly of cries of battle and sorrow. To the latter the meaning of Goth. *gret-an* 'weep' might be related. Yet the sound relationships lead us to another root of similar

meaning, namely to Skt *hrād 'roar, thunder', from which: hrādinī 'the lightning of Indra'; hrādunī 'bad weather'; and with short vowel hradinī 'river' (named from its roaring), hradá-s 'pool', used in the Vedas of a pool into which brooks plunge with a roar, later of the deep pool of Tartarus. Accordingly gretan can just as well be associated with hrād, since the basic meaning coincides so closely with that of krand, and hrād fits exactly with regard to form.

According to Lottner the initial Gothic aspirates furnish no exception to the shift, though the initial tenues do, yet only to the extent they seem to correspond to old tenues in some examples (p. 185). First of all OE pād = πᾶτο-s along with the corresponding forms of the old dialects provides a real exception, though only in the special sense of 'path'; for the root fanþ (Goth. finþ-an), whose original meaning must be 'go', and all its derivatives in use (OE feða = OHG fendo 'pedestrian', OE feða 'stride' etc.) show the regular shift. In this way OE cal-o 'bald', which is put erroneously among the initials by Lottner, has been demonstrated above to be a regular correspondent of Skt khal-atí-s. If in addition Goth. tek-an corresponds to Lat. tango, Gk τε-ταγ-ών, I believe that the irregularity exists in the old languages and is caused by a sound law demonstrated above for Greek. For Goth. tek-an would correspond to an old *dang, *dag if regularly shifted. Now we have seen that in Greek, roots with two mediae and between them a simple vowel or vowel expanded by a nasal are absolutely avoided; in Latin this law was necessarily obscured because of the representation of aspirates through mediae. If we therefore take as original that root which Gothic suggests, then when a disinclination against such a root form began to develop in Greek and Latin, a change of the one sound had to take place, by which a reason was afforded for hardening of the initial. The remaining exceptions which Lottner cites there, all concern Germanic *k*, and particularly in its position before *v* and *r*, where however the organic forms with initial *h* in part occur beside it, as in kvainon, ON hvāna, in ON kringla, hringr; and Lottner already rightly observed that here the *h* (which however must have been closer in sound originally to the *ch*) is to be viewed as the original sound on Germanic soil; only later (when it inclined more towards the soft spirant), because of the difficulty to make it audible before *r*, *v* (*l*, *n*), did it disappear in part, in part harden to *k*. This can be applied to all the examples adduced there; for also the ON kynda 'kindle' stands for *kvinda in accordance with the Old Norse sound laws.

For medial position Lottner demonstrated (pp. 188-197), as Grimm had already pointed out at various times, that frequently in this position the old Germanic aspirates (which correspond to the tenues of other languages) had sunk downward to mediae; further, that this transition, which can be pursued historically in many individual instances, was the reason why we frequently, and in particular after liquids, find mediae corresponding to medial tenues of other languages on the first grade of the Germanic shift, where the more frequent aspirate would be expected. And he also showed (p. 200) that the shift of mediae is frequently not carried out, so that here too a kind of elective affinity makes itself known between liquids and mediae (p. 196). But in all other instances the exceptions turn out to be only apparent, if one applies the laws developed above; or they are limited to an exceedingly small number of cases, which in addition are nearly all dubious or limited to dialect variations. In this way, all the exceptional instances adduced by Lottner (p. 202) in which Gothic tenues are supposed to correspond to old aspirates vanish first of all; for the aspirates showed up as hard originally, and therefore, in accordance with the above, regularly correspond to Gothic tenues. These are: 1. skip, skapan (see the first essay towards the end, No. 8); 2. meki (No. 1); 3. OE macjan (No. 7); 4. tacan (No. 6); 5. greipan (No. 10). A similar situation applies for the exceptions which are medially preserved mediae (p. 201), for here the Gothic mediae correspond to original weak aspirates, as has been demonstrated in this second essay of mine for the following instances: 1. grid-s (No. 25), for which I demonstrated at least that also Lat. gradus can be taken back to

a root with two aspirates; 2. deigan (No. 14); 3. skaidan (No. 27); 4. skadus (No. 28); 5. biben (No. 12); 6. biber (No. 13). Similarly OE glād 'be happy', if it really belongs to Skt hlad, which however does not seem certain to me, would point to the fact that the original final was *dh*, whose aspiration had to defer later to the initial aspirate. Moreover, OHG sweben, sweibon 'vary, waver', Goth. sveiban 'διαλείπειν', ON svāfa 'waver, hurry' seem to me to have to be separated from OHG sweif = σοβή OS suepan, OE svīpan, svāpan 'sweep' = σοβέω, Goth. sveipan (in midja-sveipains), which correspond exactly to the Greek forms in meaning and form (apart from the varying vowels in Germanic). As single exception would then remain OHG swīgan = Gk σγῶω, for which it is not clear however whether the irregularity lies on the side of the Germanic or Greek, or whether a relationship exists at all.

Most numerous are the exceptions cited by Lottner (p. 185) for the instances in which medial tenues seem to be maintained. But first, all those exceptions must be excluded in which the Germanic words only correspond to words in Latin, Lithuanian, Slavic (Irish), for in all of these languages (apart from Lat. *f* which represents initial *sph*) the tenues are not distinguished from the original hard aspirates; and in accordance with the statements above, Gothic tenues correspond to hard tenues. Moreover, those instances must be excluded in which the remaining languages (as Lottner too remarks) show mediae, which then correspond regularly to tenues on the first grade of the shift (like hrūk-jan beside κραυγ-ή, hveit-s beside Skt çvid, ut beside ud, þata beside tad; in this connection it should be noted that Panini already posits these words in the forms ud and tad). Moreover those instances should be disregarded in which the deviation occurs only in one or the other secondary dialect form, while all other forms and dialects show the regular correspondence (ON spak-r 'intelligent' beside ON spā for *spah 'prophecy', OHG spahi 'wise', spahā 'wisdom' spehon, etc.; further, OE sūcan beside the normal sūgan etc. of Old English and the other dialects). The situation is quite different in OE vīc, OHG wīch = Lat. vīcus, Gk Foίko-s for here only Gothic provides the regular form veih-s. Moreover those examples are excluded in which the Gothic tenues regularly correspond to original hard aspirates, namely in vairpan (Essay I, No. 9), in ON flat-r (No. 5), and probably in NHG flach, which may be recognized as a secondary form beside flat-r since Old High German almost exclusively shows the form flaz corresponding to ON flat-r. Finally, those words are excluded whose association with those of the related languages rests on erroneous comparison. Here I put the association of taikn-s 'sign' with δείκνωμι, Skt diç, to which the generally distributed Germanic root tih 'show' regularly corresponds. It seems to me that taikn-s has lost an initial *s* and that it belongs to the root: Zend çtij, στιγ, Lat. stig, Goth. stik, stak 'stick', which loses its *s* also in Sanskrit; this association is demonstrated by the meaning of στῆγμα 'spot, characteristic', and through Lat. signum, which Ebel in this journal 6.441 correctly explains from *stig-num and which, except for the loss of the second element of the consonant combination, corresponds exactly with Goth. taikn-s. Further, I count as erroneous the association of ON hvat-r 'sharp' with Lat. catu-s, or with Skt kaṭu-s; the Latin word, to which also cōs belongs, leads to a root *ca = Skt çā (ço) 'sharpen' (Aufrecht in this journal 7.74). Skt kaṭu-s 'sharp in taste' does not belong with hvat-r either; for this purpose kaṭh-ora-s 'hard, sharp' (cf. kaṭh-ina-s 'hard') is much more probable -- for the ax kuṭh-āra, for example, is called a kaṭh-ora-nemi provided with a sharp edge, and kaṭh-ora (Petersburger Lexicon) is used of a sharp bite, a sharp wind, of piercing cries (of the donkey). The associated kuṭhāra 'ax' makes an original initial of *kv* probable at the same time through the exchange between *a* and *u*. The sounds then agree very exactly, since the hard aspirate regularly corresponds to ON *t*. Accordingly there remains among the exceptions cited by Lottner only one, namely OE vīcan, ON vīka, OHG wīchan 'yield' beside Gk Φέικω, Skt vic

'separate' for which the secondary form vij of the grammarians (or indeed a derivation from vi yuj) cannot be taken into consideration.

If in this way the numerous exceptions to the first sound shift vanish almost without a trace, as soon as one recognizes the laws developed above, I believe I have found through this fact no negligible confirmation of the theory I have proposed.

Stettin, 4 September 1862

CHAPTER ELEVEN

KARL VERNER

AN EXCEPTION TO THE FIRST SOUND SHIFT

"Eine Ausnahme der ersten Lautverschiebung,"
**Zeitschrift für vergleichende Sprachforschung auf dem Gebiete
der Indogermanischen Sprachen, 23.2 (1875), 97-130**

Editor's Introduction

Verner's may be the single most influential publication in linguistics. It is so lucid that it scarcely needs comment. Yet since a later generation often wonders why a publication had the impact it did, a few of the reasons may be mentioned.

First, the article is excellently written. Verner presented all the relevant material in exemplary form. Comparison with even the careful Grassmann, not to speak of the discursive Lottner or earlier scholars, will indicate Verner's superior marshalling of the data. The argument too is at all times lucid and persuasive. One need only read articles published by well-known scholars even after Verner's time to observe the refreshing clarity of Verner. Alone as an essay, the article is superb.

Further, through the primary purpose of the article Verner solved the most troublesome contemporary problem - "the last set of exceptions to Grimm's law." To be sure an explanation had been offered and had even been acknowledged by scholars as competent as Lottner and Grassmann. But it was fuzzy, scarcely in accordance with other observations on the functioning of language. Verner's explanation was immediately convincing. Moreover, it removed from linguistics an awkward attempt to rely on imprecise relationships, and it suggested that linguistic phenomena must be accounted for with the rigor demanded in the physical sciences.

Because this explanation was at once adopted, the reasoning on which it was based and its implications for general theory had a tremendous influence. Attention was drawn to suprasegmentals. The journals after Verner are full of articles proposing explanations of linguistic phenomena by means of accent, such as the various attempts to give an explanation for the development of Gmc *-jj -ww-* to *-dd/ggj- -ggw* in Gothic and North Germanic. And since such suprasegmentals came to their attention, linguists began to devote a great deal of interest to the use of suprasegmentals in selected patterns of language, to metrics. This scrutiny of suprasegmentals for improved understanding of linguistic phenomena was important, but of greatest importance for general linguistics was the effort to account for all phonological phenomena: not only consonants and vowels, but also stress, pitch, quantity, juncture. Control over these was not achieved at once, but the efforts leading to that control were largely touched off by Verner's article.

Further, Verner saw the clinching evidence for his explanation in its accounting for morphophonemic variation. Since there was a direct relationship between the consonant variation, the variation in accent, and the stem changes in the preterite and preterite participle, Verner concluded that the variation must be regularly conditioned. This attention to morphophonemic variation led to greater examination of morphological structure in its relation to the phonological system of language, and in this way to the method of internal reconstruction. Verner's second article, which stands immediately after this one, KZ 23.2.131-38, dealt with Indo-European ablaut. Other linguists made the important contributions to its understanding: Brugmann by positing vocalic nasals; Saussure by positing laryngeals. Both

scrutinized morphological patterning in arriving at their conclusions. Both, especially Saussure, came to be increasingly proficient in the method of internal reconstruction. In providing his explanation, Verner sought to account for all the data. Grimm had recognized the general relationship between the Germanic obstruents and those in the other Indo-European dialects, and he noted only in passing problems like the *-d-* in Gothic *fadar* etc. Grimm's successors had clarified some particulars. In clarifying the remainder Verner accounted for all the residues. In this way he applied the principle of accounting for all data in a language. His predecessors were moving toward such methodological standards. When Lottner and Grassmann, for example, published their articles they also discussed (the remainders which were not yet accounted for. But since imprecise sets of exceptions remained, their articles had not exerted the dramatic impact on general linguistics of Verner's. After his it seemed clear that linguists could and must provide a total accounting of the data in any given language.

It is understandable that with its tremendous contributions to Germanic, Indo-European and general linguistics the article led to excesses. After its publication many obscure problems were examined for possible explanation by means of supra-segmentals, and solutions were given which never were widely adopted. Yet of greatest general impact was the conviction that language undergoes change regularly, even mechanically: that sound change takes place without exception. The linguists at Leipzig, who brought Verner down from Copenhagen, were strengthened in this mechanical view of language by his remarkable article; his explanation helped establish the highly influential neogrammarian school which dominated linguistics for the next two generations.

Karl Adolf B. Verner (1846-1896) was himself very modest. The article which brought him fame was published at the insistence of Vilhelm Thomson. Although he was well-known after this publication, he preferred a simple position in a library at Halle. When there was a vacancy in Slavic Philology at his own university, he became Reader there in 1883 and spent the rest of his career at the University of Copenhagen. Not least of his qualities was his capacity for self-criticism. He published very little, all of it high in quality. The impact of his work resulted from his capable formulation as well as the discovery itself. For a fine account of his manner of work and his personality see Otto Jespersen's essay in his volume of collected papers, *Linguistics*.

In the eleventh volume of this journal (pp. 161-205), Lottner subjected the exceptions of the first sound-shift to a careful examination. He investigated all developments of the Indo-European stops (tenues, mediae, and aspiratae) which seem to forsake the scheme

$$\begin{array}{l} \text{IE } k = \text{Gmc } h, \text{ IE } g = \text{Gmc } k, \text{ IE } gh = \text{Gmc } g \\ t = \quad \text{þ}, \quad d = \quad t, \quad dh = \quad d \\ p = \quad f, \quad b = \quad p, \quad bh = \quad b, \end{array}$$

and the now dead researcher found essentially two categories of exceptions, exclusive of the cases where no shift occurred due to certain consonantal combinations (IE *sk, st, sp* = Gmc *sk, st, sp*; IE *kt, pt* = Gmc *ht, ft*). On the one hand, Lottner found that *g, d, b* were sometimes present in Germanic unshifted, as for example in Goth. *gredu-s* 'hunger' beside Skt *gṛdh-yati* 'he is eager for', Goth. *dauhtar* 'daughter' beside Skt *duhitar* 'daughter', Goth. *bindan* 'to bind' beside Skt *bandh* 'to bind', and others. On the other hand, these same Germanic voiced stops (*g, d, b*) appeared in many cases not as correlatives of the Indo-European aspirates, as was to be expected, but as correlatives to the Indo-European voiceless stops (*k, t, p*); thus, for

example, the Germanic form *tegu* 'decade', which corresponds to IE *dakan* 'ten', Gmc *modar* = IE *mâtar*, OHG *ebar* = Lat. *aper*, Goth. *bairand* 'they carry' = Skt *bharanti* etc.

The first class of exceptions, however, was soon afterwards accounted for by Grassmann. In his well-known article in the twelfth volume of this journal "On the original presence of roots, whose initial and final contained an aspirate," he establishes the fact that the anomalies cited by Lottner are only apparent, since in Skt *gṛdhyati*, *duhitar*, *bandh* and the like, we do not have the original Indo-European initial sound, which was rather an aspirate, as a comparison with other Indo-European languages attests, and therefore the voiced stop in the Germanic form is fully justified.

Compared with the first very extensive class of exceptions found by Lottner, the second class may not be cleared up in such a way. Here there is really a violation of the sound laws and apparently the guilt falls exclusively on Germanic. The irregular sound change occurs only medially and then only in a voiced environment. I cite some examples of this irregular shifting with differing sound-positions medially:

Gmc *g* = IE *k*. Gmc *saga* f. 'saw' (ON *sög*, OHG *saga*); compare Lat. *sec-o*, OSl. *sekā* 'I hew', Lith. *sýki-s* 'strike, time'. Gmc *sagjan* 'to say' (ON *segja*, OS *seggian*, OE *secgan*, OHG *sagian*) Lith. *sak-ýti*, *-aú* 'to say'; compare *ἔν-νεπ-ε* for **ἔν-ζεπ-ε* and OLat. *in-sec-e* 'quote, tell'. Goth. *hals-aggan-* m. 'curve of the neck', OE *angan-* m. 'point, arrowhead'; compare Skt *anka-* m. 'hook, clasp; joint, side, lap' = *ογχο-s* = Lat. *uncu-s* 'hook'. Gmc *þegna-* m. 'boy, servant, warrior' (ON *þegn* 'free man, warrior', OS *thegan* 'boy, man, warrior', OE *þegn* 'knight', OHG *degan* 'boy, servant, warrior') = *τέκνο-v* 'child'. Along with this compare successively the following examples of the regular shift in similar medial sounds: Goth. *haiha-* 'one-eyed' = Lat. *caecu-s* 'blind'. Gmc *hlahjan* 'to laugh' (Goth. *hlahjan*, ON *hlčja*, OE *hlehhan*, *hlyhhan*, (OHG *hlahhan*); compare Skt *kark* 'to laugh', *κλώζζω* for **κλωκ-jω* 'I cluck, click (the tongue)'. Gmc *fanhan* 'to catch' (Goth. *fāhan*, ON *fá*, OS *fāhan*, OE *fōn*, OFris. *fā*, OHG *fāhan*); compare Skt *pāç-aya-ti* 'he binds', Lat. *pac-iscī*, *pax*, *pāc-is*. Gmc *laihna-* n. 'fief' (ON *lān*, OE *læn*, OHG *lēhan*) derived from *lēhvan* 'to lend' (Goth. *leihvan*, ON *ljá*, OS *far-līhan*, OHG *līhan*); compare Skt *ric*, pres. *riṇak-ti* and *recati* 'to leave' = *λείπω*, *ἔ-λιπ-ov* = *linquo*, *liqui* = Lith. *lėk-u*, *lik-ti*.

Gmc *d* = IE *t*. Goth. *fadi-* m. 'master', only in compounds, as for example *brūþ-fadi-* 'bridegroom' = Skt *pati-* m. 'master, husband' = *πόσι-s* = Lith. *pāt-s* 'lord and master'. Gmc *þeuda-* f. 'people' (Goth. *þiuda*, OS *thioda*, OHG *diota*) = Lith. (Zemaitic) *tautà*, Latvian *tauta*, Umbrian *tūtu*. Gmc *þridjan-* 'the third' (Goth. *þridjan-*, ON *þriði*, OS *thriddio*, OE *þridda*, OHG *dritjo*, *dritto*) = Skt *ṛtīya-*, Lat. *tertiu-s*, Lith. *trėcza-s*, OSl. *tretii*. Gmc *fedvōr* 'four' (Goth. *fidvor*, ON *fjōrir*, OS *fiuuar*, OE *feóver*, OHG *fior*) = Skt. *catvāras*, *τέσσαρες*, *quatuor*, Lith. *keturi*, OSl. *četyrije*. Gmc *and-* 'against, ant-' (Goth. *anda-*, *and-*, ON, OE *and-*, OHG *ant-*); compare Skt *anti* 'against' *अन्ति*, *अन्ता* 'against'. Lat. *ante*. Gmc *andja-* m. 'end' (Goth. *andja-*, ON *endi-r*, OS *endi*, OE *ende*, OHG *enti-* m.n.); compare Skt. *anta-* m. 'end', *antya-* adj. 'he who is final, the last'. Gmc *skordi-* f. 'to shear, cut' (ON *skurð-r* m. i-stem, 'cutting, mowing', OHG *scurt-* f. 'tonsure') formed from the root *skar* 'to cut' by means of the suffix *-di* = IE *-ti*. Gmc *skoldi-* f. 'guilt' (ON *skuld*, *skyld*, OS *sculd*, OE *scyld*, OHG *sculd*) by means of the same suffix from the root *skal* 'should'. Compare with this the following cases of regular shifting: Gmc *hvaþara-* 'both' (Goth. *hvaþar*, ON *hvár-r*, OS *hueðar*, OE *hvæer*, OHG *hwedar*, *wedar*) = Skt *katar-* = *πότερο-s*, Ionic *κότερο-s* = Lith. *katrà-s*. Gmc *hleuþa-* n. 'hearing, listening, silence' (Goth. *hliuþa-*, ON *hljóð*) = OBactrian *çraota-* n. 'hearing'. Gmc *niþja-* m. 'relative, cousin' (Goth. *niþja-*, ON *ni;ð-r*, OE *niððas* pl.m. 'men'); compare OSl. *netii* m.

'nephew', ἄ-νεψιό'-s 'cousin, relative' from a base form *napatja-, compare Skt. napât-, naptar- 'grandson, nephew, descendant', Lat. nepôt-. Goth. salīþva- f., only in the pl. salīþvos 'shelter, lodging', formed by means of the suffix *-þva* = IE *-tva* from the verb stem salja- 'to put up at'. Gmc tanþu-, tanþ- m. 'tooth' (Goth. tunþu-, ON tönn f., OS tand m., OE tōð, OHG zand) = Skt. dant-, dantà- m., ὀ-δοús, ο-δόντος m., Lith. dantí-s m. f. Gmc an-þja- n. 'forehead' (ON enni, OHG andi); cp. ἀντίο-s 'that which is opposite, opposed', Lat. antiæ 'hair on the forehead'. Gmc morþa- 'murder' (ON morð, OE morð, OS morð, OHG mord), formed from the root mar 'to die' by means of the suffix *-þa* = IE *-ta*. Goth. vulþu- m. 'grandeur' = Lat. vultu-s, from the root val 'to desire' by means of the suffix *-þu* = IE *-tu*.

Gmc. *b* = IE *p*. Gmc seban 'seven' (Goth. sibun, ON sjau, OS, OHG sibun, siban, OE seofon) = Skt saptan, ἑπτὰ, septem. On the other hand with regular shifting: Gmc nefan- m. (the Germanic basic form must be posited with *f* after OHG nevo 'nephew, sister's son, uncle, relative'; ON nefi, OE nefa); cf. Skt. napât- m. 'descendant, grandson', Lat. nepôt-.

But this differentiation of the originally voiceless stops takes place not only, as in the above examples, in forms originating from different roots; it also appears very frequently within word formations belonging to the same root, so that some derivations show in Germanic voiceless fricatives in the root, the other derivations voiced stops. Thus beside Gmc tehan 'ten' (Goth. taihun, ON tíu, OS tȳn, OHG zehan = Skt dacan, δέκα, decem) is found a substantive tegu- m- 'a ten' (Goth. tigu-, ON tig-r, tug-r, OHG -zig, -zog); beside Gmc hauha- 'high' (Goth. hauha-, ON há-r, OS hôh, OE heáh, OHG hôh) a form hauga- m. 'hill' (ON haug-r, MHG houc, gen. houges); beside teuhan 'to draw' (Goth. tiuhan, OS tiohan, OHG ziohan = Lat. dûco) Gmc tuga- 'pull' (ON tog n., OHG zug m.), Gmc taugi- f. 'cord' (ON taug f., OE teig) and Gmc haritugan- m. 'commander-in-chief' (ON hertogi, OS heritogo, OE heretoga, OHG herizogo); beside Gmc fanhan 'to catch' the substantive fanga- 'catch' (ON fang n., OHG fang m.); beside Gmc slahan 'to beat' (Goth., OS, OHG slahan, ON slá, OE sleá) Gmc slaga- 'blow' (ON slag n., OE slagu f., OHG slaga f.); beside OHG swehur m. and OE sveor m. 'father-in-law' (= Skt çvaçura-, ἑκγό-s-, socer, OSl. svekrŭ, Lith. szeszura-s) OHG swigar f., OE sveger f. 'mother in-law' (= Skt. çvaçrŭ ἑκγό, socru-s, OSl. svekry); beside ON flá from *flahan 'flay' ON flaga wk. f. 'layer' and flagna 'come off (the skin from the flesh)'; beside Gmc felhan 'to hide' (Goth. filhan, ON fela, OHG felahan) Goth. fulgina- 'hidden' and ON fjalg-r in compounds 'safe, well kept', and others. In the dental series we have for example Goth. hinþan 'to capture, take prisoner', Swed. hinna st.verb, Dan. dialect hinne 'to reach' beside the Germanic form connected with it handu- 'hand' f. (Goth. handu-, ON hönd, OS hand, OE hond, OHG hant, hand); Gmc finþan 'to find' (Goth. finþan, ON finna, OS fiðan, OHG findan) beside ON fund-r, stem fundi- m. 'gathering'; Goth. fraþan 'to understand, to be reasonable' beside Gmc frôða- 'intelligent, reasonable' (Goth. froða-, ON fróð-r, OS, OE frôð, OHG fruot); Gmc liþan 'to go' (Goth. leiþan, ON lãða, OS lîða, OS lîðan, OE lîðan, OHG lîdan) and liþu- m. 'limb' (Goth. liþu-, ON lið-r, OE lið, OHG lid) beside Gmc laidjan 'to lead' (ON leiða, OS lédian, OE lædan, OHG leittan) and laida- f. 'way' (ON leið, OE lãd); Goth. soþa- m. 'satisfaction' ga-soþjan 'to sate' beside Gmc sada- 'satisfied' (Goth. sada-, ON sað-r, OS sad, OHG satt = OSl. sytŭ cf. Lat. satur, sat, satis) and others. In the labial series, *f* and *b* have fused through secondary sound changes into one sound in most of the Germanic languages, thus obliterating the differentiation originally present. From Gothic, which, like Old High German, kept the two sounds distinct, these forms can be cited: af-lif-nan 'remain over' beside laiba- f. 'remainder'.

If one surveys the cited examples, one may easily be tempted to explain this entire differentiation of the originally voiceless stops as a caprice of the language, to ascribe simply

to chance the appearance of the voiced stops in many cases where the voiceless fricative would be expected. Yet just to cite still another striking example, the three identically formed Indo-European relationship terms *bhrâtar*, *mâtar*, *patar* correspond to the Germanic correlatives *brôþar*, *môdar*, *fadar*, though there is no apparent reason why *môdar* and *fadar* do not follow the regularly shifted *brôþar*. One cannot however persist in the hypothesis that this was a chance occurrence. Comparative linguistics cannot, to be sure, completely deny the element of chance; but chance occurrence en masse as here, where the instances of irregular shifting are nearly as frequent as those of regular shifting, it cannot and may not admit. That is to say, in such a case there must be a rule for the irregularity; it only remains to discover this.

Let us first clarify the phonological event. One can readily accept the fact that the Germanic voiceless fricative resulted directly from the Indo-European voiceless stop by a relaxing of the oral closure. On the other hand, the Germanic voiced stop cannot have resulted directly from the Indo-European voiceless stop by voicing, for this would be a sound innovation directly counter to the main direction of the sound shift, which produced a voiceless stop from the Indo-European voiced stop. One must therefore attempt to arrive indirectly from the voiceless stop to the voiced stop, and then the best proposal is Scherer's explanation in the fine section concerning the sound-shift (*Geschichte der deutschen Sprache*, p. 82): "I now assume that all irregularly shifted tenues were first shifted regularly to voiceless spirants, that these, particularly in frequently used words (like *fadar*, *môdar*), were under the influence of the surrounding voiced elements also produced with voice and then, with the beginning of the third part of the shift, took the direction of all the remaining voiced spirants or voiced affricates." If one wants to assert that in the above explanation the so-called affricates (Rumpelt, *Deutsche Grammatik* I, section 27) must generally be substituted for spirants, then one may do this; it is itself of little importance and especially for our purposes will be a matter of complete indifference, since it is enough for us to have determined that the irregular shifts also followed at one time the sound stage of the regular shifts; from there, however, they progressed further.¹ And we can now phrase the question of the etymological explanation thus: Why did the sound current of the shift in some cases stop with the voiceless fricative and in other cases progress further through the voiced fricative to the voiced stops?

The only person who has sought an answer to this question, as far as I know, is Scherer in the passage just cited. He assumes that the shift to voiced stops occurs "in frequently used words (like *fadar*, *môdar*)" consequently the regular shift occurs in less frequently used words. I believe that the venerable author did not wish to attach great weight to this attempt at explanation and that he permitted himself to mention it only as a conceivable possibility. A careful scrutiny of the Germanic vocabulary is not favorable to his thesis. Is it probable that *fadar* and *môdar* were used more frequently than *brôþar*? In Ulfila's writings moreover *môdar* does not even appear, the word *aiþei* always being used instead; and he uses *fadar* only once, otherwise however *atta*, while his *brôþar* has no parallel synonym at all.

Could *fehu-*, the Germanic epitome for material well-being, cattle, money, wealth, possessions and the like, have been a more infrequently occurring word than, for example, *lagu-* 'lake' (ON *lög-r*, OE *lagu* = Lat. *lacu-s*)? May one assume that our Germanic ancestors used the numbers 4 and 100 (*fedvór*, *hund*) more frequently than the number 10 (*tehan*)? More such examples could be cited, I will, however, find occasion in what follows to demonstrate the improbability of that thesis.

An attempt to find an etymological rule for the differentiation of the Proto-Germanic voiceless fricative into voiceless fricative and voiced stop by means of a juxtaposition of the

Germanic word stock with the comparable word stock of the other Indo-European languages cannot lead to any certain result; for precisely because the differentiation manifest itself so actively in word formation, one cannot be satisfied with a comparison of root-related words; rather, a juxtaposition of words which are identical wherever possible is required, and in this way the comparable materials will become too small for something reliable to be built on it. Happily, however, the investigation can be transferred to another sphere which is significantly more circumscribed and where we can find certain bases for our conjectures. Not enough importance has been placed on the fact that the differentiation of the Proto-Germanic voiceless fricative also appears in the conjugation of certain verbs.²

When, for example, we have for OE *liðe* 'navigo, proficiscor' a participial form *liðan*, then here there is apparently the same differentiation as in *lið* 'limb' as against *lid* 'vehicle'. That Germanic philology has until now so readily ignored this fact, which is very interesting in itself and demands reflection -- for a modification of the root consonant for the purpose of conjugation does not belong to the realm of the commonplace -- may have its basis in the fact that Gothic, from which one usually proceeds in a comparison, does not even know this differentiation in the conjugation. It can, however, be established through compilation of the relevant materials that this differentiation in the conjugation originally belonged to all the Germanic languages, and consequently that it must also at one time have been present in Gothic. The Germanic voiceless fricatives and voiced stops which arose from the Indo-European voiceless stops are so distributed in the conjugation, that all present tense verb forms (inf., pres. ind., subj., imper., and part.) as well as the singular forms of the preterite indicative show voiceless fricatives and all remaining verb forms show voiced stops. I must completely disregard the labial differentiation in the following compilation; it was alluded to above that the differentiation of the labial in word formation was almost completely effaced by later falling together of the sounds; there is no longer any trace to be found in the conjugation.

A. Verbs, whose roots in Indo-European end in *k*, in Germanic in *h* (*hv*), *g*:

1) root *slah*, *slag* 'ferire'³

ON *slá*, *sló*, *slógum*, *sleginn*.

OS *slahan*, *slôh* (*slôg*), *slôgun*, *slagan*.

OE *sleán*, *slôh* (*slôg*), *slôgon*, *slàgen*.

OFris. *slâ*, *slôch*, *slôgon*, *e-slein*.

OHG *slahan*, *sluoh* (MHG *sluoc*), *sluogum*, *slagan*.

OS, OE *slôg*, MHG *sluoc* through the influence of the plural forms; thus frequently in the following forms.

2) root *þvah*, *þvag* 'lavare'.

ON *þvâ*, *þvó*, *þvógum*, *þveginn*.

OS *thuahan*, (*thuôg*), [*thuôgun*, *thuagan*].

OE *þveán*, *þvôh*, *þvôgon*, *þvâgen*.

OHG *dwahan*, *dwuoh* (MHG *dwuoc*), *dwuogum*, *dwagan*.

3) root *lah*, *lag* 'vituperare'.

OS *lahan*, (*lôg*), [*lôgun*, *lagan*].

OE *leán*, *lôh* (*lôg*), *lôgon*, [*lâgen*].

OHG *lahan*, *luog*, *luogum*, [*lagan*].

4) root flah, flag 'excoriare'.
ON flá, fló, flógum, fleginn.

5) root klah, klag 'fricare'.
ON klá, kló, klógum, kleginn.

6) root vah, vag 'mentionem facere'.
OHG [ge-wahan], -wuoh, -wuogum, [-wagen].

7) root hlah, hlag 'ridere', makes its present forms by means of *-ja-*
ON hlæja, hló, hlógum, hleginn
OS ? [hlôh], hlôgun, hlagan.
OE hlehhan hlyhhan, hlôh (hlôg), hlôgon, [hlâgen].
OHG hlahhan, (hluoc) ? ?

8) root fah, fag 'laetari'.
OE ge-feón, -feah, fægon, [fegen].
OHG ge-fehan, -fah, -fâhum, -fehan has abandoned the differentiation.⁴

9) root sahv, sagv 'vider'
OS sehan, sah, ságon sâuuun (sâhun), seuuan (sehan).
OE seón, seah, sægon sâvon, seven.
OFris. sia, (sag), sagen, sien.
OHG sehan, sah, (sâhum), sewan (sehan).
The *v*, which is only manifested in the preterite forms, must also be regarded as a kind of differentiation.
ON sjá, sá, sáum, sénn does not show the differentiation.

10) root falh, falg 'commendare, abscondere'.
ON fela, fal, (fálum), folginn.
OE feolan (felgan), fealh, fulgon (fêlon, fælon), (folen, feolen).
ON fulgum is to be expected in the preterite plural; fálum is formed by analogy with fela fal, as if the verb belonged to the second ablaut class (stela, stal, stálum); likewise OFris. bi-fellan for *bi-felhan has gone over to the second ablaut class (bi-fel, -faelon, -felen). OS bi-felahan, -falah, -fulhun, -folhan and OHG felahan, falah, fuluhum, folohan are without differentiation.

11) root tih, tig 'demonstrare, nuntiare'.
OS tihan, [têh, tigon, tigan].
OE teón tihan, tâh, [tigon], tigen.
OHG zihan, zêh, zigum, zigan.
ON tjá has become weak.

12) root þih, þig 'crescere, proficere'.
OS thihan, [thêh, thigun], thigan.
OE þeon þihan, þâh (þeáh), þigon (þugon), þegen (þogen).
OHG dihan, dê, digum, digan.

13) root sihv, sigv 'colare, liquare'.
OE seón, sâh, sigon, [sigen].
OHG síhan, sêh, [sigum], sigan siwan (sihan).

14) root *vrih*, *vrig* 'operire'.
OE *vreón vríhan*, *vrâh*, *vrigon*, *vrigen*.
OHG (int-) *ríhan*, [-*rêh*] -*rigum*, -*rigan*.

15) root *lihv*, *ligv* 'commodare'.
OS (far)- *lîthan*, [-*lêh*], -*liuum* (-*lihun*), -*liuuan*.
OE *líhan*, *lâh*, [*ligon*, *ligen*].
OHG *líhan*, *lêh*, *liwum*, *liwan* (*lihan*).
Compare No. 9 - ON *ljá*, OFris. *lía* have become weak.

16) root *tuh*, *tug* 'trahere'.
ON ----- *toginn*.
OS *tiohan*, *tôh*, *tugun* (*tuhun*), *togan*.
OE *teón*, *teáh*, *tugon*, *togen*.
OFris. *tîa*, *tâch*, *tegon*, *tein*.
OHG *ziohan*, *zôh*, *zugum*, *zogan*.

17) root *þluh*, *þlug* 'fugere'.
OS *fliohan*, *flôh*, [*flugun*, *flogan*].
OE *fleón*, *fleáh*, *flugon*, *flogen*.
OFris. *flîa*, ----, *flegen*, *flain*.
OHG *fliohan*, *flôh*, *flugum*, *flogan*.

B. Verbs, whose roots in Indo-European end in *t*, in Germanic in *þ*, *d*.

Old Norse cannot be compared here, since *þ* and *d* medially fell together in one sound. Also in the conjugation Old Saxon merged the two sounds in *ð*, while keeping them otherwise distinct. It can however be perceived from ON *finna*, OS *fīðan*, that both languages at one time recognized the difference in the conjugation, even in the dentals. In OHG, Gmc *þ* is shifted to *d* medially (in the Low Franconian Isidore to *dh*) and Gmc *d* is shifted to *t* (in Isidore to *d*).

1) root *kvapþ*, *kvad* 'dicere'.
OE *cveðan*, *cväð*, *cvædon*, *cveden*.
OHG *quedan*, *quad*, *quâtum*. (*quâdum*), *quetan*. In Isidore *quhedhan* (*quhedan*), *quhidum*, *quhedan*.

2) root *fanþ*, *fand* 'invenire'.
ON *finna*, *fann*, *fundum*. (*funnum*), *fundinn* (*funninn*).
OS *fīðan* (*findan*), (*fand*), *fundun*, *fundan*.
OHG *findan*, *fand*, *funtum* (*fundum*), *funtan* (*fundan*).
OE *findan*, OFris. *finda* with *d* throughout.

3) root *þarp*, *vard* 'fieri'.
OE *veorðan*, *vearð*, *vurdon*, *vorden*.
OFris. *wertha*, *warth*, *worden*, *worden*.
OHG *werdan*, *ward*, *wurtum*, *wortan*. In Isidore *uuerdhan* (*uuerdan*), (*uuard*), *uurdum*, *uuardan*.

4) root *liþ*, *lid* 'ire, proficisci'.
OE *līðan*, *lāð* [*lidon*] (*liðon*), *liden* (*liðen*).
OHG *līdan*, *leid*, *litun*, *litan*.

5) root *sniþ*, *snid* 'secare'.
OE *snīðan*, *snāð*, *snidon*, *sniden*.
OFris. *snītha*, *snêth*, *sniden*, *snein* (*snithen*).
OHG *snīdan*, *sneid*, *snitum*, *snitan*.

6) root *vriþ*, *vrid* 'ligare, torquere'.
OE *vriðan*, *vrāð*, [*vridon*] (*vriðon*), [*vriden*] (*vriðen*).
OHG *rīdan*, [*reid*, *ritum*, *ritan*] (*ridan*).

7) root *miþ* *mid* 'evitare'.
OE *mīðan*, *māð*, [*midon*, *miden*] (*miðen*).
OHG *mīðan*, *meid*, *mitum*, *mitan*.

8) root *skriþ*, *skrid* 'gradi'.
OE *scrīðan*, *scrāð*, *scridon* [*scriden*] (*scriðen*).

9) root *suþ*, *sud* 'coquere'.
OE *seóðan*, *seiáð*, *sudon*, *soden*.
OHG *siodan*, (*sôt*), [*sutum*], *sotan*.

10) root *hruþ*, *hrud* 'ornare'.
OE *hreóðan*, [*hreóð*, *hrudon*], *hroden*.

The above verbs all belong to the various ablaut classes; of the verbs which in Germanic originally formed their preterite by means of reduplication, only two show differentiation; they, however, do so in such a way that the voiceless fricative is found only in the present forms, while the preterite singular conforms to the remaining preterite forms and shows a voiced stop.

1) root *fanh*, *fang* 'capere'.
ON *fá*, *fékk* (for **fénk*, **féng*), *féngum*, *fenginn*.
OS *fāhan*, *fêng*, *fêngun*, *fangan*.
OE *fôn* (from **fôhan*, **fonhan*, **fanhan*), *fêng*, *fêngon*, *fangen*.
OFris. *fâ*, *fêng*, *fêngon*, *fangen* *fenszen*.
OHG *fāhan*, *fiang*, *fiangum*, *fangan*.

2) root *hanh*, *hang* 'pendere'.
ON (*hanga*), *hékk*, *héngum*, *hanginn*.
OS [*hāhan*, *hêng*, *hêngun*], *hangan*.
OE *hôn*, *hêng*, *hêngon*, *hangen*.
OHG *hāhan*, *hiang*, *hiangum*, *hangan*.

Certainly no one would think of interpreting all these cases as special developments within the individual languages. It would be quite unthinkable that the five languages here treated changed the *h* in the preterite participle of *slahan*, for example, to *g* independently of one another. The differentiation in conjugation must therefore have existed already at a stage of

development common to the five languages; indeed even where this differentiation can be established only for one particular language, it may be viewed as a common possession, for a phenomenon which operates in such a special sphere and is due to an insignificant acoustical difference would hardly have been able to produce forms by analogy. If, however, the differentiation in conjugation was common to the five languages, then Gothic must also once have participated in it. This language, which recognizes the differentiation in word formation, shows consistently the voiceless fricative in the conjugation of verbs, which in the other Germanic languages have the differentiation: *slahan*, *sloh*, *slohum*, *slahans*; *leiþan*, *laiþ*, *liþum*, *liþans*; *vairþan*, *varþ*, *vaurþum*, *vaurþans*; *fâhan*, *fai-fâh*, *fai-fâhum*, *fâhans* etc. The more frequently occurring present forms won out over the preterite forms and forced their root consonants on them; in this we may see a manifestation of the strong tendency toward uniformity of this language idiom, which also manifests itself elsewhere, for example, in Gothic *i*, *u* as against the *e*, *i* and *o*, *u* respectively of the other Germanic languages. The differentiation in conjugation, therefore, already belonged to the Germanic original language.

If, however, the differentiation in conjugation had its origin in the same language period in which the differentiation in word formation also originated, then it is self-evident that both are simply manifestations of one and the same sound shift; they must therefore be interpreted from one unified viewpoint, a common explanation must be sought for them. The following equation will be generally valid:

Gmc <i>tehan</i>	slahana- (inf. stem)	brôþar	kveþana- (inf.)
—	—	—	—
Gmc <i>tegu-</i>	slagana- (pret. part. stem)	môdar	kvedana- (part.)

An explanation which is suitable only for one of the differentiations or only for quite isolated cases of the differentiation⁵ has thereby the appearance of improbability. Even if the above-cited explanation by Scherer could with great difficulty be adapted to the differentiation in word formation, it still could not be applied to the differentiation in conjugation because one would then have to make the foolish assertion that the plural forms of the preterite indicative, which show the voiced stop (OS *slôgun*), are more frequently used than the plural forms of the present indicative, which have the voiceless fricative (OS *slahad*), and that the preterite participle (OS *slagan*) is more frequent than the infinitive (OS *slahan*).

From the regular occurrence of differentiation in the conjugation of these verbs, the important conclusion may now be drawn that the differentiating force must be sought in a certain phonetic relationship which varyingly accompanied the conjugation. Through this conclusion the investigation is confined to rather narrow limits. The differentiation took place after the sound-shift had begun; therefore it is peculiar to Germanic. The differentiating impetus, on the other hand, must be older and may very well have already belonged to the Indo-European language. Consequently, this impetus must be sought in that language stage which has its end members in the underlying Indo-European forms on the one hand and on the other, in the forms to which one can attain through a compilation of the Germanic languages. Fortunately, the principal forms of the Germanic, strong verbs are transparently clear back to Indo-European. The Indo-European conjugation is based on the following four means of formation:

- 1) varying ending
- 2) varying root vowel

- 3) the use or non-use of augment and reduplication
 4) varying accent
 These and no others.

If one now looks at a series of Germanic basic forms, for example:

kveþana-, slahana-, liþana-,
 kvarþ, slôh, laiþ,
 kvâdum, slô, lidum
 kvedana-, slagana-, lidana,

it is readily apparent that the phonetic basis for the differentiation cannot lie in the phonological material of the endings: the endings of the infinitive stem (kveþ-ana-, slah-ana-, liþ-ana-) is the same as that of the participle stem (kved-ana-, slag-ana-, lid-ana-) and yet differentiation is present. Secondly, the basis cannot be sought in the quantitative aspects of the roots, for the voiceless fricative appears with long as well as short root vowels (liþana-, slôh; kveþana-, kvaþ, slahana-); the same is true of the voiced stop (slôgum; kvedana-, slagana-). And these same quantitative conditions were already present in Indo-European. Thirdly, and finally the use or non-use of reduplication -- the augmented verb forms have been lost in Germanic -- could not have caused the differentiation, since then we would have to have for some forms the same root consonants in the entire preterite indicative, which is not the case; for others outside the conjugation, a special explanation would have to be given for the differentiation, since reduplication is essentially a purely verbal process.

Consequently, only one explanation remains and it is no desperate hypothesis, to which I must take recourse because all other attempts at explanation have failed, but rather a decision which has of necessity thrust itself upon me by sober argumentation: The differentiation must be based on the fourth means of formation of the conjugation, on the varying Indo-European accent. This assumption is confirmed in the highest degree by a confrontation of the Germanic verb forms with the corresponding forms of the Sanskrit verbs. When the accent in Sanskrit rests on the root syllable, we have the voiceless fricative for the root final in Germanic; on the other hand, when the accent in Sanskrit falls on the ending, the Germanic forms show a voiced stop for the root final. In the following compilation, I am juxtaposing to the Sanskrit forms first the etymologically corresponding Germanic paradigm and then a paradigm with the differentiation. Since we are concerned here only with the root final, I am citing the Germanic forms with Gothic endings.

A. The accent rests in Sanskrit on the root; the root final is a voiceless fricative in Germanic.

a. Skt pres. ind.	= Gmc pres. ind.	
sg. 1. bhédâmi	= bîta	liþa
2. bhédasi	= bîtis	liþîs
3. bhédati	= bîtiþ	liþiþ
pl. 1. bhédâmas	= bîtam	liþam
2. bhédatha	= bîtiþ	liþiþ
3. bhédanti	= bîtand	liþand
b. Skt pres. potential	= Gmc pres. subj.	

sg. 1.	bhédeyam	=	bîtau	lîpau
	2. bhédes	=	bîtais	lîpais
	3. bhédet	=	bîtai	lîpai
pl. 1.	bhédema	=	bîtaima	lîpaima
	2. bhédeta	=	bîtaiþ	lîpaiþ
	3. bhédeyus	=	bîtaina	lîpaina
c.	Skt pres. imper.	=	Gmc pres. imper.	
sg. 2.	bhéda	=	bît	lîþ
pl. 2.	bhédata	=	bîtiþ	lîpiþ
d.	Skt pres. part. act.	=	Gmc pres. part. act.	
	bhédant-	=	bîtand-	lîþand-
e.	Skt verbal substantive	=	Gmc infinitive	
	bhédana-	=	bîtan	lîþan
f.	Skt perf. ind. sg.	=	Gmc pret. ind. sg.	
	1. bibhédá	=	bait	laiþ
	2. bibhéditha	=	baist	laist ⁶
	3. bibhédá	=	bait	laiþ

B. The accent in Sanskrit rests on the ending; the root final is a voiced stop in Germanic.

a. Skt perf. ind. pl. = Gmc pret. ind. pl.

1.	bibhidimá	=	bitum	lidum
2.	bibhidá	=	bituþ	lituþ
3.	bibhidús	=	bitun	lidun

b. The Vedic Sanskrit forms *vavṛjyús*, *tuturyáma* and the like, first recognized by Westergaard as perfect potential = Gmc preterite subjunctive.

sg. 1.	bibhidyám	=	bitjau	lidjau
	2. bibhidyás	=	bitís	lîdis
	3. bibhidyát	=	biti	lidi
pl. 1.	bibhidyáma	=	bitîma	lidîma
	2. bibhidyáta	=	bitîþ	lidîþ
	3. bibhidyús	=	bitîna	lidîna

c. Forms in *-ná-* in Skt., usually called perf. part. pass. = Gmc. pret. part. pass.

bhin-ná-	for *bhid-ná-	=	bitana-	lidana- ⁷
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Before I pursue further the rule which is disclosed here, I must make a short digression concerning a relationship which has until now remained obscure, but which finds its answer in this context. I am referring to the relation between *s* and *z(r)* in the Germanic languages. The IE *s* corresponds in Gothic partly to *r*, partly but more seldom and never initially, however, to *z*, whose phonetic value must be established as a voiced dental fricative. The latter corresponds in the other Germanic languages to an *r*, which is to be regarded as a further

development. In all respects, this differentiation of the original *s* to *s* and *z(r)* in the Germanic languages is parallel to the above-treated differentiation.

Thus we have for example Gmc auzan- n. 'ear' (ON eyra,⁸ OS ôra, OE eáre, OHG ôra = Lat. auris f. for *ausis, Lith. ausì-s f., OSl. ucho, stem ušes-); Gmc deuza- n. 'animal' (Goth. diuza-, ON dýr, OS dior, OE deór, OHG tior; from the root dhus, which is in OSl. dŭch-ŋa-ti dyš-ati 'to breathe', duchŭ 'anima', duša 'soul'); Gmc baza- 'bare' (ON ber, OS, OE, OHG, bar = OSl. bosŭ, Lith. bása-s 'barefoot') etc. with voiced dental fricative; whereas Gmc lausa- 'loose, empty' (Goth. lausa-, ON lauss, OS lôs, OE leás, OHG lôs; from a root lus in Goth. fra-liusan 'to lose'), Gmc mûs- mûsi- f 'mouse' (ON mû- f., OE mûs- f., OHG mûs- f. = Skt. mûsh-, mûsha- m., μῦσ, μῦ-ός, Lat. mûs mûri-s, OSl. myšì- f.), Gmc nasa- f. (ON nös, OE nàŋse, OHG nasa = Skt. nâsâ f., Lat. nâsu-s, OSl. nosŭ m., Lith. nósi-s f.) and others have preserved the voiceless fricative.

The same differentiation is also found in the conjugation. One example will suffice:

ON	kjósa, kaus, kurum korum, korinn kørinn,
OS	kiosan, cos, curun, coran,
OE	ceósan, ceás, curon, coren,
OFris.	kiasa, kâs, keron, keren,
OHG	kiosan, kôs, kurum, koran.

Therefore, *s* and *z(r)* are distributed in the conjugation in full accord with the distribution of *h* *g*, and of *p d*.

Here too Gothic avoids the differentiation, i.e. the voiceless fricative of the present forms has spread to all the forms of kiusan, friusan, fraliusan, driusan, visan etc.

All this demonstrates sufficiently that the differentiation of the *s* to *s* and *z(r)* must in every way be viewed like the differentiation of the Proto-Germanic voiceless fricatives to Germanic voiceless fricatives and voiced stops. If at a certain time and under certain circumstances the three voiceless fricatives of the language: *h* (Brücke's χ^2), *p* (B.'s s^4) and *f* (B.'s f^1) were voiced, i.e., to the sounds which Brücke designates by y^2 , z^4 , w^1 , it follows almost out of necessity that the fourth and last voiceless fricative of the language: *s* (B.'s s^3) must also have been voiced (B.'s z^3) at the same time under the same conditions.⁹ Therefore the basis for the differentiation of *s* to *s* and *z(r)* must likewise be sought in earlier accentual relationships, and we can augment the equation set up on p. 144 by the two members.

Gmc mûsi-	keusana-
—	—
Gmc deuza	kuzana-

For the differentiation in its entirety, as will be clear from what follows, where the instances of differentiation also occurring outside root syllable are taken into consideration, the discovered rule must be formulated as follows:

IE *k, t, p* first shifted to *h, p, f* in all environments; the voiceless fricatives thus originating, together with the voiceless fricative *s* inherited from Indo-European, then became voiced

medially in voiced environments, but remained voiceless when they were the final sounds of accented syllables.

A simulated Indo-European word *akasatam developed in the Germanic region first to *ax²as³as⁴am (with Brücke's notation), then, however, further to *áx²az³as⁴a(m), *ay²ás³az⁴a(m), *ay²az³ás⁴(m), according to whether the accent rested on the first, second, third, or fourth syllable. Later, the new Germanic accent principle came into being; z³ remained a fricative; the other voiced fricatives, however, shifted to voiced stops; and IE *akasatam would then have appeared in Gothic in one of the following forms: *ahazad(am), *agasad(am), *agazap(am), *agazad(am).

The fact that the voiceless fricatives did not follow the general tendency and become voiced in accented syllables, is easy to explain physiologically. For the older period of Germanic we have to start with an accent which was not purely chromatic like the accent in Sanskrit and the Classical languages, but which, like modern accentuation, had something expiratory¹⁰ about it, that is, was based on greater activity of the muscles of expiration and to the subsequently stronger exhalation of air. The essential distinction between the voiceless and voiced consonants is dependent on the position of the vocal cords (Brücke, *Grundzüge der Physiologie*, p. 8.56). For voiceless consonants, the vocal cords are wide open; the air stream from the chest cavity has free passage: it is therefore more forceful than for voiced consonants, and this stronger expiration of air manifests itself in the stops by a more rigid muscular occlusion and a more powerful explosion. For voiced consonants on the other hand, the vocal cords are brought together almost until they touch; the narrow glottis hinders the free expiration of air; the air-stream is therefore weaker, the occlusion in the oral cavity accompanying the voiced stops and the explosion itself are not as energetic as those of the voiceless stops. Therefore, the stronger expiration of air is an element which the expiratory accent has in common with the voiceless consonants. Accordingly the intensified air-stream in the accented syllable could keep the voiceless fricative voiceless; that is, it could hinder the vocal cords from becoming narrowed for voicing, as happened with the normal expiration of air in the unaccented syllable.

I probably need not remark that here we must not employ the modern hyphenation *fa-dar*, *finþan*; all the consonants following the vowels belonged to the preceding syllable *fad-ar*, *finþ-an*), as indeed Germanic versification also attests (the Old Norse *hendingar*, assonance rimes).

I have deduced my rule from the presence of differentiation in the conjugation and it has been shown above that it suffices completely for the explanation of the root final in the conjugation. This is, however, not enough. If the rule is to have general validity, then it must also be able to explain the differentiation in all other cases; it must also be applicable to those root consonants outside the conjugation and finally even for the endings, both inflectional and derivational. I shall now turn my attention to this final test. I shall conscientiously bring up even those isolated cases where the law is not valid. I must again use Sanskrit as comparative member; only rarely do I bring in Slavic and Lithuanian.

The enigma brôpar, môdar, fadar is resolved first of all. The Sanskrit accentuation is bhrâtar-, but mâtâr-, pitâr-, and according to the rule, in Germanic we must have brôpar in contrast with môdar, fadar. Among other kinship names can be cited: Gmc snuza f. 'daughter-in-law' (OHG snura, OE snóru f., ON snør f.), which entirely corresponds with the Sanskrit word of the same meaning snushá (= वृó-s, Lat. nuru-s OSl. snúcha, Russ. snochá). Gmc nefan- m. 'descendant, nephew' = Skt nápât. Gmc svehra- m. 'father-in-law, (OE sveor, OHG swehur,

MHG sweher; Goth. svaihran-) = Skt. çvāçura-, 'father-in-law' (ἑκυρό-s, Lat. socer, Lith. szészura-s, OSl. svekrū, Russ. svjókór), whereas Gmc svegrâ f. 'mother-in-law' (OE sveger f., OHG swigar f.) goes back to Skt çvaçrû f. 'mother-in-law' (ἑκυρά, Lat. socru-s, OSl. svekry, Russ. svekrón' f.).

Of the numerals, Skt. daçan 'ten' and pañcan 'five' are paroxytone; to these correspond in Germanic tehan and fimf (Goth. fimf, ON fimm, OS fif, OE fif, OHG fimf, finf = πέντε, πέμπε, Lat. quinque, Lith. penkí, pènkios, OSl. pětí). On the other hand are Gmc fedvôr 'four' and hunda- n. 'hundred' (Goth. hunda- n., ON hund, OS hund, OHG hunt) = Skt. catváras m., catvári n., catúr- and çatá- n., for *çantá- (ἑ-κατό-v, Lat. centu-m, Lith. szímta-s, OSl. sũto, Russ. sto n.). Gmc seban 'seven' corresponds to Skt. saptán (Vedic Sanskrit, in the classical language accented sáptan = ἑπτά, Lat. septem). Lith. túkstanti-s, OSl. tysąšta, tysęšta f. (for *tysantjâ), Russ. tysjaça; f. 'thousand' is Gmc þúsundja- f.n. (Goth. þúsundi f., þúsundja n.pl., ON þúsund f., OS thûisint n.pl., OE þúsend n., OHG dûsunt n pl.). Gmc þridjan- 'third' corresponds to Skt. tríya-. Gmc fedvôrþan- 'fourth' (ON fjórði, OS fiorðo, OE feóverða, feórða, OHG viordo) does not correspond to Skt. caturthá-; perhaps the accentuation in Gmc fedvôrþan- was however in agreement with the accentuation of the Sanskrit cardinal number; cf. Lith. ketvírta-s, Russ. četvjórtyj, Bulg. četvrúti.

Other comparable words are:

Gmc fehu- n. 'cattle' (Goth. faihu n., ON fé, OS fehu, OE feó, OHG fihu) is completely identical with Skt. páçu n. 'cattle' (so accented in the Vedas; the masculine form páçu-s is oxytone; Lat. pecu n.).

Gmc ehva- m. 'horse' (ON jó-r, OE eoh, OS ehú-skalk 'groom')= Skt. áçva m. 'horse' (ἵππο-s Lat. equu-s).

Gmc volfa- m 'wolf' (Goth. vulfa- m., ON ulf-r, OS uulf, OE vulf, OHG wolf: the f of the Germanic base form assured by Gothic and OHG f) corresponds to Skt. vṛka- m 'Wolf' (λύκο-s, Lat. lupu-s, Lith. vilka-s, OSl. vlükū, Russ. vołk, gen. vólka).

Gmc angan- m. 'curve, arrowhead' corresponds to Skt. añká- m.

Gmc haidu- m. 'appearance, way, manner' (Goth. haidu- m., ON heið-r, OE hād, OHG heit m., cf. *Einheit, Gleichheit* etc.). Skt. ketú -m. 'appearance of light, brightness, clarity; appearance, form, figure'.

Gmc raþa- n. 'wheel' (OHG rad n.) = Skt. rátha- m. 'vehicle' for *rata- (Lat. rota, Lith. ráta-s).

Gmc hardu- 'hard, stringent' (Goth. hardu-s, ON harð-r, OS hard, OE heard, OHG hart) = κρατύ-s.

Gmc anþara- 'the other' (Goth. anþar, ON annar-r, OS ôðar, OE ôðer, OHG andar) = Skt.

ántara- 'the other' (Lith. àntra-s).

Gmc undar- adv. and prep. 'under' (Goth. undar, ON undir, OS undar, OE under, OHG untar) = Skt antár adv. 'within', prep. 'under' (Lat. inter, Oscan Umbrian anter).

Gmc tanþu-, tanþ- m. 'tooth' = Skt. dánta- m. 'tooth'.

Gmc sanþpa- 'true' (ON sann-r, OS sôð, OE sôð)= Skt. sât-, present participle of the root as 'to be' (ἑόντ, Lat. præsent-)

Gmc anadi-f. 'duck' (ON önd, OE ened, OHG anut) Skt. âtí- f. 'a certain waterfowl' vñçsa, Lat. anati-, Lith. ánti-s f.).

Gmc maþjan- n. 'speech' (Goth. maþla- n., 'place of assembly', but maþljan, 'to speak'; ON mál, OE mædel) = Skt. mántra- m. 'saying, poem, agreement, advice' (cf. OSl. moli-ti 'to ask, pray', Bohem. modliti, Pol. modli for *motliti = Lith. maldý-ti 'to ask', Goth. maþljan 'to speak'; Pol. modly f.pl. 'prayers', Lith. maldà f. 'prayer').

Gmc hleuþra- n 'hearing' (OE hleóðor) = Skt. çrótra- n, hearing, ear ' (Avestan çraothra- n. 'hearing, causing to hear, singing').

Gmc þaþrô 'there' (Goth. þaþro, þaðra) = Skt. tátra 'there'.

Gmc feþra f. 'feather' (ON fjöðr, OS feðara weak f., OE feðer st.f., OHG fedara) = Skt. pátra-, pátra- m. and n. 'wing, feather' (πτέρο-v, OSl. pero n.).

Gmc rôþra- m.n. 'oar, rudder' (ON róðr m., OHG ruodar n.) = Skt. aràtra- m. 'rudder', áritra and aràtra- n. 'steering rudder'.

Gmc nôsa f. 'nose' (OE nōsu; cf. ON nōs f., OE nāse f., OHG nasa f.) = Skt. nāsâ f. 'nose' (Lat. nāsu-s, Lith. nōsi-s f., OSl. nosŭ m.).

Gmc hazan- m. 'hare' (ON héri, OE hare, OHG haso, in which *z* has reverted to *s*) = Skt. çaçá- m. for *çasá- 'hare'.

Gmc fersna f. 'heel' (Goth. fairzna, OE fiersn, OHG fersna) = Skt. pârshñi f. 'heel' (= πτέρνα).
Goth. amsa- m. 'shoulder' = Skt. árñsa- m.n. 'shoulder' (ώμο-s, Lat. umeru-s).

Of the words for which the rule is not valid, I have noted the following:

Gmc hvaþara- 'both' (Goth. hvaþar, ON hvár-r, OS hueðar, OHG hwedar), but Skt. katará- (πότερο-s, Ionic κότερο-s, Lith. katrà -s).

Gmc hersan- m. 'head' (ON hjarsi, hjassi), but Skt. çîrshán- n. 'head'.

Gmc hvehvla- n. 'wheel' (ON hjól, OE hveól, hveohl), but Skt. cakrá- m.n. 'cart-wheel, circle' (= κύκλο-s)

Gmc maisa- m.f. 'sack, basket' (ON meis-, OHG meisa), but Skt. meshá- m 'ram, the fleece of the sheep and what is made from it' (Lith. maàsza-s 'large sack', OSl. mechŭ m. 'hide, skin': Bugge, *Zeitschr.* XX, p. 1).

Gmc fadi- m. 'master, husband', only as the last member of a compound (Goth. fadi- m.), but Skt. páti- m. 'master, husband' (πότι-s, Lith. pàti-s, pat-s).

In the Sanskrit causatives, the accent falls on the ending:

bhârâya- sâdâya-, vedâya-, etc. The Germanic causatives agree with this accentuation, as may be seen from the following examples:

Gmc hlôgjan 'to make laugh' (ON hloegja; Goth. uf-hlohjan with *h* by analogy with the basic verb), causative of hlahjan 'to laugh'.

Gmc hangjan 'to cause to hang' tr. (ON hengja, OHG hengan, henkan), causative of hanhan 'to hang' intr. Gmc laidjan 'to lead' (ON leiða, OS lêdian, OE lædan, OHG leittan) causative of lîþan 'to go'.

Gmc fra-wardjan 'to spoil', causative of Goth. fra-vairþan 'to be ruined'.

Gmc sandjan 'to send' (Goth. sandjan, ON senda, OS sendian, OHG sentan; cf. Lith. siunczà¹ 'I send'), causative of a lost verb sinþan 'to go', cf. sinþa- m. 'course, time' (Goth. sinþa-, ON sinn n., OS sîð, OHG sind).

Gmc nazjan 'to save' (OS nerian, OE nerjan, OFris. nera, OHG nerian: Gothic again by analogy nasjan), causative of nesan 'to recover'.

Gmc laizjan 'to teach' (ON læra, OS lêrian, OE læren, OHG lêran: Gothic by analogy laisjan), causative of a verb lîsan 'to know, inferable from Goth. lais 'I know'.

On the other hand, no Germanic causatives occur with *h*, *þ*, *s*, as root final, since lausjan 'to loosen' (Goth. lausjan, ON eysa, OS, OHG lôsian, OE lýsan) is not the causative of leusan 'to lose', but rather the denominative of lausa- 'loose'. We can therefore (as a pre-Germanic form of the Skt. sâdâya- 'to set') assume a form *satâja-, more correctly perhaps *satâja. With the appearance of the new principle of accentuation, we would have sâtija-, and only then the earlier stressed vowel of the ending was lost and satja- resulted. In hlôgjan as against hlahjan, the evident contrast between the causative-forming and the present tense-forming *-ja* should be observed by the way; the latter required root stress (the fourth class in Sanskrit).

In Sanskrit, from the substantives which signify a masculine being, the corresponding feminine forms are frequently constructed by means of the suffix *-î*: devá- m., 'god', devî- f. 'goddess'; putrá- m. 'son', putrí- f. 'daughter'; meshá- m. 'ram', meshî- f. 'ewe'; sūkará- m. 'boar', sūkarî f. 'sow'; mátsya- m. 'fisč, f. matsî; çván- 'dog' f. çunî; tákshan- m. 'carpenter', takshnî f. 'wife of the carpenter'; dhártar- 'carrier, supporter', f. -trî; bhártar- 'supporter, maintainer', f. -trî etc. The feminine form is oxytone even when the masculine form is accented otherwise. The Indo-European form of this suffix must be posited as *-yâ*, as may be seen from the corresponding Greek forms: ζώτεια for *ζώτερ-ja, τέκταινα for *τέκταν-ja = Skt. takshnî for *takshan-yâ. This feminine-forming suffix is also evident in Germanic, although more seldom; thus we have from þeva- m. 'boy, servant' (Goth. þiu-s, stem þiva-, ðEWAR in the oldest Runic language, OE þeón) a form þivja- f. 'woman slave, maid-servant' (Goth. þivi, stem þiuja-, ON þý, gen. þýjar, OS thiui, OHG diuwa) against galtu- m. 'castrated swine' (ON gölt-r) a form goltia- f. 'sow' (ON gylt-r f.). Also explained thus is ON ylg-r f. 'she-wolf', stem ylgja-; the Germanic form is *volgja, the feminine of volfa- m., which stands for *volhva-, just as fimf for *finhv.¹¹ Gmc *volgja, therefore, also agrees in its accentuation with vřkî of the same meaning, just as volhva- agrees with Skt. vřka-.

As can be seen, those cases of the differentiation of root consonants occurring outside the conjugation fit very nicely into the proposed rule. All that now remains is to establish the validity of the rule even for those cases of differentiation occurring in the endings. In the above, we have already encountered an example in Gmc þúsundja-; if the Pre-Germanic accent was situated on the first syllable of this word, then the *t* of the ending had to appear in Germanic as *d*. Since the strong verbs in Germanic can, with only a few isolated exceptions, be traced back to verbs of the first and fourth Sanskrit classes, which accentuate the root syllable, we have to expect Gmc *d* for the frequent *t* in the Indo-European conjugational endings. -This is, in fact, the case. So we have Gmc *d* for IE *t* in the following endings:

Gmc 3rd sg. pres. ind. berid (OS *-d*, OHG *t*, Goth. *-þ*, according to the Gothic law of finals for *-d*, which also occurs) = Skt. bháratî, φέρει, fert.

Gmc 2nd pl. pres. ind. berid (Goth. *-þ*, for *-d*, which also occurs; OHG *-t*) = Skt. bháratha, φέρτε, fertis.

Gmc 2nd pl. pres. subj. beraid (Goth. *-þ* for *-d*, which also occurs; OHG *-t*) = Skt. bháreta, φέρετε, ferâtis.

Gmc 2nd pl. pres. imper. berid (Goth. *-þ*, *-d*, OS *-d*, OHG *-t*) = Skt. bhárata, φέρετε, ferte.

Gmc 3rd pl. pres. ind. berand (Goth. *-nd*, OHG *-nt*) = Skt. bháranti, φέρουσι, ferunt.

Goth. 3rd sg. pres. ind. pass. bairada = Skt. bhárate, φέρεται.

Goth. 3rd sg. pres. subj. pass. bairaidau = Skt. bháreta, φέροιο.

Goth. 3rd pl. pres. ind. pass. bairanda = Skt. bhárante, φέρονται.

Goth. 3rd pl. pres. subj. pass. bairandau = φέροιντο (Skt. bháreran).

Goth. 3rd sg. imper. (mid.) bhairadau (atsteigadau Matthew 27, 42) = Skt. bháratâm.

Goth. 3rd pl. imper. (mid.) bhairandau (liugandau 1 Cor. 7, 9) = Skt. bhárantâm.

Gmc pres. part. act. berand = Skt. bhárant-, φέροντ-, ferent-.

The *s* in the Indo-European conjugational endings becomes *z* in the Goth. 2nd sg. pres. ind. pass. bairaza = Skt. bhárase, φέρη; in subjunctive bairalza = φέροιο (Skt. bhárethâs).

The second singular present form causes difficulties. The 2nd sg. pres. ind. bhárasî in Sanskrit would according to our rule lead to a Germanic basic form beriz. ON berr presupposes this

basic form; Goth. bairis can be traced back to beriz or beris; OS, OHG biris only to beris; OE byrest and OFris. berst have been extended by an epenthetic *t*. The 2nd sg. pres. subj. bhâres, φέρεις, ferâs would lead to the Germanic basic form beraiz, which may also be assumed from ON berir, OE and OFris. bere; Goth. bairais on the other hand can be traced back to beraiz or to berais, OS beras and OHG berês only to berais. I shall attempt an explanation of these irregularities. For all the Germanic languages the basic form beriz was at one time valid in the second singular present indicative. The *-z* must have become *-s* in the special life of Gothic. In Old Norse the *-z* remained and became *-r* in the further course of the sound development. In the West Germanic languages, the *-z* should have disappeared in accordance with the laws of finals applicable to these languages; see Scherer, *Zur Geschichte der deutschen Sprache*, p. 97ff. One would therefore expect in the West Germanic area a form *beri or *ber for beriz; this apocopated form was, however, too short for the language and could easily have been confused with other forms; hence, the language sought, for the purpose of clarity, to preserve the fuller form, a fact which so affected Old Saxon and Old High German that they made the *-z*, which was impossible in final position, voiceless; whereas Old English and Old Frisian changed the *-t* originating in the 2nd person of the preterite-present (OE þearf-t, vil-t, OFris. skal-t, wil-t) to *s*. The situation of the subjunctive form is similar; the posited basic form beraiz regularly becomes ON berir, Goth. bairais, OE, OFris. bere, whereas Old Saxon and Old High German on the other hand have again established *-s*.

The ending *-tâ-* in the perfect participle passive in Sanskrit corresponds in the-Germanic weak verbs to the ending of the preterite participle passive *-da-*: Goth. tami-da = Skt. dami-tâ, Lat. domi-tu-s; Goth. sati-da = Skt. sâdi-tâ; frijô-da-, habai-da- etc. With this same suffix are formed: Goth. munda- 'believed', participle of munan = Skt. matâ- for *mantâ-. Gmc kunda- (Goth. godakunda- 'of good birth', OE feorran-cund 'originating from afar' = Skt. jâtâ- 'born' for *jantâ-. Gmc hlûda- 'loud' (OE hlûd, OHG hlût) Skt. çrutâ- 'heard', κλυτό-s, Lat. (in)clutu-s. Gmc kalda- 'cold' (Goth. kalda-, ON kald-r, OS kald, OE ceald, OHG calt) from the root kal, ON kala strong verb 'to freeze': cf. Lat. gelu, gelidus, gelare. Gmc alda- 'old' (OS ald, OE eald, OHG alt) = Lat. altus, cf. ad-ultu-s, from the root al in ON ala = Lat. alere. Gmc dauða- 'dead' (ON dauð-r, OS dôd, OE deád, OHG tôd, but Goth. dauþa- with *þ* by analogy with the juxtaposed substantive Gmc dauþu- m., Goth. dauþu, ON dauðr, OS dôð, OE deáð, OHG tôd), from a root dau, ON deýja, OS dôian, 'to die'. Probably here belongs also the fem. Gmc þeuda 'people' from the Indo-European root tu, 'to grow' = Lith. dialect tautà, Latvian tauta, Umbrian tūtu).¹²

In Sanskrit, the primary suffix *-ti-* forms the feminine *nomina actionis*, which are sometimes paroxytone, sometimes oxytone: gâti- 'way, going' from the root gam 'to go', sthîti- 'standing' from the root sthâ 'to stand', yûti- 'joining' from the root yu 'to yoke', pîtî- 'drink' from the root pâ 'to drink', pûrtî 'filling, granting' from the root pî 'to fill', etc. That oxytonation was more widespread earlier is seen from the fact that a great many of these forms are oxytone in the language of the Vedas which appear as paroxytone in the later classical language; so for example kîrtî 'thinking, mentioning', ishîti 'impulse, wish', paktî- 'cooking, digestion', bhûti- 'powerful existence, vitality', matî 'devotion, opinion, insight', râti-, 'bestowal, gift', vittî 'finding, discovery', vîti 'enjoyment', vṛshî 'raining' and others; in the Classical language kîrti-, ishîti-, pákti- etc. In Germanic this suffix is *-þi-* or *-di-*. Only rarely does it occur in the form *-þi-*: Goth. ga-qum-þi f. 'meeting', cf. the above-cited Skt. gâti- for *gâmti-; Goth. gabaurþi f. 'birth' (root bar 'to bear'); more frequently, however, the suffix occurs in the form *-di-*: Goth. ga-mun-di- f. 'memory' = Skt. matâ for *mantâ 'understanding, opinion', Gmc spôdi- f. 'success' (OS spôd, OE spêd, OHG spuot) = Skt. sphâtî¹³ 'growth, thriving', root sphâ, sphâ-yati 'he puts on weight, becomes stouter' = OSl. spe-jetî 'he has success' = Lith. spê-ja 'he

has time, opportunity' = OE *spêv-eð* 'he succeeds'; Gmc *sâdi-* f. 'seed' (Goth. m. *mana-sedi-* 'crowd of men', ON *sáð*, OHG *sât*) from the root *sâ* 'to sow'; Gmc *skordi-* f. 'shearing' (OHG *scurt* 'tonsure'), root *skar* 'to shear, cut', cf. *κάρσι-*s 'shearing' and others.

By means of the secondary suffix *-tâ* f., Sanskrit quite frequently forms abstracts from adjective stems; which accent the syllable preceding the suffix, as for example *çuklátâ-* 'white substance' from *çúkla-* 'white' *âryâtâ* 'an honorable bearing' from *ârya-* 'Aryan, venerable', *nyûnatâ* 'defective condition' from *nyûana-* 'defective', *krûrátâ* 'cruelty' from *krûrá-* 'cruel', *pañgútâ* 'lameness, from *pañgú* 'lame', *pṛthútâ* 'breadth' from *pṛthú* 'broad' etc. The formations in *-þa* f. in Germanic which correspond in every way are very numerous: so for example Gmc *folliþa* f. 'fullness' (OHG *fullida*) = Skt. *pûṛnatâ* 'fullness', from Gmc *folla-* 'full' (Goth. *fulla-*, ON *full-r*, OS *full*, OE *ful*, OHG *fol*) = Skt. *pûṛná-*, 'fullness'; Goth. *gauriþa* f. 'grief' from Goth. *gaura-* 'grieved', which is perhaps to be compared with Skt. *ghorâtâ* 'horribleness' from *ghorâ-* 'horrible'; Gmc *hailiþa* f. 'health' (OHG *heilida*) from *haila-* 'healthy, well', (Goth. *haila-*, ON *heil-l*, OS *hêl*, OE *hâl*, OHG *heil*), to which Skt. **kalyâtâ* from *kalya-* 'well' would correspond; Gmc *sâliþa* f. 'happiness' (OS *sâlða*, OE *sælð*, OHG *sâlida*) from *sâla-*, *sâlja* 'happy' (Goth. *sela-*, ON *sæl-l*, OE *sêl*); Gmc *deupiþa* f. 'depth' (Goth. *diupiþa*, ON *dýpt*) from *deupa-* 'deep' (Goth. *diupa-*, ON *djúp-r*, OS *diop*, OE *deóp*, OHG *tiuf*) etc.

Goth. *þivadva-* n. 'servitude' from *þiva-* m. 'servant' corresponds to the frequent Sanskrit secondary forms in *-tva-*, as for example *pitṛtvá-* n. 'fatherhood' from *pitár-* 'father'; *patitvá-* n. 'wedlock' from *páti-* m. 'husband, master'; *jñitvá-* n. 'kinship' from *jñti-* m. 'kinsman'; *brâhmaṇatvá-* n. 'Brahmin priesthood' from *brâhmaṇá-* m. 'Brahmin'. I do not know the feminine form of this suffix for Sanskrit; it appears however in Gothic in *fijaþva* f. 'enmity' from *fijan* 'to hate', *frijaþva* f. 'love' from *frijon* 'to love', *salþva*, only pl. f. *salþvos* 'lodgings, quarters' from *saljan* 'to stop at', and seems to be used for forming abstracts from verbal stems and in this is like the corresponding OSl. suffix *tva-* f., for example in *žrû-tva-* f. 'sacrifice' from the root *žrû*, inf. *žrě-ti* 'to sacrifice'; *bitva* f. 'battle' from *bi-ti* 'to beat'; *klętva* 'oath' from *klę-ti* 'to swear'; *žętva* 'harvest' from *žę-ti* 'to reap'; *molitva* 'prayer' from *moli-ti* 'to pray'; *lovitva* 'hunt, chase' from *lovi-ti* 'to chase'; *selitva* 'settling, dwelling' from *seli-ti* *se* 'to settle, establish oneself'; cf. *O nžkotorychu zakonachŭ Russkago udarenija Ja. Grota*, St. Petersburg 1858, p. 41 (off-print from the Reports of the Second Department of the Academy, vol. VII). The newer Slavic languages which have maintained the free accent show an accentuation of the syllable preceding the suffix: Russ. *žęrtva*; Russ. *bätva*; Russ. *kljátva* = Bulg. *klętvŭ* = Serb. *klętva*, which according to certain laws¹⁴ stands for *klętva*; Russ. *žätva* = Bulg. *žętvŭ* = Serb. *žętva* for *žęikva*; Russ. *molätva* = Bulg. *molätvŭ* = Serb. *mólitva* for *molätva*; Russ. *-lovàta*. The *þ* in the Germanic form of the suffix agrees with this accentuation; perhaps Goth. *salþva* from *saljan* is the same word as OSl. *selitva* from *seliti*, although the latter goes back to **sedlitva* from **sedliti* (Bohem. *sedliti*, Pol. *siedlić*).

The primary suffix *-as* in Sanskrit forms neuter substantives which in meaning are usually *nomina actionis* and have the accent on the root syllable. Forms of this sort are found in all Indo-European languages; thus in Greek the neuter substantives in *-es-*, nom. *-os*, also with the accent always on the first syllable, in Latin in *-or-*, *-er-*, nom. *-us*: Skt. *jánas* = *γένος* = Lat. genus, Skt. *árças* 'wound' = *ἔλκος* = *ulcus* 'ulcer', Skt. *sádas* 'seat' = *ἔδος*, Skt. *ándhas* 'herb, plant' = *ἄνθος* 'flower', Skt. *vácas* 'word' = *ἔπος*, Skt. *çrávas* 'fame' = *κλέος*, Skt. *sáras* 'water' = *ἔλος* 'swamp', Skt. *mánas* 'spirit' = *μένος* 'courage, power', Skt. *nábhás* 'cloud' = *νέφος*, Skt. *rájas* 'dust, darkness' = *ἔρεβος* 'darkness of the underworld', Skt. *yáças* 'fame' = Lat. *decus*,

Skt. ápas 'work' = opus, Skt. rādhas 'strength, wealth' = Lat. rôbur, Skt. áyas 'metal, bronze' = Lat. aes. In agreement with the accentuation in Sanskrit the suffix in Germanic has the form -ez(a); so Gmc aiza- n. for *ajez 'ore' (Goth. aiza-, ON eir, OE ær, OHG êr) = Skt. áyas, Lat. aes; Gmc seteza- n. 'seat' (ON setr n. 'domicile', sólarsetr n. 'sunset') = Skt. sádas, ěđos; Gmc rekveza- n. 'darkness' (Goth. riqiza-, ON rökkr n.) = Skt. rájas, ěpēβos; Gmc bareza- n. 'barley' (ON barr n., Gothic in bariz-eina adj. 'barley') = Lat. far, gen. farr-is, 'spelt'; Gmc harteza- 'hate' (Goth. hatiza-, ON hatr); Gmc faheza- n. 'sheep' (ON fær, OSwed., ODan. fár; see Steffensen in *Tidskrift for filologi*, New Series, II, p. 70) = Lat. pecus, -oris 'cattle'. Here Fick's correlation of Gmc aruza- n. 'scar' (ON örr n.) with Skt. árus n. 'wound' can also find its place.

The Sanskrit gradation suffixes, comparative îyañs- and superlative ishβha- require accentuation of the stem syllable, even when the accent falls on the endings in the positive degree: vára- 'excellent', várîyañs-, várishβha-: dîrghá- 'long', drághîyañs-, drághishβha-; gurú, βαρύς, garlyam's-, garishβha-. This retracting of the accent also occurs in Greek, as is well-known: ἡδύ- 'sweet' = Skt. svádú-, comp. ἡδιον = Skt. svádîyams-, sup. ἡδιστο- = Skt. svádishβha; ἐλαχύ 'easy' = Skt. laghú-, comp. ἔλασσον- = Skt. lágghîyams-, sup. ἐλάχστο- = Skt. lágghishβha-; κακό- 'bad' κάκιον-, κάκιστο-, etc. The accentuation of the newer Slavic languages also indicates this accent change, which may therefore be established as Indo-European. In agreement with the root accentuation attested by Sanskrit, Greek, and Slavic in gradation, the comparative suffix in Germanic appears in the form -izan-, -ôzan-, in the adverbially used neuter forms as -iz-, -ôz: Gmc batizan-, 'the better' (Goth. batizan-, ON betri, OS betiro, OE betra, OHG beziro); Gmc blindô-zan- 'the blinder one' (Goth. blindozan-, ON blindari, OS blindoro, OE blindra, OHG blindoro); Gmc batiz adv. 'better' (ON betr, OS bat, bet, OE bet, OHG baʒ); Gmc nâhviz, nâhvôz adv. 'nearer' (Goth. nehvis for nehviz, ON nærr, OS OHG nâhor); Gmc sîpôz adv. 'later' (ON sîðar, OS sîðor, OHG sîdor). In Gmc junga- 'young' (Goth. jugga-, ON ung-r, OS OHG jung, OE geong = Skt. yuvaçá- 'youthful', Lat. juvencu-s, basic form *yuvanka-), comp. Gmc junhizan- (Goth. jûhizan- for *junhizan-, ON œri, according to Thórodd with nasal æ for *jâuhizan-, *junhizan-) and superl. ON oest-r for *junhista-, may reflect the change of accent in svádú, svádîyañs-, svádishβha-, ἡδύ-, ἡδιον-, ἡδιστο-; ON yngri, yngstr, OS jungaro, OE geongra, gyngra, geongost, gyngest, OHG jungiro and the like may then be viewed as later analogy formations.

Finally, what may be said about the s, which occurs frequently in Indo-European declensional endings? In the nominative singular masculine the ending -s was to be expected according to our rule for all originally oxytone and one-syllable stems: jungás, daudás, hardús, haidús, kûs = Skt. gaus 'cow', hvas = Skt. kas 'who' etc.; for all other stems, the ending -z: vólfaz, ámsaz, máisaz, sanβaz, ánβaraz, dáuβuz, éhuz etc. In the genitive singular of the feminine a-stems, -s and -z would similarly be expected according to the accentuation: snuzôs, βeudôs, but nôsôz, férsnôz, follâpôz, salâpvôz etc. So too in other declensional endings which include IE s. Germanic, however, generally shows only -z¹⁵: n. sg. m. volfaz (Goth. vulfs, according to the Gothic law for finals for *vulfz, ON ulfr, oldest Runic language -AR; in the West Germanic languages with regular loss of the -z: OS uulf, OE vulf, OHG wolf); gen. sg. fem. gebôz (Goth. gibos for *giboz, ON gjafar, OS gebo, geba, OE gife, OHG gebo); n. pl. in. volfôz (Goth. vulfos for *vulfoz, ON ulfar, OHG wolfa) etc. The language observed unity of inflectional endings. Where the phonetic development would have impaired unity, the language suspended the sound law and monopolized the most frequently occurring ending, and in the above case, that was the inflectional ending of the non-oxytone stems. The third pl. ind. sind (Goth., OS, OE sind, OHG sint) is just like this; Skt. sânti led to Gmc *sinβ; the

ending of the third plural indicative was *-nd* elsewhere however, and *sinþ* had to submit to this.

We can now survey in broad outline the history of Germanic accentuation from the oldest Indo-European time up to the present. The Indo-European accent was by nature purely chromatic, in position absolutely free. We must assume that in the Sanskrit accentuation -- when we disregard the clearly non-original Svarita -- we possess a relatively true picture of that ancient accentuation. In the common European language period, the accent still had its original character: that it was still purely chromatic is assured by the accent of the Classical languages; that, moreover, it still had its full freedom is assured by the free accentuation of Lithuanian and several New Slavic languages. Only after Germanic had separated from its closest neighbor, Slavo-Lithuanian, and had begun its special life, do we encounter the accent somewhat changed in nature; it had become expiratory or perhaps, since it probably still retained along with the expiratory accent its chromatic character, chromatic-expiratory. But the Proto-Germanic accentuation had maintained, with surprising integrity, the second characteristic feature of the Indo-European accent, freedom. The transition to fixed accentuation (root accentuation) which followed is an analogical formation which was thoroughly carried out. Those instances in which the accent rested on the root syllable were already in the majority under the old accent principle, and this method of accentuation then spread in Proto-Germanic, when those word forms which had the accent on the ending gradually retracted it to the root syllable. From the strict carrying out of root accentuation in all living Germanic languages, it might be surmised that the transition to the new accent principle was already accomplished before the Germanic basic languages split into dialects. Contrary to this, however, are the pronominal forms *unsih*, *inan*, *imo*, *iru*, *ira*, which often count as oxytone in Old High German versification; their accentuation is difficult to explain otherwise than as an inheritance from the time of free accentuation, for the last four forms correspond successively to the Sanskrit oxytone forms *imám*, *asmaí*, *asyaí*, *asyás* (cf. Scherer, Z.G., p. 152). It must therefore be accepted, that, in the division of the Germanic basic language, the accentuation of the root syllable was indeed dominant, that, however, at the same time, forms with the old accentuation still survived which only gradually conformed in the individual languages to the main trend.

The conclusions, to which my investigation has led me, will perhaps be considered highly remarkable. It may of course seem strange that an accentual principle which perished in grey antiquity may be subsequently traced today still in the Germanic verbal forms *ziehen* *gezogen*, *sieden* *gesotten*, *schneiden* *geschnitten*. It is astounding that Germanic consonantism gives us the key to the proethnic accentuation, whereas this had formerly been sought vainly in the Germanic vocalism. If my conclusions, however, are found to be remarkable, then I hope that they will not to the same degree be found improbable. Remember the course of the investigation. Proceeding from a seemingly irregular point in the conjugation by apagogic reasoning -- a means of proof which is not despised even by exact mathematics -- I have arrived at an explanation which was not only completely satisfactory for that point; but at the same time a series of language phenomena also viewed previously as irregularities were proved in this way to be completely organic products of the development of the language. Precisely in the harmonic interrelationship of various language phenomena with one another and with the total development of language as discovered through this explanation, I find the best confirmation for the correctness of my demonstration.

If my conclusions are accepted by the critics, we have in them a starting point for a further investigation into Proto-Germanic accentuation. In that way we will get nearer to the great

question of the origin of ablaut. That the basic principle in Holtzmann's ablaut theory, the assumption of a far-reaching influence of accentuation on the vocalism, is certain, is for me a settled matter; but the form which Holtzmann has given his theory can not be brought into accord with the one arrived at here and must be completely modified.

The most important new results of the above investigation are briefly the following:

- 1) Germanic still had the free Indo-European accent after the beginning of the sound-shift.
- 2) The accent however, was no longer purely *chromatic* as in Indo-European, but was at the same time expiratory.
- 3) If IE *k t p* are sometimes found in Germanic as *hpf*, sometimes as *g d, t* this was conditioned by that older accentuation.
- 4) Likewise, the bifurcation of IE *s* into Gmc *s* and *z* medially depends on the earlier accentuation.
- 5) The first sound-shift -- making allowance for the unconditional non-shift in certain consonant complexes -- allows no large groups of exceptions.

Copenhagen, July 1875

Notes

1. It is therefore incorrect, for example, to speak of a differentiation of IE *t* into Gmc *þ* and *d*; it was Gmc *þ* that divided into *þ* and *d*. [[return to text](#)]
2. Compare Braune's essay "Ueber den grammatischen Wechsel in der deutschen Verbalflexion" in the *Beiträge zur Geschichte der deutschen Sprache und Literatur* by H. Paul and W. Braune, I, 513ff. Footnote by editor (presumably A. Kuhn). [[return to text](#)]
3. The forms in () are analogical formations; the forms in [] do not occur, or more correctly, I cannot verify them. [[return to text](#)]
4. The Old Norse adj. *feginn* 'happy' may in form be the preterite participle passive to the root *fah, fag* (compare Old English); it is however better attributed to OS *fagan*, OE *fagen*, which have the same meaning; umlaut was then caused by the palatal (*k, g* with following *e, i*) as frequently happens in ON: *lengi* adv. = OS, OHG *lango*, OE *lange*; degi dative sg. of *dag-r*; the participles *ekinn, tekinn, dreginn, sleginn, fenginn*, etc. [[return to text](#)]
5. This is true, for example, of Pauli's attempt (*Zeitschrift* XIV, p. 102) to explain the *d* in *fadar, môdar* as against the *þ* in *brôþar* by a folk etymological association with Germanic *fôjan* 'pascere' or *môdi-* f 'anger, courage'. Apart from the fact that it requires very vivid, popular linguistic fantasy to associate the concept present in 'mother' with that in 'anger, courage', the explanatory words themselves require an explanation, since *fôdjan* and *môdi* likewise have a *d* from IE *t*. Do we then have to assume a folk etymological association for these words also? [[return to text](#)]
6. The second person preterite indicative in the West Germanic languages (OS *biti, lidi*; OE *bite, lide*; OHG *bizi, liti*) is the subjunctive form which has penetrated into the indicative = Goth. *biteis, liþeis*. [[return to text](#)]

7. Leo Meyer relates the Germanic preterite passive with the Sanskrit forms in -âná- with reduplication, thus bitana = bibhidâná-; also in this case the voiced stop in lidana- agrees with the Sanskrit accentuation. [[return to text](#)]
8. The *z* arising from *r* brings about in Old Norse (very seldom in Old Swedish and Old Danish) umlaut of the directly preceding root vowel: ker 'vessel', gær 'yesterday', dýr 'animal', dreyri 'blood', ber 'loose, empty', reyr 'reed', frörinn 'frozen', kýr 'cow', sýr 'sow'. Cf. Bugge, *Tidskrift for Philologi* VII, p. 320; Wimmer, *Fornnordisk Formlära*, Lund 1874, Section 12, note 2; Steffensen, *Tidskrift*, new series, II, p 71. [[return to text](#)]
9. The following additional conclusion would be tempting: If at one time all voiceless fricatives of Germanic came to be voiced under certain conditions, then the voiceless stops *k, t, p* under like circumstances must also have become voiced (*g, d, b*). This however, as is known, did not occur. Therefore -- as can be inferred -- the differentiation took place at a time when the language did not yet know these sounds in a voiced environment, i.e., before the last part of the sound-shift, the transition of the IE *g, d, b*, to *k, t, p*, had taken place. Such a conclusion is, however, inadmissible. Latin shows a similar transition of Proto-Latin *h, b, f* (Ascoli, *Zeitschr.* XVII, p. 241), arising from IE *gh, dh, bh*, which also became voiced in a voiced environment. The *s* here too follows the other voiceless fricatives and develops further to *r*. Medial *c, t, p* were, however, not at all affected by this sound shift. [[return to text](#)]
10. The accent is of twofold nature in the Indo-European languages. Either the accentuation of a syllable occurs by the vocal cords becoming more strongly tensed; in that way a higher pitch is produced in opposition to the lower pitch of the unaccented syllables. The Sanskrit and Classical accent was of such a kind, and this is also the original meaning of the name accentus, *πρὸς ᾠδίᾱ*. I call this accent chromatic. On the other hand the accentuation of the syllable consists in this that the muscles of expiration are set in greater activity, the stronger expiration of air intensifies the voice, and thus a relative forte is produced in opposition to the piano of the unaccented syllables. This may be called expiratory accent; Brücke describes it in his work: *Die physiologischen Grundlagen der neuhochdeutschen Verskunst*, Vienna 1871, p. 2. There is also a combination of both accents when the voice in the accented syllable can *not only* be raised, but also intensified, and in the cited work, p. 3, Brücke shows how the expiratory accent tends to take on a stronger or weaker chromatic coloring. This accent must be called a chromatic-expiratory accent. Skt *mánas*, Gk *μένος* have the pure chromatic accent on the first syllable; this can be given the musical expression [♩]. The Serbian accusative *vodu* 'aquam' has the pure expiratory accent on the first syllable, musically expressed ^{♩♩}; Vuk Stefanović denotes this accent by \|. In the nominative of this same word, *voda*, on the other hand, a chromatic-expiratory accent is found on the first syllable, which might be indicated by [♩]; this accent Vuk Stefanović denotes by \. When Brücke (in the above cited work) asserts "it is incorrect to attempt to distinguish a word accent consisting in tone elevation from a word accent consisting in tone intensification," then on this point I cannot agree with this expert in physiology. Anyone who has heard the Swedes pronounce the peculiar articulation of their *kalla, gata, ögon, syster, saker* and such words, will have to admit, firstly that the syllable with the expiratory accent does not necessarily lie higher on the tone scale than the unaccented syllables; secondly, that there can be a raising of the voice (chromatic accent) in addition to and independent of the expiratory accent; for in these Swedish words the expiratory accent rests on the root syllable, but the voice is raised on the final syllable at the same time that it decreases in expiratory power ("hvaruti, om än utan ljudvigt, rösten liksom svänger sig uppför," Rydqvist, *Svenska språkets*

lagar IV, p. 211). This pronunciation could be musically designated thus: ♪.

Therefore, the mentioned words have two accents, so to speak, a purely expiratory one on the root syllable and a purely chromatic one on the final syllable. An ancient Greek ear would perceive only the last syllable as accented (kalla = καλλά); the Swedish ear hears only the accent on the first syllable, which is why the native grammarians speak of a "low tone" ("låg ton") for this syllable, though this, of course, is not quite correct, since the syllable is not beneath but on the level of the normal speech tone, while the final syllable is raised above that level. Norwegian also has this method of accentuation. In an article in *Christiania Videnskabs-Selskabs Forhandlinger* 1874, p. 296, Joh. Storm explains: En général les syllabes atones ont ici un ton plus haut. Ceci est contraire à l'usage de la plupart des langues européennes et montre que l'élévation de la voix (angl. *pitch*) et le renforcement ou l'appui (angl. *force*) sont deux choses différentes, comme l'a très bien fait ressortir M. Ellis dans son travail sur l'accent (*Transactions of the Philological Society*, 1873-4, Part I p. 113 ff). [\[return to text\]](#)

11. The sound change *xv-(xf-)* *f* is also known elsewhere. It is found, for example, in the South Slavic languages: Bulg. falŭ, Serb. fala, OSl. chvala 'praise'; Bulg., Serb. fat 'a linear measure' for chvat; Bulg. fraste 'branches' for chvraste and others. Furthermore, in Lapp loan-words: fadno = ON hvönn, feres = ON hverr, fales = ON hvalr; see Thomsen "Ueber den Einfluss der germanischen Sprachen auf die finnischlappischen", p. 68. [\[return to text\]](#)
12. Gmc kunþa- 'known', (Goth. kunþa-, ON kunn-r, OS kûð, OE cûða, OHG kund; pret. part. pass. of kunnan) may not be cited as contrary to the rule. The phonetic phenomena accompanying the nn of certain roots are still not clear. One should remember, that an *s* was often inserted (as one likes to term it) in word formation along with these: OHG cun-s-t, Goth. an-s-ti-, Goth. ala-brun-s-ti-, German gun-s-t and that the *nm* can change a following *d* = IE *dh* to *p*: Gmc unþa (ON unna, OE ûðe, OHG onda) pret. ind. of unnan for *unnda; Gmc kunþa (Goth. kunþa, ON kunna, OE cûðe, OHG conda), pret. ind. of kunnan for *kunn-da. If, however, the pret. ind. kunþa represents the expected *kunnda, then the pret. part. pass. kunþa can also represent *kunnda-. [\[return to text\]](#)
13. As accented by Benfey, *Vollständige Grammatik* p. 162 above; the Petersburg dictionary does not give the accentuation for this word. [\[return to text\]](#)
14. See C.W. Smith, *De verbis imperfectivis et perfectivis in lingvis Slavonicis* (Universitetsprogram, Copenhagen 1875), p. 31f. [\[return to text\]](#)
15. In the genitive singular of the masculine and neuter *a*-stems, the ending is Gmc *-s*, volfas (Goth. vulfis, ON ulfs, oldest Runic language *-AS*, OS uulfes, OE vulfes, OHG wolfes). The *s* was retained here, because it was actually *ss* and, as such, had to retain its voiceless character (IE várkasya = Gmc *-volf-asj, *volf-ass, volfas), see Ebel in *Zeitschr.* IV p. 149 bottom. [\[return to text\]](#)

CHAPTER TWELVE

HEINRICH HÜBSCHMANN

ON THE POSITION OF ARMENIAN IN THE SPHERE OF THE INDO-EUROPEAN LANGUAGES

"Ueber die Stellung des Armenischen im Kreise der indogermanischen Sprachen," Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der Indogermanischen Sprachen, 23.1 (1875), 5-49

Editor's Introduction

Hübschmann's is another of the articles published in 1875 which indicate the maturing of linguistics. Making use of the increased control over the data in the Indo-European languages, and over linguistic methodology, Hübschmann by this article established Armenian as an independent branch of the Indo-European group.

Hübschmann's minute attention to data enabled him to sort out the evidence for distinguishing between native Armenian forms and those borrowed from Iranian. In this way his is one of the last important articles to deal with a problem which vexed early Indo-European linguistics: identification of the various strata in a language so that its original relationships could be determined. By sorting out the non-native forms, and establishing the phonological correspondence between Germanic and the other Indo-European languages, Grimm, Rask and the early historical linguists laid down the methodological principles for their field. Using these principles in a more difficult area, Hübschmann at once demonstrated their validity and gave a definitive solution to the problem he was investigating.

It is clear why Hübschmann's solution was so satisfactory: after dealing with morphological characteristics he concentrated on phonological correlations rather than on the vocabulary. His procedure might still be emulated by linguists seeking to establish genetic interrelationships in other language groups.

Even with his accomplishment, Hübschmann's understanding of Indo-European phonology was not completely accurate. Although he was aware of secondary palatalization in Indo-Iranian, he still assumed a single short vowel *a* for Proto-Indo-European, with a split into the vowels of the European languages. The correct view became generally apparent shortly after his article was published. Other misconceptions in his article are obvious to the reader. But since Hübschmann's aim was to determine the relation of Armenian to the other dialects, his conception of Proto-Indo-European was not crucial in achieving this aim.

Nor were some of his methodological views, such as those on residues. A few of these he dismisses as chance phenomena. The sections of his long article with such comments are not reproduced here. But it is to Hübschmann's credit that he recognized before his article was printed that he had slighted some of the material in Armenian. Subsequently he rectified any omission by his comprehensive *Armenische Etymologie* (Leipzig, 1897), the first part of his planned grammar of Armenian. Moreover, residues are still being explained in Armenian today, thanks to his solid work on its phonology.

Hübschmann's concern with thorough descriptive analysis enabled him to clarify other interrelationships, such as that of Ossetic as well as that of Afghan (which in his first excursus, pp. 43-46 [not included here], he demonstrated to be an Iranian and not an Indic language). The pioneering work that was necessary in Iranian as well as Armenian may be recognized from the preliminary note to his article, in which he deals with the transcription

for Armenian. Though he modified it, he was unfortunately prevented by the editors of the *Zeitschrift* from revising the transcription for Iranian, which in the form he used suggests pronunciation like that of Sanskrit.

Besides his insistence on careful descriptive techniques, Hübschmann's conception of the interrelationships between the languages in one family was admirable. The family tree model as proposed by earlier linguists seemed far too rigid. His identification of shared characteristics in Armenian and the European languages as well as in Armenian and Indo-Iranian gave excellent support to the wave theory which had been proposed three years earlier by Schmidt. The resulting conception of the position of the early Indo-European dialects prepared for the more realistic view of interrelationship between languages which followed further studies in dialect geography.

The interest in broadening the study of the Indo-European languages at this time is strikingly illustrated by the editorial comment at the beginning of the twenty-third volume of the *Zeitschrift*, on its increased scope beyond Germanic, Greek and Latin. Hübschmann's own boldness concerning the Indo-European family may be demonstrated by the concluding comment in the second excursus to his article, pp. 46-49 (not included here). After suggesting that Phrygian may have been closely related to Armenian, he ends with the statement:

"Possibly these languages formed a separate branch with other languages of Asia Minor, which in accordance with our contributions on Armenian above, might be placed between Iranian and Balto-Slavic." The separate branch has indeed been uncovered, but with a position in the Indo-European family somewhat different from that which Hübschmann had forecast. His concentration on interpreting the Iranian and Armenian data permitted little further speculation of this sort. But the interpretations he provided of these data remain permanent contributions on the position of these languages.

Johann Heinrich Hübschmann (1848-1908), after a post-doctorate period of four years at Leipzig, spent his entire career at Strasburg. Scornful of academic jockeying, he rejected offers to move closer to the contemporary centers of linguistic research. Though he dealt with many of the Indo-European languages, his concern with Armenian extended beyond linguistics to Oriental studies. His primary achievement was in the elucidation of Armenian. Though it has never been one of the languages of central interest to Indo-Europeanists, Hübschmann holds a position of great respect not only as founder of scientific Armenian studies but also for his capable application of linguistic method.

My attempt to assign to the Armenian language its position among its relatives is not the first. The Armenians themselves have proposed views about it which flatter their national vanity but lack every scientific foundation. And European scholars of previous centuries have made everything of this language since they could do nothing with it. But immediately after the establishment of linguistics by Bopp, Petermann in his *Grammatica linguae Armeniacae* (Berlin, 1837), on the basis of etymologies given at the beginning of it was able to furnish the proof that Armenian is an Indo-European language. Nine years later, in 1846, and independently of the work of Petermann, Windischmann published in the *Abhandlungen* of the Bavarian Academy (IV, 2) an excellent treatise about Armenian, in which he comes to the conclusion that Armenian goes back to an older dialect which must have had great similarity with Avestan and Old Persian but to which foreign elements had been added early. But while Pott doubted that Armenian is an Aryan language and only wanted to admit a strong influence of Aryan on Armenian, Diefenbach on the other hand observed that this assumption did not suffice to explain the close relationship of Armenian to Indic and Persian, a view which Gosche also adopted in his dissertation: *De Ariana linguae gentisque Armeniacae indole* (Berlin, 1847). Three years later in the *Zeitschrift der Deutschen Morgenländischen*

Gesellschaft IV, p. 347 ff., under the title "Vergleichung der armenischen consonanten mit denen des Sanskrit" de Lagarde gave a list of 283 Armenian words with their etymologies (which he also had found independently of Windischmann), without however dealing in greater detail about the character of the language. In the preface to the second edition of his *Comparative Grammar*, 1857, Bopp designated Armenian as Iranian and attempted, though without success, to explain its inflectional elements. Fr. Müller, who since 1861 had busied himself successfully with the etymological and grammatical explanation of Armenian in a series of treatises (Sitzungsberichte der Wiener Akademie), penetrated much more deeply in the essence of this language, which he explained as certainly Iranian. In general Patkanoff follows him in his summarizing treatise "Über die bildung der armenischen sprache," which was translated from Russian into French, *Journal asiatique*, XVI, Série 6, 1870, p. 126 ff. Even though de Lagarde in his *Gesammelten Abhandlungen* (1866), p. 291, asserted that three components are to be distinguished in Armenian: the original basis; an Old Iranian alluvium resting on it; and a similar New Iranian, added after the founding of the Parthian kingdom, nonetheless he did not give the distinguishing characteristics of these three layers, and for this reason his opinion has not been taken into further consideration. In any case Müller's view, that Armenian is Iranian, has not been disproved, and must be designated as the best established and the prevailing one at present.

The aim of the following is to investigate whether it is tenable.

It is a primary defect of Müller's investigations that he has not undertaken to demonstrate that the Armenian words which correspond phonologically with the corresponding Persian are not borrowed from Persian. If however the oldest Armenian that we know contains loanwords from Aramaic and Greek, we may expect that since the Armenians lived for centuries under the influence of the mightier and more cultured Persians, they also would have taken from their language no small number of words.¹ If this is admitted, then one can also suspect a great number of words to be borrowed; and if one has given way to this suspicion, then faith in the Iranian character of the language also disappears rapidly. And this suspicion can be very easily supported. In numerous Armenian compounds, for example, we find the word *dast* 'hand', while the usual word for 'hand' is *dzer'n*; now *dast* corresponds to Persian *dasta*, which in contrast with Av. *zasta*, Skt *hasta* is demonstrated to be specifically Persian through the sound change from *z* to *d*, and accordingly must be a loanword in Armenian. Accordingly also *dastak*, *dastakert* are foreign words, OP **dastaka*, **dastakarta*. It is further clear that Armenian regularly prefixes *a* or *e* to words with originally initial *r*: for this reason *r'azm* 'battle array, battle', *r'ah* 'way', *r'ocik* 'content'², which we also find in Persian, are loanwords from Persian, just as all words beginning with *r*' in Armenian are foreign words, cf. *r'abbi* 'master'. Further, since final *h* in Persian corresponds to original *ç* or dental, final *h* in Armenian to original *s* or *tr* (and original *ç* corresponds to Armenian *s*, original dental between vowels to Armenian dental or *y*), final *h* in Persian is accordingly etymologically different from that in Armenian;³ accordingly Arm. *akah* 'well-informed' = NP *âgâh* < *âkâça*, *gah* 'throne, seat' = NP *gâh*, Av. *gâtu*, *zrah* 'armor' = Av. *zrâdha*, NP *zirih* are loanwords from Persian. Further, if below we find the sound law that Skt *j* = Av. *z* = Arm. *ts* and accordingly Skt *jan* 'be born' = Av. *zan* = Arm. *tsn* (< *tsin*, *tse*), then *azat* 'free' = Pers. *âzâd*, Av. *âzâta*, from the root *zan*, must be regarded as a foreign word. Similarly if it is demonstrated below that Skt *han* = Av. *jan* in accordance with the sound laws would have to be represented in Armenian by *gan* and is so represented, then Arm. *zen-* 'slaughter, offer' is suspected of being borrowed because it corresponds to Av. *jan*, NP *zan-*. If in the same way Skt *aj* in accordance with the sound laws is Av. *az*, Arm. *ats*, then *gavazan* 'stick' = Av. *gavâz* cannot be an original word -- it would have to be *kovatsan* -- and also not *xarazan* 'whip', instead of which *išatsan* would be

expected. Finally, Skt. *yaj* = Av. *yaz* 'worship' in accordance with the sound laws would have to be *lats* or *dzats* in Armenian (Skt. *j* = Av. *z* = Arm. *ts*, see below; originally initial *y* becomes Arm. *l* or *dz*, *z*; where *y* is initial in Armenian, it is a newly added prefix, as can be easily demonstrated); the form however is *yaz* and accordingly it is borrowed. The same is true of *yašt* 'offering' = Av. *yêsh'ti*. Also to be considered as loanwords: *dev* = Av. *daêva*, instead of which *tiv* would be expected in accordance with the laws of the sound shift which are to be set up below; likewise, I am convinced, *bag-* 'god' = Av. *bagha*, and *den*⁴ 'religion' = Av. *daêna*, words which came to Armenia with the Zoroastrian religion. Likewise, without being able to furnish proof, I would also like to look on words like *thošak* = Pers. *tôshah* 'viaticum', *ambox* = Pers. *anboh* 'quantity', *zēndan* = Pers. *zindân* 'jail' as having come from Persia to Armenia; but of words like *dipak* 'brocade' = Pers. *dîbâh*, Arab. *dîbâj*, *crag* 'candle' = Pers. *cirâgh*, Arab. *sirâj*, *thuthak* 'parrot' = Pers. *tûtak*, *tûtî*, *kerpas* 'silk' = NPers. *kirpâs*, Arab. *kirbâs*, Skt *karpâsa*, Gk. *kârpasos* etc. there can be no doubt that they are foreign material. If it has been so easy for me to separate as loanwords no small number of the words⁵ treated by Fr. Müller, how greatly would this number be increased if an expert like de Lagarde would undertake to separate the foreign elements from the entire Armenian lexicon? Possibly also two groups of these could be distinguished, an older and a younger, and in this way the two layers would be found which according to de Lagarde were deposited on the Armenian basis.

If now we have become suspicious of the lexicon, we may turn with greater confidence to the grammar; for in all living languages this is surely the palladium that a foreign influence cannot touch. How wild is the lexicon of Afghan and New Persian, or English, and how clearly does the grammar teach us that in the former we have Iranian at hand, in the latter Germanic! And we may expect to find clarification from the grammar much more readily in Armenian, because it displays a relatively rich inflection. For Armenian still has four cases of nouns distinguished by endings and five of pronouns; and in verbs, without considering the infinitive and participles, it distinguishes by means of inflection active and passive, indicative, subjunctive and imperative, present, imperfect, simple and compound aorist, and corresponding to these double futures. Since I must treat of the grammar here briefly, it may be permitted to adduce a paradigm for the inflection of the noun and the verb:

a) Noun:

Stem: *mardo* "human" (Gk. *broto-*), *anwan* "name" (= *anman*).

	Sg.	Pl.
Nom.	<i>mard</i> , <i>anun</i>	<i>mardkh</i>
Acc.	<i>z mard</i> , <i>z anun</i>	<i>z mards</i>
Gen.-Dat	<i>mardoy</i> , <i>anwan</i>	<i>mardoʒ</i>
Abl.	<i>i mardoy</i> , <i>y anwanê</i>	<i>i mardoʒ</i>
Dat. (pron. dcl.)	<i>mardum</i> ⁶ ----	----
Instr.	<i>mardov</i> , <i>anwamb</i>	<i>mardovkh</i>

b) Verb: *ger-el* 'take captive'

	Active	Passive
1. p. sg. pres. ind.	<i>gerem</i>	<i>gerim</i>
-- subj.	<i>geriʒem</i>	<i>geriʒim</i>

imperf.	gerêi	gerêi
comp. aor.	gereʒi	gereʒay
simple aor. of gt-an-el "find"	gti	gtay
future	gereʒiʒ	gereʒaiʒ
	gtiʒ	gtaiʒ

m, s, y, mkh, ykh, n serve as primary verbal endings, and *i, ir, r, akh, ikh, in* as secondary.

If however one views the total structure of Armenian, it gives the impression of a language which has undergone great changes⁷, having lost much of the old material of stem and word formational elements; but it replaced what was lost by new inflectional elements. In this way the subjunctive turns out to be a new formation from the present stem and the subjunctive of the substantive verb: *em* (pronounced *yem*) = Lat. *sum*, *iʒem* = Lat. *sim*- accordingly *gerem* -- *geriʒem*, *ałam* -- *ałaiʒem*; similarly, the future is formed from the aorist stem and the aorist subjunctive, with little change of the coalescing components: *gereʒ* + *iʒem* = *gereʒiʒ* instead of *gereʒiʒem*, 2. p. *gereʒ* + *iʒes* = *geresʒes* instead of *gereʒiʒes*; and the imperfect similarly might be a new formation from the present stem and the imperfect of the substantive verb: *em* 'sum', *êi* 'eram' - *gerem* - *gerêi*, but Fr. Müller claims to find a formation with the suffix *ya* in the imperfect: *berêi* = *berey* -*i*,⁸ with reference to the a-class, which forms *ayi* not *êi*: *ałam* - *ałayi*. Moreover, the main factor in new linguistic formations, analogy, has of course been powerfully effective, just as it also essentially brought about the remodeling of the Old Armenian inflection to the New Armenian. For example, the passive marker is *i*; if it is added to present stems in *-u*, *wi* results (*zenu*-l, pass. *zenwi*-l, *l-nu*-l, pass. *lnwi*-l); and this *wi*, which of course was originally only the present marker of the passive of a very limited number of verbs, has become the general passive marker in modern Armenian; cf. NArm. *kordzwil* 'be done' = OArm. *gortsil*, act. *gortsel*. In this situation it is readily understandable why the elements of the Armenian inflection are still so obscure to us. I do not know how one is to explain the *ʒ*² which forms the compound aorist and the *ʒ* in *iʒem*, etc. If one identified with them the *s* of the Indo-European aorist and the *sy* of *syijn*, the opt. of *as*, then Armenian could not be Iranian, for in Iranian *s* would have to be represented by *h* and *sy* by *hy*. Equally obscure are the secondary verbal endings; on the other hand the primary are clearer, among them *m* = *mi*, *n* = *nti*, *y* = *ti*, *mkh* = *masi*; accordingly *ykh* (= *tkh*) could go back to *tasi*, the original Indo-European form assumed by Schleicher, in contrast with which Sanskrit and Avestan show *tha*. But *ykh* is probably an analogical formation to *mkh* of the first person, and *kh* is to be regarded as added on later, so that *y* likewise goes back to *tha* or a similar form. The suffix of the 2. p. sg. *s* refutes the Iranian character of Armenian, since Iranian shows *h* rather than *s*; yet also Ossetic, certainly an Iranian language, has *s* in the same form, for which explanations must still be provided.

Among the case forming suffixes of the plural, *ʒ* too is unclear, *kh* probably goes back to *as* (or in accordance with Fr. Müller to *âsas*, Iran. *âhah*) *s* to *ans*; in the instrumental we have the instrumental marker of the singular, to which the plural marker *kh* was added. Among the suffixes of the singular, *m* of the dative-locative goes back to the pronominal *-hmâi*, *hmi*; the *ê* of the ablative prepares difficulties. Fr. Müller would like to derive it from *âdha*, a shape of the ablative suffix found occasionally in the Avesta; I would rather think of the adverbial suffix *tas* = Av. *tô*, if *ê* can really not be = *at*. The instrumental suffix *b* remains to be considered. While this suffix was formerly identified with the one suffix of the Indo-European instrumental *bhi*, recently Fr. Müller and I have attempted to see in it a new formation, to be

sure for no other reason than that this suffix contradicted the Iranian character of Armenian which had been asserted by us. For like Aryan in general, Iranian too does not know the instrumental suffix *bhi*. Our conclusion was accordingly: because Armenian is Iranian, it may not have the instrumental suffix *bhi*. But suppose one should rather conclude: because Armenian has this suffix, it is not Iranian. Now in accordance with Armenian sound laws, *b* surely points to *bhi*; and an original *anmanbhi*, *martabhi* had to become Armenian *anmanb*, *martob*, subsequently *anwamb*, *mardov*, as the instrumental of *anun*, *mard* actually is attested. And since in its function as well the case with *b* is a pure instrumental, there can be no objection to the equation: Arm. *b* = IE *bhi*. Some scholars have claimed to find this suffix *bhi* in Greek, Germanic and Balto-Slavic. But *φι* could also be a reflex of the other suffixes compounded with *bhi* (*bhiam*, *bhiams*, *bhiâms*, *bhis*). In Germanic the instrumental in *mi* = *bhi* is actually not found.¹⁰ Accordingly it remains only in Balto-Slavic, where *bhi* is found as OCS *mĭ*, Lith. *mi*. Accordingly *bhi* as instrumental suffix of the singular can be assigned with certainty only to Armenian and Balto-Slavic.

Result: In the inflection of Armenian we cannot demonstrate any specific Iranian characteristics; on the contrary it differs in an important point with Aryan and agrees with Balto-Slavic.

Since the inflection does not give us enough information about the character of Armenian, we will turn to the phonology.

Part I

In order to decide whether or not Armenian is Iranian with reference to its sounds, the question must first be answered: what are the characteristic features of the sound system of Iranian in contrast with the other Indo-European languages?

They are as follows:

A.1. The dental *s*, when not protected by a directly preceding following consonant, consistently becomes *h*, and

2. correspondingly *sv* becomes *hv*,

3. but when *i*, *u* or *ai*, *au* precedes, it becomes *sh*. In the latter point Iranian agrees with Sanskrit (except for final position where Sanskrit preserves the *s*); but Slavic between vowels always develops instead of that *sh* the fricative *ch* (*sluchŭ* = *sraosha*). In the change of *s* to *h* on the other hand, Greek agrees with Iranian; but unlike Iranian, in Greek this change is not carried through consistently. Further, also in Celtic *sv* becomes *hv*, *chw*; cf. Cornish *huir*, Breton *choar* 'sister' = NPers. *khvâhar*; Welsh *chwech* (= *sves*) 'six'.

4. Iranian shows a disinclination for aspirates but an inclination for the formation of spirants, of which it is particularly fond of *kh*, *gh*, *f* and *w*. Yet the oldest Iranian dialects, those of the Gathas and of the Old Persian cuneiform inscriptions, do not yet know the voiced spirants (*gh*, *dh*, *w*, which are present in the usual Avestan);¹¹ and Ossetic has shifted the voiceless stops (*k* and *t*) to aspirates. Baloci too knows aspirates (see at the end of this discussion), but they probably arose through the influence of Indic.

5. In consonant clusters spirants arise from stops through the influence of following *t, sh, r, v*; accordingly original *kt, pt, tt* become *kht, ft, st*; *khsh, kra, pra, tra* become *khra, fra, thra*.

6. Notable is the lack of *l* in Old Iranian,¹² the shift of *çv* to *sp*, and in contrast with Indic the form of the preposition *pati* (= Skt *prati*), of the adverb *us, uz* (= Skt *ut, ud*, but similarly in Old Persian), words like *gaosha* with the meaning 'ear', etc.

B. The aspirated voiced stops are lacking in Iranian; through loss of aspiration they fell together with the voiced stops and like them often became spirants subsequently. Balto-Slavic also merged voiced stops and voiced aspirated stops.

C. The change of the original palato-velars *k, g, gh* to the palatals *c, j* and *s, z* must be considered a primary characteristic of Iranian. But Sanskrit shares in the formation of palatals from palato-velars, and Balto-Slavic in the change of the palato-velars to slit fricatives.

Accordingly every single one of these characteristics is found in other Indo-European languages, and only the occurrence of all of them makes up the character of an Iranian language. We ask now whether all these characteristics occur in Armenian.

A.1. Original *s* generally appears in Armenian as *h*; cf. *hin* 'old' = Av. *hana*, Lat. *senex*; *mahik*, diminutive of *mah* 'moon', = Skt *mâsa*, Av. *mâoñha*; this *h* is lost for example in the root *arb* 'drink' = original *sarbh* (Lat. *sorbeo*, Lith. *srebiù*), *evthn* 'seven', Ossetic *awd* = original *saptan*. In inflection this *h* shows up as *kh* (now pronounced as an aspirate), just as also in Persian *h* is closed to the spirant *kh*. *s* has been maintained as *s* in *amis* 'month', *mis* 'meat', *us* 'shoulder', in which the maintenance of *s* is explained by an originally preceding *n*: *amis* developed from *mens*, *mis* from *memsa* and *us* from *amsa*. The *s* in the accusative plural may probably be explained similarly: *mards* (now pronounced *mártūs*) developed from *mardins* = *martans*. Accordingly the maintenance of *s* in these cases would not contradict the Iranian sound law set up above, even though Avestan would also change *s* to *h* after *n*; cf. *maih* = *mans*, aorist stem of the root *man*, = *man* + *s*. In one case to be sure (before original *v*) *s* seems to be maintained even contrary to the sound law: *skesur* 'mother-in-law', cf. Avestan *qapra* 'father-in-law', NPers. *khusur*; here *v* may first have changed to *g*¹³ and this to *k* after the *s* on the pattern of *skund* 'puppy' = *çvan-*. Windischmann, *Grundlage des Armenischen*, p. 20, already wanted to regard the colloquial by-form *kesur* as the original form, and derive *k* from *kh* = *sv*; *s* would then have been added inorganically. But this explanation does not seem probable to me.

2. *sv* becomes *kh* or *v* in Armenian, both probably having arisen from *hv*: *khair*, now pronounced *khuir*, NPers. *khvâhar*, pronounced *khâhar*, originally *svasar*, and *veʒ* = *sechs* = Gk *sweks*, Welsh *chwech*.

3. Aryan *sh* = *s* after *i, u* and their various grades is found in *dž* = Av. *duzh* from *dush*, cf. *dž-goh* 'discontented' and in *zguiš* 'careful' = **uzgaosha*, actually 'with pricked up ears' -- two genuine Iranian formations, of which the latter itself would prove the Iranian character of Armenian. And *zguiš* is so well established in Armenian that one cannot readily assume it to be borrowed. This *sh* shows up also in *uš* 'memory, reason' = Av. *ushi* 'reason'. Elsewhere this *š* may indeed have developed further to *s*, e.g. *ls-el* 'hear' = Av. *srush* in *sraosha* (Lith. *klausà* OCS *sluchŭ*), *nist* 'sitting' = *nsit* = *niseda* = *nishadah*, as in Ossetic where in *ghos* 'ear', *ars* 'bear', *aḡsawa* 'night', *ast* 'eight' *s* is found instead of *sh*. Accordingly de Lagarde is probably

right in deriving *gusan* 'singer, musician' from the root Skt *ghush* 'make noise, resound'. Yet this material is not sufficient in order to discuss this point adequately.

4. Armenian is fond of the (voiceless) aspirates, of which it possesses a complete set: *kh*, *th*, *ph*; but of the voiceless spirants it knows only *χ*. Yet of the voiceless spirants Afghan possesses only *χ* (*kh*), but not *f*, which is frequent in Ossetic and Persian.

5. *χt* = original *kt* is found in *uχt* 'vow, treaty', Av. *ukhti*, *aχt* 'suffering, sickness' = Av. *akhti*; and *dstr* 'daughter' (beside *duχt* = Pers. *dukht*) may also be derived from *duχtr*, when we find *bast* beside *bayt*, *drast* beside *drayt* ('garden, paradise' Pers. *dirakht* 'tree'). *ft* for original *pt* cannot be found in Armenian, since *f* is missing; yet Avestan too still has *pt* instead of *ft*: *gerepta*, *haptan*, but NPers. *giriftah*, *haft*. For the change of *tt* to *st* I do not find an example, but it seems certain because of Arm. *azd* 'information' = OPers. *azdâ*, Skt *addhâ* 'certainly'. Aryan *ksh* = Iran. *khsh* appears metathesized in Armenian as *šχ*: *išχel* 'govern' = Av. *khshi*; *bašχel* 'distribute' = Av. *bakhsh*; *ašχarh* 'land' = Av. *khshathra*. Iranian *khra* appears as Arm. *χra* in *χrat* 'theme' *χratu* 'admonition, counsel', Av. *khratu*, NPers. *khirad*; Iran. *fr* as Arm. *hr*: *hra* = *pra*, Av. *fra*; Iran. *thr* as Arm. *rh*: *ašχarh* 'land' = Av. *khshathra*.

6. *l* is not absent in Armenian; but it also occurs in all contemporary Iranian languages, so that the presence of *l* in Armenian would prove nothing of itself. But we will see later that Armenian is distinct from Iranian by the manner of occurrence of *l*

B. As far as the aspirated voiced stops are concerned, we might assume that the original Iranian language had already given up aspiration and merged the aspirated voiced stops with the voiced stops. Before this happened, Armenian must have separated from Iranian (if we set up a family tree); for in Armenian voiced stops and aspirated voiced stops do not fall together but rather have always been kept distinct. For while the aspirated voiced stops were shifted to voiced stops, the voiced stops developed to voiceless stops; the voiceless stops however remained unchanged or became aspirates or spirants. Accordingly the original series

<i>gh</i>	<i>g</i>	<i>k</i>
<i>dh</i>	<i>d</i>	<i>t</i>
<i>bh</i>		<i>p</i>

undergo in Armenian a conversion to:

<i>g</i>	<i>k</i>	<i>k, kh</i>
<i>d</i>	<i>t</i>	<i>t, th, y</i>
<i>b</i>		<i>p, ph, h</i>

Examples are as follows:

a. Dental series:

Arm. *d* = original *dh*: Arm. *d-ne-l* = original *dhâ* 'set, do' ... (Other examples follow.)

Arm. *t* = original *d*: *atamn* (a-ta-mn) 'tooth' = *dant*. (Other examples follow.)

Original *t* was maintained when protected by neighboring consonants: *astl* 'star', *dustr* 'daughter'; or it developed to *d*: *du* (from *túam*) = NHG *du*; *leard* 'liver' = *yakart*; *mard* 'human'

being' = Gk. brotós; ôd 'wind' = vâta; or it developed to an aspirate: tharm 'fresh, young' = Skt taruṇa; tharšam 'wilted' (in an-tharšam 'not wilting', tharšameṣuṣanel 'wilt' trans.), root tars, Lat. torreo, tarsós; evethn 'seven' = saptan; uth 'eight' = ashtan; thandzr 'thick' root tañc; artsath 'silver' = Skt rajata; or between vowels it developed to y: hair (written hayr) 'father'; mair 'mother'; berê 'he bears' = bereti, etc.

b. Labial series:

Arm. *b* = original *bh*: band, bant 'prison', root bhandh... (Other examples follow.)

p is maintained as voiceless stop in kapel = capere; partkh (stem partu-) 'debt', Av. par (in pesha, peretha) 'involve in debt, forfeit through debt'; pšnul 'observe' = Skt paç; patmel 'narrate' pati + mâ, it was shifted to an aspirate¹⁴ in phošî 'dust' = Av. pāšnu; phetur = NHG Feder; phut 'foul' = Skt pūti 'foul, stinking', Phl. pūtak; and initially it went over to *h* in: hair 'father' = patar; hing 'five' = pankan; harṣanel 'question' = NPers. purs-îdan; heru 'last year' = Osset. fâre 'in the previous year', falwâre (= farfâre) 'in the second last year', Pers. pâr 'the past year'.

c. Palato-velar series: (H's term: *Gutturalreihe*)

Arm. *g* = original *gh*: gari 'barley' = hordeum, originally ghardha, Phl. jurdâk 'grain, barley', Baloci zurth-ânî 'a kind of grain'; mêg 'mist' = mêgha; vagr 'tiger' = Skt vyâghra.

Arm. *k* = original *g*: kov 'cow' = gâu; klanel 'devour', kerî 'I ate', root gar; keal 'life', root giv; kin 'woman' = ganâ; kr'unk 'crane' = gíranos; eki 'I came', root ga, of which the present however is ga-m. gravel too does not agree with Skt grabh, Av. garb; yet the same irregular shift occurs in Goth. greipan. For further details, see below. (not included here) The voiceless stop was maintained as *k* in akn 'eye'; kam-il 'desire' Skt. kâma; kerp = Lat. corpus; kapel = Lat. capere; in final position it became *g*: erg 'song' = Skt arka; infrequently it became an aspirate: kharšel 'pull' = Av. karesh; khên 'hatred, revenge' = Av. kaêna, NPers. kîn; khandel 'destroy' (khand-el denominative ?) from Av. kan, Skt khan.

On the shift of another series (*g'* -- *gh'*) see below.

This is the first sound shift of Armenian. The New Armenian of the west has undergone a second: the relationship of voiced and voiceless stops, as established after the first sound shift, is reversed, so that the original voiced aspirates are now voiceless Stops, the original voiced stops as well as a part of the original voiceless stops are now voiced stops, but the aspirates and h-sounds remained unshifted. In Armenian accordingly, voiced stops and aspirated voiced stops did not fall together as in Iranian.

C. The last point remains to be discussed, the development of spirants from original palato-velars. In this point Iranian and Balto-Slavic have much in common, so that Johannes Schmidt protested with this support against a separation of Iranian and Slavic and of Aryan and European in the early period; and he overthrew the family tree of the Indo-European languages which has been proposed up to now. For not only in the split of original *k* to *k* and *k'* = ç, s do Balto-Slavic and Aryan agree closely,¹⁵ but also in accordance with Ascoli's demonstration in that of *g* to *g* and *g'* = Iranian, Balto-Slavic ž, z and that of *gh* to *gh* and *gh'* = Iranian, Balto-Slavic ž, z. This knowledge however is not adequate for our following

purpose, and in order to be able to compare the split of the palato-velars in Armenian with that in Aryan and Balto-Slavic we have to set up these series of splits completely, as I now do.

I. Split of *g* to *g* and *g'*.

a. *g* appears in Sanskrit as *g*, in Avestan as *g*, Armenian *k*, Balto-Slavic *g*.

Note 1: Skt. *gâ*, *gam* 'go', Av. *gâ* in *gâma*, *gâya*, *ga* in *gata*, *apagaiti*, *gam* in *ja-ghm-aṭ*, *aibî-gemen*, Arm. *eki* 'I came', *ek* 'the stranger' (*baínō*, *venio*)... (Other examples follow.)

The *g* above we see developing to *j* in some examples; thus beside Skt. *gam*, Av. *gâ* even the root and present stem appear as *jam*, *jim*, *jas*, though the original *g* was maintained where it was protected by a consonant: *jaghmaṭ* ... Beside Skt. *yuga* : *yuj* we find Av. *yuj*. So we may also posit original *g* = Skt. *j* = Av. *j* = Arm. *k*, Balto-Slavic *g*; note Skt. *rajas* 'sphere of air, fog, darkness', = Arm. *erek* 'evening', Gk. *Érebus*, Goth. *riqis*. ... The complete *g*-series accordingly shows up as follows:

Skt <i>g</i> ,	Av. <i>g</i> ,	Arm. <i>k</i> ,	Balto-Slavic <i>g</i>
<i>j</i>	<i>j, zh</i>	<i>k, ž</i>	

b. *g'* appears in Sanskrit as *j*, Avestan *z*, Arm. *ts*, Slav. *z*, Lith. *z*.

cf. Skt. *aja*, *ajâ* 'buck, goat', Av. *azi*, Arm. *aits*, Lith *ožýs* 'buck', *aíks* ... (Other examples follow.)

II. Split of the *gh* to *gh* and *gh'*.

a. *gh* appears in Sanskrit as *gh*, Av. *g*, *gh*, Arm. *g*, Balto-Slavic *g*.

cf. Skt. *megha* = Av. *maêgha* 'cloud', Osset. *miegha* 'fog, cloud', Arm. *mêg* 'fog', Lith. *miglá*, OCS *mĭgla* 'fog, clouds'... (Other examples follow.)

Just as *g* occasionally became *j* in Sanskrit and *j, zh* in Avestan, so *gh* occasionally becomes *h* in Sanskrit, *j, zh* in Avestan, *ž* in Armenian.

Skt. *druh* 'vex', *drogha* 'insult', Av. *druj*, *druzh* 'lie, deceive' beside *draogha* 'deceitful', Arm. *džr-el*, *drž-el* 'deceive, miss, offend' ... (Other examples follow.)

Accordingly the *gh*-series shows up as:

Skt. <i>gh</i> =	Av. <i>g, gh</i> ,	Arm. <i>g</i> ,	Balto-Slavic <i>g</i>
<i>h</i>	<i>j, zh</i>	<i>g, ž</i>	

b. *gh'* = Skt *h*, Av. *z*, Arm. *z, dz*, Slavic *z*, Lith *ž*.

Skt. *aham* 'I', Av. *azem*, Arm. *es* from *ez*), OCS *azŭ*, Lith *až* (*asz*)... (Other examples follow.)

Some apparent anomalies must be noted here, from which the relation of *g* to *g'*, *gh* to *gh'* becomes clear. We saw above that Skt. *yuj* = Av. *yuj* must go back to a root *yug*, the *g* of which must have been present in Armenian as palato-velar, as it is actually found that *zuig* = **yôga*. Now we also find however Its-el 'hitch up in a yoke', which goes back to original *yug'* (which is not present in Sanskrit and Avestan); and accordingly we must posit for Armenian two roots, *yug* and *yug'*, which of course were identical originally. Then the two *g*'s are not originally different, but the one *g* has split in two, in part remaining *g*, in part becoming *g'*. The same is true of Aryan *g* in the root *gabh* (and of forms with *gh* and *k* that H. cites). ... This can only mean: originally there was only one *k*, one *g*, one *gh*, which later split to *k*, *k'*, *g*, *g'*, *gh*, *gh'*....

If one now compares the *k* series with the *g* and *gh* series, in accordance with the previous investigations:

	<i>k</i>	=	Skt <i>k</i> , Av. <i>k</i> ,	Arm. <i>k</i> ,	Balto-Slavic <i>k</i>
	/				
<i>k</i>			<i>c</i>	<i>c</i>	?
	\				
	<i>k'</i>	=	<i>ç</i>	<i>s</i>	<i>s</i> (š, ž) Slav. <i>s</i> , Lith. <i>sz</i>
	<i>g</i>	=	<i>g</i>	<i>g</i>	<i>k</i> , <i>g</i>
	/				
<i>g</i>			<i>j</i>	<i>j</i> , <i>zh</i>	<i>k</i> , <i>ž</i>
	\				
	<i>g'</i>	=	<i>j</i>	<i>z</i>	<i>ts</i> Slav. <i>z</i> , Lith. <i>ž</i>
	<i>gh</i>	=	<i>gh</i>	<i>g</i> (<i>gh</i>)	<i>g</i> <i>g</i>
	/				
<i>gh</i>			<i>h</i>	<i>j</i> , <i>zh</i>	<i>g</i> , <i>ž</i>
	\				
	<i>gh'</i>	=	<i>h</i>	<i>z</i>	<i>z</i> , <i>dz</i> Slav. <i>z</i> , Lith. <i>ž</i>

there is complete agreement between these series, from which it must be concluded that in the original period of the Aryans, Armenians, and Balto-Slavic speakers were in especially close contact with one another. For this common development of the palato-velars *k*, *g*, *gh* in two directions: to *k*, *g*, *gh* and *k'*, *g'*, *gh'* cannot be purely accidental -- or if it is, all characteristics of languages, by which we determine their conditions of relationship, must be purely accidental.

If we consider especially the relationship of Armenian to Aryan and Balto-Slavic, it turns out first of all that by its strict distinction of *g* (= *k* and *ts*) and *gh* (= *g* and *z*, *dz*) it is at an older stage than Balto-Slavic and Iranian, which as may be seen from the above table have merged both of these. This phenomenon agrees totally with the other phonological relationships of these languages. For if Sanskrit and Armenian in general maintain the distinction between voiced aspirated stops and simple voiced stops (*gh-g*, *dh-d*), which Iranian and Balto-Slavic have abandoned, then we must also expect that the two first-named languages retained the distinction between original *gh'* and *g'*, and the last named language groups gave it up, i.e.

they merged *gh'* and *g'* to *g'* and developed this to a spirant (Av. *z* = Slav. *z* = Lith. *ž*). On their part Sanskrit and Armenian are differentiated because Sanskrit, in contrast with Avestan and Balto-Slavic, merges part of the original *g*, *gh* with *g'*, *gh'* (so that Sanskrit *j* = *g* and *g'*, Sanskrit *h* = *gh* and *gh'*); Armenian on the other hand not only continues the distinction of voiced stops and voiced aspirates, but also *g*, *gh* and *g'*, *gh'*, and accordingly in this respect it maintains the original phonological relationship more faithfully than Aryan and Balto-Slavic.

But we must also examine the relationship of Armenian to Aryan and Balto-Slavic in another and more important area. For the chief difference between the language families named above consists in this that Balto-Slavic at first maintains its palato-velars (*g*, *k*) unchanged, Aryan on the other hand changes them to palatals. For the Old Aryan sounds *k*, *g*, *gh* in part remained velars, in part also developed to the palatals: Skt *c*, *j*, *h* (*h* from *jh*) and Av. *c*, *zh*, *j*, primarily in three cases: 1. if *i* or *y* followed them originally, e.g. *jîv* 'live'; 2. in the reduplicating syllable; 3. in root final position, when they were not protected by a following consonant, or when they were maintained unchanged before vowels in nominal derivations, as happened in part, e.g. *pac* 'cook', *vac* 'speak', but *pâka* and *ukta*. But palatalization has also taken place beyond these limits, if not widely, and in this situation *k* has been affected more frequently, and *g* and *gh* less: cf. Aryan *ca* 'and', *catvar* 'four', *car* 'go, drive', *pañcan* 'five', Skt *jaḅhara* 'belly', Skt *han* = Av. *jan* 'strike'. The agreement with which Indic and Iranian have carried out this process of palatalization provides certain proof that it took place already in the common Aryan period. And since it did not occur in this way in any other Indo-European group, this formation of palatals is particularly characteristic for Aryan. For that reason it must also serve as a test to determine whether Armenian is Iranian or not.

Now we have already noted (in a portion not given here) that: Arm. *uiž baž*, *buž* = Aryan *aujas*, *bhaj*, *bhuj*, possibly also *žtel* = Av. *jad*, *žir* = Skt *jîra*, and *držel*, *džrel* = Skt *druh*, Av. *druzh*, *iž* = Av. *azhi*, *aržani* = Skt *arh*, Av. *arej* (NPers. *arzân*), and may because of these examples designate Armenian as Aryan. But only one thing is unclear: why do we find in *uiž*, *baž*, *buž* the sound *ž* corresponding to Aryan *j*, since in accordance with the sound shift we would expect *c*? No example at all has been found for Arm. *j* = Aryan *jh* and Arm. *c* = Aryan *j*; for this reason one must assume first of all that *j* and *c* arose only late in the separate existence of Armenian¹⁶ (accordingly *ž* would have arisen for *j* and *c* in Aryan times?). Arm. *c* = Pers. *c* is found frequently by the way; cf. *cank*, *cang* 'hook' = NPers. *cang*; *caš* 'eat' with its derivatives: *cašel*, *cašak*, *cašakel* 'taste' = NPers. *cashîdan*; *capuk-* = NPers. *câbuk* 'nimble'; *carp* 'fat' = Phl. *carp*; *crag* = NPers. *cirâgh* 'lamp'; *vcar-* 'solvere' = NPers. *guzâr* (from *vicar*); *r'ocik* 'support' = NPers. *rûzeh*; *rûzî*, Av. *rocañh* 'day', etc. But these examples prove too much; the agreement with Persian is here too great, for otherwise we find no trace of such agreement. And since words like *crag* and *r'ocik* are certainly borrowed (they are also found in Georgian), the above words other than these are probably also loanwords. The same is probably true of *patmucan* = Phl. *patmucan* 'dress', while the *c* of *mucak* = NPers. *mûzah* could only have arisen from the *k* of the underlying word *muik* 'shoe' = Phl. *môk* (Afghan *moc-añah* f. 'shoe') in Armenian.

But in accordance with the sound shift, the Aryan palatal *c* is found in Armenian as *ch* in: *chorkh*¹⁷ 'four' = *catvar*; *gochel* 'scream', *kochel* 'name' Lat. *vocare*; and it has become a dental in *mrž-il* 'battle, fight' Av. *mereñc*, nasalized from *marc* (for the meaning, cf. *márnatai* 'he fights' = Skt *mṛṛñâti* 'he crushes'), *haž* 'bread' = *pac*, *thandzr* (from *thanžr* 'thick', Av. *tañicish'ta*), and finally in *luis* 'light' = Av. *raocanh*, NPers. *rôz*¹⁸. Is Armenian then Aryan?

Compare now the Armenian words eki 'I came', keal 'life', kov 'cow', kin 'woman', erek 'evening', bek 'broken', gan 'strike' with their Aryan related words as well as hing (from penkan) 'five' with Aryan pañcan and lkh-anel 'leave' with Aryan ric (erg 'song' = Skt arka, root arc and khan = Lat. quarn, khanak = quantum, Av. cvañt, NPers. cand do not come into consideration); it then turns out that precisely in those forms to which especially value is to be ascribed after Ascoli's splendid studies concerning the Aryan palatals, Armenian is decisively separated from Aryan and agrees with Balto-Slavic.

After the above remarks we can now complete the k-series set up above as follows:

$$\text{IE } k = \text{Skt } k, \text{ Av. } k, \text{ Arm. } k, \quad \text{Balto-Slavic } k$$

$$c \quad c \quad k, kh; ch, \mathfrak{z} s$$

and the parallelism with the *g* and *gh* series is now completely established.

From the whole preceding investigation we obtain as total result:

In accordance with its development of original palato-velars to spirants Armenian belongs to the sphere of the Aryan and Balto-Slavic languages. It agrees in part with the Aryan languages in the palatalization of the palato-velars, but in another area it also preserves palato-velars unchanged, like Balto-Slavic; for this reason it can neither be subordinated to Aryan (in the usual sense) nor be taken away from it. For this reason too it cannot be designated as Iranian, even though it like Iranian changes *s* to *h* and treats many consonants and groups of consonants (like Arm. *šχ* = Iran. *χš* = Aryan *kš*) in a similar or in the same way. For this reason it must be set up as an independent branch between Iranian and Balto-Slavic.

Part II.

If however Armenian stands between Iranian and Slavic, that is between Aryan and European, we must still examine its position to the special peculiarities of the European languages, through which these are sharply separated from the Aryan languages; that is, we must examine whether Armenian knows the European split of *a* to *a* and *e*, that of *r* to *r* and *l*, and whether or not it presents important points of contact in vocabulary with European. We will proceed at once to answer these questions.

1. Split of *a* to *a* and *e*.

Nothing is more correct than Fick's view that the most important difference between European and Aryan in vocalism consists in the split and non-split of *a* to *a* and *e*. It is certain that no Indic and no Iranian language knows this split. To be sure we write numerous *e*, i.e. short *ä*, in New Persian words, but short *a* simply becomes *ä* throughout (pronounced as pure *a* in India),¹⁹ and of a split there is no question here. Ossetic, in the Caucasus, has *o* and *e* for and beside *a*, but *e* is rare and obviously late; it appears beside *ä* and both beside *a*, which a stricter, and older, manner of speaking preserves; and also *o* = *a* seems to be only a later darkening of the *a* in the neighborhood of *n* and *r*,²⁰ but does not enter into consideration here at all. Accordingly Aryan does not know this split.

Armenian on the other hand splits the *a* completely to *a*, *e*, *o* in the European manner, and is thereby distinguished sharply from the Aryan related languages, even if it may not coincide in individual examples with the European. But in order to be able to undertake a comparison of

the individual examples, we must first survey the vocalism of Armenian in general. The scheme for it is:

Basic Vowel	Lengthening ²¹
a	
a	e, î, zero â
	o, u, zero
i, zero	ê, î
u, zero	ui, û

and the accentual law which controls the vocalism is as follows: the accent moved to the penultimate syllable of the word and caused the loss of the last, or the loss of its vowel, so that now the last syllable always has the accent. Short *i* and *u* as well as their lengthened forms *ê* and *ui* can be maintained only by the accent, that is, if they stand in the last syllable now; if however they lose the accent through the addition of a new syllable, then *ê* becomes *î*, *ui* becomes *û*, *i* and *u* on the other hand are lost. e.g. *i*: root vid 'find' = Arm. git, but in the infinitive gt-anêl; original vinâç = NPers. gunâh = Arm. vnâs; lengthening: mêg 'fog', root migh; mêt 'urine', root migh¹, Skt mih, but in the genitive: mîgi, mîzi²². *u*: root yuj, Arm. luts, infinitive ltsel 'yoke'; lengthening: luis 'light' from raucâh, root ruc, but in the genitive lûsôy. From this it is clear at once that gitêm 'I know', lizem 'I lick' go back to gêt-em, lêz-em, that is, that in these verbs the lengthened present stem occurs (gêt-em = vêda + later added em = âmi, lêzem = leigh¹-âmi), except when we deal with denominative verbs, as may be true of mizel 'urinate' beside mêt 'urine'. On the other hand *a*, *â* cannot be changed: bazúm 'much' = Skt bahu; bazúk 'arm' = Skt bâhu; asêl 'say', Skt. ah. The same is true of *o*,²³ cf. gochêl 'cry', root vac; gortsêl 'do' beside gorts 'work' = wêrgon. *e* too generally remains, cf. mets 'great', Gk mégas, genitive: metsi; but it has dropped out occasionally, e.g. vtak 'rivulet' beside get 'river'; ast! 'star' = aster; tagr 'brother-in-law' = dawer, genitive = astêl, tagêr. But if this *e* comes to stand before nasals and double consonants, it regularly goes over to *i*,²⁴ hing = quinque; hin 'alt [old]' = senex; sirt = Herz; and like original *i*, this *i* is elided when it loses the accent: hin 'old', hn-anal 'become old'; sirt 'heart', gen. srti. Accordingly *e* must be assumed everywhere in Armenian where instead of the *a*-vowel to be expected in accordance with the etymology, *e*, *i* or total loss of the vowel has occurred. Accordingly, if Armenian is to take part in the chief characteristic of European, we have to expect to find a) Arm. *a* (*o*) = European *a* (*o*) and b) Arm. *e*, *i*, zero = European *e*.

a. Arm. *a* (*o*) = European *a* (*o*). For this correspondence it is adequate to cite few examples: akn 'eye', Lith. akís, oculus; atsem = ágō; tal 'give' = dare; ail = állos; aits = aíks; hair = patêr. gochel = vocare; chorkh 'four' = quatuor; gorts = wêrgon; kov 'cow' = bow-ós; ordz 'testicle' = órkhis; orb 'orphan' = orphanós. In addition one should note for inflection that the *a*-stems -- apart from proper names -- went completely over to *o*-stems; for this reason original marta-, Gk broto- appears in Armenian as mardo-, cf. gen. dat. mardoy, instr. mardov, gen. pl. mardo3, instr. mardovkh. In this respect Armenian agrees with Latin and Greek.

b. Arm. *e* = European *e*. In his book, *Die ehemalige spracheinheit der Indo-germanen Europas*, p. 425, Fick listed the original European words to which *e* must be ascribed. Of these I find the following in Armenian: Arm. sirt = Eur. k¹erd 'heart'; tsnôt (= tsen-ôt) = genu 'chin'; inn (= inun = invan from envan = nevan) = nevan 'nine'; hing = penkan 'five'; mets = mega 'large'; mêtj (from medyo) = medhia 'middle'; melr 'honey', melu 'bee' (mélissa) = melita 'honey'; nist (= nsit = ni-sedas) = Eur. sedas 'seat'; hin = sena 'old'; evthn = septan 'seven'; ast!

'star' = ster; skesur 'mother-in-law' = svek¹ura, sved¹rû 'in-law'; veՅ = sveks 'six' For inflection *e* is important in nominal suffixes like ter = original tar, therefore dústr 'daughter', gen. dstér; in verbs as the stem-forming verb of the most widely distributed class: berem, beres, berê, etc.; as augment, to the extent it appears: eki 'I came', edi 'I set',²⁵ etu 'I gave', etes 'he saw', egit 'he found'....

2. Split of the *r* to *r* and *l*.

l is found in Armenian beside two *r* sounds (*r*' and *r*) and an *l*, which is now pronounced by the western Armenians as γ , but in former days transcribes Gk. *l*. In European *l* also corresponds to the first *l*, while *r* is found in European corresponding to the *r*', *r* and *l*.

a. *l* = European *l*: lal 'bewail, weep' root lâ... (Other examples follow.)

b. Arm. *r*, *r*', *l* = European *r*:
sirt 'heart' = cor... (Other examples follow.)

3. There are various words which go back to a different phonological structure in the European languages than in the Aryan.... (Of the twelve found in Armenian) the Aryan forms compare with the European in the proportion of 3 : 9 = 1 : 3.

4. The last point to be discussed here, the question about the relationship of the Armenian vocabulary to that of the European languages, I have to leave untouched for the time being, because the greater part of the Armenian words are still not yet etymologically clarified.... But in future studies numerous "European" words will be demonstrated to exist in Armenian.

Through the last part of our investigation, such a tight bond has without question been constructed between Armenian and European that it would be easier to tear Armenian from Aryan than from European. Among the European languages it stands closest to Balto-Slavic because of the spirants, with which it was also especially connected by the instrumental suffix *bhi*, which is common to only these two. In this situation, friends of the family tree, like Fick, will certainly be inclined to separate Armenian completely from Aryan and make it a purely European language. Against this view I might first refer to the fact that Armenian does not take part completely in the split of *a* and *r*. ...

The result of my entire investigation is accordingly as follows:

Armenian stands in the sphere of the Aryan-Balto-Slavic languages between Iranian and Balto-Slavic.

If further research makes this preliminary conclusion definitive, then the impossibility of setting up a family tree of the Indo-European languages would be strikingly demonstrated. For Armenian would be the connecting ring of both parts in the chain of the Aryan-Balto-Slavic languages, not a branch between two branches. And then too the family tree, which Johannes Schmidt's vigorous might has overturned, would remain lying forever.

But if Armenian is to be the connecting member between Iranian and Balto-Slavic, between Aryan and European, then in my opinion it must have played the role of an intermediary at a time when they were still very similar to one another, when the historical period had not yet drawn the present sharp boundary between them, but when they were still related to one

another as dialects. Just as Upper Italian folk dialects with their nasal vowels, with *ü* instead of *u* and with other characteristics approach French, so that one might expect that Italian at the boundary of France is almost an intermediate between French and Italian, in the same way Armenian might once have been intermediate between the Aryan and the European dialects and therefore have taken part in the characteristics of both. For if we see that the archaic languages of the Avesta and the Veda still stand quite close to one another and that a reconstructed Iranian and an Indic Proto-language would be related to each other in the very same way as dialects, why shouldn't the European languages once have stood in this relationship to one another and Armenian as intermediate dialect between the two types? In this way the peculiar hybrid structure of Armenian can easily be explained. After the wave of the splitting of *a* and *r* had arisen in the Western dialects and that of the splitting of the palato-velars in the Eastern, the former penetrated beyond Balto-Slavic and spread further over Armenian, while the latter penetrated outside of Armenian and spread further over Balto-Slavic. The former changed, whether directly or through a subsequent effect, the *a* of the Indo-European numeral *dakan* to *e* in Balto-Slavic, and the latter changed the *k* of the same word to *k'*, so that instead of the IE *dakan* the Balto-Slavic basic form *dek'an* resulted. When later in Aryan the wave of the subsequent split of the palato-velars (to velars and palatals) arose, it was still able, whether it was of itself too weak or whether the dialects had already begun to separate more and more, to spread completely over Iranian, but only over Armenian in some offshoots, so that we find to be sure *chorkh* = *catvar*, but also *hing* = *pañcan*.

However that may be, if we must view the development of Skt *c, j, h* and Av. *c, j* from *k, g, gh* in the same forms as proof for the connection of the Aryan languages, then also the development in the table below must be viewed as proof for the connection of Aryan with Armenian and Balto-Slavic:

IE	<i>k,</i>	<i>g,</i>	<i>gh</i> to
Aryan-Arm.-Balto-Slavic	<i>k'</i>	<i>g'</i>	<i>gh'</i>
i.e.Skt.	<i>ç</i>	<i>j</i>	<i>h</i>
Av.	<i>s</i>	<i>z</i>	<i>z</i>
Arm.	<i>s</i> (<i>š, ž</i>)	<i>ts</i>	<i>dz, z</i>
Slavic	<i>s</i>	<i>z</i>	<i>z</i>
Lith.	<i>sz</i>	<i>ž</i>	<i>ž</i>

It is obvious that the minute difference between sounds in the individual languages proves nothing against this conclusion, for only the later phonological propensities²⁶ of the individual languages are responsible for their existence. For Gothic even confronts the European *e* with *i*; and the *l* of the individual languages which has arisen from European *l* is certainly not the same everywhere, as the Gk. *l* in Armenian transcription is always given by *!* (etymologically = *r*, now = *γ*), never by *l*. If nonetheless we prove the original connection of the European languages with this *e* and *l*, we must also prove through those spirants the former connection of Aryan, Armenian and Balto-Slavic. What's sauce for the goose is sauce for the gander. And finally, as compelled as we are to derive the Aryan palatals from the pre-Aryan palato-velars, we are equally justified in deriving the series of the Aryan-Armenian-Balto-Slavic sounds *k'*, *g'*, *gh'*, to which we take back those spirants, from the series of the Indo-European palato-velars. For a split of the palato-velars took place twice in a similar manner but in different extent.

But if one might claim both series for the Indo-European original language, as Fick did with *k* and *k'*, then our argumentation would be untenable and no closer relationship would be proved between Aryan, Armenian and Balto-Slavic; yet even so the common formation of the palatals in Aryan, in which Armenian participates, if only in part, would prove nothing for the closer connection of Indic-Iranian-Armenian:

<i>k</i>	=	Skt. <i>c</i> , Av. <i>c</i>	Arm. <i>ch</i> , <i>ʒ</i> , <i>s</i>
<i>g</i>	=	<i>j</i>	<i>j</i> , <i>zh</i> (<i>k</i>) <i>ž</i>
<i>gh</i>	=	<i>h</i>	<i>j</i> , <i>zh</i> (<i>g</i>) <i>ž</i>

But then, to be just and consistent, one ought also declare meaningless the few reasons for which Balto-Slavic and Germanic as well as Greek and Italic or Italo-Greek and Celtic have been generally assumed to be connected; for they are by no means of greater significance than those by which one can connect Aryan with Balto-Slavic or Armenian with both of these. Then we would arrive at a skeptical point of view, and would hold that European *e* and *l* too prove nothing: just as in the one group spirants would arise from palato-velars in certain cases without motivation, so in the other *a* would become *e* and *r* would become *l* in certain cases without motivation. Or if one assumes two basically different *k* for Indo-European, why not also two originally different *a* and *r*, which had fallen together in Aryan just as randomly as often happened in European with Fick's *k* and *k'*? No one can claim that this point of view is nonsensical; only Fick will not be inclined to adopt it.

From this point of view there would be nothing further to say about Armenian than that it is an individual branch of Indo-European. And as such we will also have to view it from the other point of view, however its relationship to European and Iranian is to be conceived. Unfortunately -- and to this I'd like to point in conclusion -- the etymological investigation of Armenian is still in its beginning, and we are working with such a minute portion of the Armenian vocabulary that we cannot foresee what further investigations will uncover; and it was probably unjustified to erect at this time such bold constructions on such an uncertain basis as was done above. It is by far most important to separate the Iranian loanwords from Armenian and to arrive at pure Armenian material. Only when this has been done can one determine the more precise phonological characteristics of Armenian and thereupon loosen or tighten the bond that connects it with Iranian. But whether this bond is firm or slack, the close connection of Armenian to European remains undeniable, such as the formation of the instrumental singular with original *bhi*, the (partial) preservation of the palato-velars in contrast with the Aryan palatals, and the split of *a* to *a* and *e*, that of *r* to *r* and *l* demonstrate. For the time being there are not yet many deviations and agreements in the vocabulary to be given, since up to now neither Armenian nor Iranian has been investigated enough etymologically. Therefore the question of the lexical relationship of Armenian to Iranian and Slavic must still be viewed as quite open, just as we have intended to broach the question of the position of Armenian in the sphere of the Indo-European languages, not to have settled it decisively.

Notes

1. Fr. Müller also admits this in general, since in a friendly letter (28 July 1874), in which he wants to have Armenian energetically reclaimed for Iranian and not viewed as a transitional language, he writes: "That there are many foreign words in Armenian which have penetrated from Proto-Pehlevi is an evident fact; I fear however that many

a word that is good Armenian is regarded as a foreign word only to be able to deny the Iranian character of Armenian." But it is not adequate to admit this in general; if one wishes to judge about the character of a language, one must be certain in every individual instance that the material with which one works is not foreign stuff. Moreover, in the interest of the theory which is presented below I would like very much to have Fr. Müller prove to me that I have gone too far in the assumption of loanwords. [\[return to text\]](#)

2. Pers. rôzî to which lûsik and not r'ocik would have to correspond in Armenian, since Pers. rôz 'day' = Arm. luis. [\[return to text\]](#)
3. Alike only if both go back to s: Arm. mah-ik = NPers. mâh 'moon', from mâsa. [\[return to text\]](#)
4. Also designated as Persian in the Armenian-Italian dictionary of *Caḡcaḡ*. [\[return to text\]](#)
5. To these must still be added the foreign personal names, which are sharply distinguished from the real Armenian ones: the latter have a very characteristic sound and are etymologically obscure; the former are old acquaintances from Persian, like Artavan = Av. ashavan, and accordingly OPers. *artavan; Artavazd = Av. ashavaz-dañh, and accordingly OPers. *artavazdah (the former = Gk Artábanos Artabanus, the latter = Gk Artabázēs or Artaouásdēs, Artavasdes) etc. Therefore it is unfortunate to claim to prove merely from proper names the Iranian character of a people who are neighbors to the Persians. [\[return to text\]](#)
6. In the modern dialect of Tiflis, um, which can only be pronominal in origin, consistently forms the locative, while the genitive and dative have fallen together. This New Armenian therefore has one case more in nominal inflection -- to be sure one newly formed -- than Classical Armenian. [\[return to text\]](#)
7. One example may demonstrate this: the pronoun of the second person plural is dukh 'you', formed from the singular du = 'thou' with the plural sign of nouns *kh* = as originally. Probably no other Indo-European language has gone so far. [\[return to text\]](#)
8. Also êi, êir, êr etc. would remain unexplained, while in this way we could assume that this imperfect of *ah* has gone over to the analogical influence of the other verbs; this is also true in part for the present, where ê 'is' is not explained from *asti*, but probably through analogy from *berê* 'he bears' = *bereti*. [\[return to text\]](#)
9. *ʒ* is emphatic *ts*, just as *ch* is emphatic *tš* (*c*). [\[return to text\]](#)
10. On the Old High German instrumental in *u*, see Braune, "Ueber die quantität der ahd. endsilben," p. 40. [\[return to text\]](#)
11. For further information see Spiegel, Grammar p. 345. [\[return to text\]](#)
12. That Old Iranian had no *l* is clear from the fact that the modern Iranian languages do not agree in the use of *l*; compare for example the following examples: Ossetic *stal* 'star', *khalm* 'crawling animal (snake)', *nal* 'man', *malin* 'die' with NPers. *sitârah*, *kirim*, *nar*, *murdan*; and conversely: NPers. *gulû* (*gula* 'throat') with Ossetic *gur* = *ghur*, Afghan *ghâraḡah*, fem. 'throat'; NPers. *talkh* 'bitter' with Afghan *trîḡ*, fem. *taraḡah*, NPers. *kulâgh* = Baloci *gurâgh* 'crow' (Afghan *kârgh**h 'crow'?). For this reason, in spite of Oppert's objections, *Revue de linguistique* IV, p. 209), *l* will have to be denied for Old Iranian. [\[return to text\]](#)
13. This change is frequent: *gail* 'wolf' = European *valka*; *get* 'river' beside *vtak*, root *vad*; *gin* 'price' *venum*, original *vasna*; *gini* 'wine', *vinum*; *gitel* 'know', root *vid*; *gtanel* 'find', root *vid*, *vind*; *gortsel* 'work', Av. *verez*, *werg-*; *tagr* 'brother-in-law', *dawer-*; *gochel* 'cry' = *vac*, *garun* 'spring' = Av. *vahra*, *gier* 'night' = *vesper*, *gar'n* 'lamb' = *warĕn*, *warnós*. Old Persian too causes *v* to change to *g*, cf. *gurg* 'wolf' = Arm. *gail*; but otherwise in different forms than in Armenian: *gul* 'rose' = Arm. *vard*, *gunâh* 'pass'

- = vnas, etc. Both languages have carried out this change quite independently of each other. [[return to text](#)]
14. Found also in loanwords: phartham 'rich', Phl. fratum; phuriršišs 'process' = Pers. pursish; phi! 'elephant' = Pers. pîl. In loanwords however which had initial *f* rather than *p*, Armenian substituted the similar *h*, since it had no *f*: hrasac = Arab. farsac, Pers. farsang 'parasang'; hraman 'order' = Pers. farmân; hretak 'envoy, angel' = Pers. firishtah. The Kurds too have changed their *f* to *h*, but maintained it in loanwords, e.g. in firman (Justi, *Die kurdischen Spiranten*, p. 15). The Ossetes on the other hand change initial *p* consistently to *f*: farsun 'ask', fondz 'five', fathan 'broad', so that *p* is initial still only in loanwords, while Afghan substitutes *v* for *f* and uses *f* only in Arabic and Persian loanwords. [[return to text](#)]
 15. The series are: original *k* = Skt *k*, Iran. *k*, Arm. *k* (*kh*), Balto-Slavic *k*; and *k'* = Skt *ç*, Iran *s*, Arm. *s*, Slav. *s*, Lith *sz*. Armenian agrees with Iranian and Slavic, cf. tasn 'ten'. Occasionally however *š* is found instead of *s*, as in šun 'dog' = Skt *çvan*, pš-nul 'observe', Skt paç, as in NPers. shâkh 'twig' instead of sâkh = çâkhâ, shustan 'purify' = çudh, an indication that the sharp *s* of Iranian stands very close to the *sh* = Skt *ç*. And when for that reason *sz* is found in Lithuanian as opposed to Slav. *s* = *k'*, and Indic *ç*, now pronounced *sh*, as opposed to Iranian *s* = *k'*, we will consider this difference irrelevant, with Johannes Schmidt against Fick. From the sole Aryan-Balto-Slavic *çvan*, *çuni* arose only late the various Skt *çvan*, gen. *çunas*, and *çuni*, Av. sînô, sîni, Arm. šun, gen. šan, Old Prussian sunis, Lith. szũ, gen. szũns. But whatever is valid for Slavic *s* = Lith. *sz* must also be valid for Slavic *z* = Lith. *z*, original *g'* and *gh'*. [[return to text](#)]
 16. Through secondary palatalization in the separate existence of Armenian there arose: jerm 'warm' = Skt gharma, NPers. garm and šeram 'silkworm' = Skt kṛmi, Phl. kirm. [[return to text](#)]
 17. The secondary form khar' is related to chor- as is Av. tûirya to Av. cathware, tûirya = tvar-ya and khar' = tvar; *kh* = *tv* as in khsan 'twenty' = dvi-çanti. [[return to text](#)]
 18. Add to this: Arm. *ch* = Skt *ch* = original *sk* in the present stem forming *sk* = Gk *sk*: Arm. can-ach-em = gignōskō, Aor. tsaneay, and in chu 'walking' = original sku, Ascoli, *Vorles.* p. 189. [[return to text](#)]
 19. Accordingly in this essay I have written instead of *ä*, as it is now pronounced in Persia itself, the older *a*, from which it developed. [[return to text](#)]
 20. See barzond 'high', zarond 'old' = geront, zond, zund 'knowledge', zônun 'know', fondz 'five', dzorun 'speak', çor 'sun' (= svar), corun 'eat' (= svar-). How little *o* means here is shown by kharôn = Av. karana, which forms in the plural: Tagauric kharatthä, Digoric kharanthä. [[return to text](#)]
 21. I should like to note that the quantity of vowels is not marked in the Armenian writing system; therefore elsewhere as well I have not indicated a long mark. But this is only a shortcoming of the writing system, with reference to which it must be noted that *a*, *i*, *u*, where they are lengthened forms of the basic vowels *a*, *i*, *u*, must have formerly counted as long or still do. Only *e* and *o* are always short. [[return to text](#)]
 22. I write here *î*, as in the following *û*; for from mîgî, mîzî: mgî, mzî would have had to develop, and similarly from lûsoy: lsóy. [[return to text](#)]
 23. Petermann, *Grammar* p. 37: "omnium vocalium constantissima, quae fere nunquam abjicitur seu mutatur." (The most constant of all vowels, which almost never is lost or changed.) [[return to text](#)]
 24. This change of *e* to *i* has been carried through completely in the modern dialect of Tiflis, in which *o* has also become *u* throughout. In older Armenian *u* from *o* = *a* is

found more infrequently: a sure example is probably the suffix forming the decades: -sun, gen. -sni, e.g. innsun, gen. innūsni '90' = enenĕkōnta. [[return to text](#)]

25. The present is dne-l = d-ne-l, which according to the sound laws must go back to de-ne-l. If one compares this with the present tal 'give', then the equation results: Arm. de 'set': ta 'give' = Gk the: do. [[return to text](#)]
26. Consider how *s* in Sanskrit, where it was to be voiced, develops to everything, only not *z*, and how *jh*, instead of which *h* shows up, is almost prohibited. It is therefore not remarkable that we do not find in Sanskrit *z*, to which it was completely opposed, instead of the original *g'*. Notable is the preference of Iranian, Armenian and Slavic (in their oldest form) for the dental spirants over against the palatals of Sanskrit and the linguals of Lithuanian; but nothing is proved by this about the closer relationship of these languages to one another. [[return to text](#)]

CHAPTER THIRTEEN

KARL BRUGMAN

NASALIS SONANS IN THE ORIGINAL INDO-EUROPEAN LANGUAGE

"Nasalis sonans in der indogermanischen Grundsprache,"
Curtius Studien 9 (1876), 287-338

Editor's Introduction

Brugmann's article is included here for two reasons: it illustrates the growing control over articulatory phonetics; it reflects an awareness that the phonological and morphological levels of language are distinct, and that the one can be examined for insights into the other. Only a small portion of the article is given. The remainder is important for comparative Indo-European grammar -- the excerpt presented here, for general theory, especially for the assertion that there were vocalic nasals in Proto-Indo-European.

The recognition that PIE *m* and *n* were also vocalic led to considerable clarification of the ablaut in the Indo-European languages. Eventually the six resonants -- *y w r l m n* -- were classed together, for the clarification of many interrelationships in Indo-European grammar, such as an understanding of the Germanic strong verb bases. Brugmann's formulations are awkward in part -- another reason for merely providing excerpts. But publication of the article eventually led to the general assumption of vocalic resonants.

Verner's explanation of the phonological variation in sets like

OHG ziohan zōh zugum zogen

illustrated that phonological change did not occur by morphological sets but rather in similar phonological environments. Accordingly, aberrancies in morphological sets might point to earlier phonological change. Brugmann led off the investigation of vocalic nasals by scrutinizing patterns in a morphological set, the *n*-stems. His procedure leads to that now known as internal reconstruction; in using it Brugmann is not as precise as is Saussure, but through its use he added conviction to conclusions which were supported by reference to general phonetic observations.

The article illustrates a tremendous number published in the last quarter of the nineteenth century which gradually clarified the important problems in the Indo-European family. Most dealt with minor problems and received little lasting acclaim. But their results led to the great compilations, such as Brugmann's *Grundriss* and to the grammars of the individual languages, such as Streitberg's, Pedersen's, Meillet's, Hirt's which are still widely used.

Karl Brugmann (1849-1919) is one of the great Indo-Europeanists. His capacity for work was enormous. He produced the *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*, second edition 1897-1916, which will never be superseded, for it is reliable, thorough and representative of Indo-European studies when many of the important problems had been clarified. Even though his writing was prolific, Brugmann was, however, not as clear and compact as Verner. His article on vocalic nasals lacks the immediate impact of Verner's, though it was as important for clarification of the Indo-European vowel system as was Verner's for the Indo-European accent.

Osthoff's essay "On the Question of the Origin of the Germanic *n*-Declension," just published in Paul and Braune's *Beiträgen* III 1 95., which I became acquainted with several months ago

through a special printing, I will not hesitate to characterize as a work that will exert for a long time a most profound influence on research in the field of nominal stem formation and inflection. Its principles, to be sure, are not new, but its application to the given facts is new in many instances, and opens a great many quite new and far-reaching perspectives. I will treat the most essential results of the essay at another opportunity, in order to use them as a basis to clear up various phenomena of stem gradation which remain obscure. Here I will deal with a matter which Osthoff handled only in passing, and which led him to a result whose validity I must question.

I.

As is well known, the accusative plural in Old Indic is for the most part a weak case in those consonantal declensions, in which stem gradation occurs. For example, the accusative forms *ap-ás* 'waters', *path-ás* 'paths', *ukshṇ-ás* 'oxen', *tudat-ás* 'pushing' stand in contrast to the nominative plurals *āp-as*, *pánthān-as*, *uksháṇ-as* and *tudánt-as*, and to the accusative singulars *āp-am*, *pánthān-am*, *uksháṇ-am* and *tudánt-am*. A different situation exists in the European languages, which along with the Aryan took part in stem gradation, and have this appear often, though never as clearly and openly as does the Old Indic. In the European languages the accusative plural is throughout a strong case, so that Osthoff sets up as basic form for his model the Indo-European stem *uks-án-*, *uks^an-as* in the Aryan languages and *uksán-as* in the European languages. Naturally now, only one of these two forms can be considered the original Indo-European form. Either the Aryan or the European has altered the original relationship.

Osthoff decides on pages 35ff. in favor of the Aryan languages, and consequently asserts that the accusative plural in the original language was a weak case with a weak stem form and a stressed case ending. If I understand correctly, three considerations lead him to this assumption:

1. If *uksán-as* is taken in the original form, then a shift of the accent from the stem suffix to the ending has to be assumed for Old Indic. Shifts of the accent did indeed often occur in Old Indic toward the beginning of the word, but never in the other direction.
2. One encounters attempts in many places during the historical period of the Indo-European languages to assimilate the nominative and accusative towards each other in form. Now if *uksán-as* is assumed to be the original form, so that in the original language the nominative and accusative plural were formed alike on the one hand, and the accusative singular and the accusative plural were on the other hand accented alike, then Aryan would have taken exactly the opposite course and would have disturbed the original agreement of cases.
3. It is a quite unprovable hypothesis that the original form of the suffix of our case was *-ams* or *-ans*: the whole group of languages points only to *-as*. This proposition plays a role to the extent that it implies that the accusative plural was not formed by simply attaching the plural *-s* to the singular form in *-am*. Accordingly, there would not necessarily need to be agreement between the singular and plural as far as the stem gradation is concerned.

In contrast to these statements let us weigh the following:

1. Among themes which undergo stem gradation the accusative plural often appears in Vedic as a strong case with regard to the form as well as to the accent; for example, *āp-as* beside *ap-*

ás, uksháṅ-as beside ukshṅ-ás, vṛshaṅ- as beside vṛshṅ- as. Among monosyllables without stem gradation, the accusative plural in Vedic is at times accented as a strong case, at other times as a weak case, thus rāj-ás and rāj-ás, vāk-as and vāk-ás.¹ In themes of this sort, in later Sanskrit some words appear with the stress on the stem syllable, such as nāv-as and vāk-as, others with the stress on the case ending, such as mās-ás (Benfey, *Vollständige Grammatik* p. 318, IV). In Old Bactrian furthermore the accusative plural is probably about as prevalent in the strong form, and thus like the nominative plural in sound as in the weak form; in the strong, for example, in ṣpānō from ṣpā 'dog', dātārō from dāter 'giver'. urvānō or urvānō from urvan - 'soul' (See Spiegel *Grammar* p. 119).² The Vedic uksháṅs corresponds very closely to Goth. auhsans; similarly, vāk-as and nāv-as to the Gk ópas and nēas. If therefore all the Indo-European languages are familiar with the accusative plural as a strong case and only the Aryan, beside the general Indo-European relationship, exhibits a different one, characteristically peculiar only to itself, it follows as a matter of course that this exclusively Aryan form, which even in the Aryan languages is not regular, is not the original form.

2. The fact that Greek from earliest times on does not use the same form for the accusative and nominative plural, but shows the ending *-as* (ópas) for the former and *-es* (ópes) for the latter, remains quite enigmatical in Osthoff's conception. For the view that in the common Indo-European language state, the ending of the nominative plural *-as* had already undergone weakening to *-es*, while at the same time the original form of the accusative plural uks^an-ás persisted, and that precisely the old stress of the case ending caused Greek to preserve the pure *-a*-sound is to my mind highly artificial; and one must object to it above all, that the assumption that the high pitch on the end syllable *-as* prevented any departure from a pure *a*-sound is absolutely without basis. For where else in Greek is such an influence of the accent to be found? I look in vain for analogies and believe that instances like the genitive op-ós = Old Indic vāk-ás simply demolish Osthoff's hypothesis.

3. Everything indicates that our Indo-European ending *-as* actually originated from *-ams*. The *m* of pad-am (pedem) is without doubt essentially the same element as the *m* of akva-m (equum). If now, as no one doubts, the plural of akva-m was originally akva-ms, and from that form akva-ns, perhaps already in the original language; this form, however, differs from the singular only by the addition of the plural characteristic *s*,³ it is extremely probable that the plural of pad-am was pad-ams. None of the various languages prevents our establishing this as the original Indo-European form; Greek as a matter of fact, points to it most decisively. I will prove the correctness of this assertion below at relatively great extent.

If we are to consider *-ams* accordingly as the original form of the case suffix, then it necessarily follows that the accusative plural in the original Indo-European period belonged to the strong cases....

(293) We now arrive at the central point of our argument, at the demonstration that no phonetic obstacle exists to setting up *-ams* as the original form, and that Greek *-as* must necessarily be derived from *-ans*.

The vowel of the case suffix *-am* in Old Indic pād-am, Gk pód-a Lat. ped-em, etc. has been called a connecting vowel. For the sake of brevity let us maintain this name provisionally, without wishing to make any statement about the origin of the vowel. It is surely the same vowel which we encounter in the inflection of the verb before endings beginning with *-nt*, as in the third person plural before *-nti*, *-nt*, and *-ntai*, *-nta*, when these endings appear on themes which end with consonants, such as the Old Indic third person plural dvish-ánti (cf. first

person plural *dvish-más*). We then call this too a connecting vowel. But now in both Aryan and European a significant difference is shown in the treatment of *a* when it is a connecting vowel and when it is thematic (part of the stem suffix); this holds true in nouns as well as in verbs, so that we are forced to conclude that the thematic *a*, for example from *ákva-m* Gk *híppo-e* and *bhára-nti* Gk *phéro-nti*, was already pronounced differently from the connecting vowel in the original Indo-European, for example *pád-am* Gk *pód-a* and *as-ánti* Gk *é-anti*. As these Greek forms set beside the original forms show, the difference in this language is still clearly distinct.

In Old Indic, the difference between the two *a*-sounds can be arrived at from a hard and fast rule, whose operation we will now examine more closely.

It is a constant rule that after a thematic *a* which is followed by a consonant,⁴ a nasal never disappears without a trace, and conversely that a nasal after a connecting vowel *a* disappears completely, if its syllable has low tone.

Let us begin with the verb. First, compare the indicative *bhára-nti* (Class I) and *bíbhr-ati* (Class III); the imperative *bhára-ntu* and *bíbhr-atu*; the participial accusative singular *bhára-ntam* and *bíbhr-atam*. Contrast further *bíbhr-ati* (Class III) and *dvish-ánti* (Class II), *bíbhr-atu* and *dvish-ántu*, *bíbhr-atam* and *dvish-ántam*. The law to be noted here is not invalidated by the fact that the third person plural middle of Classes II, V, VII, VIII and IX lacks the nasal, in spite of the accent on the connecting vowel, as in *dvish-átē*, *kinv-átē*, *juñg-átē*, *tanv-átē* and *jun-átē*. The fact that this stress is more recent and that the accent originally stood on the end syllable is proved by such Vedic forms as *indh-atē*, *tanv-atē*, etc. (Delbrück, *Das altindische Verbum* p. 74). There is the same type of relationship between the later *tanvátē* and the Vedic *tanvatē* as there is between the later *máti-* fem. (mens) and the Vedic form *mattí-* which also has lost the nasal because of influence of the conditions of the accent; more on this below.

If we now compare the formation of the accusative plural of the *a*-stems and the consonant stems, we find that *áčvān* i.e. (**áčva-ns*) is like *bhára-nti*; conversely *vák-as*, i.e. (**vák-ans*) like *bíbhr-ati*. We therefore find that ending *-as*, with which this investigation began, has appeared in complete accordance with the sound laws for Indo-European *-ans*...

(303) This is the place to go into the articulatory phonetics of our question.... E. Sievers, in his splendid *Grundzügen der Lautphysiologie*, sets forth the principle, p. 24ff., that the liquids *r* and *l* and the nasals *ñ*, *n*, and *m* can be vowels just as well as consonants. He teaches that, for example, in the usual pronunciation of *ritten* and *handel*, *rittn* and *handl*, *n* and *l* form the whole second syllable, and actually made up a syllable, and are to be designated as actual vowels. Accordingly, a strong distinction should be made between the nasalis sonans as in *rittn*, *ātm* and the nasalis consonans as in *berittne*, *ātme*; in the first words the nasal carries the accent of the final syllable, while in the second the accent is placed on the *e*. The sonore nasalis can carry the main stress of the word, as for example in the bisyllabic *ñi-nein* and *ñi-ja* as I know them for the expression of unwilling negation and heated asseveration in the Wiesbaden dialect. Now if we designate vocalic nasal *m* and *n* in contrast with the consonantal *m* and *n*, I am convinced that we have to establish for the original language beside *ákva-m*, *ákva-ms* the forms *pád-m*, *pád-ms*, and beside *bhára-nti*, *bhára-ntai* the forms *as-ñti*, *ās-ñtai*. By means of *svarabhakti*, i.e. the appearance of a short vowel from resonant consonants before *m* and *n* (cf. Sievers, *Lautphysiologie* p. 142) all the above-cited forms *-m*, *-ms*, *-ñti*, etc., developed. First of all, therefore, *svarabhakti* developed in such forms as *patár-m*, and then spread also to those instances where a voiceless sound preceded the nasal.

My friend Osthoff urged me on to this conception. During a conversation in which I told him the main results of my study, he said: "One will probably have to posit the nasal in the original language precisely as a vowel" (in the sense of Sievers).⁵

With this assumption, we gain a double advantage. First, we can unite as one the double suffix forms *-am*, *-anti*, etc., (in consonant stems) with *-m*, *-nti*, etc., (in vowel stems). Second, all the qualitative vowel differences in the various languages which were cited above are simply solved, and I hope, some other difficulties too....

Notes

1. Vā́k-as as accusative plural Rigveda 1.113.17 according to Grassmann under the word *sjūman* and Ludwig l.p. 12. [[return to text](#)]
2. In Old Persian the accusative plural of stems ending in consonants is not attested. [[return to text](#)]
3. Compare the instrumental singular *-bhim*, plural *-bhim-s* etc.; see Leskien, *Die Declination im Slavisch- Litauschen und Germanischen*, p. 99ff. 1876. [[return to text](#)]
4. An apparent exception is formed by the participle *bhára-nt*-in the weak cases, e.g. gen. *bháratas*; concerning this see the excursus at the end of the article (not included here). [[return to text](#)]
5. Earlier I had explained the difference to myself by ascribing to the vowel designated as connecting vowel the value of an irrational vowel in the original language. [[return to text](#)]

CHAPTER FOURTEEN

HERMANN OSTHOFF AND KARL BRUGMANN

PREFACE TO *MORPHOLOGICAL INVESTIGATIONS IN THE SPHERE OF THE INDO-EUROPEAN LANGUAGES I*

From Morphologische Untersuchungen auf dem Gebiete der indogermanischen Sprachen I (Leipzig: S. Hirzel, 1878) pp. iii-xx

Editor's Introduction

By 1878 the young linguists at Leipzig were confident enough of their methodology to undertake investigations of virtually all Indo-European problems. To publish their views Osthoff and Brugmann founded a journal of their own, which continued until 1890. The preface to this journal, written by Brugmann but also signed by Osthoff, states the principles which they and their colleagues followed. The central axiom, that sound laws have no exceptions, was first published by the oldest of the group, August Leskien in *Die Declination im Slavischlitauischen und Germanischen* (1876). With Leskien, Wilhelm Scherer, as the preface indicates, gave the initial impulse to the group. One of Scherer's contributions was his rejection of the old notion that the languages of today represent a decline from those of the past; in this way he freed linguistics from some of the burden maintained from the first part of the century.

The principles elaborated by Brugmann were also applied by the other notable neogrammarians: Braune, Delbruck, Paul, and Sievers in addition to those mentioned above. Their shortcomings have been widely discussed. Students who have heard primarily about these may be surprised at the restraint of the preface: the insistence on oral, not paper, language; the study of speech as one of the cultural activities of men; the concern with contemporary language, even with dialects; the suspicion of theory -- even today the last sentence of footnote 3 is not without validity; the temperate statement of the neogrammarian axiom and concomitant recognition of analogical modification. After reading the preface one may wonder how it could have led to the shortcomings for which the neogrammarians are blamed. It is clear how on these principles many of the phonological and morphological problems of the Indo-European languages were clarified.

Since the appearance of Scherer's book *Zur Geschichte der deutschen Sprache* (Berlin, 1868), and principally through the impulses that went out from this book, the physiognomy of comparative linguistics has changed considerably. A method of research has been instituted since then and is winning more and more supporters; it differs in essential respects from the method by which comparative linguistics proceeded in the first half-century of its existence.

The older linguistics, as no one can deny, approached its object of investigation, the Indo-European languages, without first having formed a clear idea of how human speech really lives and develops, which factors are active in speaking, and how these factors working together cause the progression and modification of the substance of speech. Languages were indeed investigated most eagerly, but the man who speaks, much too little.

The human speech mechanism has a twofold aspect, a mental and a physical. To come to a clear understanding of its activity must be a main goal of the comparative linguist. For only

on the basis of a more exact knowledge of the arrangement and mode of operation of this psychophysical mechanism can he get an idea of what is possible in language in general -- by that one should not think of the language on paper, for on paper almost everything is possible. Moreover, only through this knowledge can the comparative linguist obtain the correct view of the way in which linguistic innovations, proceeding from individuals, gain currency in the speech community, and only thus can he acquire the methodological principles which have to guide him in all his investigations in historical linguistics. Articulatory phonetics concerns itself with the purely physical aspect of the speech mechanism. This science is several decades old, and the older linguistics, since about the 1850's, has also profited by its results; for this we must give it great credit. But the matter is far from ending with articulatory phonetics alone, if one wants to acquire a clear understanding of man's speech activity and of the formal innovations that man undertakes in speaking. Even the commonest sound changes, as, for example, the change of *nb* to *mb*, or *bn* to *mn*, or the metathesis of *ar* to *ra*, are incomprehensible if one proceeds solely from the standpoint of the physical production of sounds. In addition, there must necessarily be a science which undertakes extensive observations of the operation of the psychological factors which are at work in countless sound changes and innovations as well as in all so-called analogical formations. The first outlines of this science were drawn by Steinthal in the essay "Assimilation und Attraction, psychologisch beleuchtet" (*Zeitschrift für Völkerpsychologie*, I, 93-179), which up to now has received little notice from linguistic science and articulatory phonetics. In the work named below (KZ 24,50f), one of the two authors will soon try to demonstrate fully, starting from this essay of Steinthal, how important it is to form a clear idea of the extent to which sound innovations are on the one hand of a purely psychomechanical nature and on the other hand the physical reflections of psychological processes. Further, the author will there examine thoroughly the effect of association of ideas in speech activity, and the creation of speech forms through the association of forms; and he will attempt to develop the methodological principles relative to it. The older comparative linguistics, while it readily accepted and utilized the teachings of articulatory phonetics, hardly concerned itself at all with the psychological aspect of the speech process, and as a consequence it fell into numerous errors. Only in very recent times is one becoming more aware of that neglect. Fortunately the movement starting with Scherer's efforts, the "neo-grammarians" movement, has already done away with some of the fundamental errors which dominated the entire older linguistics. These errors originated in that very failure to recognize the fact that even the changes and modifications taking place solely in the external speech form and affecting only the phonetic expression of thought are due to a psychological process which takes place prior to the materialization of the sound by the vocal organs. In this regard future research will of course have to investigate many things more carefully and in more detail, and many other viewpoints important to the method of historical linguistics will presumably be disclosed through this association, when historical linguistics and psychology will have entered into a closer relationship with each other than they have maintained up to now.

The insufficient investigation of the speech mechanism, especially the almost total disregard of its psychological side, was in itself a drawback which, in the older comparative linguistics, impeded and retarded the acquisition of correct guiding principles for the investigation of form change and formal innovations in our Indo-European languages. But in addition there was something which had a far worse effect and which gave rise to an error that made the discovery of these methodological principles flatly impossible as long as it persisted.

Formerly the reconstruction of the Indo-European parent language was always the chief goal and focal point of the whole of comparative linguistics. The consequence was that all

investigations were constantly directed toward this original language. Within the individual languages known to us through written documents, within the development of the Indian, Iranian, Greek languages, etc., almost exclusive interest was held by the oldest periods, those lying closest to the original language, such as Old Indic, here again especially Vedic, Old Iranian, Old Greek, here chiefly the Homeric dialect, etc. The more recent language developments were thought of as stages of decay, of decline, of aging, and with a certain amount of disdain they were disregarded as much as possible. From the forms of the earliest historically accessible periods the original Indo-European forms were constructed. And the latter were made the generally held criterion for evaluating the structures of attested language formations; so much so that comparative linguistics acquired its general ideas of how languages live, are maintained and change primarily on the basis of the original Indo-European forms. That this, however, was not the right way to arrive at correct guiding principles for the investigation of form change and form innovation in our Indo-European languages is so very obvious that one must be surprised at how many have not yet become clear about it. Is not, after all, the authenticity, the scientific probability, of the original Indo-European forms, which are of course all purely hypothetical creations, totally dependent on whether they agree in general with the proper conception of the development of linguistic forms and on whether they are constructed according to correct methodological principles? Thus the investigators went around in the most obvious circles, and even today many still do so, without knowing it or wanting to admit it.

We have a picture of the manner in which linguistic forms in general are maintained, not by means of the hypothetical reconstructions in the original language, nor by means of the oldest forms known to us of Indic, Iranian, Greek, etc., whose prehistory can be inferred only by way of hypothesis and reconstruction, but -- according to the principle that one has to start with the known and from there advance to the unknown -- by means of those linguistic developments whose previous history can be pursued at some length on the basis of texts and whose starting-point is directly known to us. The more linguistic material is made available for our observation in an unbroken written tradition extending through the centuries, the better off we are; and the farther, with reference to the present, a stage of a language is removed from the point where its historical tradition begins, the more informative it necessarily becomes. Therefore, the comparative linguist must turn his attention from the original language to the present if he wants to arrive at a correct idea of the manner in which language is maintained, and he must once and for all rid himself completely of the thought that as a comparative Indo-Europeanist one need concern himself with the later stages of the Indo-European languages only when they offer linguistic material that is of importance for the reconstruction of the original Indo-European language.

Language fields like Germanic, Romance and Slavic are without doubt the ones where comparative linguistics can most securely acquire its methodological principles. In the first place, the main condition is met here: we can pursue the development, the process of change of linguistic forms through many centuries on the basis of texts. Further we are here to a much greater extent involved with genuine popular speech, with the common language of communication and colloquial speech than in such languages as Old Indic, Old Greek, and Latin. What we know about the old Indo-European languages through the texts handed down to us is in such a way and to such an extent literarily influenced speech -- the word "literary" taken in its broadest sense -- that we scarcely get to know the genuine, natural, spontaneous, everyday language of the old Indians, Greeks, and Romans. But it is precisely this latter way of communication of thoughts which one must have clearly in mind in order to acquire the correct standpoint for evaluating the linguistic change taking place in the vernacular and

especially for the evaluation of all prehistoric language development. Furthermore, the younger languages referred to are also by far superior to the ancient languages with reference to the purpose under discussion, because their development in everyday use, which can be pursued for centuries on the basis of texts, terminates in a living language abounding in dialects; but this language does not yet differ so sharply from the older state of the language of centuries ago, accessible solely in a written reproduction, that it could not furnish an excellent corrective against the errors that must necessarily creep in repeatedly with exclusive dependence on this written reproduction of the speech forms of earlier centuries. Everyone knows, for example, how we can establish the history of High German sounds in the individual dialects from the Old High German period up to the present day far more reliably than we can establish the history of Greek sounds in the Old Greek period, because the living sounds of the present permit the possibility of correctly understanding the characters through which the Germans tried to represent their sounds in past centuries. Letters are indeed crude and awkward, and very often actually misleading representations of the spoken sound. It is not possible at all to get an exact idea of the course of the process of changes, for example, of an Old Greek or Latin dialect.

Precisely the most recent stages of the newer Indo-European languages, the living dialects, are of great significance for the methodology of comparative linguistics in many other respects too. Here I may especially emphasize only one other thing to which linguistic research has paid much too little attention until now, simply because of the belief that whenever possible it must turn its back on the language life of the more recent and of most recent times. In all living dialects the shapes of sounds peculiar to the dialect always appear much more consistently carried out throughout the entire linguistic material and maintained by the members of the linguistic community than one would expect from the study of the older languages accessible merely through the medium of writing; this consistency often extends into the finest shades of a sound. Whoever is not in the position of making this observation in his native dialect or elsewhere may refer to the excellent work by J. Winteler *Die Kerenzer Mundart des Kantons Glarus* (Leipzig and Heidelberg, 1876) where he can convince himself of the accuracy of what has been said.¹ And should not they now take this fact to heart, who so willingly and so often admit of unmotivated exceptions of the mechanical sound laws? When the linguist can hear with his own ears how things happen in the life of a language, why does he prefer to form his ideas about the consistency and inconsistency in phonological systems solely on the basis of the inexact and unreliable written transmission of older languages? If someone wants to study the anatomical structure of an organic body, and if the most excellent preparations stand at his disposal, will he then take recourse to notoriously inexact diagrams and leave the preparations unexamined?

Therefore: only that comparative linguist who for once emerges from the hypotheses-beclouded atmosphere of the workshop in which the original Indo-European forms are forced, and steps into the clear air of tangible reality and of the present in order to get information about those things which gray theory can never reveal to him, and only he who renounces forever that formerly widespread but still used method of investigation according to which people observe language only on paper and resolve everything into terminology, systems of rules, and grammatical formalism and believe they have then fathomed the essence of the phenomena when they have devised a name for the thing -- only he can arrive at a correct idea of the way in which linguistic forms live and change, and only he can acquire those methodological principles without which no credible results can be obtained at all in investigations in historical linguistics and without which any penetration into the periods of

the past which lie behind the historical tradition of a language is like a sea voyage without a compass.

The picture of the life of language that someone gets, on the one hand, through the study of more recent language developments and of the living dialects and, on the other hand, through a consideration of those things which an observation of the psychological and physical speech mechanisms place at his immediate disposal -- this picture differs in essential features from that other picture which comparative linguistics formerly saw arising out of the original Indo-European fog when it was still looking only for the primitive language; this picture is still the guiding form for many investigators today. And precisely because this discrepancy exists, there remains, we believe, no other choice than: to reform the previous methodological principles of our science and to abandon forever that hazy picture which can in no way disavow its foggy home.

That is by no means to say that the whole structure of comparative linguistics, as far as it has been erected till now, should be torn down and built up again from the beginning. In spite of the above-mentioned shortcomings of the method of investigation, such an abundance of important, and so it seems, permanently reliable results have been achieved through the discernment and industry of the investigators who have been active in our field, that one can look back with pride upon the history of our science so far. But it is not to be denied that many faulty and untenable things are mixed in with the many good ones, even though many investigators at present still regard the untenable components as certain conclusions. Before one builds further, the whole structure, as far as it now stands, has need of a thoroughgoing revision. Even the foundations contain numerous unsolid places. That part of the masonry which is already set on top of these must necessarily be brought down again. The other part of the masonry, which already towers fairly high in the air, can remain standing or need only be touched up because it rests on a good foundation.

As was already indicated above, it is Scherer's achievement to have effectively broached the question of how changes and innovations take place in a language. To the horror of not a few fellow investigators, but luckily for the discipline itself, Scherer in the book named above, made ample use of the principle of leveling in his explanations. Many forms of even the oldest historically accessible stages were suddenly according to him nothing other than formations by "false analogy";² until then investigators had always regarded these as purely phonetic developments from the original Indo-European forms. That was against all tradition and hence aroused distrust and opposition at the outset. Now, in many points Scherer was without doubt wrong; in not a few, however, also without doubt correct. And no one can contest his right to that one achievement which overshadows all errors and which can hardly be valued highly enough: because of him investigators were for the first time faced with the question of whether the way in which they had previously been accustomed to judging form changes in old stages of a language, as in Old Indic, Old Greek, etc., could be the right one, and of whether these languages did not have to be treated from the same point of view as the newer languages in which they had readily admitted "formations by false analogy" in rather great measure.

Some linguists, particularly a few most directly concerned passed over the question and, abruptly rejecting it, remained satisfied with the old way. No wonder. When serious attempts at upset are directed against a procedure that one is used to and with which one feels comfortable, one is always more readily stimulated to ward off the disturbance than to undertake a thorough revision and possible alteration of the accustomed procedure.

But with others, especially younger scholars, the seed scattered by Scherer fell on fruitful ground. Leskien above all seized upon the thought, and since he reflected on the concept of "sound law" and "exception to the law" more profoundly than had been done before, he arrived at a set of methodological principles which he at first made fruitful in his university lectures in Leipzig. Then other younger investigators, personally stimulated by him (among them also the authors of these *Untersuchungen*), tried and still do try to bring them to wider acceptance and recognition. These principles are based on a two-fold concept, whose truth is immediately obvious: first, that language is not a thing which leads a life of its own outside of and above human beings, but that it has its true existence only in the individual, and hence that all changes in the life of a language can only proceed from the individual speaker;³ and second, that the mental and physical activity of man must have been at all times essentially the same when he acquired a language inherited from his ancestors and reproduced and modified the speech forms which had been absorbed into his consciousness.

The two most important principles of the "neogrammarian" movement are the following:⁴

First, every sound change, inasmuch as it occurs mechanically, takes place according to laws that admit no exception. That is, the direction of the sound shift is always the same for all the members of a linguistic community except where a split into dialects occurs; and all words in which the sound subjected to the change appears in the same relationship are affected by the change without exception.

Second, since it is clear that form association, that is, the creation of new linguistic forms by analogy, plays a very important role in the life of the more recent languages, this type of linguistic innovation is to be recognized without hesitation for older periods too, and even for the oldest. This principle is not only to be recognized, but is also to be utilized in the same way as it is employed for the explanation of linguistic phenomena of later periods. And it ought not strike us as the least bit peculiar if analogical formations confront us in the older and in the oldest periods of a language in the same measure or even in still greater measure than in the more or most recent periods.

This is not the place for going into further particulars. Yet let us here briefly call attention to two other main points so that we may justify our method in the face of some objections made to it recently.

One of them is this. Only he who adheres strictly to the principle of sound laws, this mainstay of our whole science, has firm ground under his feet in his investigations. There are, on the one hand, those who needlessly, only to be able to satisfy certain desires, admit of exceptions to the sound laws governing a dialect,⁵ who except either individual words or classes of words from a sound change which has demonstrably affected all other forms of the same type, or who postulate a sporadic sound change which has taken place only in isolated forms and which has not affected all other forms of the same kind; and finally, there are those who will say that the same sound, in the very same environment, has changed in some words one way, in other words another. He who does this and who in addition sees in all these unmotivated exceptions which are favored by him, something very normal which he thinks follows from the very nature of mechanical sound change, and he who then even as very frequently happens makes these exceptions the basis of further conclusions, which are to abolish the consistency of the sound law that is otherwise observed,⁶ he necessarily falls victim to subjectivism and arbitrariness. In such instances he can indeed put out quite ingenious conjectures, but none that merit belief, and he must not then complain when he is faced with

cold rejection. That the "neogrammarian" movement is not yet in a position to explain all "exceptions" to the sound laws is, of course, no basis for an objection against its principle.

And secondly, a few more brief words about the use of the principle of analogy in the investigation of the older periods of a language.

Many believe that analogical formations arise principally in those stages of a language in which the "feeling for the language" has "degenerated" or, as one also says, in which a "the awareness of language has grown dim"; and thus they believe that one cannot expect analogical formations in the older periods of a language to the same extent as in the later.⁷ A strange way of looking at things! This point of view arose among those who think that a language and the forms of a language lead a life to themselves, apart from the individual speakers and who permit themselves to be governed to such an extent by terminology that they continually regard metaphorical expressions as reality itself and even incorporate into the language concepts which are only the ways in which the grammarian looks at things. If someone could once and for all manage to get rid of these generally harmful expressions "youth" and "old age" of languages! These and many other in themselves quite innocent grammatical terms have so far been almost exclusively a curse, hardly a blessing. For the child who was born in Greece in the Homeric age, who became aware of the speech forms of his linguistic community by hearing them, and who then reproduced them in order to make himself understood by his fellow men for that child were these speech forms ancient? Did he feel and handle them differently from the way in which a Greek of the Alexandrian age or someone of still later times felt and handled them?⁸ If today a Greek dialect of the 20th century B.C. or a Germanic dialect of the 8th century B.C. suddenly became known to a grammarian, would not he then immediately alter his conception of antiquity, which he associates with the Homeric and Gothic dialects, and henceforth call old things young? And would he not in all probability henceforth drop the notion that the Greeks of Homeric times and the Goths of the 4th century A.D. were people with a "degenerate feeling for language," with a "dim awareness of language"? And do such predications have anything at all to do with the thing itself? Or might the older Indo-European peoples, suspecting what was coming, not have analogized the forms of their time a great deal in order to satisfy the grammatical desires of their offspring and not make the business of reconstructing the Indo-European parent language too difficult? We believe: as sure as we are that our Indo-European forefathers had need, just as we do, of their lips, tongue, teeth, etc. for the articulation of the sounds of their language, just as sure can we be of the fact that the entire psychological aspect of their speech activity (the emergence of sound images preserved in the memory from a subconscious state, and the development of concepts of sounds to words and sentences) was influenced by the association of ideas in the same way and in the same measure as today and as long as people are people. One must also understand that the difference in overall make-up which exists between the individual old Indo-European languages, the descendants of the same original Indo-European language, would not be nearly so considerable if in prehistoric periods regular phonetic change of the original forms had only taken place and if reformations and new formations by analogy had not supplemented it to a very great extent. Therefore there is nothing to that difference between old and young.

At first glance another objection which has been raised against us recently in order to discredit our efforts makes more sense. It is said: whoever operates with the concept of analogy can here and there perhaps hit upon the right thing with a stroke of luck, but in the main he can only appeal to faith. Now, that latter statement is quite right, and everybody who deals with the principle of analogy is also clearly aware of it. But consider the following. First: if, for

example, the suffixal ending of the nominative plural Gk híppo), Lat. equi can not be reconciled with that of Osc. Núvulanús, Goth. vulfôs, Old Ind. açvâs on the basis of the sound laws, and if we have come to the conclusion that one of the two formations must be an analogical creation, is it such a bold stroke if we assume that híppoi and equi were formed according to the pronominal declension (such as originally tai, from ta-, Old Ind. te, Gk toí, etc.)? Of the same or similar simplicity are, however, countless other instances where we have recourse to our principle, whereas others arbitrarily stretch and bend the sound laws in order not to let the speaking peoples be bad grammarians who did not remember their forms and paradigms properly. Second: A principle which we strictly maintain, to the best of our ability, is: only then to take recourse to analogy when the sound laws compel us to. Form-association is for us too an "ultimum refugium." The difference is only that we see ourselves confronted with this much sooner and much more often than are the others, precisely because we are so punctilious about the sound laws and because we are convinced that the boldest assumption of the operation of analogy always has more claim to be "believed" than arbitrary evasions of the mechanical sound laws. Third: It was not long ago that the beginning was made to establish rights for the principle of analogy. Hence it is, on the one hand, very probable, indeed sure, that blunders have been made here and there in the assumption of form associations. But, on the other hand, it is also very probable that more general principles will gradually be found to cover the diverse tendencies of association, especially when the modern languages have been investigated more thoroughly with regard to their analogical formations. In this way a probability scale can also gradually be established for the assumption of association. The essential thing in the meantime is for people to have the good intention of permitting themselves to be instructed by the facts of modern language developments and then for them to conscientiously apply what they have learned to the older periods of a language.

Thus we believe that the objection that our work with the principle of analogy is reprobable because it terminates in mere conjecture has been proven to be unjustified, and we want to add one more thing in conclusion of this discussion. If the "neogrammarian" movement with its methodological principles gives up many of the original Indo-European forms which have circulated for a long time in our science and which are probably very dear to many, and if the movement is not now in a position to go along on the "idealistic flight" into the periods of primitive and pre-primitive language -- as this flight is now so often attempted -- and if the neogrammarian movement with its skeptical attitude seems to lag behind those who are always looking toward the primitive language and if it appears inferior in its efficiency to the older movement, it can surely console itself with the thought that for a young science, as comparative linguistics is in spite of its sixty years, it must be of more concern to fly as safely rather than as far as possible. On the other hand, it can cherish the hope that what it gives away in primitive and primitive-primitive linguistic niceties will be amply made up for through the attainment of a deeper understanding of the mental activity of human beings in general and of the individual Indo-European peoples.

We believed that we should preface the present *Untersuchungen* with our creed because they are to contribute primarily to bringing the "neogrammarian" movement into more and more general acceptance. We may also, however, here ask our several critics to keep in mind constantly the principles by which we have decided in favor of this or that assumption. In the last years people have unfortunately passed numerous unfavorable judgements on our movement or on some of the opinions advanced by this movement; they only prove that the judges in question have not considered at all what motives led us to follow just this method and no other. An understanding and agreement between the different movements in our science which are at present battling with each other can not be brought about by such

occasional skirmishings which skirt the basic questions and not by directing one's blame solely against details, but only by taking aim at the leading motives and principles. That is not to say, of course, that we, for our part, would not be heartily grateful for a detailed demonstration of mistakes and errors.

Heidelberg and Leipzig, June, 1878

Notes

1. One should give special consideration to the remarks this phonetician (p. 233) makes in general about the unreliability of the usual representation of the spoken word and about the dangers which result from it for linguists. [[return to text](#)]
2. Thus Scherer maintained, for example, (which one of the authors, O., still disputed unjustly in his *Forschungen*, II, 137) that Old Indic bhárâmi 'I carry' was not the phonetic descendant of an original Indo-European form bharâmi, but that in Indo-European one said bharâ and that Old Indic bhárâmi was a new creation by analogy with athematic verbs like dádâmi. [[return to text](#)]
3. This had previously been accepted in theory. But the fact that people were accustomed to seeing language only on paper as well as the fact that people always said "language" when, strictly speaking, they ought to have said "the men who speak" -- it was not, for example, the Greek language which was averse to spirants, dropped final *t*, changed thíthēmi to títhēmi, etc., but those among the Greeks with whom the sound change in question started -- had as a consequence that people frequently forgot the true state of affairs and attached a completely false idea to the term "language." Terminology and nomenclature are often a very dangerous enemy of science. [[return to text](#)]
4. The following have expressed themselves (in general) about these principles: more briefly: Leskien, *Die Declination im Slavisch-litauischen und Germanischen* (Leipzig, 1876), Merzdorf, *Curtius' Stud.*, IX, 231 f.; 341, Osthoff, *Das Verbum in der Nominal composition* (Jena, 1878); more extensively, Brugman, *Stud.*, IX, 317 ff. and Kuhn's *Zeitschr.*, xxn, 3 ff.; 51 ff. and especially Paul, *Beitr. zur Gesch. der deutschen Sprache u. Liter.*, IV, 320 ff. In addition, most recently Brückner, "Zur Lehre von den sprachlichen Neubildungen im Litauischen," *Archiv für slav. Phil.*, III, 233 ff. and Osthoff's review of Ascoli's *Studi critici in Jena Lit.-zeit.*, 1878, no. 33. [[return to text](#)]
5. We are of course speaking here only of mechanical sound change, not of certain phenomena of dissimilation and metathesis. The reason for the latter lies in the peculiarity of the words in which they appear; they are always the physical reflections of purely psychological stimuli and in no way nullify the concept of sound law. [[return to text](#)]
6. Reference is made to such an example below p. 156, fn. 1. (not included here). [[return to text](#)]
7. Often one encounters the statement in linguistic works that a given form stems from too ancient a period to be considered a formation by false analogy. [[return to text](#)]
8. Naturally we are here speaking only of common colloquial speech and of the people who approached language with no literary or grammatical training. [[return to text](#)]

CHAPTER FIFTEEN

EDUARD SIEVERS

ON THE ACCENT AND PHONOLOGY OF THE GERMANIC LANGUAGES. III. ON THE LAW OF VOCALIC FINALS

"Zur Accent- und Lautlehre der germanischen Sprachen. III. Zum vocalischen auslautsgesetz," Beiträge zur Geschichte der Deutschen Sprache und Literatur, 5 (1878), 63-163

Editor's Introduction

In a long discussion on "accent and phonology in the Germanic languages" Eduard Sievers proposed a solution for the difference between the endings of Gothic *harjis* and *hairdeis* which illustrates his capabilities in analysis and the initial steps towards recognizing allophonic variation in language. The solution came to be known as Sievers's law, now occasionally Sievers-Edgerton's law, after two important articles by the late Franklin Edgerton: "Sievers's law and IE weak-grade vocalism," *Language* 10. 235-65 (1934) and "The Indo-European Semivowels," *Language* 19. 83-124 (1943). In its current form it proposes that [i],[y], and [iy] were allophones of PIE /y/, determined by its phonological environment; also that the other Proto-Indo-European resonants underwent the same allophonic variation.

Sievers recognized the "law", but did not describe the conditioning features thoroughly; nor did he apply it to the Indo-European resonants other than /y w/. His recognition was achieved before it was generally accepted that Proto-Indo-European has "several *a* vowels"; see the excerpt below from Saussure. The segment of Sievers's discussion included here illustrates the concern with accent, with more precise definition of other phonological entities, and with the relations between morphological and phonological structures that was general after Verner's article. It also reflects the increasing preoccupation with metrics.

Eduard Sievers (1850-1932) was probably the most brilliant of the neogrammarians. He had a remarkably fine capability for analyzing language. Among his legendary accomplishments was the identification of the Old English Genesis as a translation from Old Saxon before there was evidence for an Old Saxon poem on Genesis; it was later discovered in the Vatican. Another is his early recognition of the relationship between the accent and the phenomenon clarified by Verner. Like Verner he made his initial suggestion in a letter; this letter, written to Braune 24 March 1874, Sievers himself never published, nor did he proceed to a thorough formulation of the discovery as did Verner. Streitberg published a part of the letter in *Germanisch*, pp. 287-8:

But the verbs in *-ja?* Should one think of the influence of the accent, for those in *-áyati*, *-āyati* originally have the accent after the stem syllable just as the preterite plurals do? According to the root vowel and the Slavic accentuation *-énŭ* the preterite participle also must have had an accent like **numánas*. But how are accent and weakening related? The *-da* of the preterite participle of the weak verbs, such as **nas-i-dá-s* is surely also pertinent; cf. Skt *uktá* etc., Gk *plek-tós*, etc.; also Gk *-ikós* = Goth. **ei-ga-s* etc. A pity that we still do not have the beginnings of a sensible theory of accent; and who can understand German sound changes without an understanding of shifts of accent?

Fortunately Sievers made ample contributions to linguistics without pursuing this idea. A professor at 21, his long career at Leipzig made it one of the leading centers in linguistics.

The multiple recognition of the role of accent in language change is a further indication of the maturing of linguistics. It also illustrates that discoveries were not simply made by men of genius, but by capable workers in a developing field; and credit goes to those who formulated the discovery. The most notable multiple recognition at the time was that of the "law of palatals." During the 1870's it became clear to a number of linguists -- Ascoli, Thomsen, Verner, Tegnér, Saussure, Collitz, Schmidt -- that Sanskrit palatals were found in environments where the European languages had *e*. This observation led to the conclusion that more than one vowel must be assumed for late Proto-Indo-European and to the assumption of *e a o* where Schleicher posited *a*; it also contributed further to reducing the reliance on Sanskrit for comparative purposes, and instead to the reconstruction of Proto-Indo-European. Like the excerpt presented here, formulation of the "law of palatals" was only one of a great number of fine observations which were being published in the last quarter of the nineteenth century, often to be refined later, as Edgerton did for Sievers's law.

[125-31] A further reason against the assumption of general Germanic syncope of *a* I take from the inflection of the *ja*-stems. In order to clarify everything here, however, I must expand somewhat.

It is a question of the explanation of the groups of sounds: *-ji* and *-ei* in *harjis*, *háirdeis* and the corresponding verbal forms *nasjis*, *sôkeis*; on these compare Scherer, *Zur Geschichte der Deutschen Sprache* 113f.; Zimmer, *Zeitschrift für deutsches Altertum* 19.419; Amelung, *ibid.* 21. 230f.; Osthoff, *Zeitschrift für vergleichende Sprachforschung* 22.89f.

Scherer, whose view Zimmer and Amelung accept, as is known derives *harjis* and *háirdeis* from **harijas* and **háirdijas* through syncope of the *a*; in complete accordance with the views of Scherer, Zimmer and Amelung interpreted the latter forms as *hárijàs*, *háirdijàs*. This in turn presupposes the validity of the law of the Middle High German low accent, which I believe I have disproved for the original Germanic language; according to the principles proposed in *Beiträge* 4. 522ff., I can make no other assumption than that those forms, presupposing three syllables, were each pronounced *hárijàs*, *háirdijàs*. Why shouldn't both have developed similarly to *harjis*, **háirdjis*, as the group of sounds *ji* is maintained undisturbed in the genitive singular neuter in *reikjis*, *kunþjis* etc. or in *faírnjin* etc.; or why isn't it **hareis*, like *háirdeis*, after the analogy of *naveis* and *gasteis* from **navijiz* and **gastijiz*? [The ending *-iz* is supported by OE *fêþ*, ON *fœþr* = **fôþiz*; see above 111.] There is also a strong physiological question concerning the assumed loss of the vowel *a* between the consonants *j* and *s*; but I would not like to press this too strongly here, for the discussion necessary for its support might find little support.

I can come to terms still less with the view of Osthoff than with this conception, which one might call the general point of view and which one has to agree is consistent and logical in its point of view. A development of **hairdjas*, **harjas* through **hairdjs* and **harjs* to **hairdjis* and *harjis* by means of the development of an auxiliary vowel from the *j* may indeed be represented graphically but not be made credible for the written language. If this *a* was actually lost after the *j*, then according to the laws developed in *Lautphysiologie* § 22 this *j* should have become the vowel *i*, and we would get only **háirdis*, **haris*. If one wanted to take refuge in the fact that *j* may not have been a semivowel, but rather a spirant or obstruent, then the development of an auxiliary *i* could not be conceived, nor its contraction with a completely non-homogeneous vowel. Finally, the objection that Scherer's hypothesis

necessarily requires the dative form *háirdija does not hold up any better, for the development of a medial *ija* to *ja* is without question in *sôkja* and similar forms.

But if the assumption of *harjis* and *háirdeisas* general Germanic forms raises so many problems, one might simply ask whether they indeed have any claim to this status. North Germanic does not play a decisive role here; its forms *niðr*, *hirðir* = Goth. *niþjis*, *háirdeis* have the same phonological relationship as do ON *biðr*, *sækir* = Goth. *bidjis*, *sôkeis*; *hirðir*, *sækir* however are justified by means of analogies like *ástir*, *nœmir* = Goth. *ansteis*, *nêmeis*, whose *i* is certain in the Germanic period. Accordingly in the northern languages there is no sound law which hinders our equating *hirðir* directly with Goth. *háirdeis*.

It's quite different in West Germanic. The older Anglo-Saxon, Old Saxon and Old High German attest in weak verbs with short syllables instead of Goth. *ji* only *i*, *e* without lengthening of the preceding consonant. Compare, for example, from the Old Kentish psalter (Ed. Stevenson, London and Edinburgh, 1844) *reces* 2, 9, *seleð* 7, 8 etc., *seles* 15, 10 etc., *cweceð* 7, 13, *ðeneð* 7, 13, *sites* 7, 4 etc., *swereð* 14, 4, *gestes* 17, 44 etc., *segeð* 18, 2 (cf. J. Grimm, *Grammatik* I⁴, 822f.); Old Saxon *fremis*, *frumid*, *haþis*, *haþid*, *hugis*, *hugid*, *letid*, *sagis*, *sagið*, *telid*; Old High German examples, Grimm *Grammatik* I⁴, 788. [In Old High German, this law was broken through early by the sound shift, like many other things. The form of the infinitive, of the plural and subjunctive present is carried through everywhere where there was too great difference of the sound; accordingly, *sezzis*, *deckis*, like *sazta*, not **seʒʒiz*, **dechis* etc., = OE *setes*, *þeces*]. The *j* was merged here throughout to a simple vowel with *i* of the verbal ending, which was proved to be general Germanic through its causing umlaut in the strong verb at a very early time, before the beginning of the consonant lengthening. Differently among the nouns. Here we have nominatives and accusatives like OE *hrycg*, *mecg*, *slecg*, *wecg*, *þrymm*, neuter *cynn*, *webb*, *bedd*, *nett*, *flett*, OS *hruggi*, nt. *bed*, *flet(ti)*, *net(ti)*, *siukki*, *kunni*, *webbi*, OHG *hrukki*, nt. *kunni*, *tenni*, *stukki*, *giuuiggi*, *âuuiggi*, *stuppi*, *ueeppi*, *betti*, *antlutti*, *nezzi*, *uuizzi*, etc.; further, adjectives like OE *nytt*, *gesibb*, OS *middi*, *thriddi*, *luggi*, OHG *luggi*, *fluggi*, *âuulggi*, *sibbi*, *nuzzi*, accordingly throughout lengthening of the consonant before the ending. I believe that this proves that a *j* was still present in West Germanic before the final vowel; and since analogy with the verb has just showed us that *ji* was not possible in West Germanic the final vowel must have been other than *i*. Where else might this questionable vowel arise other than from the thematic *a*? As the last general Germanic original form of the short syllable stems we must therefore not assume *harjis*, *kuni*, but only **harjəz*, **kunjə*; in these *ə* may designate the vowel sound that cannot be determined, which developed gradually under the influence of the *j* from the thematic vowel *a*². But also for the long syllable stems non-shortened forms with *ia* or *iə* must be assumed. For if the Germanic original form of the neuters had been, for example, *rīki* or even **rīkī*, then the *i* would have been compelled to drop in Old English and Old Norse as in the imperatives OE *sêc*, ON *sæk* = Goth. *sôkei*, or in the feminines OE *bend*, *hœeð*, ON *heið-r* (with non-original *r*) = Goth. *bandi*, *haiþi*. Details are given about this below. [A further proof for the non-originality of the *i* in the nominative of the neuters is given by ON *hey* = Goth. *havi*. If *havi* were original Germanic, then the *i* would have been compelled to drop in North Germanic after short syllable without producing umlaut. Proto-Germanic **naviz* regularly yielded ON *há-r*, as **favaz* yielded *fár*; or in order to give an analogy for the medial position as well, as beside the verbs **haujan*, *þraujan* = ON *heyja* (OE *hêgan*), *þreyja* the preterites *haviða*, *þraviða*, i.e. ON *háða*, *þráða* regularly occur. ON *hey* can accordingly stand only for Gmc. **hauja*, **haujə* (cf. Lappish *avje*, Thomson 131). On the other hand one may not adduce the analogy of *mœr*, *þý* = Proto-Norse **mavi-r*, **þivi*, for these forms actually have the ending Gmc. *-î*, as will become clear later. But the inflection *mœr*, *meyjar* can warn us not to view the

nominative-accusative hey prematurely as possible analogical formations to the other cases.] None of the forms discussed can be explained through analogical formation, for apart from them there is nowhere a pattern by which they could have been formed. There are clearly three groups: *ja*-stems that have remained short, with *e* in the nominative-accusative, e.g. here and the borrowing *ele*; those that have become long (through consonant gemination) without vocalic ending, *hrycg*, *cynn*; old long syllables with *e*, *hyrde*, *rice*.

Examination of the genitive singular of the *ja* stems leads to similar results with regard to the non-originality of the Gothic forms. For in order to maintain *hairdeis* as common form, one must first of all seize upon the highly questionable assumption of a Proto-Germanic contraction of *ie* to *i* in the penultimate (while the *e* of the genitive elsewhere did not become *i*, does not cause umlaut); then however one must explain all West Germanic forms as new formations (OE *hyrdes*, *rices*, OS *hirdies*, *rikies*, OHG *hirtes*, *riches*). Only the North Germanic *hirðis*, *rikis* with some difficulty be compared with the Gothic. Shouldn't one then rather admit that the Gothic *hairdeis* owes its development only to the specifically Gothic aversion to the sound *e*, with which was apparently also associated an effect from the nominative? Only in this way do the neuters, with their prevailing genitives in *-jis*, receive their due: *kunþjis*, *reikjis*, *fairgunjis*, *andbahtjis*, *valdufnjis*, *gavairþjis* beside *andbahteis*, *valdufneis*, *gavairþeis*, *trausteis*, *fauramapleis* (see the list in Heyne, *Ulfilas* § 23). The lack of a nominative similar in sound helped to preserve the older forms here.

Accordingly: the *i* in Goth. *harjis* is a remainder of the thematic *a*; it did not develop from the derivative suffix *i* or *j* but was only conditioned in its color by these. The same remainder is found also in *hairdeis*, which we have to resolve first of all in a previous three-syllabic **herðiiz* or **herðijiz*, whose treatment corresponds completely with that of *naveis*, *ansteis* (cf. p. 125). Goth. *naveis* is particularly welcome as evidence that the contraction has nothing to do with quantity or with an accentual law dependent on quantity, as we objected above. For the language it's quite immaterial which of two similar contracted vowels had the accent; I need only recall the well-known elementary rules of Greek grammar.

The difference between the short and long syllable *ja*-stems accordingly consists only in the fact (as Scherer already recognized, though in my view without adequate justification) that the former had consonantal *j*, the latter vocalic, i.e. syllabic, *i* in their suffixes.

But where does this difference arise, if it does not depend on the low accent law? One would scarcely assume with no further evidence an earlier, general Germanic existence of this law in the Lachmann version, and a later complete reversal especially in West Germanic! On what should we base our suggestions? We will therefore have to go farther back and hold to the original Indo-European language.

If one may take confidence in the investigations of Benfey (*Abhandlungen der Göttingen Gesellschaft der Wissenschaften* 16. 91ff., 1871), the suffix *ia* was used interchangeably in the Veda as monosyllabic or bisyllabic. If one however examines the situation more precisely, a quite definite law stands out: unaccented (without *svarita*) *i* or *u* before a vowel is consonantal after a short syllable, vocalic after a long syllable, without regard for the other accentual situation of the word. Compare examples like the following:

ajuryá:	asûriá		ávya:	mártia
aryá	kâviá		-búdhya	ayásia

anishavyá	taugriá		-avadhya	árdhia
kavyá	pûrviá		íbhya	açmāsia
gavyá	bhâviá		gávya	áčvia
divyá	açásiá		mádhya	aria etc.

[For the references, see Grassmann. Here I must withhold giving the proof for the above principle at length or discussing the regular exceptions which occur and the violations against it, which in part are not insignificant criteria for determining the age of Vedic hymns. I will only note here that that principle is only a segment of an extensive rhythmical law in oldest Sanskrit and Indo-European, particularly concerning the relationship of the vowels *i*, *u* and the semivowels *y*, *v*; for years I have been collecting material in support of it. Precise observation of these principles will be useful not only for metrics but also for grammar itself. It turns out, for example, that the lengthenings before *r* + consonant were still foreign to the living Vedic language; that *ūr*, *īr* always developed through *ṛ*, and the like.] Exceptions are the suffixes beginning with a consonant like -bhyās, -bhyām, -tva, to the extent that these (like word-initial consonants + *y*, *v* in general) were used interchangeably after long syllables (after short syllables only with consonantal *y*, *v*, i.e. monosyllabic); further certain short syllabic adjectives, especially verbal adjectives with bisyllabic suffix (Grassmann's Part. IV): gádhia, gúhia, gopayátia, carkṛtía, tújia, dábhia, dṛçia (mádia, yújia?), çásia, çrúitia, hávia (while for example the suffix of the so-called *ya*-class or the passive follows the rule).

I may report that Hübschmann has recently established the same laws for Old Bactrian, starting from another point of view, so that three languages may already be called upon as mutual witnesses for the great age of the phenomenon. In the remaining languages the old difference seems to have been eliminated early; at any rate none of them shows such an obvious observance of the law as do the three named. But scholars will doubtless succeed in finding remnants of the rule still in details. I'd like to direct attention to one such still: the Greek adjectives hágios and stúgios, which correspond to hádzomai i.e. *hagjomai and similar forms in the same way as do the Sanskrit verbal adjectives to the corresponding verbs.

Probably the most general formulation of the law discovered here may be given as follows: the vowel of a syllable of derivation is and remains heavier after a preceding long than after a preceding short (therefore *ia*, *ua* remain bisyllabic in the first case; in the second they become monosyllabic).

CHAPTER SIXTEEN

FERDINAND DE SAUSSURE

MÉMOIRE ON THE PRIMITIVE SYSTEM OF VOWELS IN THE INDO-EUROPEAN LANGUAGES

**Mémoire sur le système primitif des voyelles dans
les langues indo-européennes (Paris: Vieweg, 1887),
authorized reprint of the 1879 edition**

Editor's Introduction

Saussure's achievement in his *Mémoire* is phenomenal. Published during his student days, actually in 1878 rather than the indicated 1879, it was far in advance of his time. Applying the method of internal reconstruction to Proto-Indo-European, he proposed the hypothesis that the long vowels had developed from short vowel plus sonant coefficients. His hypothesis was confirmed after Hittite was discovered. J. Kurylowicz in 1927 pointed out that the Hittite consonants transcribed with *ḫ* corresponded in some cognates to those which Saussure had suggested purely on the basis of phonological analysis of morphological patterns. The *Mémoire* is accordingly a fine example of the method of internal reconstruction, possibly the most dramatic application that has been made.

The consonants proposed by Saussure were related to Semitic by Hermann Möller in the following year, and have subsequently been known as laryngeals; their position in the phonological system of Proto-Indo-European and pre-Indo-European has subsequently been one of the intriguing questions of Indo-European linguistics. As is clear from the excerpts presented here, Saussure's chief interest was clarification of the Indo-European ablaut relationships generally, not merely of the roots with long vowels. These excerpts also illustrate the various uncertainties about the phonological system of Indo-European during the seventies. Only at the end of the decade was the "law of palatals" understood and with it the vowel system of late Proto-Indo-European as we know it was proposed.

Although the contributions of Ferdinand de Saussure (1857-1913) to historical linguistics were great, those to descriptive linguistics overshadow them. He is known as the founder of modern linguistics. His influence was largely exerted through a posthumous publication based on lecture notes: the celebrated *Cours de linguistique générale*, edited by C. Bally and A. Sechehaye. A student at Leipzig, he is largely responsible for establishing the eminent linguistic group in Paris, through his position at the École des Hautes Études, 1881-1891, which after him was led so long by his student, Antoine Meillet (1866-1936). He himself found life more congenial in Geneva, where he gave the lectures on which the *Cours* was based. His contributions have been capably discussed, as by Rulon Wells, "De Saussure's System of Linguistics," *Word* 3. 1-31 (1947) and Meillet, *Linguistique historique et linguistique générale* II. 174-183. We may note that his view of language as a system is apparent in the very title of the *Mémoire* which he wrote when he was barely twenty-one, and that from this view he made his notable analysis.

(1-6) The immediate object of this small work is to study the various forms under which is manifested what is referred to as IE *a*; the remaining vowels are not taken into consideration except to the extent that the phenomena related to *a* require. But if after we have come to the end of such a limited field the table of the Indo-European vocalism is little by little modified

under our eyes so that we see it grouped entirely around *a*, and we take a new view of it, clearly it is the system of vowels in its entirety on which our observations will center and which should be indicated at the start.

Nothing is more disputed: the opinions are almost infinitely divided and various authors have rarely made a completely rigorous application of their ideas. In addition, the problem of the *a* is related to a series of phonological and morphological difficulties, some of which have yet to be solved, but many have not yet been stated. Thus in the course of our peregrination we will often traverse the most unexplored regions of Indo-European linguistics. If nonetheless we set out, though convinced in advance that our inexperience will often lead us into a maze, it is not recklessness, as is often said, that compels anyone who occupies himself with these studies to attack such questions: rather it is a necessity, it is the first school one must pass. For the question is not one of speculations of a transcendent order but of research into elementary facts without which everything drifts, everything is arbitrary and uncertainty.

I must withdraw some opinions which I have published in an article in the *Mémoire de la Société de Linguistique de Paris*, entitled: An Essay on a Distinction between different IE *a*'s. Particularly the resemblance of *Ar* with the phonemes arising from *r̥* led me to reject, very reluctantly, the theory of vocalic liquids and nasals, to which I now return after mature reflection.

Bopp and those who immediately followed the illustrious author of the *Comparative Grammar* limited themselves to stating that in regard to the three vowels *a e o* of the European languages, the Aryan uniformly showed *a*. The *e* and *o* were then considered weakenings characteristic of the idioms of the West and relatively recent developments from a single IE *a*.

The work of Curtius in the *Sitzungsberichte der Kgl. Sächs. Gesellschaft der Wissenschaften* (1864) enriched our understanding greatly: Curtius showed that *e* appeared in the same place in all the languages of Europe, so that it cannot have developed independently in each of them. And departing from the accepted idea that the mother language only possessed the three vowels *a i u*, he concluded that all the European peoples must have passed through a common period, during which they still spoke the same language. Also, that during this period a part of the *a*'s were weakened to *e*, under an unknown influence, while the rest persisted as *a*. Later the various languages, separately from one another, had carried out a second split of the *a*, which yielded *o*. Yet in southern Europe this vowel must have arisen before the end of the Greco-Italic period, in view of the agreement of the *o* of the two classical languages, notably in the declension of the masculine stems in *-a* (Gk *híppos* = equos).

We believe we are representing exactly the system of Curtius by the following table:

Indo-European	<i>a</i>	<i>ā</i>
European	<i>a; e</i>	<i>ā</i>
Later	<i>a o; e</i>	<i>ā</i>

[It is necessary, however, to add the following remark of the *Grundzüge*, p. 54: "the original dualism (*Zweiklang*) *gan* (Skt *ḡan-â-mi*) and *gân* (Skt perf. *ḡa-ḡân-a*), *bhar* (Skt *bhar-â-mi*) and *bhar* (Skt *bhâra-s* 'bundle') arose by an imperceptible substitution at the start: *gen gan*, *bher bhar*, then *gon* (Gk *genésthai*, *gégona*), *bher*, *bhor* (Gk *phérō*, *phóros*). But nothing can

make us believe that there had ever been a time when Gk gen and gon, pher and phor would have been interchanged arbitrarily, of a kind so that one might have said Gk gonésthai, phórō or inversely gégena, phéros." Here accordingly the learned professor admits an original distinction of *e* and *o*, and derives the *o* of Gk gégona from IE *ā*.]

Fick's statement, *Spracheinheit der Indogermanen Europas*, p. 176ff., reproduces in general the preceding system. The ancient *a* is divided into *a* and *e* in the European period. When a word shows *e* in all the languages, it is necessary to assume that the change of its *a* to *e* goes back to this period. On the contrary it seems for *a* or *o*, that although this appears in a single language, it is necessary to admit that *a* still remained at the time of the community. The ablaut of Gk dérkomaí dédorka, but above all of Gmc ita, at, is an admirable utilization of the splitting of *a*. On this last point see Curtius in the quotation above.

The system of Schleicher is different. Admitting in each vocalic series two degrees of reinforcement produced by the addition of one or two *a*'s, he places for the series of *a* the three expressions: *a aa āa*.

He finds these three degrees in Greek: *a* is represented ordinarily by ε (e.g. Gk édō), but also by *o* (Gk podós) and by α (Gk ákōn). The first reinforcement, *a + a*, is represented by *o* when it is produced from ε , i.e. "Gk gé-gon-a, the first form: ga-gān-a; Skt gágān-a beside Gk e-gen-ómēn." This same degree is transmitted under the form of \bar{a} , \bar{e} , when it has *a* for base: Gk élakon, lélāka. The second reinforcement is *o*: érrōga. Gothic possesses the three degrees too; the other languages have confused the two reinforcements.

Since the genealogical tree of languages as Schleicher constructed it was not that which most of the other scholars had adopted and did not include a European period, it is clear that the *e* of the languages of Europe does not go back for him to a common origin. In particular, Goth. *i* has a different place from that of Gk *e* in his *Compendium*; the latter is considered the regular representative of IE *a*, Goth. *i* as an abnormal weakening. In formulating the following scheme according to Schleicher's system we therefore avoid the idea of a historically common development of the European vocalism:

Indo-European	a	aa	āa
European	a e o	a o ā	ā

It is also necessary to note that Gk *a* and Lat. *a* are not mentioned as reinforced degrees.

In a small work entitled: "Die Bildung der Tempusstämme durch Vocalsteigerung," Berlin, 1871, the Germanist Amelung, prematurely lost to our science, has attempted to apply the system of Schleicher in a very consistent manner and to combine it with the fact of common European *e*. In his eyes, this *e* is the normal representative of the non-reinforced *a*. The European *a* -- with which he also includes *o* as Curtius had done -- goes back to the first reinforcement which he designates by \bar{a} ; and the second reinforcement (\hat{a}) is long \bar{a} in the European languages. Presents, such as Goth. fara, Gk ágō, ózō accordingly show a reinforced vowel, and it is necessary to admit that they are denominatives. -- In a word, the dualism: *e a* is original, and the relation existing between them is that of simple to reinforced vowel. Note the table:

Indo-European	a	ā	â
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(Aryan	a	a ā	ā)
European	e	a	ā
Gothic	i	a	ō
Greek	e	a o	ā ō

The debate which Amelung had on this question with Leo Meyer in *KZ* 21 and 22 did not bring any essential modification to this system, which has been presented in detail a second time in the *Zeitschrift für deutsches Altertum* 16. 161ff.

Brugman, *Studien* 9. 367ff. *KZ* 24.2 traces the existence of *e*, as a distinct vowel from every other, to the Indo-European period, without pretending by this that its pronunciation had been that of an *e* from its origin; and he designates its proto-type by *a*₁. Concurrently with this vowel the same scholar finds in Greek, Latin, Slavic *o* = Lithuanian, Gothic *a* = Sanskrit *ā* (at least in open syllables) a stronger phoneme which he calls *a*₂ and the origin of which was determined by the accent.

In accordance with this theory one generally arranges the following table, which nonetheless is certainly not that approved by Brugman himself, for he alludes (*Studien* 9.381) to the possibility of a great number of original *a*'s:

	(a)		
Indo-European	<i>a</i> ₁	<i>a</i> ₂	ā
European	e	a	ā

In sum, one sees that for the languages of the West, the different authors, whatever their point of view, operate with three entities: the *e*, *a*, *ā* of the European languages. It will be our task to clarify the fact that there are really four different units, not three; that the languages of the North confused two fundamentally distinct phonemes still distinguished in southern Europe: *a*, a simple vowel, opposed to *e*; and *o*, a reinforced vowel, which is merely *e* in its higher form of expression. The dispute between those who favor the split (original *a* weakened partially to *e*) and those who favor a twofold original *a* (*a*₁, *a*₂ becoming *e* and *a*) -- this dispute, it is necessary to state, gets us nowhere, because by the *a* of the languages of Europe is understood an aggregate which has no organic unity.

These four kinds of *a* which we are going to try to find at the basis of the European vocalism we will pursue further still and arrive at the conclusion that they even belonged to the mother language from which the languages of the East and West arose.

Chapter I. The sonant liquids and nasals.

Before beginning the study of *a* it is necessary to determine carefully the limits of its domain, and at this point the question of the sonant liquids and nasals is presented. For anyone who admits these phonemes for the mother language will consider a number of vowels of the historical periods of the language recent and distinct from the question of the *a*.

The hypothesis of sonant nasals was first proposed and developed by Brugman, *Studien* 9. 287ff. In the same work (325) the author also touched on the subject of the sonant liquids, of which apparently the first notion is due to Osthoff.

1. Sonant liquids.

In the Indo-European mother language, the liquid, or liquids, if one accepts two of them, existed not only in the state of consonants but also in the state of sonants, that is to say, that they were able to carry a syllabic accent, capable of forming a syllable. This took place, as is known, in historical times, in Sanskrit. Everything leads one to believe that the sonant liquids never arose except through weakening, because of which the *a* which preceded the liquid was expelled; but this does not hinder our placing them, as we shall see, on the very same plane with *i* and *u*...

(8) 1. Root syllable.

The order adopted here to distinguish the different instances in which *r*{syllabic} appears is based on a new classification of roots, which can only be justified later but should not confuse the reader in the meantime.

We will deal only with the roots containing *e*. -- Every root which contains *e* in the languages of Europe has the ability of expelling this *e* and in this way taking on a weaker form, on the sole condition that the phonetic combinations so produced can be readily pronounced.

To be arranged under the roots containing *e* are those in which are found the diphthongs *ei* and *eu* and which one is accustomed to cite under their weakened form, deprived of *e*: thus, *kei*, *sreu*, *deik*, *bheugh* (*ki*, *sru*, *dik*, *bhugh*).

The *i* and *u* of these roots, as well as the liquid and nasal of roots such as *derk* *bhendh* can be called sonant coefficients (*coefficient sonantique*).

They are parallel in vocalism of the root. Depending on whether the *e* remains or disappears, their function varies: *r l m n* develop from consonants to sonants; *i* and *u* pass from a symphthongic state to an autophthongic.

A. Roots ending with a sonant coefficient.

Examples *kei* (weak form *ki*) *sreu* (w.f. *sru*) *bher* (w.f. *bhr*) *men* (w.f. *mn*).

B. Roots including a sonant coefficient followed by a consonant.

Examples *deik* (w.f. *dik*) *bheugh* (w.f. *bhugh*) *derk* (w.f. *dr̥k*) *bhendh* (w.f. *bh̥ndh*).

C. Roots without a sonant coefficient, ended by a consonant.

Examples *pet* (w.f. *pt*) *sek* (w.f. *sk*) *sed* (w.f. *zd*)....

(51) How then could the *a* and *o* of the languages of the South have arisen from one and the same original *a*? By what miracle could this old *a* be colored to *o*, and never to *a*, in all the times that it is found to vary with *e*? -- Conclusion: the twofold *a* and *o* of the classical languages is original, and it must be that in the single *a* of the North two phonemes were confused.

Confirmation: when a root contains *a* in Greek or in Latin and this root is found in the languages of the North, one observes in the first place that it there still shows the vowel *a*, but what is the important fact, that this *a* never alternates with *e*, as is the case when Greek corresponds with an *o*. Thus Goth. *vagja* = Gk *okhéo*, *hlaf* = Gk (*ké*)*klopha* are accompanied by *viga* and *hlifa*. But *agis(a-)* = Gk *ákhos*, or *ala* = Lat. *alo* do not have a parent form with *e*. On the other hand, the roots of the latter type have a characteristic, unknown among the first type: the ability to lengthen their *a* (*agis*: *ōg*, *ala*: *ōl*) of which we will have to take account below.

Brugman has designated with *a*₁ the prototype of European *e*; his *a*₂ is the phoneme which we have called *o* up to now. As to this third phoneme which is Greco-Italic *a* and which constitutes a portion of the *a*'s of the languages of the North, we will designate it by the letter *A*, after noting well that it is not the parent of *e*(*a*₁) nor of *o* (*a*₂). -- Excluding for the time being the other possible kinds of one obtains the following table:

Languages of the North	Primordial state	Greco-Italic
e	a ₁	e
a	a ₂	o
}	A	a

(134-135) § 11. Grammatical role of the phonemes *A* and *Q*, Complete system of the primordial vowels.

When one considers the following cases of the permutation *a*₁,*a*₂: Goth. *hilfa hlaf*, Gk *kléptō kéklopha*, Gk. *hippos híppe*, and when one compares with them the following cases of the permutation *A* *Ā*: Goth. *sake sōk*, Gk *lískō lélāka*, Gk *númphā númphā*, the temptation is strong, assuredly, to set up the proportion $\bar{A} : A = a_2 : a_1$. But this would be to get involved in a course without result and to misunderstand the true character of the phenomena. For greater clarity we are going to construct at once the system of vowels such as we understand it. For the time being we are concerned only with root syllables.

The phoneme *a*₁ is the root vowel of all roots. It can be alone in forming the vocalism of the root or it can be followed by a second sonant which we have called sonant coefficient (p. 8).

Under certain conditions which are not known, *a*₁ is replaced by *a*₂; under others, better known, it is expelled.

When *a*₁ is expelled, the root remains without vowel when it does not contain a sonant coefficient. When it does, the sonant coefficient comes to be alone, or in an autophthongic state (p. 8), and provides a vowel to the root.

The phonemes *A* and *Q* are sonant coefficients. They cannot appear alone except in the reduced state of the root. In the normal state of the root, it is necessary that they be preceded by *a*₁, and the combinations *a*₁ + *A*, *a*₁ + *Q* give rise to the longs \bar{A} , \bar{Q} . The permutation *a*₁: *a*₂ takes place before *A* and *Q* as elsewhere.

Vocalism of the roots in Indo-European								
Full root	a ₁	a ₁ i	a ₁ u	a ₁ n	a ₁ rn	a ₁ r	a ₁ A	a ₁ Q
	a ₂	a ₂ i	a ₂ u	a ₂ n	a ₂ rn	a ₂ r	a ₂ A	a ₂ Q
Reduced root	-	-i	-u	-n	-rn	-r	-A	-Q

Useful designations

For a₁A and a₁Q after contraction: \bar{A}_1 and \bar{Q}_1 .

For a₂A and a₂Q after contraction: \bar{A}_2 and \bar{Q}_2 .

The theory summed up in this table has been applied to all the types of roots above except those which contain A and Q,...

CHAPTER SEVENTEEN

WILLIAM DWIGHT WHITNEY

LANGUAGE AND THE STUDY OF LANGUAGE, LECTURE X

New York: Charles Scribner's Sons, 1892⁵, pp. 356-394

Editor's Introduction

By the latter part of the nineteenth century, sufficient work had been done in linguistics to suggest the need for general handbooks. The most representative of these is Whitney's. In 1864 he was asked to present six lectures "on the principles of linguistic science" at the Smithsonian Institution in Washington, D.C. These were expanded to twelve when presented in Boston, and published essentially in that form. In his preface Whitney acknowledges obligations to Heinrich Steinthal and August Schleicher, and refers to his frequent antagonist, the great popularizer Max Müller. Since Whitney was at home in the linguistic centers of Europe, his statements on the "science of language" may be taken as representative of views of the time. His book was first published in 1867. Bloomfield, *Language* 16, says of it and its successor *The Life and Growth of Language* (New York, 1874), "Today they seem incomplete, but scarcely antiquated, and still serve as an excellent introduction to language study." Readers may make their own judgements of Whitney's views through the segment presented here.

Lecture X surveys the problem which pervades much of nineteenth-century linguistics -- linguistic classification both genealogical and typological. It also deals with the relationship between language and other elements of culture, as well as race. Although some of Whitney's views may not have been immediately adopted, they are in large part the ones that we now hold, such as the view that there is little evidence for proposing a relationship between Indo-European and Afro-Asiatic; or that there is little likelihood of establishing interrelationships beyond a certain time, on the basis of the materials we now know. As Bloomfield indicated, the matter of Lecture X is therefore scarcely antiquated. Whitney's interest in Schleicher's attempts at linguistic formalization is also in keeping with current activities.

William Dwight Whitney (1827-1894) was called by Jespersen, *Language* 88, "the leading exponent of general linguistics after the death of Schleicher." We hold him in high regard for his temperate views; as Jespersen remarked, "he was opposed to all kinds of mysticism, and words were to him conventional signs." All who have used his *Sanskrit Grammar* (Leipzig and Boston, 1896³) can scarcely have failed to be amused by the first sentences of its preface: "It was in June, 1875, as I chanced to be for a day or two in Leipzig, that I was unexpectedly invited to prepare the Sanskrit grammar for the Indo-European series projected by Messrs. Breitkopf and Härtel. After some consideration, and consultation with friends, I accepted the task, and have since devoted to it what time could be spared from regular duties, after the satisfaction of engagements earlier formed. If the delay was a long one, . . ." In four years he completed, presumably in his spare time, the grammar which has remained standard ever since. A professor at Yale University, Whitney is responsible for its early eminence in linguistics. Any member of the Linguistic Society of America knows the veneration still accorded him.

Classification of languages. Morphological classifications; their defects. Schleicher's morphological notation. Classification by general rank. Superior value of genetic division. Bearing of linguistic science on ethnology. Comparative advantages and disadvantages of linguistic and physical evidence of race. Indo-European languages and race mainly coincident. Difficulty of the ethnological problem. Inability of language to prove either unity or variety of human species. Accidental correspondences; futility of root comparisons.

Our inquiries into the history and relations of human languages have last brought us to a review and brief examination of their groupings into families, so far as yet accomplished by the labors of linguistic students. The families may be briefly recapitulated as follows. First in rank and importance is the Indo-European, filling nearly the whole of central and southern Europe, together with no inconsiderable portion of south-west Asia, and with colonies in every quarter of the globe; it includes the languages of nearly all the modern, and of some of the most important of the ancient, civilized and civilizing races. Next is the Semitic, of prominence in the world's history second only to the Indo-European, having its station in Arabia and the neighboring regions of Asia and Africa. Then follows the loosely aggregated family of the Scythian dialects, as we chose to term them, ranging from Norway almost to Behring's Straits, and occupying a good part of central Asia also, with outliers in southern Europe (Hungary and Turkey), and possibly in southernmost Asia (the Dekhan, or peninsula of India). Further, the southeastern Asiatic or monosyllabic family, in China and Farther India, and countries adjacent to these; the Malay-Polynesian and Melanesian, scattered over the numberless islands of the Pacific and Indian Oceans; the Hamitic, composed of the Egyptian and its congeners, chiefly in northern Africa; the South-African, filling Africa about and below the equator; and the American, covering with its greatly varied forms our western continent, from the Arctic Ocean to the Antarctic. Besides these great families, we took note of several isolated languages or lesser groups, of doubtful or wholly unknown relationship: as those in extreme north-eastern Asia, in the Caucasian mountains, in central Africa; as the Basque in the Pyrenees, the Albanian in north-western Greece, the Yenisean in Siberia, and the extinct Etruscan in northern Italy.

The scheme of classification, as thus drawn out, was a genetical one, founded on actual historical relationship. Each family or group was intended to be made up of those tongues which there is found sufficient reason to regard as kindred dialects, as common descendants of the same original. We were obliged, however, to confess that our classification had not everywhere the same value, as the evidences of relationship were not of an equally unequivocal character in all the families, or else had been thus far incompletely gathered in and examined. Where, as in the case of Indo-European and Semitic speech, we find structural accordance combined with identity of material, as traced out and determined by long-continued and penetrating study on the part of many investigators, there the unity of the families is placed beyond the reach of reasonable doubt. But it is unfortunately true that these two are the only groups of wide extent and first-rate importance respecting which the linguistic student can speak with such fullness of confidence; everywhere else, there is either some present deficiency of information, which time may or may not remove, or the conditions are such that our belief in the genetic relationship must rest upon the more questionable ground of correspondence in structural development. We may by no means deny that morphological accordance is capable of rising to such a value as should make it a sufficient and convincing evidence of genetic unity; but it is evidently of a less direct and unmistakable character than material identity, and requires for its estimation a wider range of knowledge, a more acute insight, and a more cautious judgement. If two languages agree in the very material of which their words and apparatus of grammatical inflection are composed, to a

degree beyond what can possibly be regarded as the effect of accident or of borrowing, the conclusion that they are akin is inevitable; nothing but community of linguistic tradition can explain such phenomena: but agreement in the style only in which words are composed and thought expressed admits of being attributed to cause other than historical -- to equality of mental endowment, of intellectual force and training. We may look hopefully forward to the time when linguistic science shall have reached such a pitch of perfection, shall have so thoroughly mastered the infinitely varied phenomena of universal human language and traced out their causes, that she shall be able to separate with certainty the effects of ethnic capacity from those of transmitted habit: but that time has certainly not yet come; and, as the value of morphological accordances as evidence of genetic connection has hitherto been repeatedly overrated, so it will long, and always in unskilful or incautious hands, be peculiarly liable to a like mistreatment.

We have already had occasions to refer to and describe some of the principal structural peculiarities which are illustrated in the variety of human tongues; but it will be worth while here to bestow a few words farther upon them, and upon the systems of morphological classification to which they have served as foundation.

The languages of mankind have been divided into two grand classes, the monosyllabic (otherwise called isolating, or radical) and the polysyllabic (or inflectional). To the former belong the tongues of China and Farther India, with their relatives in the same quarter of Asia, and perhaps one or two idioms in other parts of the world. In them there is a formal identity of root and word; none of their vocables are made up of radical and formative elements, the one giving the principal idea, the other indicating its limitation, application, or relation; they possess no formally distinguished parts of speech. Usage may assign to some of their roots the offices which in inflectional tongues are filled by inflective endings, suffixes or prefixes; it may also stamp some as adjectives, others as nouns, as pronouns, as verbs, and so on: yet means of this sort can only partially supply their lack of the resources possessed by more happily developed languages; categories undistinguished in expression are but imperfectly, if at all, distinguished in apprehension; thought is but brokenly represented and feebly aided by its instrument. To the latter, or inflectional class, belong all the other languages of the world, which, whatever and however great their differences, have at least this in common, that their signs of category and relation are not always separate words, but parts of other words, that their vocables are, to some extent, made up of at least two elements, the one radical, the other formative. There can be, it is evident, no more fundamental difference in linguistics structure than this. And yet, it is not an absolute and determinate one. It lies in the nature of the case that, as the inflectional languages have grown out of a monosyllabic and noninflecting stage, there should be certain tongues, as there are in other tongues certain forms, which stand so closely upon the line of division between the two stages, that it is hard to tell whether they are the one thing or the other. In our own tongue, there is no definite division-line to be drawn anywhere in the series of steps that conducts from a mere collocation to a pure form-word -- from *house floor* to *house-top*, from *tear-filled* to *tearful*, from *godlike* to *godly*; and, in like manner, it is often a matter of doubt, in languages of low development, where isolation ends and where a loose agglutination begins. Thus, even the Chinese, the purest type of all the isolating structure, is by some regarded as, in its colloquial forms, and yet more in some of its dialects, a language of compounded words; and the possession of one or two real formative elements has been claimed for the Burmese; while the Himalaya is likely to furnish dialects whose character, as isolated or agglutinative, will be much disputed.

But the main objection to the classification we are considering is not so much its want of absolute distinctness (a defect incident to all classification, in every department of science) as its one-sidedness: it is too much like the proverbial lover's division of the world into two parts, that where the beloved object is and that where she is not: it leaves almost all human tongues in one huge class together. Accordingly a much more popular and current system distinguishes three primary orders, separating the mass of inflectional languages into such as are agglutinative, or attach their formative elements somewhat loosely to a root which is not liable to variation; and such as are inflective, or unite more thoroughly their radical and formative elements, and make internal changes of the root itself bear their part, either primarily or secondarily, in the expression of grammatical relations. The distinction between these three orders is well expressed by Professor Max Müller in the following terms:

1. Roots may be used as words, each root preserving its full independence.
2. Two roots may be joined together to form words, and in these compounds one root may lose its independence.
3. Two roots may be joined together to form words, and in these compounds both roots lose their independence.¹

No better scheme of division, of a simple and comprehensive character, has yet been devised than this, and it is likely to maintain itself long in use. It faithfully represents, in the main, three successive stages in the history of language, three ascending grades of linguistic development. But its value must not be overrated, nor its defects passed without notice. In the first place, it does not include all the possible and actually realized varieties in the mode of formation of words. It leaves altogether out of account that internal change of vowels which, as was shown in the eighth lecture, is the characteristic and principal means of grammatical inflection in the Semitic tongues. The distinctions of *qatala* 'he killed', *qutla* 'he was killed', *qattala* 'he massacred', *qātala* 'he tried to kill', *aqatala* 'he caused to kill' and the like, are not explainable by any composition of roots and loss of their independence, even though the somewhat analogous differences of *man* and *men*, *lead* and *led*, *sing* and *sang*, *sit* and *set*, do admit of such explanation. In the second place, it is liable to something of the same reproach of one-sidedness which lies against the former, the double method of classification. It puts into a separate class, as inflective languages, only two families, the Indo-European and the Semitic: these are, to be sure, of wide extent and unapproached importance; yet the mass of spoken tongues is still left in one immense and heterogeneous body. And finally, a yet more fundamental objection to the scheme is this heterogeneity, which characterizes not its middle class alone, but its highest also. It classes Indo-European and Semitic speech together, as morphologically alike, while yet their structural discordance is vastly greater than that which separates Indo-European from many of the agglutinative tongues -- in some respects, even greater than that which separates Indo-European from the generality of agglutinative and from the isolating tongues. Not only are the higher Scythian dialects, as the Finnish and Hungarian, almost inflective, and inflective upon a plan which is sufficiently analogous with the Indo-European, but, from a theoretical point of view (however the case may be historically), Chinese, Scythian, and Indo-European are so many steps in one line and direction of progress, differing in degree but not in kind: Semitic speech, on the other hand, if it started originally from the same or a like center, has reached an equally distant point in a wholly different direction. The two inflective families may lie upon the same circumference, but they are separated by the whole length of the diameter, being twice as far from one another as is either from the indifferent middle. A less fundamental discordance, perhaps, but an equal variety of structure, belongs to those tongues which are classed together as agglutinative. The order includes such extremes in degree of agglutination as the barren and almost isolating Manchu

or Egyptian, on the one hand, and, on the other, the exuberantly aggregative Turkish and the often excessively agglomerative American or Basque; it includes such differences in the mode of agglutination as are presented by the Scythian, which makes its combinations solely by suffixes, and the Malay or South-African, which form theirs mainly by prefixes. Here, again, it may be made a question whether the morphological relationship of Scythian and Indo-European be not closer than that of Scythian and Malay. The principle which divides the former is, it is true, reasonably to be regarded as of a higher order than that which divides the two latter; yet it is more teleological than morphological; it concerns rather the end attained than the means of attainment. The reach and value, too, of the distinctively inflective principle, as developed in Indo-European language, is, as I cannot but think, not infrequently overrated. In no small part of the materials of our own tongue, for example, the root or theme maintains its own form and distinction from the affixes, and these their distinction from one another, not less completely than is the case in Scythian. All the derivatives of *love*, as *love-d*, *lov-ing*, *lov-er*, *lovely*; the derivatives of *true*, as *tru-ly*, *tru-th*, *tru-th-ful*, *tru-th-ful-ly*, *un-tru-th-ful-ly* -- these, and the host of formations like them, are strictly agglutinative in type: but we do not recognize in them any inferiority as means of expression to those derivatives in which the radical part has undergone a more marked fusion, or disguising change. *Loved* from *love* is as good a preterit as *led* from *lead*, or *sang* from *sing*; *truth* from *true* is as good an abstract as *length* from *long*, or *filth* from *foul*; nor is the Latin *lædo-r*, 'I am hurt', from *lædo*, 'I hurt', inferior to the nearly equivalent Arabic *qutila*, from *qatala*. The claim might plausibly enough be set up that the unity which the Scythian gives to its derivative words by making the vowels of their suffixes sympathize with that of the principal or radical element, is at least as valuable, in itself considered, as the capacity of an Indo-European root to be phonetically affected by the ending that is attached to it -- a subjection of the superior to the inferior element. Not that the actual working-out of the latter principle in the tongues of our family has not produced results of higher value than the former has led to; but this may be owing in great measure to the way in which the two have been handled respectively.

The immensely comprehensive order of agglutinative languages is sometimes reduced a little by setting apart from it a polysynthetic or incorporative class, composed of the Basque and the American family. This, however, is rather a subdivision of one of the members of the triple system than the establishment of a new, a quadruple, scheme of classification.

Professor Müller² seeks to find a support and explanation of the threefold division of human language which we are now considering by paralleling it with the threefold condition of human society, as patriarchal, nomadic, and political. Monosyllabic or "family languages" are in place, according to him, among the members of a family, whose intimacy, and full knowledge of one another's dispositions and thoughts, make it possible for each to understand the other upon the briefest and most imperfect hints. Agglutinative or "nomadic languages" are required by the circumstances of a wandering and unsettled life; the constantly separating and reassembling tribes could not keep up a mutual intelligence if they did not maintain the integrity of the radical elements of their speech. Inflective or "state languages" are rendered possible by a regulated and stable condition of society, where uninterrupted intercourse and constant tradition facilitate mutual comprehension, notwithstanding the fusion and integration of root and affix. The comparison is ingenious and entertaining, but it is too little favored by either linguistic philosophy or linguistic history to be entitled to any other praise. It would fain introduce into the processes of linguistic life an element of reflective anticipation, of prevision and deliberate provision, which is altogether foreign to them. That wandering tribes should, in view of their scanty intercourse, their frequent partings to be followed by possible meetings, conclude that they ought to keep their roots unmodified, is quite inconceivable; nor

is it easy to see what purpose the resolution should serve, if the endings are at the same time to be suffered to vary so rapidly that mutual unintelligibility is soon brought about. In every uncultivated community, the language is left to take care of itself; it becomes what the exigencies of practical use make it, not what a forecasting view of future possibilities leads its speakers to think that it might with advantage be made to be: let two tribes be parted from one another, and neither has any regard to the welfare of its fellow in shaping its own daily speech. In point of fact, moreover, Indo-European languages were inflective, were "state languages", long before the tribes had formed states -- while many of them were as nomadic in their habits as the wildest of the so-called Turanian tribes. And to denominate the immense and highly-organized Chinese empire a mere exaggerated family, and account for the peculiarities of its speech by reference to the conditions of a family, is fanciful in the extreme. No nomenclature founded on such unsubstantial considerations has a good claim to the acceptance of linguistic scholars; and the one in question has, it is believed, won no general currency.

A very noteworthy attempt has been made within a short time by Professor Schleicher, of Jena,³ to give greater fulness and precision to the morphological classification and description of language, by a more thorough analysis, and a kind of algebraic notation, of morphological characteristics. A pure root, used as a word without variation of form or addition of formative elements, he denotes by a capital letter, as A: a connected sentence expressed by a series of such elements, as is sometimes the case in Chinese, he would represent by A B C, and so on. Such a sentence we may rudely illustrate by an English phrase like *fish like water* in which each word is a simple root or theme, without formal designation of relations.⁴ A root which, while retaining its substantial independence, is so modified in signification and restricted in application as to form an auxiliary or adjunct to another root (which was shown in the last lecture to be a frequent phenomenon in the isolating languages), is marked by an accented letter, as A': thus, in the English *shall like* would be represented by A' + A; *shall have put*, by A' + B' + A: the interposed sign of addition indicating the closeness of relation between the elements. The position of the accented letters in the formula would point out whether the auxiliaries are placed after the main word, as in Burmese, or before it, as in Siamese, or on either or both sides, as sometimes in Chinese.

If, now, the formative element is combined with the radical into a single word, it is indicated by a small letter, which is put before or after the capital which stands for the root, according to the actual position of the elements in combination. Thus, if we represent *true* by A, *untrue* would be aA; *truly* or *truth* would be Aa; *untruly*, aAb; *untruthfully*, aAbcd; and so on. Expressions of this kind belong to the agglutinative type of structure; and they are, it is plain, capable of very considerable variation, so as to be made to denote the various kinds and degrees of agglutination. It is possible, for example, to distinguish the endings of inflection from those of derivation, or elements of pronominal from those of predicative origin, by the use of a different series of letters (as the Greek) to indicate one of the classes: thus, *truths* might be Aaα, but *truthful*, Aab; *babalarumdan*, in Turkish (see above, p. 318), might be Aαβγ, but *sevishdirilememek*, Aabcdef. An adroit use of such means of distinction might enable one even to set forth with sufficient clearness the peculiarities and intricacies of polysynthetic tongues.

Again, an inflective change of the root itself for the expression of grammatical relations is denotable by exponents attached to the root-symbol. Thus, *man* being A, *men* would be A^a; *men's*, A^aa, *sang, sung, song*, from *sing*, would be denoted by A^a, A^b, A^c; *spoken* from *speak*, would be A^aa; its German counterpart, *gesprochen*, aA^ab. And in the Semitic tongues, where

the root never appears without a vocalization which is formal and significant, the constant radical emblem would be A^a.⁵

Compounds, finally, would be expressed in this method by putting side by side the symbols expressive of their separate members, the capital letters with their modifications and adjuncts. *House-top*, would be AB; *songwriter*, A^aBa; and so on.

It is unnecessary to explain with any more of detail Professor Schleicher's system of morphological notation, or to spend many words in pointing out its convenience and value. It may evidently be made a means of apprehending distinctly, and setting forth clearly, the main structural features of any language. It will not, indeed, enable us to put in a brief and compact form of statement the whole morphological character of every spoken tongue. Most tongues admit no small variety of formations; each must be judged by its prevailing modes of formation, by the average of highest and lowest modes, by their respective frequency of application, and the purposes they are made to serve. It does not help us to a simple and facile scale and classification of all the dialects of mankind; but this is to be imputed to it as a merit, not as a fault: it thus fairly represents the exceeding variety of languages, the complexity of the characteristics which distinguish them, and their incapacity of separation into a few sharply defined classes.

No single trait or class of traits, however fundamental may be its importance, can be admitted as a definite criterion by which the character of a language shall be judged, and its rank determined. We saw reason above to challenge the absolute superiority of the inflective principle, strongly as it may indicate a valuable tendency in language-making. Certainly it is wholly conceivable that some language of the agglutinative class may decidedly surpass in strength and suppleness, in adaptedness to its use as the instrument and aid of thought, some other language or languages of the inflective class. Not morphological character alone is to be taken account of; for not every race of equal mental endowment has originated and shaped a language, any more than an art, of equivalent formal merit. Some one needed item of capacity was wanting, and the product remains unartistic; or the work of the earliest period, which has determined the grand features of the whole after-development, was unadroitly performed; the first generations left to their successors a body of constraining usages and misleading analogies, the influence of which is not to be shaken off; and the mental power of the race is shown by the skill and force, with which it wields an imperfect instrument. Many a tongue thus stands higher, or lower, in virtue of the sum of its qualities, than its morphological character would naturally indicate. The Chinese is one of the most striking instances of such a discordance; though so nearly formless, in a morphological sense, it is nevertheless placed by Wilhelm von Humboldt and Steinthal⁶ in their higher class of "form languages", along with the Indo-European and Semitic, as being a not unsuitable incorporation of clear logical thought; as, though not distinctly indicating relations and categories, yet not cumbering their conception, their mental apprehension, by material adjuncts which weaken and confuse the thought.

But further, apart from this whole matter of morphological form, of grammatical structure, of the indication, expressed or implied, of relations, another department contributes essentially to our estimate of the value of a language: namely, its material content, or what is signified by its words. The universe, with all its objects and their qualities, is put before the language-makers to be comprehended and expressed, and the different races, and tribes, and communities, have solved the problem after a very different fashion. Names-giving implies not merely the distinction of individual things, but no less, classification and analysis, in every kind, and of

every degree of subtlety. There are conceptions, and classes of conceptions, of so obvious and practical character, that their designations are to be found in every language that exists or ever has existed: there are hosts of others which one community, or many, or the most, have never reached. Does a given tongue show that the race which speaks it has devoted its exclusive attention to the more trivial matters in the world without and within us, or has it apprehended higher things? Has it, for example, so studied and noted the aspects of nature that it can describe them in terms of picturesque power? Has it distinguished with intellectual acuteness and spiritual insight the powers and operations of our internal nature, our mind and soul, so that it can discuss psychological questions with significance and precision? Any dialect, isolating or inflective, monosyllabic or polysynthetic, may be raised or lowered in the scale of languages by the characteristics which such inquiries bring to light. In these, too, there is the widest diversity, depending on original capacity, on acquired information and civilization, and on variety of external circumstance and condition -- a diversity among different branches of the same race, different periods of the same history, and, where culture and education introduce their separating influences, between different classes of the same community. Our earliest inquiries (in the first three lectures) into the processes of linguistic growth showed us that the changes which bring about this diversity, the accretions to the vocabulary of a tongue, the deepening of the meaning of its words, are the easiest of all to make, the most pervading and irrepressible in their action, throughout every period of its existence. Here, then, more than in any other department, it is practicable for later generations to amend and complete the work of earlier; and yet, such is the power of linguistic habit that, even here, original infelicities sometimes adhere to a language during its whole development.

To make out a satisfactory scheme of arrangement for all human tongues upon the ground of their comparative value, accordingly, will be a task of extreme difficulty, and one of the last results reached by linguistic science. It will require a degree of penetration into the inmost secrets of structure and usage, an acuteness of perception and freedom from prejudice in estimating merits of diverse character, and a breadth and reach of learning, which will be found attainable only by a few master-minds. Great play is here afforded for subjective views, for inherited prepossessions, for sway of mental habits. Who of us can be trusted fairly to compare the advantages of his own and of any other language?

There can be no question that, of all the modes of classification with which linguistic scholars have had to do, the one of first and most fundamental importance is the genetical, or that which groups together, and holds apart from others, languages giving evidence of derivation from the same original. It underlies and furnishes the foundation of all the remaining modes. There can be no tie between any two dialects so strong as that of a common descent. Every great family has a structural character of its own, whereby, whatever may be the varying development of its members, it is made a unit, and more or less strikingly distinguished from the rest. Whatever other criterion we may apply is analogous in its character and bearings with the distinction of apetalous, monopetalous, and polypetalous, or of monogynous, digynous, etc., or of exogenous and endogenous, or of phenogamous and cryptogamous, in the science of botany -- all of them possessing real importance in different degrees, variously crossing one another, and marking out certain general divisions; while the arrangement of linguistic families corresponds with the division of plants into natural orders, founded upon a consideration of the whole complicate structure of the things classified, contemplating the sum of their characteristic qualities; fixing, therefore, their position in the vast kingdom of nature of which they are members, and determining the names by which they shall be called. The genetical classification is the ultimate historical fact which the historical method of linguistic study directly aims at establishing. With its establishment are bound up those more

general historical results, for the ethnological history of mankind, which form so conspicuous a part of the interest of our science.

To subjects connected with this department of interest, the bearing of linguistic science on ethnology, we have next to turn our attention, occupying with them the remainder of the present lecture.

One of the first considerations which will be apt to strike the notice of any one who reviews our classification of human races according to the relationship of their languages, is its non-agreement with the current divisions based on physical characteristics. The physicists, indeed, are far from having yet arrived at accordance in their own schemes of classification, and the utter insufficiency of that old familiar distinction of Caucasian, Mongol, Malay, African, and American, established by Blumenbach, and probably learned by most of us at school, is now fully recognized. But it does not seem practicable to lay down any system of physical races which shall agree with any possible scheme of linguistic races. Indo-European, Semitic, Scythian, and Caucasian tongues are spoken by men whom the naturalist would not separate from one another as of widely diverse stock; and, on the other hand, Scythian dialects of close and indubitable relationship are in the mouths of peoples who differ as widely in form and feature as Hungarians and Lapps; while not less discordance of physical type is to be found among the speakers of various dialects belonging to more than one of the other great linguistic families.

Such facts as these call up the question, as one of high practical consequence, respecting the comparative value of linguistic and of physical evidence of race, and how their seeming discrepancy is to be reconciled. Some method of bringing about a reconciliation between them must evidently be sought and found. For neither linguistic nor physical ethnology is a science of classification merely; both claim to be historical also. Both are working toward the same end -- namely, a tracing out of the actual connection and genealogical history of human races -- and, though each must follow its own methods, without undue interference from without, they cannot labor independently, careless each of the other's results. To point out the mode of reconciliation, to remove the difficulties which lie in the way of harmonious agreement between the two departments of ethnological science, I shall not here make the least pretence; such a result can be attained only when the principles and conclusions of both are advanced and perfected far beyond their present point. All that we can attempt to do is to notice certain general considerations bearing upon the subject, and requiring not to be lost from sight by either party; and especially, to point out the limitations and imperfections of both physical and linguistic evidence, and how necessary it is that each should modestly solicit and frankly acknowledge the aid of the other.

How language proves anything concerning race, and what it does and does not prove, was brought clearly to light in the course of our earliest inquiries into its nature and history. What we then learned respecting the mode of acquisition and transmission of each man's, and each community's, "native tongue" was sufficient to show us the total error of two somewhat different, and yet fundamentally accordant, views of language, which have been put forth and defended by certain authorities -- the one, that speech is to man what his song is to the bird, what their roar, growl, bellow are to lions, bears, oxen; and that resemblances of dialect therefore no more indicate actual genetic connection among different tribes of men than resemblances of uttered tone indicate the common descent of various species of thrushes, or of bears, inhabiting different parts of the world: the other, that language is the immediate and necessary product of physical organization, and varies as this varies: that an Englishman, a

Frenchman, and a Chinaman talk unlike one another because their brains and organs of articulation are unlike; and that all Englishmen talk alike, as do all Frenchmen, or all Chinamen, because, in consequence of their living amid similar physical conditions, and their inheritance of a common race-type, their nervous and muscular systems minutely correspond. And doctrines akin with these are more or less distinctly and consciously implied in the views of those who hold that language is beyond the reach of the free-agency of men, and can be neither made nor changed by human effort. All who think thus virtually deny the existence of such a thing as linguistic science, or reduce it to the position of a subordinate branch of physiology: speech becomes a purely physical characteristic, one among the many which by their common presence make up man, and by their differences distinguish the different varieties of men; and it would be for the physicist to determine, here, as in the case of other physical characteristics, how far its joint possession indicated specific unity, or how far its diversities of kind indicated specific variety. All these false theories are brushed away at once by our recognition of the fact that we do not produce our speech from within, but acquire it from without ourselves; that we neither make nor inherit the words we use, whether of our native tongue or of any other, but learn them from our instructors.

But from this it also follows that no individual's speech directly and necessarily marks his descent; it only shows in what community he grew up. Language is no infallible sign of race, but only its probable indication, and an indication of which the probability is exposed to very serious drawbacks. For it is evident that those who taught us to speak, of whose means of expression we learned to avail ourselves, need not have been of our own kith and kin. Not only may individuals, families, groups of families, of almost every race on earth, be, as at present in America, turned into and absorbed by one great community, and made to adopt its speech, but a strange tongue may be learned by whole tribes and nations of those who like our negroes, are brought away from their native homes, or, like the Irish, have lived long under a foreign yoke, or like the Celts of ancient Gaul and Spain, have received laws, civilization, and religion from another and a superior race. Languages unnumbered and innumerable have disappeared from off the face of the earth since the beginning of human history; but only in part by reason of the utter annihilation of the individuals who had spoken them; more often, doubtless, by their dispersion, and incorporation with other communities, of other speech. Everywhere, too, where the confines of different forms of speech meet, there goes on more or less of mixture between them, or of effacement of the one by the other. Yet, on the other hand, mixture of language is not necessarily proof of mixture of race. We can trace the genesis of a very large part of our own vocabulary to the banks of the Tiber, but hardly the faintest appreciable portion of our ancestry is Roman. We obtained our Latin words in the most strangely roundabout way: they were brought us by certain Germanic adventurers, the Normans, who had learned them from a mixed people, the French, chiefly of Celtic blood; and these, again, had derived them from another heterogenous compound of Italian races, among whom the Latin tribe was numerically but a feeble element.

Of such nature are the difficulties in the way of our inferring the race-connections of an individual or of a community with certainty from the relations of the language which either speaks. They are of undeniable force and importance, and must be borne constantly in mind by every one who is pursuing investigations, and laying down conclusions, in linguistic ethnology. They drive him to seek after some other concurrent test of descent, which shall serve to check and control his own results; and they make him court and welcome the aid of the physicist, as well as of the archaeologist and the historian.

But, notwithstanding this, their consequence, and their power to invalidate linguistic evidence, must not be overrated. They concern, after all, what in the grand sum of human history are the exceptions to a general rule. It still remains true that, upon the whole, language is a tolerably sure indication of race. Since the dawn of time, those among whom individuals were born, of whom they learned how to express their mental acts, have been usually of their own blood. Nor do these difficulties place linguistic evidence at any marked disadvantage as compared with the physical. They are, to no small extent, merely the effect, on the side of language, of the grand fact which comes in constantly to interfere with ethnological investigations of every kind: namely, that human races do not maintain themselves in purity, that men of different descent are all the time mingling, mixing their blood, and crossing all their race-characteristics. Fusion and replacement of languages are impossible, except when men of different native speech are brought together as members of the same community, so that there takes place more or less of an accompanying fusion of races also; and then the resulting language stands at least a chance of being a more faithful and intelligible witness of the mixture than the resulting physical type. That the modern French people, for example, is made up of a congeries of Celtic, Germanic, and Italian elements is to a certain extent -- although only the aid of recorded history enables us fully to interpret the evidences -- testified by the considerable body of the Celtic and Germanic words mixed with the Latin elements of the French language; but no physicist could ever have derived the same conclusion from a study of the French type of structure. The physicist claims that there may be a considerable infusion of the blood of one race into that of another, without perceptible modification of the latter's race-type; the intruded element, if not continuously supplied afresh, is overwhelmed and assimilated by the other and predominant one, and disappears: that is to say, as we may interpret the claim, its peculiarities are so diluted by constant remixture that they become at last inappreciable. In any such case, then, traces discoverable in the language may point out what there is no other means of ascertaining. It is true that, on the other hand, the spread and propagation of a language may greatly exceed that of the race to which it originally belonged, and that the weaker numerical element in a composite community may be the one whose dialect becomes the common tongue of all. Thus the Latin swept away the primitive tongues of a great part of southern and central Europe, and has become mingled with the speech of all civilized nations, in the Old world and the New. But we are not rashly to infer that such things have happened over and over again in the history of the world. We have rather to inquire what influences make possible a career like that of the Latin, what lends the predominant and assimilating force to a single element where many are combined. And, as was pointed out in the fourth lecture, we shall find that only superior culture and the possession of a literature can give to any tongue such great extensibility. The Persians, the Mongols, have at one period and another exercised sway over an empire not less extensive than the Roman, but their languages were never spread far beyond the limits of the peoples to which they properly belonged. The German tribes, too, conquered in succession nearly every kingdom of Europe; but it was only in order to lose themselves and their dialects together, almost undiscoverably, in the communities and languages into which they entered. Nay, even the wide-spread Greek colonies, with the superiority of Greek culture to aid them, were not able to make the Greek the tongue of many nations. There was an organizing and assimilating force in Roman dominion which the world has nowhere else seen equalled. And if the career of the Arabic furnishes something like a parallel to that of the Latin, it is due, not to the sword of Islam, but to the book, and to the doctrine and policy which the book enjoined and the sword imposed. Since, then, such movements must be connected with culture and literature, they cannot but leave their record in written history, and find there their explanation. Nor could there occur in every region or in every period such an inpouring and assimilation of nationalities as is now going on among us; it is only possible under the conditions of civilized life in the nineteenth

century, and the historical conditions which have been created here. The wild and uncultivated races of the earth generally are simply maintaining themselves by growth from generation to generation, taking in no immigrants, sending out no emigrants. Culture makes an astonishing difference in the circumstances and fates of those portions of mankind over which its influence is extended, and it would be the height of folly to transfer to barbarous races and uncivilized periods of human history analogies and conclusions drawn from the history of cultivated nations and tongues. The farther we go back into the night of the past, the greater is the probability that the limits of race and speech approximately coincide, and that mixture of either is accompanied by that of the other.

And if, in certain circumstances, a race may change its tongue, while yet retaining in its physical structure evidence of its descent, a race may also undergo a modification of physical type, and still offer in its speech plain indications of its real kindred. If the talk of our colored citizens does not show that they were brought from Africa, neither do the shape and bearing of the Magyars show that they came from beyond the Ural, nor those of the Osmanli Turks that their cousins are the nomads of the inhospitable plateau of central Asia. This is the grand drawback to the cogency of physical evidence of race, and it fully counterbalances those which affect the cogency of linguistic evidence, rendering the aid of the linguist as necessary to the physical ethnologist as is the latter's to the linguistic ethnologist. Physical science is as yet far from having determined the kind, the rate, and the amount of modification which external conditions, as climate and mode of life, can introduce into a race-type; but that, within certain undefined limits, their influence is very powerful, is fully acknowledged. There is, to be sure, a party among zoologists and ethnologists who insist much upon the dogma of "fixity of type," and assert that all human races are original; but the general tendency of scientific opinion is in the other direction, toward the fuller admission of variability of species. The first naturalists are still, and more than ever, willing to admit that all the differences now existing among human races may be the effects of variation from a single type, and that it is at least not necessary to resort to the hypothesis of different origins in order to explain them. In the fact that Egyptian monuments of more than three thousand years' antiquity show us human varieties and canine varieties, bearing the same characteristics as at the present day, there is nothing to disturb this conclusion; for, on the one hand, a period of three thousand years is coming to be regarded as not including a very large part of man's existence on the earth; and, on the other hand, such a fact only proves the persistency which a type may possess when fully developed, and is of very doubtful avail to show the originality of the type. Something analogous is to be seen in language. The speech of our rude Germanic ancestors of the same remote period, had we authentic record of it, would beyond question be found to have possessed already a general character clearly identifying it with Germanic tongues still existing, and sharply sundering it from Greek, from Slavonic, from Celtic, and all the other Indo-European branches; yet we do not doubt that the Germanic type of speech is derived, a secondary one. In settling all these controverted points, in distinguishing between original diversity and subsequent variation, in establishing a test and scale for the possibilities and the rate of physical change, the physical ethnologist will need all the assistance which historical investigations of every kind can furnish him; and the greater part must come to him from the student of language.

As the Indo-European family of language is that one of which the unity, accompanying a not inconsiderable variety of physical type in the peoples who speak its dialects, is most firmly established, and as therefore it may naturally be regarded as furnishing a prominent illustration of the bearing of linguistic conditions on physical inquiries into the history of man, it is perhaps worth our while to refer to a theory respecting Indo-European speech which has

found of late a few supporters of some note and authority, and which, if accepted, would altogether deprive it of ethnological value. The assertion, namely, is put forth, that the apparent unity of languages of this family is not due to a prevailing identity of descent in the nations to which they belong, but to the influence of some single tribe, whose superior character, capacity, and prowess enabled it to impose its linguistic usages on distant and diverse races. By some it is even assumed that the correspondence of words and forms exhibited by the so-called Indo-European tongues are not fundamental and pervading, but superficial, consisting in scattered particulars only, in such designations of objects and conceptions as one race might naturally make over into the keeping of another, along with a knowledge of the things designated. This assumption, however, the expositions, and reasonings of our fifth and seventh lectures will have shown to be wholly erroneous: the correspondences in question are fundamental and pervading: they constitute an identity which can only be explained by supposing those who founded these tongues to have been members together of the same community. Others, who know the European languages too well to maintain respecting their relations any so shallow and untenable theory, yet try to persuade themselves that the analogy of the Latin will sufficiently account for their extension over so wide a region; that, as Etruscans, Celts, Iberians, Germans, learned to speak a tongue of Roman origin, so the populations of Europe and Asia, of diverse lineage, learned to speak a common Indo-European dialect; and that, accordingly, the differences of Greek, Sanskrit, Celtic, and Slavonic are parallel to those of Italian, French, and Spanish. But this theory, though more plausible and defensible than the other, is hardly less untenable. It exhibits a like neglect of another class of linguistic principles: of those, namely, which underlie and explain the abnormal extension of tongues like the Latin and the Arabic: we have more than once had occasion to set them forth above. In order to establish an analogy between the history of Latin and that of Indo-European speech, and to make the former account satisfactorily for the latter, it would be necessary to prove, or at least to render probable, the existence in a very remote antiquity of those conditions which in modern times have been able to give such a career to the language of Rome. But, so far as we can at present see, there must have been a total lack of the required conditions. Force of character, warlike prowess, superiority of inherent mental capacity, undeveloped or partially developed, the Indo-Europeans may probably have possessed, as compared with the more aboriginal races of Europe; but these are not the forces which enable the language of a small minority to stifle that of the masses of a people and to take its place; if it were so, southern Europe would now be talking Germanic instead of Romanic dialects. The rude beginnings of a higher civilization, as metals, instruments, seeds, domestic animals, arts, may possibly have been theirs; yet even these would merely engraft upon the languages of the peoples to whom they were made known certain words and phrases. Only the resources of an enlightened culture, supplemented by letters, literature, and instruction, could give to any tongue the expansive force demanded by the theory we are considering; and of these, it is needless to say, no traces are to be found in Indo-European antiquity. We have no good ground, then, for doubting that the great extension of the languages of our family was effected by the usual causes which act among uncultivated tongues: that is to say, mainly by the growth, spread and emigration of a single race; by its occupancy of ever new territory, accompanied with the partial destruction and partial expulsion, sometimes also with the partial incorporation and absorption, of the former inhabitants; the element of population which inherited the speech and institutions of the original Indo-European tribe being ever the predominant one in each new community that was formed. How many fragments of other races may have been worked in during the course of the family's migrations -- how far the purity of blood of one or another of its branches or sub-branches may have been thus affected by successive partial dilutions, so that some of their present peculiarities of type are attributable to the mixture -- is, of course, a legitimate matter

for inquiry, and one upon which we may even look for information from their languages, when these shall have been more narrowly examined. But upon the whole, in the light of our present knowledge, we are justified in regarding the boundaries of Indo-European speech as approximately coinciding with those of a race; the tie of language represents a tie of blood.

If the limitations and imperfections of the two kinds of evidence are thus in certain respects somewhat evenly balanced, there are others in which linguistic evidence has a decidedly superior practical value and availability. The differences of language are upon a scale almost infinitely greater than those of physical structure. They are equal in their range and variety to those found in the whole animal kingdom, from the lowest organisms to the highest, instead of being confined within the limits of the possible variation of a single species. Hence they can be much more easily and accurately apprehended, judged, and described. Linguistic facts admit of being readily collected, laid down with authentic fidelity, and compared coolly, with little risk of error from subjective misapprehension. They are accessible to a much greater number of observers and investigators. Exceptional capacity, special opportunity, and a very long period of training, are needed to make a reliable and authoritative describer of race-characteristics. It is true, that to distinguish from one another very diverse types, like the European and African, is a task which presents no difficulty. But, though we should all, in nine cases out of ten, recognize a native of Ireland at sight, who among us could trust himself to make a faithful and telling description of the ideal Irishman, such that, by its aid, a person not already by long experience made familiar with the type would recognize it when met with? The peculiarities of the native Irish dialect, however, are capable of being made unmistakably plain to even the dullest apprehension. A few pages or phrases, often even a few words, brought back by a traveller or sojourner in distant lands from some people with which he has made acquaintance, are likely to be worth vastly more for fixing their place in the human family than the most elaborate account he can give of their physical characteristics. Photography, with its utter truth to nature, can now be brought in as a most valuable aid to physical descriptions, yet cannot wholly remove the difficulty, giving such abundant illustration as shall enable us to analyze and separate that which is national and typical from that which is individual and accidental. This last, indeed, is one of the marked difficulties in physical investigations. Two persons may readily be culled from two diverse races who shall be less unlike than two others that may be chosen from the same race. While, on the contrary, words and phrases taken down from the lips of an individual, or written or engraved by one hand, can be no private possession; they must belong to a whole community.

The superior capacity of the remains of language to cast light upon the affinities of races needs only be illustrated by an instance or two. What could have impregably established the ethnological position of the ancient Persians like the decipherment of the inscriptions of Darius and his successors, which show that they spoke a dialect so nearly akin with those of Bactria and India that it can be read by the latter's aid? What could exhibit the intimate mixture of races and cultures in the valley of the Euphrates and Tigris, and the presence there of an important element which was neither Indo-European, nor Semitic, except the trilingual inscriptions of the Mesopotamian monuments? What a pregnant fact in African ethnology will be, if fully and irrefragably proved, the relationship of the Hottentot dialects with the ancient Egyptian! What but the preserved fragments of their speech could have taught us that the Etruscans had no kindred with any other of the known races inhabiting Europe? And when would physical science ever have made the discovery that the same thing is true of the Basques, whom yet it has all the opportunity which it could desire to study? But the most important of the advantages belonging to linguistic science, in its relation to ethnology, is that to which allusion was made at the very outset of our discussions: namely, that language tells

so much more respecting races than lies within the reach or scope of the physicist. In every part and particle, it is instinct with history. It is a picture of the internal life of the community to which it belongs; in it their capacities are exhibited, their characters expressed; it reflects their outward circumstances, records their experiences, indicates the grade of knowledge they have attained, exhibits their manners and institutions. Being itself an institution, shaped by their consenting though only half-conscious action, it is an important test of national endowment and disposition, like political constitution, like jurial usage, like national art. Even where it fails to show strict ethnic descent, it shows race-history of another sort -- the history of the influence which, by dint of superior character and culture, certain races have exercised over others. The spread of the Latin has swept away and obliterated some of the ancient landmarks of race, but it has done so by substituting another unity for that of descent; its present ubiquity illustrates the unparalleled importance of Rome in the history of humanity.

For these reasons, and such as these, the part which language has to perform in constructing the unwritten history of the human race must be the larger and more important. There are points which physical science alone can reach, or upon which her authority is superior: but in laying out and filling up the general scheme, and especially in concerting what would else be a barren classification into something like a true history, the work must chiefly be done by linguistic science.

The considerations we have been reviewing will, it is hoped, guide us to a correct apprehension of the relations of these two branches of ethnological study. Discord between them, questions as to respective rank, there is or should be none. Both are legitimate and necessary methods of approaching the solution of the same intricate and difficult question, the origin and history of man on the earth -- a question of which we are only now beginning to understand the intricacy and difficulty, and which we are likely always to fall short of answering to our satisfaction. There was a time, not many years since, when the structure and history of the earth-crust were universally regarded as a simple matter, the direct result of a few fiats, succeeding one another within the space of six days and nights: now, even the school-boy knows that in the brief story of the Genesis are epitomized the changes and developments of countless ages, and that geology may spend centuries in tracing them out and describing them in detail, without arriving at the end of her task. In like manner has it been supposed that the first introduction of man into the midst of the prepared creation was distant but six or seven thousand years from our day, and we have hoped to be able to read the record of so brief a career, even back to its beginning; but science is accumulating at present so rapidly, and from so many quarters, proofs that the time must be greatly lengthened out, and even perhaps many times multiplied, that this new modification of a prevailing view seems likely soon to win as general an acceptance as the other has already done. And the different historical sciences are seeing more and more clearly their weakness in the presence of so obscure a problem, and confessing their inability to give categorical answers to many of the questions it involves.

Such a confession on the part of linguistic science, with reference to one point of the most fundamental interest and importance in human history, it next devolves upon us to make.

A second question, namely, which cannot but press itself upon our attention, in connection with the survey we have taken of the grand divisions of human speech, is this: What is the scope and bearing of the division into families? Does it separate the human race into so many different branches, which must have been independent from the very beginning? Does linguistic science both fail to find any bond of connection between the families and see that

no such bond exists? Or, in short, what has the study of language to say respecting the unity of the human race?

This is an inquiry to which, as I believe, the truths we have established respecting the character and history of language will enable us readily to find a reply. But that reply will be only a negative one. Linguistic science is not now, and cannot hope ever to be, in condition to give an authoritative opinion respecting the unity or variety of our species. This is not an acknowledgement which any student of language likes to make; it may seem to savor, too, of precipitation on the part of him who makes it; of a lack of faith in the future of his science -- a science which, although it has already accomplished so much, has yet confessedly only begun its career. That those linguistic scholars -- for such there are -- are over-hasty and over-credulous who suppose themselves to have proved already, by the evidence of language, that all mankind are akin by blood as well as by nature, will be conceded by many who are yet unwilling to give up all hope of seeing the proof one day satisfactorily made out. Let us, then, enter into a brief examination of the point, and a consideration of the grounds upon which is founded the view we have taken.

To show, in the first place, that linguistic science can never claim to prove the ultimate variety of human races will be no long or difficult task. That science, as we have seen, regards language as something which has grown up, in the manner of an institution, from weak and scanty beginnings; it is a development out of germs; it started with simple roots, brief in form and of indeterminate meaning, by the combination of which words came later into being. And the existing differences of speech among men are, at least to a very considerable extent, the result, not of original diversity, but of discordant growth. Now we cannot presume to set any limits to the extent to which languages once the same may have grown apart from one another. It matters not what opinion we may hold respecting the origin of the first germs of speech: if we suppose them to have been miraculously created and placed in the mouths of the first ancestors of men, their present differences would not justify us in believing that different sets must have been imparted to different pairs, or groups, of ancestors; for the same influences which have so obscured the common descent of English, Welsh, and Hindustani, for example, may, by an action more prolonged or more intense, have transformed germs originally common beyond even the faintest possibility of recognition. And if, on the other hand, we regard them as originated by the same agency which has brought about their later combinations and mutations, by men, namely, using legitimately and naturally the faculties with which they have been endowed, under the guidance of the instincts and impulses implanted in them -- and no linguist, certainly, as such, has any right to deny at least the possibility of this origin of language -- then the case is yet clearer. For we cannot venture to say how long a time the formation of roots may have demanded, or during what period universal language may have remained nearly stationary in this its inceptive stage. It is entirely conceivable that the earliest human race, being one, should have parted into disjointed and thenceforth disconnected tribes before the formation of any language so far developed and of so fixed forms as to be able to leave traceable fragments in the later dialects of the sundered portions. These possibilities preclude all dogmatic assertion of the variety of human species on the part of the linguist. Among all the known forms of speech, present and past, there are no discordances which are not, to his apprehension, fully reconcilable with the hypothesis of unity of race, allowing the truth of that view of the nature and history of speech which is forced upon him by his researches into its structure. It is certain that no one, upon the ground of linguistic investigations alone, will ever be able to bear witness against the descent of all mankind from a single pair.

That no one, upon the same grounds, can ever bear witness in favor of such descent is, as it appears to me, equally demonstrable, although not by so simple and direct an argument, and although the opinions of eminent authorities are at variance upon the point, and may fairly continue to be so for some time to come, until more of the fundamental facts and principles in linguistic science shall have been firmly established and universally accepted than is the case at present. We have here no theoretical impossibility to rely upon; no direct argument from necessary conditions, cutting off all controversy. As the linguist is compelled to allow that a unique race may have parted into branches before the development of abiding germs of speech, so he must also admit the possibility that the race may have clung together so long, or the development of its speech have been so rapid, that, even prior to its separation, a common dialect had been elaborated, the traces of which no lapse of time, with all its accompanying changes, could entirely obliterate. Nay, he was bound to keep that possibility distinctly before his mind in all his researches, to cherish a hope of making language prove community of blood in all members of the human family, until conscientious study should show the hope to be groundless. The question was one of fact, of what existing and accessible testimony was competent to prove; it was to be settled only by investigation. But I claim that investigation, limited as its range and penetration have hitherto confessedly been, has already put us in condition to declare the evidence incompetent, and the thesis incapable of satisfactory proof.

In order to make clear the justice of this claim, it will be necessary to recapitulate some of the results we have won in our previous discussions.

The processes of change which are constantly at work in language, altering both the form and the meaning of its constituent words, were set forth and illustrated with sufficient fulness in our early lectures. The degree of alteration which they may effect, and the variety of their results, are practically unlimited. As they can bring utter apparent diversity out of original identity, so they can impress an apparent similarity upon original diversity. Hence the difficulties which beset etymological science, its abuse by the unlearned and incautious, the occasional seeming arbitrariness and violence of its procedures, even in skilled and scientific hands. Voltaire's witty saying, that in etymologizing the vowels are of no account at all, and the consonants of very little -- to which he might have added, that the meaning is equally a matter of indifference -- was true enough as regarded the science of his day; but we must also confess that in a certain way it possesses an applicability to that of our own times. Even modern etymology acknowledges that two words can hardly be so different, in form or in meaning, or in both form and meaning, that there is not a possibility of their being proved descendants of the same word: any sound, any shade of idea, may pass by successive changes into any other. The difference between the old hap-hazard style of etymologizing and the modern scientific methods lies in this: that the latter, while allowing everything to be theoretically possible, accepts nothing as actual which is not proved such by sufficient evidence; it brings to bear upon each individual case a wide circle of related facts; it imposes upon the student the necessity of extended comparison and cautious education; it makes him careful to inform himself as thoroughly as circumstances allow respecting the history of every word he deals with.

Two opposing possibilities, therefore, interfere with the directness of the etymologist's researches, and cast doubt on his conclusions. On the one hand, forms apparently unconnected may turn out to be transformations of the same original: since, for example, the French *évêque* and the English *bishop*, words which have no common phonetic constituent, are yet both descended, within no very long time, from the Greek *episkopos*; since our *alms* comes from the Greek *eleēmosunē*; since our *sister* and the Persian *ṡāhar* are the same word; since the

Latin *filius* has become in Spanish *hijo*; and so on. On the other hand, what is of not less importance in its bearing upon the point we are considering, he must be equally mindful that an apparent coincidence between two words which he is comparing may be accidental and superficial only, covering radical diversity. How easy it is for words of different origin to arrive at a final identity of form, as the result of their phonetic changes, is evident enough from the numerous homonyms in our own language, to which we have more than once had occasion to refer. Thus, *sound* in "safe and sound" comes from one Germanic word, and *sound* in "Long Island Sound" from another; while *sound*, 'noise', is from the Latin *sonus*. So we have a *page* of a book from the Latin *pagina*, and a *page* in waiting from the Greek *paidion*, 'a little boy', we have *cleave*, 'to stick together', from the Anglo-Saxon *clifian*, and *cleave*, 'to part asunder', from the Anglo-Saxon *clufan*; and numberless other instances of the same kind. Fortuitous coincidences of sound like these, in words of wholly independent derivation, are not less liable to occur between the vocables of different languages than between those of the same language; and they do so occur. It is, further, by no means infrequently the case that, along with a coincidence, or a near correspondence, or a remoter analogy, of sound, there is also an analogy, or correspondence, or coincidence, of meaning -- one so nearly resembling that which would be the effect of a genetic relationship between the two words compared as to give us an impression that they must be related, when in fact they are not. Resemblances of this sort, of every degree of closeness, do actually appear in abundance among languages related and unrelated, demonstrably as the result of accident alone, being mistaken for signs of genetic connection only by incompetent or heedless inquirers. Thus, an enterprising etymologist, turning over the pages of his Hebrew lexicon, discovers that the Hebrew root *kophar* means 'cover'; and he is at once struck with this plain proof of the original identity of Hebrew and English: whereas, if he only looks a little into the history of the English word, he finds that it comes, through the Old French *covrir*, from the Latin *coöperire*, made up of *con* and *operte*; which latter is gotten by two or three steps of derivation and composition, from a root *par*, 'pass': and this puts upon him the necessity, either of giving up his fancied identification, or of making out some degree of probability that the Hebrew word descended, through a like succession of steps, from a like original. Another word-genealogist finds that *lars* in ancient Etruscan meant 'a chief, a headman', and he parades it as an evidence that the Etruscan was, after all, an Indo-European language: for is not *lars* clearly the same with the Scottish word *laird*, our lord? He is simply regardless of the fact that *laird* and *lord* are the altered modern representatives of the Anglo-Saxon *hlaford*, with which *lars* palpably has about as little to do as with *brigadier-general* or *deputy-sheriff*. A Polynesian scholar, intent on proving that South Sea islanders and Europeans are tribes of the same lineage, points out the almost exact coincidence of the Polynesian *mate* and the modern Greek *mati*, both signifying 'eye': which is just as sensible as if he were to compare a (hypothetical) Polynesian *busa*, 'a four-wheeled vehicle', with our *bus* from *omnibus*: for *mati* in Greek is abbreviated from *ommation*, diminutive of *omma*, 'eye', and has lost its originally significant part, the syllable *om*, representing the root *op*, 'see.'

These are only a few samples of false etymologies, selected from among the thousands and tens of thousands with which all linguistic literature, ancient and modern, teems; which have been drawn out, with infinite expenditure of ill-directed ingenuity and misapplied labor, from the vocabularies of tongues of every age and every clime. There is not one among them which has not a much higher *primâ facie* plausibility than the identity of *évêque* and *bishop*, or of *filius* and *hijo*, or than numberless others of the true etymologies established upon sufficient evidence, by the scientific student of languages: but their value is in seeming only; they are baseless and worthless, mere exemplifications of the effects wrought by the process we are considering -- the process which brings out accidental analogies, phonetic and significant,

between words historically unrelated. The greater portion of false etymologies are to be ascribed directly to its influence; and their number is a sufficient and striking proof of the wide extent of its action, the frequency and variety of the results it produces.

The fact is well established, that there are no two languages upon the face of the earth, of however discordant origin, between which may not be brought to light by diligent search a goodly number of these false analogies of both form and meaning, seeming indications of relationship, which a little historical knowledge, when it is to be had, at once shows to be delusive, and which have no title to be regarded as otherwise, even if we have not the means of proving their falsity. It is only necessary to cast out of sight the general probabilities against a genetic connection of the languages we are comparing (such as their place and their period, their nearer connections, and the pervading discordance of their structure and material), and then to assume between them phonetic transitions not more violent than are actually proved to be exhibited by other tongues -- and we may find a goodly portion of the vocabulary of each hidden in that of the other. Dean Swift has ridiculed the folly which amuses itself with such comparisons and etymologies, in a well-known caricature, wherein he derives the names of ancient Greek worthies from honest modern English elements, explaining *Achilles* as 'a kill-ease', *Hector* as 'hacked-tore', *Alexander the Great* as "all eggs under the grate!" and so on. This is very absurd; and yet, save that the absurdity of it is made more palpable to us by being put in terms of our own language and another with which we are somewhat familiar, it is hardly worse than what has been done, and is done, in all soberness, by men claiming the name of linguistic scholars. It is even now possible for such a man to take an African vocabulary, and sit deliberately down to see what words of the various other languages known to him, he can explain out of it, producing a batch of correspondences like these: *abetele*, 'a begging beforehand' (which he himself defines as composed of *a*, formative prefix, *be*, 'beg', and *tele*, 'previously'), and German *betteln*, 'beg' (from the simpler root *bit*, *bet*, our *bid*); *idaro*, 'that which becomes collected into a mass', and English *dross*; *basile*, 'landlord' (*ba* for *oba*, 'master', *si*, 'of', and *ile*, 'land'), and Greek *basileus*, 'king': and the comparer, who is especially versed in the mathematical doctrine of chances, gravely informs us that the chances against the merely accidental character of the last coincidence are "at least a hundred million to one." More than one unsound linguist has misled himself and others by calculating, in the strictest accordance with mathematical rules, how many thousand or million of chances to one there are against the same word meaning the same thing in two different and unconnected languages. The calculation is futile, and its result a fallacy. The relations of language are not to be so simply reduced to precise mathematical expression. If words were wholly independent entities, instead of belonging to families of connected derivatives; if they were of such precise constitution and application as so many chemical formulas; if the things they designated were as distinct and separate individualities as are fixed stars, or mineral species, or geographical localities -- then the calculations of chances would be in place respecting them. But none of these things are true. The evidences on which linguistic science relies to prove genetical connection are not identities of form combined with identities of meaning: forms may differ as much as *hijo* and *filius*; meanings may differ as much as German *bekommen*, 'get', and English *become*, 'come to be' and *become*, 'suit'; form and meaning may differ together to any extent, and yet the words may be one and the same, and good evidences of relationship between the languages to which they respectively belong. Not literal agreement, but such resemblances, nearer or more distant, clearer or more obscure, as are proved by supporting facts to have their ground in original identity, make satisfactory evidence of common descent in language.

Here, then, is the practical difficulty in the way of him who would prove all human speech a unit. On the one hand, those fortuitous coincidences and analogies which any given language may present with any other with which it is compared form a not inconsiderable body, an appreciable percentage of its general stock of words. On the other hand, the historical coincidences and analogies traceable between two languages of common descent are capable of sinking to as low, or even to a lower, percentage of its vocabulary. That is to say, there may be two related tongues, the genuine signs of whose relationship shall be less numerous and conspicuous than the apparent but delusive signs of relationship of two others which derive themselves from independent origins. The former have been so long separated from one another, their changes in the meantime have been so pervading, that their inherited points of resemblance are reduced in number and obscured in character, until they are no longer sufficient to create a reasonable presumption in favor of their own historical reality; they are undistinguishable from the possible results of chance. As we saw in the sixth lecture, evidences of genetic connection are cumulative in their character; no single item of correspondence is worth anything until there are found kindred facts to support it; and its force is strengthened with every new accession. And, in the comparison of languages, the point is actually reached where it becomes impossible to tell whether the few coincidences which we discover are the genuine traces of a community of linguistic tradition, or only accidental, and evidence of nothing. When we come to holding together the forms of speech belonging to the diverse families, linguistic testimony fails us; it no longer has force to prove anything to our satisfaction.

To demonstrate that this is so, we do not need to enter into a detailed examination of two tongues claimed to be unrelated, and show that their correspondences fall incontestably short of the amount required to prove relationship: we may take a briefer and directer argument. We have seen that the established linguistic families are made up of those dialects which exhibit traceable signs of a common historic development; which have evidently grown together out of the radical stage (unless, as in the case of the monosyllabic tongues, they have together remained stationary in that stage); which possess, at least in part, the same grammatical structure. There are some linguistic scholars who cherish the sanguine hope that trustworthy indications of this kind of correspondence may yet be pointed out between some two or three of the great families; but no one whose opinion is of one straw's weight thinks of such a thing with reference to them all. So discordant is the whole growth of many of the types of speech that we can find no affinities among them short of their ultimate beginnings: if all human speech is to be proved of one origin, it can only be by means of an identification of roots. To give the investigation this form, however, is virtually to abandon it as hopeless. The difficulties in the way of a fruitful comparison of roots are altogether overwhelming. To trace out the roots of any given family, in their ultimate form and primitive signification, is a task whose gravity the profoundest investigators of language are best able to appreciate. Notwithstanding the variety of the present living dialects of the Indo-European family, and the noteworthy preservation of original forms on the part of some among them, their comparison would be far enough from furnishing us the radical elements of Indo-European speech. Even the aid of the ancient tongues but partially removes the difficulty; and, but for the remarkable and exceptional character of the Sanskrit, our knowledge of that stage in the history of our language out of which its present grammatical structure was a development would be but scanty and doubtful; while we have been compelled to confess (in the seventh lecture) that we know not how far even so primitive a stage may lie from the absolute beginning. The corresponding condition of Semitic speech, its foundations of triliteral roots, is to no small extent restorable; but we have seen that these roots are themselves the products of a strange and highly perplexing development, beneath which their actual origin is not yet

discernible. Among the different great branches of the Scythian family, the recognizable radical coincidences are hardly sufficient, if they are sufficient, to establish their unity as proceeding from the same stock: a reliable basis for comparison with other families is certainly not furnished us here. Nor was the Scythian the only family in establishing whose unity we were obliged to add the evidence of morphological structure to that of material correspondences: there were at least two, the monosyllabic in south-eastern Asia and the American, which were founded almost solely on accordance of type. And the former of them is a striking illustration of the power of phonetic corruption to alter and disguise the bare roots of language, without help from composition and fusion of elements. If we cannot find material correspondences enough between the pure radicals of Chinese, Siamese, and Burmese to prove these three tongues akin, but must call in, to aid the conclusion, their common characteristic of monosyllabism, what hope can we possibly entertain of proving either of them akin with Mongolian or Polynesian, for example, with which they have no morphological affinity? Who will be so sanguine as to expect to discover, amid the blind confusion of the American languages, where there are scores of groups which seem to be totally diverse in constituent material, the radical elements which have lain at the basis of their common development? Apparent resemblances among apparent roots of the different families are, indeed, to be found: but they are wholly worthless as evidences of historical connection. To the general presumption of their accidental nature is to be farther added the virtual certainty that the elements in which they appear are not ultimate roots at all, but the products of recent growth. There is nothing, it may be remarked, in the character of ultimate roots which should exempt them from the common liability to exhibit fortuitous coincidences, but rather the contrary. The system of sounds employed in the rudimentary stage of linguistic growth was comparatively scanty, the circle of ideas represented by the roots was narrow and limited, the application of each root more vague and indeterminate; hence accidental analogies of form and meaning might even more reasonably be looked for between the radical elements of unconnected families than between their later developed words.

For these reasons it is that the comparison of roots is not likely to lead to any satisfactory results even in the most favorable cases, and cannot possibly be made fruitful of valuable and trustworthy conclusions through the whole body of human language. There are, it is true, not a few philologists -- and among them some authorities deserving of the highest respect -- who hold that correspondences enough have been found between Indo-European and Semitic roots to prove the ultimate connection of those two families of language: but the number is yet greater of those who regard the asserted proof as altogether nugatory. The attempt has been made above (in the eighth lecture) to show that the governing presumption in the case is not a purely linguistic one, but rather a historical; and it is one which is quite as likely to be weakened as to be strengthened by the results of future researches. But, as regards the point now under discussion, the admission or rejection of a genetic tie between these two particular families, or even between these and the Scythian and Chinese, would make no manner of difference; there would still remain the impossibility of extending a like tie, by linguistic means, to the other great families.

Our general conclusion, then, which may be looked upon as incontrovertibly established, is this: if the tribes of men are of different parentage, their languages could not be expected to be more unlike than they in fact are; while, on the other hand, if all mankind are of one blood, their tongues need not be more alike than we actually find them to be. The evidence of language can never guide us to any positive conclusion respecting the specific unity or diversity of human races.

Notes

1. *Lectures*, first series, eighth lecture. [[return to text](#)]
2. In his Letter on the Classification of the Turanian Languages, p. 21 seq.; see also his *Lectures*, first series. [[return to text](#)]
3. See his paper, "Contribution to the Morphology of Language," in the *Memoirs of the Academy of St. Petersburg*, Vol. i, No. 7 (1859); also, the Introduction to his work, the *German Language* (Stuttgart, 1860), p. 11 seq. [[return to text](#)]
4. Of course the parallel is to be regarded as only an imperfect one; though these three words are to our apprehension primitives, they are far from being ultimate roots; they all either contain formative elements added to such a root, or have possessed and lost them; each is, to be sure, employable as noun, adjective, or verb, without change of form, yet not, like Chinese roots, in virtue of an original indefiniteness of meaning, but as one distinct part of speech is in our usage convertible directly into others; nor can it be said that, even as they stand, they are altogether formless; for each is defined in certain relations by the absence of formative elements which it would otherwise exhibit: *water* is shown to be singular by lacking an *s*, *fish* and *like* to be plural by the absence of *s* from *like*. [[return to text](#)]
5. Professor Schleicher, indeed, adopts this emblem as that of the Indo-European root also, since he holds the view, briefly stated and controverted above (in the eighth lecture), that the radicals of our family were originally liable to a regular variation, of symbolic significance, for purposes of grammatical expression. I regard it, on the contrary, as the weak point in his system, as applied by himself, that it does not distinguish an internal flection like the Semitic -- which, so far as we can trace its history, is ultimate and original, and which continues in full force, in old material and in new formations, through the whole history of the languages -- from one like the Indo-European, which is rather secondary and accidental, constantly arising in new cases under the influence of phonetic circumstances, but never winning a pervading force, and in many members of the family hardly taking on anywhere a regular form and office, as significant of relations. [[return to text](#)]
6. See the latter's *Charakteristik* etc., pp. 70, 327. [[return to text](#)]

CHAPTER EIGHTEEN

EDUARD SIEVERS

FOUNDATIONS OF PHONETICS

From Grundzüge der Phonetik zur Einführung in das Studium der Lautlehre der indogermanischen Sprachen (Leipzig: Breitkopf & Härtel, 1901⁵), pp. 1-9, 267-69, 272

Editor's Introduction

The most definitive achievement of nineteenth-century linguistics may be in articulatory phonetics. By the end of the century Jespersen, Sweet, Sievers and others had gained a control of the subject which has been surpassed only in details. Accordingly, sections from one of the standard works on phonetics have been chosen as the last in this anthology.

These sections indicate that Sievers held some linguistic views which we generally consider characteristics of more recent linguistics. Section 11 stresses the importance of system in language; entities are to be defined in it. Section 14 speaks of "individual sounds" as abstractions which are dependent on the point of view of the linguist; this statement is not unlike definitions of the phoneme given in the 1930's. Possibly most notable is Sievers' insistence that the sentence is the minimum linguistic unit. Like other views given in these few sections, this is remarkably in keeping with those held today; one wonders why it had so little influence in 1876 and during the subsequent decades when Sievers' handbook was revised, reprinted and widely used.

Sievers' views on historical linguistics seem equally contemporary. Sound change is a modification of Bildungsfaktoren-formative features. Sound law is temperately defined. These excerpts may illustrate that students will derive greater profit by reading the outstanding works of the neogrammarians and their predecessors than by reading about them.

I. Present Position, Goals and Methods of Phonetics

1. By phonetics we mean the study of the forming of speech, that is, of the production, the characteristics and the use of sounds in the forming of syllables, words and sentences, and finally of the general conditions of their change and decay. Phonetics, then, is a border area between physics, insofar as it is concerned with the acoustic analysis of individual quantities of sound, physiology, insofar as it investigates the functions of the organs which are used in producing and perceiving speech, and finally linguistics, insofar as it gives information about the nature of one of its important aims.

2. Only for the two above-mentioned scientific disciplines can the investigation of the origin and the nature of the individual sounds from which a language is constructed be an end in itself. For the linguist, phonetics is only an ancillary science. Accordingly the interest of the individual disciplines in its different sub-areas will vary. The task and most important goal of scientific investigation is to ascertain the general, basic laws concerning the nature, formation and utilization of the speech sounds. The linguist's task on the other hand is to pursue these basic laws into all the ramifications which have taken place in the various languages and dialects and to make the results of this specialized research useful to his scholarly aims. The natural scientist will accordingly be concerned with the general, the theoretical, while the

linguist is primarily interested in the specific data and their particular application to the material to the study of which he dedicates himself.

3. Within the wide area included in the study of language, the studies which are directed at the investigation of living languages undoubtedly have the most direct and practically significant part in the discoveries relating to the nature of linguistic phenomena, which phonetics is able to provide; for only on the basis of a knowledge of phonetics can the facts in the pronunciation of the various idioms be determined. The recognition of the accuracy of this statement has become increasingly widespread, and accordingly practical phonetic research has striven more and more to meet the needs of the modern study of language. It has directed itself particularly toward obtaining reliable material for study while limiting theoretical discussion as much as possible, and reducing this material to simple rules in keeping with practical demands. The success which these attempts have had, is adequate proof that the path begun was the correct one for the solution to this undertaking. It seems all the more doubtful whether the unduly great emphasis placed upon the so-called experimental phonetics with its purely mechanical measuring and representation, even by some who formerly represented the practical position, will in the long run work more to the advantage than to the detriment of the physiological side of the discipline, notwithstanding a series of results with practical value, which experimental phonetics has thus far produced.

4. The relation of phonetics to historical-comparative linguistics is also different from its role for the investigator of living languages. The practical aspect of phonetics is here important only insofar as it may be necessary to ascertain the pronunciation of the living members of a language or dialect group whose history is to be investigated. The linguist needs such identification especially to augment the incomplete pictures of linguistic phenomena which the incomplete writing systems of ancient and modern times afford; for only too often do these systems conceal peculiarities of pronunciation which are of importance in the development of the language. But the center of the interest that linguistic research has in phonetics surely lies in another area. Phonetics must enlighten the historical linguist first of all concerning the nature, the development and the relationships of the various phonetic processes whose beginning and end he has determined by means of a historical study of language. It can do this because it shows him series of developmental stages in the comparison of living languages and dialects, which in turn, by suggesting analogies, lead him to reliable conclusions concerning the course of development of the individual language, and because it represents for him, in paradigm form, the relationship between the force which conditions linguistic change and the individual examples of the resulting change, again from the example of living language. The historical linguist, then, needs detailed, individual descriptions of the pronunciation of a given idiom less than does a scholar who is investigating a modern language; and he has even less need to construct a general system in which the individual sounds of the various languages are once and for all ordered according to a definite arrangement. One can even say that while for the theoretical phonetician the system and the precise analysis of individual sound classes and sounds which result from it stand in the center of interest, the historical linguist who pursues the historically attested changes and shifts of precisely these formations will derive the most benefit from systematic consideration precisely of the points of contact between the individual subclassifications which the systematizer sets up and tries to keep distinct as best he can.

5. It would be impossible for any single presentation of phonetics to do justice to the demands of all the above-mentioned areas of interest. For the phonetician with interests in science, the specialized linguistic material which is necessary for the philologist and linguist will scarcely

ever be available in any quantity. Moreover he lacks interest, since even a very large accumulation of material can offer him no real help in the formulation of the general statements concerning language formation, for which he is striving. Still further afield for him are the historical linguist's problems of the development of language. And again only the smallest number of those who lean toward philology will want to or be able to follow the scientist in the details of his anatomical, physiological and physical research. Granted that some one individual might succeed in assembling all the knowledge necessary for presenting a comprehensive survey of phonetics, and in putting this down in a textbook of general phonetics, such a work would still not meet the needs of the student, who, after all, almost invariably approaches phonetics with a limited range of interest and accordingly brings to the subject an understanding for only one or the other portion of it, not for all.

6. Because of these considerations it seems necessary to abandon all thoughts of a general survey of phonetics in favor of individual presentations which direct greater attention to the particular requirements of the various areas of interest, while touching upon only the most essential aspects of the subject as a whole, and that but briefly. The present study, for example, is aimed at one such specialized field. In the first place it is intended to be an introduction to the study of the phonology of the older Indo-European languages, approximately in the extent to which they are represented in the "Library of Indo-European Grammars"; and it tries to do justice to this task by orienting the reader through selected examples about a number of phonetic problems which are pertinent to an understanding of the development of Indo-European phonology. Anything else which is included to make the presentation of the material more complete is intended only as an incidental supplement through which the author attempted, to the best of his ability, to make the book useful to historical linguists outside the field of Indo-European. It will be obvious that the book, because of this emphasis on the historical aspect, is not aimed at the scientist; nor does it meet the needs of the specialist in modern languages, and is useful in their teaching only insofar as that which is of use to the historical linguist may also be of use in language teaching.

7. It lies in the very nature of the problem that a certain amount of work with the spoken language is indispensable for any training in phonetics. A mere description will never be able to convey accurately all the fine points of pronunciation which determine the real character of a language or dialect, and along with it often the particular direction of its further development, while the ear trained through oral practice is readily able to grasp these. It may be most readily possible to present the basic scientific laws of language formation theoretically while keeping them generally understandable. But the greater phonetics is to be made useful for the practical purposes of teaching languages or linguistic research, the more instruction of the teacher must be replaced by direct observation on the part of the learner himself. A textbook of phonetics, then, if it is to be useful to the student of linguistics, must be essentially nothing other than an introduction to the proper use of observation, which in turn affords the student the solid foundation for the practical utilization of the phonetic principles which have been acquired in this way.

8. It follows that the task of the language teacher, whose field of observation is limited essentially to the normal pronunciation of the language he is teaching, is relatively simple. The scholar engaged in research, on the other hand, cannot consider such restriction. The more complicated the phonological problems whose solution he is seeking may be, the more comprehensive and secure his survey of the conditions of development of living idioms must be, if he is to avoid continually exposing himself to the danger of reaching for false means of explanation.

9. Above all, the serious student of language who hopes to realize concrete profit for his science through the study of phonetics must strive from the beginning to free himself from a number of prejudices to which the scholar is driven, partially through the schools, partially through the practical activity of living, and from which learned circles are least of all free. The first of these prejudices is the opinion that normal or natural speech is found only in the languages of writing or culture. The necessary presupposition for this doctrine, the basic unity of languages, exists only on paper; a tremendous number of opinions will, therefore, become entangled in an insoluble conflict if, in accordance with bad habits of the past, the individual arbitrarily attributes his own pronunciation to the letters of a writing system, and makes this the only basis for his conclusions concerning foreign languages. And even if there did actually exist somewhere a relatively large entity within a language (a phenomenon which could only be developed, as experience shows, through artificial cultivation starting from a writing system transmitted from an earlier period of the language), how could the views derived from it help to explain the development of language, which so often moves from a condition of simplicity to one of complexity? Furthermore, the individual modern languages are too distant from one another to permit with requisite certainty from comparison of them alone relatively general statements concerning the development of sounds and of speech. Dialects must be used to fill the gap, since they alone are in a position to supply the links missing in the standard languages. Furthermore, dialects are generally in a position to give the observer a much clearer picture of the consistency of pronunciation and the development of sounds than do the written and standard languages, which at any time not only exhibit a mixture of sound and speech forms, having widely divergent origins, but also are constantly subject to a large number of unpredictable influences from individual speakers than is the idiom of the lower classes which is transmitted only through the unconscious and therefore more steady tradition of oral communication.

10. Each linguist must accordingly use dialects which are familiar to him from his youth as the starting point for all studies in phonetics. If an actual folk dialect is not available to him, he must at least adhere to the natural and easy colloquial speech of the educated people of his home, and not to the generally artificially contrived and therefore often contradictory manner of speaking of the schools, the pulpit, the theater, or the drawing room. Only when he has achieved complete clarity with regard to all phonetic phenomena of his own dialect should he turn to the study first of related dialects and languages, and finally to those more distant. If it is feasible, one should attempt to attain perfect fluency in one or more dialects.

11. Some additional comments will be found below, in the concluding remarks to chapter 11, especially concerning the particulars of examining the sound systems of related dialects as one's study progresses. But even here it must be pointed out most emphatically that the tasks of historical phonetics cannot be solved with a mere statistical consideration of individual sounds and their changes. For in general it is not the individual sound which undergoes change according to certain universally valid laws, but rather there is usually a corresponding development of corresponding series of sounds in corresponding positions (cf. for example the uniform shift of the series of *tenuis*, *mediae* and *aspiratae* in the Germanic consonant shift, or the transformation of entire vowel systems through increase or diminution of the specific articulation of the vowels, etc.); generally specific points of view can also be discovered which help explain the change of one such series of sounds from the overall constitution of the system as well as of the particular position of that series in it.

12. Above all, then, one should seek an exact insight into the structure of every phonological system which must be treated. One will do well always to remember that this is determined

not so much by the number of sounds themselves which happen to be mixed together in the system as by the relationship of these individual members with one another; and furthermore that the acoustic impression of a sound is not the essential thing, but rather the manner in which it is formed. For what we call sound change is just a secondary result of modifications of one or more of this kind of formative factors through whose interaction a sound is produced.

13. It must be emphasized that the acquisition of such phonetic training, as that emphasized here from the start, is no easy matter. It requires a tireless, lengthy training of the speech organs, and particularly in connection with the last statement of the hearing. For on the one hand the ear tends to be deaf to a certain extent to sounds which are foreign to it or to the differences of these from sounds which are familiar to it; or when a difference is actually perceived, we often hear intermediates somewhere between the unfamiliar and our own sounds, which arise only through the fact that the impression of one's own sounds blends with that of the corresponding unfamiliar sounds which are heard. On the other hand, because of the insensitivity of hearing to minor differences in the impression of sounds, we often run the risk of attributing such articulations to unfamiliar sounds which one can grasp only through hearing, by means of which one can approach the acoustic effect of them in attempts at imitation, but quite often one's own articulation does not correspond to the unfamiliar ones. One will therefore be able to say that a preliminary conclusion in phonetic training in this direction has only been acquired when the observer is able to perceive correctly any unfamiliar sound, preferably by ear alone, and to characterize it according to its position in its own system as well as its relationship to corresponding sounds of other systems. Cautious occupation with experimental phonetic studies may now and then be useful as a preliminary step in attaining this goal, because it can occasionally clear up deficiencies in the powers of observation especially for the indifferent beginner, which have thus far gone unnoticed. But only he who succeeds in sharpening his senses to such an extent that he need no longer remain subject to the often deceptive, dead apparatus attains complete mastery over his attainment.

14. Current grammatical practice usually takes letters or sounds as a starting point, and then builds up to consideration of syllables, words, and sentences. But it is self-evident that a phonetics which proceeds very systematically would have to begin with the investigation of the sentence, because only the sentence exists in the spoken language as an entity which is given by itself and which can be directly observed. The word, the syllable, the individual sound often take on different forms in the "sentence" (this word is understood in the broader sense in which it is generally used; for the problem itself cf. below, 611 ff); and the individual sound often does not even exist isolated in speech in the absolute form in which it is generally presented in grammars. Therefore the sentence ought to be investigated first, with all the variations which it can experience in oral expression (e.g. those, which the same "sentence" experiences when it is used as simple declarative, as exclamatory, as interrogative, etc., and the like). Only after one has learned to take these variable characteristics of the sentence into consideration should one go on to the analysis of the sentence itself, that is, to the investigation of the individual rhythmic groups of speech (620 ff.) and of the syllables as components of these rhythmic groups. Only to this should the analysis of syllables as such and of their individual sounds be attached. That which finally results as definition of the individual sound is in the end largely an abstraction dependent on arbitrarily selected points of view which is made from the frequently variable forms under which this so-called individual sound can appear in continuous human speech. For practical reasons it is customary also in the study of phonetics to proceed from the simplest elements to the more complex formations, and this generally adopted method is also retained in the present work. If, however, one

adheres to this method, one must always bear in mind the important fact, that we have by no means exhausted all that there is to be said about the nature of the individual sound in living speech with the few things we can express concerning the artificially isolated individual sound. In any case, the construction of a mere sound system, however important it may be in itself, always remains one of the most elementary tasks of the phonetician, in whose realm all the various phenomena of spoken language fall. One should not, then, be content with the study of sounds per se, but must examine with equal exactitude the formation of syllables, of rhythmic units and sentences, always with one's native language as the starting point. The knowledge thus obtained must then be tested by comparing other living languages and dialects, and only when one finds that he is completely equipped for these, should he proceed to the application of phonetic criteria for the elucidation of older stages of speech and their gradual change to their modern representatives.

IV. Sound Change and Sound Development

722. It is usual for the traditional pronunciation of the individual forms of speech, (sounds, groups of sounds, syllables, rhythmic groups, etc.), to change in the course of time. Instead of the early OHG *gasti*, for example, there is the later (common OHG) *gestiand* in its stead late OHG and MHG *geste*; OHG *piligrîm* with *m* corresponds to the Latin *peregrinus*, with *n*; and the MLG *bersten* with the sequence *er* corresponds to the OLG *brestan*, with *re*, etc. The term "change in pronunciation" best describes the results of such modifications; but instead the form "sound change" has come into use. And this term is acceptable when one considers that even the sum total of the changes in the pronunciation of complicated formations (as of a sound group, a syllable, a word) are composed of the changes which the individual sounds of these complexes undergo.

723. Every sound change is based upon inadequate reproduction of the traditional pronunciation. The formation of new forms of pronunciation then originates with a single individual or with a group of individuals and only through imitation are such individual innovations spread adequately throughout larger parts of a speech community, or even its entirety. In the process it is rather unimportant for the further development of a language where the innovation begins, whether within one and the same generation of speakers or in the process of transmitting speech from one generation to the other. Apparently both forms of innovation have a characteristic role in language change.

725. Causes of the Sound Change. Even today the opinion is very widespread that all sound change proceeds from striving toward an easier manner of pronunciation, or in other words that it is always based on a decrease of effort ("sound weakening") and never on an increase ("sound strengthening"). We can admit that many phenomena in the development of languages may be brought under this heading, but in the generality with which the statement is produced it is definitely false. Its incorrectness can readily be seen, even from a very superficial examination of the various historically attested directions of sound development. When an original *tenuis* becomes a *media*, that is, when *a fortis* becomes *a lenis*, as in the change from Latin *patrem* to Italian *padre*, and when this *lenis* disappears completely as in the corresponding Provençal *paire*, French *père*, this clearly must be designated as an instance of weakening. But also the directly opposite series of development is found, as for example on Germanic soil, where we see a *ddj* arise from simple *j* (Gothic *twaddje* from **twaije*, etc.) and all original *mediae* change to *tenues* or *affricates* (Gk *déka*, Lat. *decem*, Gothic *taihun*, OHG *zēhan*). The sphere of the vowels is similar. For example, the same languages frequently enough (if partly in different periods) show simplification of diphthongs to long vowels and

diphthongization of originally simple vowels (OHG *mêr, lôn* as opposed to Goth. *máis, láun*; and OHG *hiar, fuor* as opposed to Goth. *hêr, fôr*; or Ital. *oro* beside Lat. *aurum* and Ital. *buono, Pietro* beside Lat. *bonum, Petrum* etc.) Particularly interesting phenomena along this line are found in languages like Danish, which forms its initial tenues very energetically and with strong aspiration, whereas in medial or final position following a vowel it has permitted them to sink to fricatives of very little energy or even to disappear completely.

726. These few examples are sufficient to show that if the concept of the simplification of pronunciation is to be retained at all, it must be conceived in a very relative sense (often it will be a question of nothing more than simple fashion). In general it must be carefully noted that differences in difficulty of producing speech sounds are extremely minute, and that actual difficulties with regard to imitation generally exist only with regard to unfamiliar sounds. Just as every part of the human body is particularly trained through special practice for the one service which it performs every day, but becomes less suited or even completely useless for other tasks, so the human speech organs attain a complete mastery of all the articulatory movements, which are required for one's native language, through the practice in the production of sounds and groups of sounds in this language which one carries on continually since childhood. But only of these sounds! After the organs of speech have received special training for and through the service determined for them, everything which falls outside the limits of the familiar articulatory movements seems difficult. Naturally this applies with regard to the sounds of one language as well as another: the Englishman has the same difficulty in pronouncing the German *ch* or the uvular or tongue trilled *r* or the dorsal *d, t* as the German speaker has in imitating the English *th* or the cerebral *r* or the cerebral *d, t*, etc. Such difficulties, however, play a role of course only in the transfer of a language from one people to another (accordingly by speech borrowing in the broadest sense of the word).

732. The word sound law, as one sees, is not to be conceived in the sense in which one speaks of natural laws. It is not meant to imply that under certain given conditions a certain result must necessarily follow everywhere; but it should merely indicate that, if somewhere under certain conditions a shift in the manner of articulation has occurred, the new manner of articulation must be applied without exception in all instances which are subject to exactly the same conditions.