

## **A professional view as Zootomists about Latinized names in Animal Anatomy**

**Pere M. Parés-Casanova, Irina Kucherova**

Dept. of Animal Production, University of Lleida  
Lleida (Catalunya, Spain).  
[peremiquelp@prodan.udl.cat](mailto:peremiquelp@prodan.udl.cat)

### **RESUMEN**

#### **Una visión profesional como Zootomistas sobre la latinización de nombres en Anatomía Animal**

La *Nomina Anatomica Veterinaria* se constituye como un consenso general de la nomenclatura veterinaria. Este artículo contempla algunos términos arcaicos e irracionales extraídos de la última versión de la *Nomina*, de lo que se justifica que los autores justifiquemos la elección de palabras que puedan ser fácilmente adaptadas a las lenguas vernáculas, independientemente del origen de cada término, griego o latín. Los anatomistas animales deberíamos relativizar la utilidad de términos latinos en esta nomenclatura, a favor, si fuese incluso necesario, de una cierta corrupción del original latín.

**Palabras clave:** Anatomical topographic terms; Necropsy; *Nomina Anatomica Veterinaria*; Veterinary

### **SUMMARY**

*Nomina Anatomica Veterinaria* represents a general agreement on the nomenclature of veterinary anatomy. This article compiles some archaic and irrational terms extracted from the latest version of the *Nomina*. This has led the authors to advocate the choosing of terms that can be more easily adapted to the vernacular, regardless of whether they are of Latin or Greek origin. Animal anatomists should consider the usefulness of Latinized words in nomenclature, even if they involve a certain corruption of Latin.

**Keywords:** Anatomical topographic terms; Necropsy; *Nomina Anatomica Veterinaria*; Veterinary

## INTRODUCCION

Language and communication are fundamental to all biological disciplines. The importance of rapid and effective international communication is greater than ever and hence the need for simple, international terminologies, sufficiently easy to be accepted and used by scientists. It has been traditionally considered convenient and politic to use Latin as it belongs to no modern political or linguistic group.

Until 1895 there was no general agreement on the nomenclature of human or veterinary anatomy. Each nation had its own system of terminology, although there was a common foundation that extended far back into history. Many structures had different names in different countries, and many were named after the person credited with the first description. In many cases the same organ was associated with the names of different anatomists in different countries. This would explain why so many eponyms exist (Botalli's ligament, Peyer's patches, Vater-Pacini lamellated corpuscles...).

Only the Binomial Nomenclature of Linnaeus precedes it amongst scientific terminologies. But many of the terms are from 'classical Latin' and some are even directly derived from the usages of pre-Christian anatomists. The first effort to compile a unified anatomical terminology produced the *Basel Nomina Anatomica* (B.N.A.), adopted by the *Anatomische Gesellschaft* in 1895. This nomenclature was not applicable to domestic animals because the terms of direction were based on the erect position of the human body (this difficulty is especially appreciated if one thinks of the difficulty of positioning a quadruped corpse in a 'standard human' autopsy position). So a committee on veterinary anatomical nomenclature was established in the same year by the VIth International Veterinary Congress in Bern. This committee secured the adoption of its nomenclature by the VIIth International Veterinary Congress in Baden-Baden in 1899. Unfortunately, it was never printed, and was not distributed internationally. It was, however, used in well-known textbooks. In 1923 the American Veterinary Medical Association published *Nomina Anatomica Veterinaria* based on the B.N.A. This list also failed to achieve international acceptance.

A revision of the B.N.A. was prepared by a committee of German anatomists between 1923 and 1935, adopted by the *Anatomische Gesellschaft* in Jena, and published in 1936. Some of its sweeping reforms were especially important to veterinary anatomists. The standard anatomical position was abandoned and the terms of direction were related to parts of the body, making the terms applicable to all vertebrates. Of course, many terms necessary in veterinary anatomy were not listed, but established veterinary anatomical terms were adopted by the authors of several widely-accepted textbooks. During the same period the Birmingham Revision, based on the erect human position, was published with the approval of the Anatomical Society of Great Britain and Ireland.

An International Anatomical Nomenclature Committee (I.A.N.C.) was appointed by the Vth International Congress of Anatomists in Oxford, 1950. The list of terms compiled by this Committee was adopted by the VIth International Congress of Anatomists in Paris in 1955. Although the new nomenclature

contained many improvements and had the great advantage of international recognition and actual use in textbooks of human anatomy, it was opposed by veterinary anatomists because it was based on the B.N.A., reintroducing the old terms of direction related to the human standing position, with the forearms supinated in a posture that is impossible in most animals. Consequently the veterinary anatomists present at the Congress in Paris decided to found an International Association of Veterinary Anatomists with the primary objective of preparing a nomenclature of veterinary anatomy based on the 1995 nomenclature.

The first version of *Nomina Anatomica Veterinaria* (N.A.V.) dates from 1968. It was prepared by the International Committee on Veterinary Gross Anatomical Nomenclature (I.C.V.G.A.N.). The 4th edition, published in 1994, was the last commercially-printed edition. The 5th edition is available free of charge from the World Association of Veterinary Anatomists (W.A.V.A.) in portable document format, and has not been printed commercially (available at [http://www.4shared.com/office/NoTIfxbU/nomina\\_anatomica\\_veterinaria\\_5.html](http://www.4shared.com/office/NoTIfxbU/nomina_anatomica_veterinaria_5.html)).

The principles of the N.A.V., which serve as guides in the work of the Committee, are (p. xi):

1. Apart from a very limited number of exceptions, each anatomical concept should be designated by a single term.
2. Each term should be in Latin in the official list, but the anatomists of each country are free to translate the official Latin terms into the language of instruction.
3. Each term should be as short and simple as possible.
4. The terms should be easy to remember and should have, above all, instructive and descriptive value.
5. Structures that are closely related topographically should have similar names, for example, *Arteria femoralis*, *Vena femoralis*, *Nervus femoralis*.
6. Differentiating adjectives should generally be opposites, as with *major* and *minor*, *superficialis* and *profundus*.
7. Terms derived from proper names (eponyms) should not be used.

No scientific nomenclature can be considered complete and permanent while research in the field is continuing. Research in gross anatomy of domestic animals is actively pursued throughout the world, and has been accelerated by interest in the problems uncovered in the compilation of the N.A.V. But even if the N.A.V. was regularly revised, it would still constitute an obsolete manual in many respects.

N.A.V. has inherited a number of archaic, and now somewhat irrational, terms which are confusing even to those who possess the rudiments of Latin, as Spanish students do. For example, why does N.A.V. persist in trying to enforce the term *ventriculus* instead of the obvious *gaster*? (Everything pertaining to the

stomach is “gástrico” in Spanish). Curiously, N.A.V. admits *vena gastrica* and *nl. epigastricus*. The preservation of archaic terms such as *Lien* (Spanish: “bazo”), *epiploon* and *syndesmologia* has no sense in a world which uses and will continue to use *splen* (and so “splenic vein” instead of *vena lienalis*, and vernacular Spanish terms such “esplenodinia”, “esplenograma” and “esplenopatía”), *omentum* (and so vernacular Spanish terms such “omentofijación” and “omentopexia”) and *arthrologia* (and so vernacular Spanish terms such “artrófito”, “artropatía” and “artroscopia”). The adoption of alternative names such as *fibula* and *ulna* instead of the old Greek terms *perone* and *kubiton*, or *nates* instead of *chunes*, would facilitate the formation of vernacular derivatives: “fibular”, “ulnar” (although “ulna” is accepted in N.A.V., some incongruences appear, such as *incisura radialis* instead of *incisura ulnae*), “naticefalia”, “natiforme”.

Another defect which can be detected in N.A.V. is, for example, that it does not differentiate between a cranial and a caudal *Nl. epigastricus*, but the latter exists in the rabbit and the cat. Admitted synonyms add confusion: we find no sense in strange terms such *os lunatum* (Spanish: “hueso semilunar”), *os triquetrum* (Spanish: “hueso piramidal”), *os hamatum* (Spanish: “hueso ganchoso”), all referring to the bony pieces of the carpus, when it would be easier to name them according to their relative position: *intermedium*, *ulnare*, *carpale IV*.

Moreover, names referring to form are frequently those from human bones, so this has no sense in Animal Anatomy. The same is valid for tarsal bones: *os naviculare* (Spanish: “hueso escafoides”, there being an added problem with this bone in that the Spanish “hueso navicular” exists and corresponds to the distal sesamoide bone, *os sesamoideum distale*). Only its synonym *os tarsi central* might be allowed. An example of completely obsolete words is *puendum* (*puendum femininum*), for which the synonym *vulva* is recognized; leave *vulva* and then the derivatives would be more understandable, such *vena vulvae* (not appearing in N.A.V.) instead of *vena puenda*.

Another strange word is *mala*, instead of the recognized word *bucca*, the former being an ancient name referring to *os zygomaticum*. In other cases, a name could be “reused”, such as *jugal* (an ancient name also referring to *os zygomaticum*), which if it were restricted to premolar and molar teeth, a derivative *dentes jugalis* (= lower premolar and molar teeth) could be formed (and even a *dentes malaris* (= upper premolar and molar teeth). No word sacrificed, then!

An examination of scientific papers clearly shows that a large number of those which use anatomical terms make little effort to use derivatives in conformity with N.A.V., preferring 'unofficial' variants to those which are closer to the common language. So, in conclusion: we advocate choosing terms that can be more easily adapted to the vernacular, regardless of whether they are of Latin or Greek origin. We must emphasize that ours is not a “personal crusade” against Greek terms: *splen* and *gaster* are Greek terms, *lien* is a Latin one; the former two are recommended, the latter one is not. It is just a reflexion about the incongruity of some official anatomical terms and the risk that they will end up as “fossilized” (and thus scarcely used) archaic words.

As anatomists we should consider the usefulness of Latinized words in nomenclature, even if they involve a certain corruption of Latin. N.A.V. fails to encompass all the details of anatomy in domestic animals, so no “definitive work” can be argued. The botanists, perhaps the most experienced users of Latin nomenclature (and they do not use it only for naming species and subspecies, but also for phytosociological communities), emancipated themselves from 'classical' Latin long ago. This has given them great freedom to form neologisms. So, are we free enough to accept new and updated standardized names for animal anatomical terms?

*Nota Bene.* And a last comment about scientific names for animals used in N.A.V.: They had to be revised so that they can be applied to domestic species, so a “para-linnean” nomenclature (see Groves, 1995) must be applied.

## REFERENCES

- Barone, R. (1996). *Anatomie comparée des mammifères domestiques. Tome 5. Angiologie.* Éds. Vigot. Paris.
- Barone, R. (1999). *Anatomie comparée des mammifères domestiques. Tome 1. Osteologie.* Éds. Vigot. Paris.
- Braier, L. (1979). *Diccionario Enciclopédico de Medicina Jims.* Jims. Barcelona.
- Getty, R. (1985). *Anatomía de los animales domésticos. Tomo I.* Salvat. Barcelona.
- Groves, C.P. (1995). On the nomenclature of domestic animals. *Bull. of Zool. Nomencl.* 52(2):137-141.
- König, H.E., Liebich, H.-G. (2009). *Veterinary Anatomy of Domestic Mammals.* Textbook and Colour Atlas. Schattauer. Stuttgart.