

OPINION 99

Endamoeba LEIDY, 1879, vs. *Entamoeba* CASAGRANDE and
BARBAGALLO, 1895

SUMMARY.—*Entamoeba* 1895, with *blattae* as type by subsequent (1912) designation, is absolute synonym of *Endamoeba* Leidy, 1879a, p. 300, type *blattae*, and invalidates *Entamoeba* 1895, type by subsequent (1913) designation *hominis* = *coli*.

STATEMENT OF CASE.—Dr. W. H. Taliaferro presents the following case for Opinion:

Should the two generic names *Endamoeba* Leidy, 1879, and *Entamoeba* Casagrandi & Barbagallo, 1895, both be retained or should they be considered homonyms? It is impossible to decide this question from the existing International Rules. The spirit of Article 35, a-e, would point to the conclusion that they were homonyms, but Article 36 (recommendations) would allow the interpretation that both should be retained. In the past, authors have disagreed in regard to this question. Dobell (1919, "The Amoebae Living in Man"), for example, advocates the retention of both names whereas others consider them homonyms.

DISCUSSION.—This is a case upon which legitimate difference of opinion may arise. It has both its academic and its practical aspects.

The first point at issue is whether *Endamoeba* and *Entamoeba* are homonyms, or whether they come under the first recommendation of Article 36 which reads as follows:

It is well to avoid the introduction of new generic names which differ from generic names already in use only in termination or in a slight variation in spelling which might lead to confusion. But when once introduced, such names are not to be rejected on this account. Examples: *Picus*, *Pica*; *Polyodus*, *Polyodon*, *Polyodonta*, *Polyodontas*, *Polyodontus*.

Neither Leidy, 1879, nor Casagrandi & Barbagallo, 1895 and 1897, gave the derivation of their generic name. Accordingly, the conceivable possibilities as to etymology seem to lie in recommendations *e* and *k* of Article 8 which read as follows:

The following words may be taken as generic names:

e. Greek or Latin derivatives expressing diminution, comparison, resemblance, or possession. Examples: *Dolium*, *Doliolum*; *Strongylus*, *Eustrongylus*; *Limax*, *Limacella*, *Limacia*, *Limacina*, *Limacites*, *Limacula*; *Lingula*, *Lingulella*, *Lingulepis*, *Lingulina*, *Lingulops*, *Lingulopsis*; *Neomenia*, *Proneomenia*; *Butco*, *Archibuteo*; *Gordius*, *Paragordius*, *Polygordius*.

k. Words formed by an arbitrary combination of letters. Examples: *Neda*, *Clauculus*, *Salifa*, *Torix*.

In view of the history of the genus *Amoeba* it would be difficult to assume that recommendation *k* obtains in this case.

In attempting to derive the two names from the Greek, it seems not absolutely inconceivable that the authors might have united the Greek words *ἐν* and *ἀμειβή*, Leidy using a *d* and Casagrandi & Barbagallo using a *t* for sake of euphony. If this possibility were actually the fact, the case would be somewhat similar to *Microdon* and *Mikrodon*, but more similar to *Tacniarhynchus* Weinl., 1858a, and *Tacniorhynchus* Arribalzaga, 1891, and etymologically [not necessarily taxonomically] the words would be not only synonyms but, if used for two different things, *virtually* homonyms.

Another, certainly more probable and more scholastic line of argument would be that while both names are based on *ἀμειβή*, Leidy derived his Greek prefix from *ἐνδον* and Casagrandi & Barbagallo derived their prefix from *ἐντός*.

Professor J. M. Campbell, of the Catholic University of America, has kindly furnished the Secretary with the following memorandum in regard to these two words:

ἐνδον, seen in our ordinary lexica, is derived from *ἐν* + Indo-European *-dom*.

Its original signification is "in the house" (*-dom*, cf. Latin *domus*).

ἐντός, of our lexica, is derived from *ἐν* + Indo-European *-tos* (meaning "from"). Its original signification is "in from," i. e., "from within."

The Indo-European *-tos* ("from") is seen in the Sanscrit *mukha-tāh* ("from the mouth") and in the Latin *caelitus* ("from heaven").

Both *ἐνδον* and *ἐντός*, according to Boissacq's "Dictionnaire étymologique de la Langue grèque" (Paris, 1910), are now synonymous, signifying "à l'intérieur."

Their early confusion of meaning is indicated by the career of *ἐνδον* in the dialects. In Cretan, Megarian, and Syracusan, *ἐνδον* became written *ἐνδός* on analogy with *ἐντός*. Such an analogical form probably arose from the approximate similarity in spelling of *ἐνδον* and *ἐντός* and, what is of more interest to us, from their similarity in meaning.

Accordingly, *endon* and *entos* are now synonyms and from this point of view *Endamoeba* and *Entamoeba* are words of identical meaning but of slightly different etymology in their historic development, in that both of them have in common the Greek words *ἐν* and *ἀμειβή* but differ in the Indo-European *dom* and *tos*.

Words of similar derivations as respects the *end* and *ent* are well known in terminology in zoology and are often interchangeable. For instance, *endoplasm* is interchangeable with *entoplasma*, and *endoderm* with *entoderm*. Not only would the concurrent use of these terms in different senses be confusing but zoologists have come to use them as absolute synonyms.

Turning now to the more practical and less academic side of the question we are faced by the following taxonomic situation.

Endamoeba Leidy, 1879a, p. 300, has for its monotype *Amoeba blattae*. The generic name was emended by Chatton, 1910, Ann. Zool. exp. gén., 282,¹ and 1912, Bull. Soc. zool. France, p. 110, to read *Entamoeba*, and by Chatton and Lalung, 1912, BSPe, p. 142, in the same sense. Accordingly, there is a generic name *Endamoeba* and one *Entamoeba* with the same species (*E. blattae*) as type.

*Entamoeba*² Casagrandi & Barbagallo, 1895c, p. 18, contained *Amoeba coli* and *A. blattae* without designation of type. Apparently the first type designation in words was by Brumpt (1913, p. 21) as *Entamoeba hominis* which is *Amoeba coli* renamed. It will be noted that the type designation is three years later than Chatton's emendation of *Endamoeba* to *Entamoeba*. It is also clear that Chatton (1912) quotes the generic name *Entamoeba* Casagrandi & Barbagallo, 1897, and invites attention to the fact that as early as 1910 he (Chatton,³ AZeg, 282) had shown that protozoologists had erroneously attributed the parentage of the genus *Entamoeba* to Casagrandi & Barbagallo, 1897. Accordingly, for Chatton *Endamoeba* 1879 and *Entamoeba* 1897 were simple orthographic variants and it is not at all impossible (renaming and cf. Opinion 6) to construe his papers (1910, 282, and 1912, 110) as a designation of *blattae* as the type of *Entamoeba* Casagrandi & Barbagallo, 1897. This point of view receives support in the fact that Chatton eliminated *E. coli* from *Entamoeba* and made it type of *Löschia*. If this point of view be accepted, *Endamoeba* 1879 and *Entamoeba* 1895 are to be interpreted as having the same genotype, on the premise that Chatton in 1912 determined the type of *Entamoeba* Casagrandi & Barbagallo as *blattae* while Brumpt did not make his determination (*hominis*=*coli*) until 1913.

We are further faced by the complication that some authors consider the species *blattae* and *coli* as congeneric, others as belonging to two different genera in the same family, and still others as belonging to two different subgenera in the same genus.

¹ It is obvious that Casagrandi & Barbagallo were discussing *E. coli* rather than *E. blattae*, and that they cited only incidentally the latter species. To take *E. blattae* as type of their *Entamoeba* is theoretically possible under the Rules, but is contraindicated by Art. 30, n. p. q. t, also by the obvious fact that Casagrandi & Barbagallo had *E. coli* especially in mind. The difficulty is solved equally well by considering *Entamoeba* a variant of *Endamoeba*, as Chatton (1910) did, before Chatton & Lalung, 1912, eliminated *coli* to *Löschia*.

² "*Entamoeba* Leidy, 1879" . . . "C'est à tort que Doflein (1909) attribue la paternité du genre *Entamoeba* à Casagrandi & Barbagallo (1897)."

The case has already produced considerable confusion in literature and it seems obvious that unless the name *Entamoeba* is definitely suppressed both the nomenclatorial and the taxonomic status of the species which come into consideration will become even more confused.

Accordingly,

(a) since the original authors did not give the derivation of the two names in question,

(b) since Chatton (1910, Ann. Zool. exp. gén., 282, and 1912, Bull. Soc. zool. France, p. 115) interpreted the two names as orthographic variants, hence identical in origin, and therefore homonyms,

(c) since Chatton's action appears to be the earliest interpretation available to the Secretary and therefore has priority,

(d) since (under Opinion 6) Chatton's paper (1912, Bull. Soc. zool. France, p. 113) is to be interpreted as designating *blattae* as type of "*Entamoeba*" 1897 (=1895), [emendation of *Endamoeba*, but obviously construed as identical with *Entamoeba*],

(e) since the concurrent use of the two generic names as closely allied separate units has already given rise to a confusion which promises to increase rather than to decrease,

(f) since zoologists are accustomed to use words of similar derivation as respects the *end* and *ent* interchangeably, and

(g) since, conceivably, *Entamoeba* and *Endamoeba* might have been derived from *ἐν* and *ἀμοιβή* with *d* and *t* for sake of euphony, or still more probably, and more scholastically, derived from *ἐνδον* or *ἐντός* and *ἀμοιβή*, the one or the other adverb being used as seemed the better at the moment, whether for euphony's sake or for other reason (that they have the same meaning, etc.) and since they are therefore of the same meaning and practically, though not academically, of the same ultimate derivation *ἐν* (+ *tos* or + *dom*) and *ἀμοιβή*, the Secretary recommends that the name *Entamoeba* 1895, either with type *hominis=coli* as definitely designated by Brumpt, 1913, p. 21, or with *blattae* as accepted by Chatton and Lalung (1912, 111) and as implied by Chatton (1910, 282), be definitely invalidated by *Endamoeba* Leidy, 1879a, p. 300, type *blattae*, irrespective of the point whether the type of *Entamoeba* be considered *blattae* or *coli*.

The foregoing Opinion was submitted to vote by mail and carried as follows:

Opinion concurred in by twelve (12) Commissioners: Apstein, Horvath, Jordan (D. S.), Kolbe, Loennberg, Monticelli, Neveu-Lemaire, Skinner, Stejneger, Stiles, Stone, Warren.

Opinion dissented from by three (3) Commissioners: Bather, Handlirsch, Jordan (K.).

Not voting, two (2) Commissioners: Chapman, Hartert.

The points raised in the dissenting votes were sent to all Commissioners and a new ballot was taken with the following result:

Concur with the original Opinion, eight (8) Commissioners: Handlirsch, Jordan (D. S.), Jordan (K.), Neveu-Lemaire, Monticelli, Stiles, Stone, and Warren.

Dissent from original Opinion, three (3) Commissioners: Apstein, Bather, and Horvath.

Not voting, six (6) Commissioners: Chapman, Dabbene, Hartert, Kolbe, Loennberg, and Stejneger.

All papers were tabled until the Budapest meeting of the Commission. Commissioner K. Jordan was appointed a committee of one to restudy the case for the Commission. He reported as follows:

Entamoeba Leidy, 1879 with *blattae* as only species.

Entamoeba Casagrandi & Barbagallo, 1895, with two species, *blattae* and *coli*, none being designated as genotype.

When Casagrandi and Barbagallo proposed *Entamoeba* as a new genus they were unaware of the existence of the name *Entamoeba* Leidy, 1879.

Which spelling of the name should be used? The question can be decided on nomenclatorial grounds and on philological grounds:

A. NOMENCLATORIAL CONSIDERATIONS

In 1912 Chatton separated from *Entamoeba* the species *coli* as genotype of his new genus *Löschia*, leaving *blattae* as only original species in *Entamoeba*. As nobody had dealt, nomenclatorially, with *Entamoeba* prior to 1912, Chatton's action made *blattae* the type of *Entamoeba*. In 1912 the two concepts stood like this:

Entamoeba Leidy, 1879, type *blattae*.

Entamoeba Casagrandi & Barbagallo, 1895, type *blattae*. That is to say, the second name falls as a synonym of *Entamoeba*.

B. PHILOLOGICAL CONSIDERATIONS

In zoology the prefixes *Ento-* and *Endo-* are frequently interchanged. In zoological terminology they are located as being identical. They come under the category of names of which the spelling in Latin varied to a slight extent and which the Rules of Nomenclature do not accept as different, such as *auctumnalis* and *autumnalis* (p. 87 of Rules). *Entamoeba* is philologically the same as *Endamoeba*.

On motion and second, the foregoing report was adopted by unanimous vote of those present, namely: Apstein, Bather, Hartert, Heddicke, Jordan (K.), Muesebeck, Rothschild, Stejneger, and Stiles, and authorized to be published.