

## DEBATE AND DISCUSSION

**A brief outline of the development of medical English**

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**English medical terminology developed from medieval Latin terminology, which had absorbed a developed Greek terminology. Only a few medical terms come from the oldest developmental period of English language (from Anglo-Saxon). During the Middle Ages, French became an excellent medium for introducing new medical terms developed from Greek/Latin elements. Nowadays English more and more uses its own language material for creation of new terms. (Ref. 9.)**

**Key words:** medical English, development, history.

English has become the *lingua franca* also in the field of medicine. Knowing the history of a language enables us to understand better its present state. How much do you know about the development of medical English?

**The Greek and Latin Influence**

International medical terminology and as a part of its frame this also English medical terminology both have a long, nearly 2500-year-old history. Each language of each nation that has contributed to the development of medicine has left indelible-unchangeable traces in modern medical English, too. The oldest language that played a very important role in the development of medicine in Europe was Greek. Thanks to the high level of medical schools which existed for a long time after the decline of the Macedonian Empire, Greek was the language of doctors in Ancient Rome from the beginning to the fall of the Roman Empire. Roman rulers, in an effort to strengthen the power and prestige of the Empire, focused their attention on military, governmental, and engineering problems. When in Rome in 293 B.C. there was a plague outbreak, the Romans called for doctors from Greece (Junas et al, 1985). At the beginning, the Romans had little confidence in the doctor's job; they even underestimated it. But after the arrival of famous doctors, such as Soranos, Rufus, Galenos and others into Rome, there was a gradual change in the way it came slowly to a turn in the public viewing of the medicine and from approximately since the 1st century B.C., medicine started to develop successfully in Rome, too (Kábrt and Kábrt, 1988). Not only doctors but also writers such as Aulus Cornelius Celsus were interested in medi-

cine, though, it was a long time before ordinary Romans did not consider it worthwhile to devote their energies to such a socially undervalued and underpaid activity with very low profit for a long time. The most important task for Roman doctors was to collect and arrange all available knowledge about treatment — see writings by Scribonius Largus *Compositiones* (Kronika medicíny, 1994). As one part of doctors living in Rome had come from Greece or Asia Minor, and the other part of Roman doctors had studied medicine in Athens, Alexandria, Pergamon or at some other Greek schools, the majority of medical writings were written in Greek. The first important Latin medical writings and translations appeared in the Medieval Latin which is more than reminiscent of a Latinised Greek than classical Latin (Andrews, 1947). In spite of the fact that Roman medicine did not surpass theoretically the level of Greek doctors (Kábrt and Kábrt, 1988), we cannot deny the Romans their outstanding talent in organizing, establishing and using medicine in practice. While in Ancient Greece, scientific language deviated from the common language, in Ancient Rome a new phenomenon started to develop — a bilingual Greek-Latin terminology (Šimon, 1989).

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From a number of preserved English medical terms of Greek origin we have chosen the following ones: *bregma*, *chorion*, *diabetes*, *diarrhoea*, *dyscrasia*, *empyema*, *emphysema*, *glottis*, *hypopyon*, *myopia*, *ophthalmia*, *plasma*, *pneumonia*, *stigma*, and *trauma*. Most Greek medical terms came into English in Latin „dress“ (with a Latin ending or spelling), e.g. *bronchus* (Gr. *bronchos*), *colon* (Gr. *kolon*), *hypochondrium* (Gr. *hypochondrion*), *pelvis* (Gr. *pyelos*), *pericardium* (Gr. *perikardion*), and *thrombus* (Gr. *thrombos*). Many Greek terms resisted to assimilation for a very long time and were anglicised only partially, either as adjectives or names of diseases (never as a denomination of a part of the human body), or in a very changed form, e.g. Gr. *paralysis* → Engl. *palsy*; *pleuritis* → *pleurisy*; *rhachitis* → *rickets*; etc. The English adjective *brachial* originated from the Greek *brachion* (English *arm*), for instance. Similarly:

Organ in Greek	Organ in English	Adjective and disease
<i>derma</i>	<i>skin</i>	<i>dermal, dermatitis</i>
<i>hepar</i>	<i>liver</i>	<i>hepatic, hepatitis</i>
<i>kardia</i>	<i>heart</i>	<i>cardial, carditis</i>
<i>nephros</i>	<i>kidney</i>	<i>nephric, nephritis</i>
<i>osteon</i>	<i>bone</i>	<i>osteal/osseous, osteitis</i>

For better understanding of the etymology of medical English let us go back to the very beginning of the language's development.

#### Under the Roman Government

When in the year 55 BC Roman troops tried to conquer Britain (the country had obtained its name from the Ceeeltic tribe of Britons), the local inhabitants spoke Celtic dialects, from which the modern Gaelic and Welsh language later developed. The Romans conquered Britain in the first half of the 1st century and established Latin as the official language. Probably it led to Celtic-Latin bilingualism in some social classes and in doctors even to trilingualism – Celtic-Latin-Greek (Andrews, 1048). Roman civilisation influenced significantly the life of the Celts. From this pre-Anglian period originate Latin loanwords such as *wine* (Lat. *vinum*), *plum* (Lat. *prunus*), *mint* (Lat. *moneta*), *pound* (Lat. *pondo*), *chest* (Lat. *cista*, Gr. *kiste*) (Peprník, 1992), *street* (Lat. *via strata*) (Vachek, 1974), etc. The Celtic language had no significant influence on Old English and only a few words with general meaning in today's English come from this source, e.g. *ass*, *ban-nock*, *bin*, *brock* (Vachek, 1974).

#### Development of Old English

When the Romans left Britain in 410 AD, the country became a target for new invasions from Europe. German tribes of Angles, Saxons, and Jutes gradually pushed the Celtic population into the mountainous regions of Wales and Scotland. Besides Latin, which was still used as an official language, Saxon dialect in the South, and Anglian dialect in the North were estab-

lished. By the 6th century all German tribes (i.e. Europeans and Islanders) could make themselves understood. Gradually the tribes transformed into new nations with their own languages. From European Saxons, Low Germans with their Low German dialect (Plattdeutsch) came and from European Angles the Danes with Danish arose. Before one national language developed in England, i.e. in the period of Old English called also Anglo-Saxon, four main dialects existed: Northumbrian, Mercian, West-Saxon, and Kentish (Peprník, 1998). Northumbrian and Mercian dialects had some features in common and sometimes they are considered to be two branches of a dialect called Anglian. But the majority of the oldest literary texts that have been preserved were written in the West-Saxon dialect. This resulted from the important political role the West-Saxon Kingdom played at the end of the Old-English period. However present-day Standard English does not relate much to West-Saxon dialect but more to Mercian and the London dialect (Peprník, 1998). While today's colloquial English has preserved a lot of words of Anglo-Saxon origin (nearly one third of its vocabulary), in medical English there are only a few (fewer than five per cent) (Andrews, 1947). These are basic anatomical terms such as *arm*, *chin*, *finger*, *foot*, *gut*, *hair*, *head*, *hip*, *liver*, *mouth*, *wrist*, etc.

#### The Scandinavian Influence

The period between 789 and 1066 was a period of frequent invasions of Vikings from Scandinavia. At the beginning, these were only sporadic raids, later – in the second half of the 9th century – the Scandinavians started to settle in England and in a short time they changed the northern and eastern parts of the country into a Scandinavian colony known as Danelaw. The West-Saxon King Alfred the Great, who defeated the Scandinavians in 878, saved the country from complete scandinavisation (Vachek, 1974). Although King Alfred tried to increase the education of his nation by having many Latin texts translated into ANglo-Saxon, the northern part of England did not escape the strong influence of Scandinavian languages. Adjective like *angry*, *happy*, *wrong*, *ugly*, nouns like *egg*, *husband*, *sister*, *sky*, verbs like *die*, *get*, *give*, *take*, even personal pronouns like *they* are of Old-Norse or Old-Danish origin (Vachek, 1974). Very few Scandinavian words penetrated into the medical vocabulary, however e.g. *ill*, *leg*, *kidney*, *skin*, and *skull*. We can hardly find any scientific name of a disease or an illness process that is of Anglo-Saxon or Scandinavian origin (Andrews, 1947).

#### After the Decline of the Roman Empire

What was happening in the meantime with Greek medicine and the Greek language? After the decline of the Roman Empire, the Greek language gradually lost its influence on medical terminology and retained its position only in the East-Roman Empire in Constantinople till the Turks defeated it in 1453 (Kronika medicíny, 1994). Medieval Europe went through a long, dark period of feudalism that brought a severe economic decline, deep class differences, and bad social and hygienic conditions for the

majority of its inhabitants. Migration of tribes and nations, frequent wars, unhealthy nutrition, and insufficient hygiene were the cause of a high sickness rate, death rate and the spread of infectious diseases, mainly cholera, plague, and leprosy. The new Catholic religion, which was proclaiming equality, justice, and eternal salvation for all people, acquired at first huge popularity among the poor. Later when it was institutionalised, the Church by means of dogmas slowed down the progress and development of human thinking for more than a thousand years. Greek as a scientific language disappeared completely and Latin kept its position only thanks to the fact that it was a language of the Church. The rebirth of Greek as a tool suitable for scientific purpose did not occur until the period of Humanism. Another paradox in the history of mankind is that Latin, as the second major source of medical vocabulary, had to vanish first as a living language before it became a means of doctors' communication for long centuries in the Middle Ages. In some countries it survived up to the end of the 19th century.

From Latin coinage the following English terms come, e.g.: *femur, forceps, humerus, occiput, placenta, pus, sinus, mandible* (Lat. *mandibula*), *cecum* (Lat. *caecum*), *puncture* (Lat. *punctura*), *pulse* (Lat. *pulsus*), *pulp* (Lat. *pulpa*). From other Latin terms only adjective forms survived, e.g. Lat. *ren/renalis* (Engl. *kidney*) → *renal*; *cutis/cutaneus* (Engl. *skin*) → *cutaneous*; *umbilicus/umbilicalis* (Engl. *navel*) → *umbilical*; *os/osseus* (Engl. *bone*) → *osseous*; *cor/cordialis* (Engl. *heart*) → *cordial*.

### The French Influence

In about the 7th–8th century classical Latin died out and split into several „vulgar“ languages such as Spanish, Italian, French, etc. Before classical Latin was „rediscovered“ in Europe, French had an enormous influence on the development of colloquial and scientific English. After the conquest of England by the Normans in 1066, it was its Norman variety and later on, the standard Paris variety which were dominant. The Normans brought to England a new official language that permanently and considerably influenced English vocabulary, spelling, grammar and sentence structure. An inflectional Old English language turned into an analytic Modern English with a fixed word order, expressing the relations among words by means of prepositions. For some linguists, the year 1066 meant the end Anglo-Saxon (for others it was the year 1150 before when the *Chronicle of the History of England* was written in Anglo-Saxon in English monasteries) and the period Middle English started. It lasted till the end of 15th century, till the accession of Elizabeth I. to the English throne in 1558. For more than three centuries there co-existed three completely different language communities: a Norman-speaking governing class; native Anglo-Saxon subordinates; and Latin, used in churches and universities. Historical events such as the loss of Norman territory in 1204, the Hundred Years War between England and France (1337–1450), and a split from the Roman Catholic Church under Henry VIII. led these communities to merge into one language unit – Middle English. As English developed, the use of French slowly disappeared.

### Development of Medieval English

The rebirth of English was a long process, which lasted several centuries. During this process the Teutonic element gradually weakened till there remained bare roots of words and the French influence grew stronger. French words penetrated first of all into administrative, legal, religious, political, military, artistic, and culinary terminologies, less into medical vocabulary, though there are some French terms, such as *jaundice* (Fr. *jaunisse*), *ague* (Fr. *aigu*), *poison*, *faint*, etc., French played a far more important role as a medium for penetration of Latin and Romance words into English. These are e.g. *superior*, *inferior*, *male*, *female*, *face*, *leper*, *gout*, *migraine*, *nature*, *nourish*, *nurse*, *odour*, *ointment*, *pain*, *venom*, *voice* (Andrews, 1947). For the development of the English language this period was also very fruitful from the literary viewpoint. The first preserved work written in Middle English is *The Canterbury Tales* by Geoffrey Chaucer. Thanks to the invention of printing, English started to get a regular typographical shape. The first English printed book was the *Chronicle of Troy*, 1474 (Vachek and Firbas, 1962). It was published by the printer William Caxton who, besides printing books, also translated Hippocrates' and Galenos' writings into English to enhance medieval English medical science, which, as he informs us in his work *Mirror of the World*, is not a science but a „métier or craft“ (cited from Andrews, 1947). In the middle Ages there was no interest in „learned“ medicine. The true scientific works still written in Latin came into existence at the turn of 16th and 17th centuries when such personalities as Francis Bacon, Isaac Newton, William Harvey, etc. lived. During that period the influence of Arab medicine that had absorbed much from classical Greek medicine and enriched medieval Latin medicine in many ways was declining in many European universities. The Arabic influence on English medical terminology can be traced in expression like *alcohol*, *alchemy*, *alkali*, *nitrate*, which got into English through Latin and French. Similarly the terms *dura mater* and *pia mater* are calks (translations) from Arabic into Latin.

### The Beginning of Modern English

The development of Modern English was encouraged amongst other things by a number of translations of the works of Greek and Latin scientists as well as of contemporaries, such as the Flemish anatomist Andreas Vesalius. The era of Modern English started during the reign of Henry VIII. who ensured peace in his country and allowed development of more cultural aspects of life (disregarding here the negative sides of his reign). Elizabeth I. continued in his policy. The English were proud of their language, which flourished in the works of William Shakespeare, Ben Jonson, Christopher Marlowe and others. The development of English language and literature was also influenced by a new philosophical trend – Humanism – which spread to the British Isles at the end of the 15th century. Humanism and the Renaissance stimulated interest in the study of classical (Greek and Latin) literature, arts, and languages. Latin, and a hundred years later also Greek, became welcome sources for forming new sci-

entific terminologies of quickly developing sciences such as physics, chemistry, biology, and medicine. The words such as *nucleus*, *vertebrate*, *mammal*, *fungus*, *syringe*, *thorax* entered into English directly from Latin (*nucleus*, *vertebratus*, *mammalius*, *fungus*, *syringa*, *thorax*) and did not experience a multiple assimilation as was the case with the following Greek words that got into English through Latin and French. Compare:

Greek	Latin	French	English
<i>atomos</i>	<i>atomus</i>	<i>atome</i>	<i>atom</i>
<i>diaita</i>	<i>diaete</i>	<i>diete</i>	<i>diet</i>
<i>rheumatikos</i>	<i>rheumaticus</i>	<i>reumatique</i>	<i>rheumatic</i>
<i>spasmos</i>	<i>spasmus</i>	<i>spasme</i>	<i>spasm</i>
<i>chirurgus</i>	<i>chirurgus</i>	<i>chirurgien</i>	<i>surgeon</i>

### Humanism and The Renaissance

In the 16th century many neologisms from Latin elements entered the language for scientific purpose, e.g. *cerebellum*, *delirium*, *virus*, *cadaver*, *cornea*, *vertigo*, *albumen*, *sinus*, *appendix*, *pus*, *abdomen*, *digit*, *ligament*, *saliva* (Andrews, 1947). In the Middle Ages, Latin was spoken by nearly every educated man and so Greek and Latin expressions could easily get into colloquial language, e.g. *individual*, *nervous*, *rational*, *tract*, *ulcer*, *genius*, *history*, and *summary*. In some expressions there occurred a meaning shift. For instance, in the 15th century the word *individual* meant *inseparable/unseparated* and the word *nervous* meant *musculous*, *ligamentous*, *strong*. Their contemporary meanings date back to the beginning of the 17th century (Peprnik). But up to now they carry a feature of bookishness and abstractness. We rarely hear such bookish words (among which we can include specialized terms) but see them more often in written texts. This leads to one interesting fact – a certain instability and uncertainty in their pronunciation.

Although the Renaissance brought a lot of new terms (Andrews, 1947, puts the number at 12,000 words), this new vocabulary did not penetrate into English as deeply as French did. Greek-Latin terminology is primarily used by a relatively small circle of people – specialists – and is used for scientific communication. This way of forming new words continues as a peripheral part of the lexical system of Modern English even today (Vachek, 1974).

Humanism created not only humanistic Latin but also conditions for its successive replacement by living languages. Since the time of Humanism and the Renaissance, the history of international medical terminology overlaps with the history of national terminologies. They influence each other and cannot be separated (Šimon, 1989).

Latin had e.g. a tendency to replace Greek nouns describing the parts of the human body and their relative adjectives with its own terms and used Greek stems for the creation of compound words suitable for denomination of pathological changes. A similar process can be observed in English, which also prefers its

own terms for the denomination of organs while all other terms are taken from Latin together with the tendency mentioned above. See:

organ (Engl.)	organ (Lat.)	pathology (Gr.)	compound/adj. (Gr. or Lat.)
<i>breast</i>	<i>mamma</i>	<i>mastitis</i>	<i>mammary</i>
<i>kidney</i>	<i>ren</i>	<i>nephritis</i>	<i>renal</i>
<i>marrow</i>	<i>medulla</i>	<i>myelitis</i>	<i>nepthro-/medullary</i>
<i>skin</i>	<i>cutis</i>	<i>dermatitis</i>	<i>cutaneous</i>
<i>eye</i>	<i>oculus</i>	<i>ophthalmitis</i>	<i>ocular/optic</i>

### The Influence of Other Languages on English

Not only has the dead language of Latin provided many medical words used today, but more and more words from other living languages have penetrated into English medical terminology. From French are e.g. *invalid*, *curette*, *grippe*, *cretin*, *migraine*, *cannula*, *tampon*, *glycerine*, *pipette*; from Spanish *mosquito* (as a malaria communicator), *potato*, *tomato*, *cocoa*, *chocolate* (as elements of healthy food), but also *tobacco*; from Italian, the names of diseases *malaria*, *pellagra*, *scarlatina*, *influenza*, or the names of plants used for preparation of drugs *belladonna*; from Dutch through French *plaque*. Thanks to discoveries overseas and trade activities, English sailors came into contact with *beriberi* disease coming from Sri Lanka, the *tsetse* fly that carries the sleeping disease in Africa, and *dengue fever* (a term of Swahili origin).

### The Modern-day Needs of the English Language

Since the 17th century, when the grammar system of Modern English was standardised in its basic features, a constant growth of vocabulary can be observed. This was influenced mainly by the technical and scientific revolution, which brought about a lot of new phenomena that had to be denominated. Besides permanent enrichment of Modern English vocabulary, the most important task in the history of post-Renaissance English was to standardise it because already at that time there was a big discrepancy between its spoken and written forms. This happened by means of vocabularies that started to appear 1755 when Dr. Samuel Johnson published his *Dictionary of the English Language* in two volumes (Vachek, 1974).

Since Rationalism (18th century), there has been a need for systematic order and a certain regularity in the English language that has still not been fulfilled. For instance, besides terms with Greek-Latin spelling there are terms with English spelling *haemostasia* x *haemostasis*, *polyglobulia* x *polyglobulism*, *thrombopathia* x *thrombopathy*, *thrombopenia* x *thrombopeny*; different affixes are used in words with the same meaning, e.g. we have found in English texts the following terms used as synonyms *embolia* x *emblus* x *embolism*; *coagulum* x *coagulate* x *coagulant*. The number of synonyms is constantly increasing; these are usually translations of Greek-Latin terms into English,

e.g. *erythrocyte x red blood cell; monocyte x mononuclear cell; thrombocyte x blood platelet; coagulation x blood clotting*. The effort to describe a certain symptom as accurately as possible results in long descriptive terms such as *acquired immunodeficiency syndrome, colony forming units, haematopoietic stem cells* that are later abbreviated into *AIDS, CFU, HSC* etc.

### Today's English

In the course of the last two centuries medicine has undergone great specialisation and differentiation into individual branches that have had to create their own terminologies. While in the past, medical English used more Greek and Latin elements when forming new terms (up to four-fifths of English scientific words are of Latin, Greek-Latin, or Romance origin) (Andrews, 1947), today's English uses more and more of its own language material. English in the 20th century thanks to the economic position of the USA became the most important interpreter of the latest news and thanks to its easy access through mass media, it has started to influence the language systems of other nations, the Slovak language being no exception, e.g. *šok, stres, skrín-ing, CT-vyšetrovanie* (from English *shock, stress, screening, computer tomography*), *AIDS* etc. The 20th century, besides economic globalisation and a maximum degree of medical development, brought also efforts towards internationalisation of national medical terminologies, plus standardisation and unification of this international form.

### References

- Andrews E.** A history of scientific English. The story of its evolution based on a study of biomedical terminology. New York, Richard R. Smith 1947.
- Junas J, Bokesová-Uherová M.** Dejiny medicíny a zdravotníctva. Martin, Osveta 1985.
- Kábrt J, Kábrt J.** Lexicon medicum. Praha, Avicenum 1988.
- Kronika medicíny.** Bratislava, Fortuna Print 1994.
- Peprník J.** Anglická lexikologie. Olomouc, Filozofická fakulta Univerzity Palackého 1992.
- Peprník J.** English lexicology. Olomouc, Vydavatelství Univerzity Palackého 1998.
- Šimon F.** O historickom výskume medzinárodnej lekárskej terminológie. Bratisl Lek Listy 1989; 90 (1): 48—55.
- Vachek J.** A brief survey of the historical development of Old English, Middle English and early modern English. Bratislava, Univerzita Komenského 1974.
- Vachek J, Firbas J.** Historický pohľad na dnešnú angličtinu. Praha, SPN 1962.

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