

ON THE ADJECTIVE *LYMPHATICUS*

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ABSTRACT

*The Latin word *lymp^ha* is derived from the adjective *limpidus* = clear, transparent, although some Roman grammarians tried another derivation from the Greek word for water sprite *nymfé*, and then the adjective *lymphaticus* meant in Latin “stricken with nymph-like anger, gripped by madness.” Thomas Bartholin, discoverer of the lymphatic system, was the first to use the word *lymphaticus* for new veins, because the liquid in them was watery. This term was accepted into the *Basiliensia Nomina Anatomica* but this did not mean the end of attempts at terminological changes, probably in an effort to eliminate the incorrect connotations based on the original understanding of this adjective. Other adjectival forms appeared, such as *lymp^haris*, *lymp^haceus*, *lymp^hatus*, *lymp^ho-vascularis*. The most recent development is the adjective *lymp^hoideus*, occurring in the *Terminologia Anatomica*, which is supposed to mean the organs producing lymph but this is not correct, since the suffix *-oideus* indicates similarity. Considering that the anatomical nomenclature manages with the adjective *urinarius* for the organs which produce and carry urine, it should also manage with the adjective *lymphaticus* for the organs which produce and carry lymph.*

Keywords: anatomical nomenclature, adjective lymphatic, lymphaticus, linguistics, history

The origin of the word *lymp^ha* in Latin grammar is not entirely clear. Linguisticians make the connection with the adjective *limpidus* = clear, transparent, used especially to mean clear, pellucid liquid (1). In Roman literature the word *lymp^ha*, more frequently the plural *lymp^hae*, was commonly used in the sense of clear water, or a source of pure water. Isidor of Seville, polyhistorian at the crossover from antiquity to medieval times, observes that *Limpidum vinum, id est perspicuum, ab aquae specie dictum, quasi lymphidum; lymp^ha enim aqua est* (2), i.e., limpid wine is that which is translucent, named for its watery look, as if it were *lymphidum*, for *lymp^ha* is water. The Roman grammarian Varro however tried to derive the word *lymp^ha* from the Greek name for water sprite *nymfé*, originating through dissimilation of the sound *n* to *l* (3). Festus, author of a defining dictionary of Latin words, literally states: *Lymphae dictae sunt a nymphis*, i.e., Lymphs got their name from nymphs (4). The adjective *lymphaticus* meant in Latin “stricken with nymph-like anger, gripped by madness.” It was traditionally said of nymphs, rather like the forest god Pan, that whoever saw them, or even claimed to have seen them, would be stricken with madness. For this reason Seneca, for example, speaks of *metus lymphaticus*, meaning frantic fear, or otherwise hydrophobia (5).

The words *lymp^ha* and *lymphaticus* were however not used in Roman medical

literature. The only exception is the medical poem by Quintus Serenus Sammonicus, where œdema is referred to as *error lymphaticus* (6), which might be taken as “stricken with madness.” For a long time then, these words played no part in medical terminology, appearing only much later in the 17th century in connection with the discovery of the lymphatic system. The first to observe the lymphatic system was the Roman anatomist Bartolomeo Eustachi, who mentioned in his writings on the non-paired vein the *ductus thoracicus* in the horse. He noticed what he called a great offspring which was *alba et aquei humoris plena* (7), i.e., white and full of watery liquid, and he named it *vena alba*, or white vein. This insight went unheeded for a long time though (8). In 1622 the anatomist Gaspare Aselli of Padua discovered lymphatic vessels in the guts of a dog. In the work which he wrote on this discovery, he devoted a whole chapter to the naming of these newly discovered vessels. In his view, new things should have new names, which could be obtained in three ways: completely new ones could be invented, they could be derived from existing ones, or they could simply be borrowed from some other, similar thing. This third way was used by Aselli himself, who named his discovery *venae lacteae*, milky veins, *venae albae* or *lactes*. He called these vessels *venae* because they were similar to veins, and *lacteae* because they contained a milk-like liquid, and also because the Latin word *lactes* means the small intestine, or the *mesenterium* (9). The name *vasa lactea* was then used by other authors who found these vessels in humans too, and not only in the intestines and mesentery but in other parts of the body as well (8,10-11). Danish anatomist Thomas Bartholin, considered to be the discoverer of the lymphatic system, published the first information on his findings in 1652. However like Aselli, whom he frequently cited in his works, he did not apply the term *lymphaticus* in that publication, but used *vasa lactea*, or *vasa nova* (12). Later though, since the liquid in these new veins was watery, and

considering himself as having discovered them, he chose the adjective *lymphaticus* for them. He proceeded from the meaning of the Latin word *lympa* and used it to name the liquid contained in those vessels. Apart from the name *vasa lymphatica*, he also accepted the term *vasa aquosa* (watery vessels) and *vasa chrystallina* (crystalline vessels). He did not insist on the name *vasa lymphatica*, saying he would accept some other “nomenclature” so long as it was more appropriate (13). At the same time as Bartholin, Swedish anatomist Olaf Rudbeck also discovered these new vessels, and a sharp exchange of claims for first place developed between them (14-16). Rudbeck named these vessels *vasa serosa*, serous vessels, because they contained serum (17). Bartholin however did not agree with this name, since *serum ... ab aqua hac lipida diversa est*, i.e., serum differs from this clear water (13).

Thomas Bartholin though was the more famous anatomist; he had authority, and he had pupils who spread his teaching and with it also the term *vasa lymphatica*, so this became established in anatomical terminology (15-16). This did not happen immediately or straightforwardly, however. Soemmerring for instance uses the name *vasa absorbentia*, and in the introduction to his chapter on these vessels, he presents a whole range of other names as well: *vasa resorbentia*, *ductus aquosi*, *ductus lymphae*, *vasa lymphatica*, *serosa*, *valvulosa*, *diaphana*, *chrystallina*, *lactea*, *chylosa*, *chylifera* (18). Nevertheless it is possible to trace the occurrence of Bartholin’s term in the well-known medical dictionaries. Castelli’s dictionary, which was published in many editions, did not yet include it in 1665 (19), and the first time *lympa* appears as a head-word was in 1682 (20). Ultimately the first unified anatomical nomenclature, Basiliensia Nomina Anatomica, accepted the adjective *lymphaticus* without reservation, discussing rather which substantives could be associated with it (*glandula*, *lymphoglandula*, *nodus*, *nodulus*, *ganglion*) (21).

Acceptance of the term *lymphaticus* in the official anatomical nomenclature, however, did not put an end to attempts at terminological change, which were probably efforts to eliminate the incorrect connotations based on the original understanding of this adjective. H. Triepel proposed the term *vasa lympharia* (22), and in *Ienaiensia Nomina Anatomica*, which strove to pay greater respect to original Latin, the term was altered to *vasa lymphacea* (23). *Parisiensia Nomina Anatomica* on the other hand returned to the original adjective *lymphaticus* (24). Another similar adjectival form is *lymphatus*, which occurred in classical Roman literature itself in its original meaning, i.e., frenzied, for example in Catullus: the Satyrs *lymphata mente furebant*, i.e., raged with frenzied mind (25). This adjective also appears in medieval Latin, for example in Erasmus of Rotterdam, who used it in his famous Oration in Praise of the Art of Medicine dated 1530: patient may be *phreneticus*, *lethargicus*, *maniacus* or *lymphatus* (1973), i.e., suffering from phrenitis, lethargy, madness or frenzy (26). In 17th century medical literature, it is found as the phrase *vas lymphatum* in anatomy of Isbrand van Diemerbroeck (27), and rarely there is a proposal to use the form *lymphata* as a substantive intended to replace *lymphatica* as a generic name for the larger lymph channels or ducts (28). There was a short-lived appearance in the official nomenclature of the adjective *lymphovascularis*, such as in the expression *systema lymphovascularis*, first introduced in the *Nomina Histologica* (29) and reappearing in its second edition (30), but *Terminologia Histologica* returned to the expression *systema lymphaticum* (31).

Most recently the *Terminologia anatomica* features alongside the adjective *lymphaticus* also the similar adjective *lymphoideus*, for example in the term *nodus lymphoideus* (32). This change has appeared only in human anatomy as *Nomina anatomica veterinaria* continues using the term *nodus lymphaticus* (33). The adjective *lymphoideus* is not new in itself, occurring in

medical terminology from the 19th century onwards but only in a pathological context. In the 20th century though the expression lymphoid system started being used in anatomy as well, and the term *textus lymphoideus* entered into the official histological nomenclature on its second issuing in 1983 (30). Its presence in the anatomical nomenclature raises certain questions, however, since the suffix *oideus* means similarity, so that *nodus lymphoideus* for example should have the meaning “a node similar to lymph” (34). From the historical point of view the form *lymphoideus* could be explained as an adjective indicating that *lymph* is not an absolutely clear liquid, in contrast to the original meaning of the word *lymph*, but that it is only similar to the latter. In that case though the anatomical nomenclature should contain only the form *lymphoideus*, and not *lymphaticus* as well. Wikipedia explains the difference between *lymphaticus* and *lymphoideus* in this way: lymphatic is used for the lymph-transporting system and lymphoid is used for the tissues where lymphocytes are formed (35). Thus *Terminologia Anatomica* properly respects this difference in that the anatomical parts included within the cardiovascular system are attributed with the adjective *lymphaticus*, e.g., *vas lymphaticum*, *ductus lymphaticus*, while the separate lymphatic system has the adjective *lymphoideus*, e.g., *systema lymphoideum*, *nodi lymphoidei*, whereby only in the case of *nodus* does TA also give the synonym *nodus lymphaticus* (32). According to Krmpotic-Nemanic and Vinter, the term *lymphoideus* may be applied solely to the lymphatic tissue incorporated in an organ such as the *medulla ossium*, *thymus* or spleen, and the adenoid tissue of the *anulus lymphoideus pharyngis* (pharyngeal ring) (36). In our opinion, however, this is not justified even in this case, because a discrepancy remains between the meaning of the suffix *oideus* and the function of the anatomical organs mentioned above. After all, medical terminology has other word-forming means

at its disposal for expressing the idea that something is created somewhere, namely the suffix *-poeticus*, as in *haemopoeticus*, *uropoeticus*. These adjectives used to appear in the anatomical nomenclature, but they were gradually eliminated. Parisiensia Nomina anatomica originally included the term *organa uropoetica* (24), but it was later changed to *organa urinaria* (30), and finally Terminologia anatomica has the comprehensive term *systema urinarium* (32). The first issue of histological terminology features the expression *organa hemopoetica* (29), and the second issue has the term *textus haemopoeticus* (30), but the current Terminologia Histologica does not include this kind of adjective form (31). There exists an adjective expressing the idea that lymph is created somewhere, which has the form *lymphopoeticus*, and this adjective in fact occurs in medical literature. In the second edition of Nomina Histologica the original term *organa hemopoetica* is extended to *organa hemopoetica et lymphopoetica* (30), but in Terminologia Histologica this is separated into *systema cardiovasculare* and *systema lymphoideum* (31). The term *organa lymphopoetica* is also used in veterinary anatomy (37), though not directly in the official Nomina anatomica veterinaria (33). Since expressions including adjectives like *uropoeticus* and *hemopoeticus* have been omitted or replaced in the official nomenclatures through their subsequent revisions, the persistence of the adjective *lymphopoeticus* in the official anatomical nomenclature becomes questionable as well. Our view ultimately is that if the anatomical nomenclature makes do with the adjective *urinarius* for organs which produce and carry urine, then it could also make do with the adjective *lymphaticus* for the organs which carry lymph as well as the organs which produce it.

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