

# PART I AN HISTORICAL OVERVIEW BY SEMANTIC FIELDS



# SEMANTIC FIELD TABLES

Walter Skeat stated in the preface to the fourth edition of his *Etymological Dictionary* of the English Language (Oxford, 1910, xiii): "Of all the Teutonic languages, German is the one from which fewest words are directly borrowed." In fact, the number of direct loans, he continued, "is quite insignificant, and they are all of late introduction." The tables and the analyses that follow dispel these assumptions.

The English borrowings from German total 5,380 items, and the dates of their transfer extend from about 1340 to 1990. The earliest among them, like *snorkle* (1340) and *ground* (1400), are harvestings of thirteenth-century German mysticism. The most recent of them, such as *Rottweiler politics* (1989) and *wallpecker* (1990), testify to the political conditions in Central Europe of yesteryear.

The distribution of these items spread over 68 semantic fields plus a miscellany is shown in Tables 1 and 2 below. In Table 1 the fields are arranged in the order of the alphabet; and in Table 2, in the order of numerical rank. The total in Tables 1 and 2 is larger than the 5,380 entries in the dictionary, because some of the words in the count pertain to two or more semantic fields. Of the entries, 93 percent are dated. It is on these that the historical analysis by semantic field in the succeeding pages is primarily based. They are subsumed alphabetically under four subject areas: 1. sciences, 2. social sciences, 3. arts and letters, and 4. others, including miscellany.

The borrowings in each field are presented selectively, in part because some of the data are beyond normal reach, "especially those regarding non-academics," as the editor of Poggendorff's renowned multivolume biographical dictionary stated in a recent letter to the authors. Scholars will also observe that instead of being presented as direct outcroppings of historical movements or cultural events, the loanwords are detailed, insofar as it is possible, against the broad spectrum of history and the developments in the arts and sciences, largely because the dates of their origin, where known, and those of their attested acculturation may be close but are more often years, decades, or even a century apart. Thus we find:

Weltinsel (1845)	island universe (1845)
Neuropilem (1890)	neuropilema (1891)
tonofibril (1899)	tonofibril (1901)
Eschatokoll (1854)	eschatocoll (1897)



#### GERMAN LOANWORDS IN ENGLISH

Table 1

Semantic field		Semantic field		Semantic field	
Administration	12	Ethnology	18	Optics	27
Aeronautics	6	Food	119	Ornithology	18
Agriculture	5	Forestry	6	Paleontology	5
Anatomy	35	Furniture	6	Pathology	52
Anthropology	37	Games	35	Pharmacology	37
Apparel	11	Geography	26	Philosophy	150
Archaeology	9	Geology	318	Physics	118
Architecture	7	History	6	Physiology	46
Art	39	Ichthyology	20	Politics	201
Astronomy	9	Immunology	12	Pottery	12
Beverages	96	Industry	22	Printing	20
Biochemistry	178	Law	7	Psychology	139
Biology	343	Linguistics	101	Sociology	48
Botany	211	Literature	73	Sports	58
Chemistry	687	Mathematics	63	Technology	37
Commerce	7	Medicine	183	Textiles	10
Crystallography	8	Metallurgy	19	Theater	13
Currency	37	Meteorology	24	Theology	70
Dance	12	Military	130	Trades	13
Ecology	29	Mineralogy	857	Transportation	9
Economics	16	Mining	21	Travel	10
Education	34	Music	193	Zoology	122
Entomology	24	Mythology	33	Miscellany	221

 Zuwachsbohrer (1818)
 increment borer (1889)

 Mitteleuropäer (c. 1815)
 Mittel-European (1950)

It will also be seen that the scope of the transfer rate of German items into English, as shown in Table 3, is suggestive of the time periods within which they are discussed, i.e., before 1501, 1501–1750, 1751–1950, after 1950.

The review of each semantic field is concluded by a chronological listing of all German loanwords in that field, dated and grouped by fifty-year periods, which is a convenient but arbitrary way to divide their history in English. As many words have the same date of record in English, to save space we have attached the date only to the terminal word in the given sequence. Thus: X 1901, Y, Z 1902, where the reader assumes that Y is also dated as 1902. Similarly, if there are no words for a given period, as in 1901–50 or Undated, that designation is omitted entirely from the given chronological listing; but it must be emphasized that each listing for the given semantic field includes all dated plus any undated items collected for this book. That principle of economy has dictated other reductions of space in this Historical



#### INDEX TO SEMANTIC FIELDS BY SUBJECT

Table 2

Semantic field		Semantic field		Semantic field	
Mineralogy	857	Physiology	46	Theater	13
Chemistry	687	Art	39	Trades	13
Biology	343	Anthropology	37	Administration	12
Geology	318	Currency	37	Dance	12
Botany	211	Pharmacology	37	Immunology	12
Politics	201	Technology	37	Pottery	12
Music	193	Games	35	Apparel	11
Medicine	183	Anatomy	35	Travel	10
Biochemistry	178	Education	34	Textiles	10
Philosophy	150	Mythology	33	Archaeology	3
Psychology	139	Ecology	29	Astronomy	9
Military	130	Optics	27	Transportation	9
Zoology	122	Geography	26	Crystallography	8
Food	119	Entomology	24	Architecture	7
Physics	118	Meteorology	24	Commerce	7
Linguistics	101	Industry	22	Law	7
Beverages	96	Mining	21	Aeronautics	6
Literature	73	Ichthyology	20	Forestry	6
Theology	70	Printing	20	Furniture	6
Mathematics	63	Metallurgy	19	History	6
Sports	58	Ethnology	18	Agriculture	5
Pathology	52	Ornithology	18	Paleontology	5
Sociology	48	Economics	16	Miscellany	221

Overview. For example, as almost all the creators of the etyma for our corpus were German and as the context also makes that identity clear anyway, it would have been redundant to speak of, for example, the *German* physician Theodor Fechner.

Alphabetical indexes of semantic fields with subjects (science, social science, arts, and others) in a single amalgamated list follow.

#### INDEX TO SEMANTIC FIELDS BY SUBJECT

Sciences	Biochemistry
	Biology13
Aeronautics 8	Botany16
Agriculture 8	Chemistry
Anatomy 8	CrystallographySee Geology
Astronomy10	Ecology



#### GERMAN LOANWORDS IN ENGLISH

# Table 3 (Including Multiple Entries)

Before 1501	12
1501–50	50
1551–1600	65
1601–50	62
1651–1700	64
1701–50	50
1751-1800	137
1801–50	722
1851-1900	1793
1901–50	1629
1951–	203
Undated	696

Entomology26	Geography59
Forestry	History61
Geology28	Law61
Ichthyology34	Linguistics
Immunology	Philosophy
Mathematics	Politics
Medicine	Psychology71
Metallurgy40	Sociology74
Meteorology40	
MineralogySee Geology	
Mining	Arts
=:	Arts
Mining	<i>Arts</i> Architecture
Mining	· -
Mining41Optics43Ornithology44Paleontology44	Architecture
Mining       41         Optics       43         Ornithology       44	Architecture
Mining41Optics43Ornithology44Paleontology44Pathology45	Architecture       .76         Art       .79         Dance       .79
Mining       41         Optics       43         Ornithology       44         Paleontology       44         Pathology       45         Pharmacology       46	Architecture       76         Art       79         Dance       79         Literature       79
Mining       41         Optics       43         Ornithology       44         Paleontology       44         Pathology       45         Pharmacology       46         Physics       48	Architecture       76         Art       79         Dance       79         Literature       79         Music       82

Social Sciences	Others
Anthropology56Archaeology57Economics58Ethnology59	Apparel         86           Beverages         87



### ALPHABETIC INDEX TO SEMANTIC FIELDS

Currency	Printing99
Education	Sports
Food90	Technology
Furniture94	Theology104
Games94	Trades
Industry95	Transportation100
Military96	Travel
Mythology98	Miscellany (Daily Life, etc.)103

## ALPHABETIC INDEX TO SEMANTIC FIELDS

Administration85	Linguistics	62
Aeronautics 8	Literature	79
Agriculture 8	Mathematics	35
Anatomy 8	Medicine	37
Anthropology56	Metallurgy	40
Apparel86	Meteorology	40
Archaeology	Military	96
Architecture	Mineralogy	28
Art79	Mining	41
Astronomy10	Music	82
Beverages	Mythology	98
Biochemistry	Optics	43
Biology	Ornithology	44
Botany	Paleontology	44
Chemistry	Pathology	45
Commerce	Pharmacology	46
Crystallography28	Philosophy	65
Currency	Physics	48
Dance	Physiology	51
Ecology24	Politics	68
Economics	Pottery	84
Education	Printing	99
Entomology	Psychology	71
Ethnology59	Sociology	74
Food90	Sports1	00
Forestry	Technology1	02
Furniture94	Textiles1	03
Games94	Theater	84
Geography59	Theology1	04
Geology	Trades1	06
History61	Transportation1	06
Ichthyology53	Travel1	
Immunology	Zoology	53
Industry95	Miscellany1	08
Law61		



#### GERMAN LOANWORDS IN ENGLISH

#### **SCIENCES**

#### **Aeronautics**

The first of the six German items that have entered English in the field of aeronautics is *airship* (1819). It is a translation of the generic term for dirigible or balloon, *Luftschiff*, coined in 1755, well before the French aeronautical engineer Henry Giffard (1825–82) attempted to fly the first lighter-than-air machine in 1852.

The three loans that followed pertain to dirigibles and airplanes. The German word for airplane, be it noted, is Flugzeug. Zeppelin was introduced to English in 1900, the year Count Zeppelin built the first rigid dirigible. Parseval emerged in English eight years later as a name for the first nonrigid airship, commemorating August von Parseval (1861–1942), who designed the machine in 1906. The borrowing Messerschmitt was not popularized in English until 1940. It refers to the German fighter plane, the first model of which (Me 109) was completed in 1934.

The fifth and sixth loans, hypergol and hypergolic, were formulated in German as hypergol and hypergolisch to describe the type of fuel Germans began to use during the latter part of World War II as a rocket propellant.

In chronological order, the loanwords in aeronautics are:

1801–50: airship 1819 1851–1900: Zeppelin 1900

1901-50: Parseval 1908, Messerschmitt 1940, hypergol, hypergolic 1947

#### Agriculture

German contributed only five terms to English in the realm of agriculture, two of which pertain to dairy farming. They are *sennhutt*, from German *Sennhütte* 'Alpine hut,' and *Senn*, unchanged from German *Senn* 'a shepherd in the Alps.' Senn is dated in German as early as 1462 (see Kluge/Mitzka). *Hay-hut*, the third of these borrowings, is the name of a hut that may be seen on any mountainside. The parts of its German etymon, *Heu* 'hay' and *Hütte* 'hut,' have their roots in Germanic times. The fourth term, *crumb structure* 'crumb-like structure (of the soil),' derives from German *Krümmelstruktur* that was first used in *Forschungen der Agrik.-Physik*, 1882, V, 146. The fifth item, *ring rot*, is a translation of *Bakterienringfäule*, describing a bacterial disease of the potato (see Mackensen).

The five words in agriculture are:

1851–1900: sennhut 1868, Senn 1882

1901–50: hay-hut 1903, crumb structure 1906, ring rot 1920

#### **Anatomy**

Early Greek medicine ranked healing above a knowledge of the human body and its functions. The principles of anatomy were not spelled out in some detail until 1543, when Andreas



#### ALPHABETIC INDEX TO SEMANTIC FIELDS

Vesalius, Belgian-born physician of German origin, published his *De humani corporis fabrica libri septem*, with anatomic plates by the Dutch painter J. St. van Kalkar. William Harvey's fundamental discovery of the circulation of the blood is dated 1628. Pathological changes began to be investigated in the eighteenth century, and physiology as a special field of study emerged only in the 1800s. The nomenclature of anatomy remained uncodified until 1895.

The earliest of the 35 German items in English anatomy, however, may be among those gleaned from the sources that are without a date. Examples are *ampulla of Vater*, from German *Vatersche Ampulle*, named after Abraham Vater, German anatomist (1684–1751); *column of Türck*, a translation of *Türckische Säule*, from the name of the Austrian physician Ludwig Türck (1810–68); and *corpuscle of Herbst*, a rendition of German *Herbstsches Körperchen*, commemorating the name of the German physician Ernst F. Herbst (1803–92).

In the order of transfer from German to English, the dated borrowings of Latin and/or Greek origin include: fundiform (1854), a latinized translation of German schleuderförmig, coined in 1841 by Andreas Retzius (1796–1860); ependyma (1872), used as Ependym by the German physician Rudolf Virchow (1821–1902), the founder of cellular pathology; delomorphic (1882), from German delomorph (1870), conceived by Alexander Rollett (1834–1903); chordotonal (1888), first employed in 1882 in German as chordotonal by Veit Graber (1844–92) in a paper published in the Archiv für mikroskopische Anatomie, XX, 506; zoochlorella and zooxanthella (1889), terms created by the German anatomist Karl Andreas Heinrich Brandt (1854–1931); neuropilema (1891), formulated in 1890 by Wilhelm His, Swiss anatomist (1831–1904); and tonofibril (1901), first used by Martin Heidenhain (1864–1949), German anatomist, in an article that appeared in 1899 in the Archiv für mikroskopische Anatomie, LIV, 212.

Examples of more recent neologisms in this field that were transferred into English without significant, if any, change are, briefly, *myoplasm* (1907), formulated by Paul Schiefferdecker (1849–1931) in 1905; *neëncephalon* and *paleëncephalon* (1917), devised in 1908 by the German anatomist Ludwig Edinger (1855–1918); and *nephron* (1932), originated by the German anatomist Hermann Braus (1868–1924) eight years before it surfaced in English.

We offer finally two of numerous additional acculturations in English that came from the pen of less prominent Central European anatomists. They are *spindle* (1894), from German *Spindel* (1863), employed in the anatomic sense by Wilhelm Kühne (1837–1900); and *germ center* (1898), a translation of German *Keimzentrum*, so named in 1884 by Walther Flemming, a German anatomist (1843–1905).

The thirty-five words in anatomy are:

Undated: ambos, ampulla of Vater, autoscopy, column of Türck, corpuscle of Herbst, corpuscle

of Vater, metakinesis<sup>2</sup>, neurotrope, pronormoblast, protoblast, rumpf

1851–1900: fundiform 1854, parametritis 1869, ependyma 1872, clastic 1875, delomorphic 1882,

chordotonal 1888, zoochlorella, zooxanthella 1889, neuropilema 1891, spindle 1894,

rhomboencephalon 1897, germ center 1898, autoscope 1900

1901–50: tonofibril 1901, neurotropism 1905, myoplasm, paraganglion 1907, paleostratium 1913,

dermatome 1915, neëncephalon, paleëncephalon 1917, Rouget cell 1922, nephron 1932,

lipochondrion 1936



#### GERMAN LOANWORDS IN ENGLISH

#### Astronomy

The nine German borrowings in astronomy scarcely reflect the contributions made to the field by German astronomers beginning with men such as Georg von Peuerbach (1423–61), who taught astronomy, mathematics, and philosophy in Vienna and not only began the translation of Ptolemy's *Almagest*, but built astronomical instruments, observed the stars, and prepared astronomical tables.

Besides the earliest recorded German loan *trabant* (1617), English lexicons record only the following borrowings between the years 1751 and 1950: *island universe* (1867), a translation of German *Weltinsel*, coined in 1845 by the German natural scientist Alexander von Humboldt (1769–1859); *gegenschein* (1880), attested in German sources since 1854 and denoting a patch of faint, nebulous light that occurs in the elliptic and opposite the sun; *astrophysics* (1890), from German *Astrophysik*, employed in 1854 by the German astronomer Joseph von Fraunhofer (1787–1826); *durchmusterung* (1892), first used by Friedrich Wilhelm August Arglander (1799–1875) in his book *Durchmusterung des nördlichen Himmels*, 1856; *stereocomparator* (1901), introduced as *Stereokomparator* by Max(imilian) Wolf in the *Astronomische Nachrichten* of 1901, 3,749; and *Schmidt telescope* (1939), called in German *Schmidt-Spiegelteleskop* after Bernhard Schmidt (1879–1935), Estonian-born German specialist in optics.

The two German items introduced to English in astronomy after 1950 are *Olbers' paradox* and *Schmidt camera*. The paradox, named after the German astronomer H. Wilhelm Olbers (1758–1840), holds that if enough stars were distributed over an infinite static universe, the sky ought to be as bright at night as it is during the day. The camera that bears the name of the Estonian-born German optician Bernhard Voldemar Schmidt (1879–1935) is a device employing a photographic reflecting telescope.

The nine words relating to astronomy are:

1601-50: trabant 1617

1851–1900: island universe 1867, gegenschein 1880, astrophysics 1890, durchmusterung 1892

1901–50: stereocomparator 1901, Schmidt telescope 1939 1951– : Olbers' paradox 1952, Schmidt camera 1978

#### **Biochemistry**

Because the study of the chemical processes in living things is not very old, it is not surprising to find that all of the dated German biochemical items entered the English lexicon after the year 1800, *Protein* aside,<sup>1</sup> the first dated loans were, in fact, introduced to English from German in the years 1844, 1845, and 1847. These borrowings are, respectively, *humin*, *biliverdin*, and *crystallin*. A citation in the *OED* associates the Dutch chemist Gerhardus Johannes Mulder (1802–80), sometime professor of chemistry at the University of Utrecht, with *humin*, which appears to have entered English via German. He investigated humus substances and humic acids in 1844 and his work attracted much attention in translation. The Swedish chemist Jöns Jakob Berzelius (1779–1848) is known to have coined *biliverdin* in German in 1840.

<sup>1</sup>Protein was apparently also coined in German by the Dutch chemist Johannes Mulder (1802-80) and published in

French as protéine in the Bulletin des Sciences Physiques en Néerlande, III (1838).



#### ALPHABETIC INDEX TO SEMANTIC FIELDS

And *crystallin*, from German *Kristallin*, a globulin in the crystallin lens of the eye, is connected with German (and possibly Swedish) in *Webster's Third*.

It is well to note here that, in addition to *biliverdin*, Berzelius discovered and named in German *Glycin* in 1848. It passed into English as *glycine* in 1851.

Born about twenty years after Berzelius, the German chemist Justus (von) Liebig formulated in 1853 the term *Kynurensäure*. An English biochemist translated it in 1872 as *kynurenic acid*.

Heinrich Wilhelm Wackenroder (1798–1854), another German biochemist of the time, was the first to isolate *carotene* from carrots (*OED* 1861). He called his 1831 discovery *Carotin*. In 1845 he also discovered the compound *Pentathionsäure* that became English *pentathionic acid*.

The German Nobel laureate in physiology of 1910, Albrecht Ludwig Kossel (1853–1927), who analyzed proteins, protamines, and amino acids, coined a number of terms that found their way into English. They are *Histon* named in 1884 (*histone* 1885), *Histidin, Salmin*, and *Sturin* in 1896 (*histidine, salmine*, and *sturine* 1896), as well as *Proton* in 1898 (*protone* 1898).

Kossel was actually a biochemist, as was his fellow-laureate Heinrich Otto Wieland (1877–1957). Wieland investigated sterols, alcaloids, and pterins. His discoveries include the enzyme *Dehydrase*, named in 1913 in German and registered in English as *dehydrase* in 1914.

The Austro-German chemist Richard Johann Kuhn (1900–67) was awarded the Nobel prize in chemistry for his research in vitamins. He and his associate investigators discovered both flavin(e) and ovoflavin in 1933. English adopted both terms the same year.

The terms *Chromosom* and *Neuron* were coined by the German biochemist Heinrich Wilhelm Gottfried von Waldeyer-Hartz (1836–1921) in 1888, six years after he had formulated and named *Keratohalin*. Anglicized, these loanwords are *chromosome*, *neuron*, and *keratohalin*(e). Their dates of first record in English are 1889, 1891, and 1887, respectively.

One of the most prolific stereochemists of the late nineteenth and early twentieth centuries, Hermann Emil Fischer (1852–1919) entered upon his academic career at the University of Munich. He accidentally discovered *Phenylhydrazin* in 1875 (*phenylhydrazine* 1897). In 1891 he added to his string of discoveries the amino acid *Lysin* and the sugar *Ribose*. English transferred them as *lysine* and *ribose* in 1892. In 1903 there followed *Polypeptid* and *Peptid*, which the *OED* records in 1903 and 1906, respectively.

The German biochemist Felix Ehrlich (1877–1942) created *Isoleucin* in 1903. It passed immediately into English as *isoleucine*.

The biochemical term *oligodynamic* (*OED* 1893) was coined in German in 1893 by the Swiss botanist Carl Wilhelm von Nägeli (1817–91). He is known for his micellar theory about the cell structure of plants, a theory long since confirmed.

Another Swiss originator was his fellow countryman Alexander Tschirch (1856–1939). He established the field of pharmacognastics, which he taught at the University of Bern. In 1907 he created *Protopectin*. It has been known in English by that name since 1908.

Adolf Friedrich Johann Butenandt (b. 1903), who shared the 1939 Nobel prize in chemistry with Leopold Ružička, is credited with the discovery of *Pregnandiol* in 1930, *Androsteron* in 1931, and *Progesteron* in 1934 (see Meyer). English dictionaries list *pregnandiol*, *androsterone*, and *progesterone*, respectively, as of 1930, 1934, and 1935.

Among the dozens of less well-known Germans who contributed loanwords to the expanding English vocabulary in biochemistry between 1751 and 1950, we single out, in conclusion,