

FURTHER COMMENTS ON THE PROPOSED DESIGNATION OF A
TYPE SPECIES FOR *PLEUROCERA* RAFINESQUE, 1818. Z.N.(S.) 83
(see Vol. 33: 105-113; vol. 34: 196-199)

By J.P.E. Morrison (1330, 4th Street, S.W., Washington, D.C.
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I believe I have studied more of the shells and the animals of the Family
PLEUROCERIDAE than anyone else now alive.

I was fortunate to discover the eggs of this family for the first time in
North America in 1924 in Kentucky. I saw them again in 1931 in Madison,
Kentucky.

In 1937 I was sent to North Alabama to study under the T.V.A. the
massive deposits of subfossil shells of this family then existent, dating
back 50,000 years.

In 1944 Dr. Hemming asked for, and if I remember rightly, got a three
to four to one majority of concerned American malacologists *against* a proposal to
change the type species of *Pleurocera*.

In 1954 I published all that was known at that time of the anatomy of
the genera of the PLEUROCERIDAE in the world. This was based on all the
anatomy and taxonomy I had by then learned. The genera of this family can be
distinguished only by the egg-laying characters. Since 1954 three additional
genera have been proven to have distinct egg-laying features, as I said all of
them in 1954.

To state the case plainly: *Pleurocera* of Rafinesque 1818 became
preoccupied in 1820 upon the publication of *Pleurocera verrucosa* Raf. Hannibal
1812 formally designated this species as the type species; Pilsbry correctly
followed this lead in 1917.

All the 'confusion' is based on Bryant Walker's deliberate refusal in
1944 to accept Hannibal 1912 and Pilsbry 1917 in taxonomic clarification of
Rafinesque's names on a strict priority basis.

I do not see how the International Commission can name as a type
species *Pleurocera acuta* Raf. 1831 when that name is preoccupied by *Pleuro-
cera (extreme) acutus* Raf. in Blainville 1824 and 1825.

Or is it wise to again disregard the priority in this case, and so have to
re-nominate *Pachychilus* from South and Central America, and all names based on
it because it is preceded as a genus?

I believe the International Commission should reject this attempted
re-nominal of the 1944 vote, and let strict priority rule.

Strict adherence to priority of scientific names is the only correct
international rule. It does not require rulings every 10, 20 or 30 years, nor does
it require the outlawing of any previous writings.

Incorrect names are, and always will be subject to correction, no matter
how often they are published.

(2) By J. Rosewater (*National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.*)

It would be very shortsighted of me to disagree with the basic premise that by far the best procedure to follow in such matters is simple priority. Where there is clear and unencumbered priority I am the first to do so! Unfortunately some of our early workers did not always express themselves in a clear and unencumbered manner.

To me and to a number of my colleagues who have already responded to you the strict application of priority in this case would cause confusion. In many instances psychic powers are required to interpret what Rafinesque has in mind in his writings. The *Pleurocera* case is one of these. He introduced names, however — some of which have become very well entrenched in classification. Tryon used a number of these names in his monograph on the STREPOMATIDAE. Most persons of that time and for many years afterwards (even to the present day) seized upon Tryon's usages, as an understanding interpretation of Rafinesque's meanderings. I therefore feel very strongly that Tryon should continue to be regarded, in the parlance of the Rules, as the 'reviser'.

If there had been Rules to go by back in 1818, perhaps Rafinesque would have followed them, although I am hardly convinced of this. For generations of workers who followed him have been the unlucky heirs of a jumbled nomenclatural bequest. I believe that the Law of Priority, as reworded following the Monaco meeting (1972) has direct application in cases such as these. This problem was submitted to the Commission and a solution was recommended by you in 1976 (*Bull. zool. Nomencl.* vol. 33, pt. 2).

I believe that use of the plenary powers is absolutely necessary to resolve the problem. The confused history of the name until Tryon established the pattern of usage which has persisted almost uninterrupted to the present day makes simple priority inoperative in this case.

(3) By A.H. Clarke (*National Museum of Natural History, Washington D.C. 20560, U.S.A.*)

In my opinion strict application of the Law of Priority does not always produce stability but often results in chaos. That is the reason why the Congress gave the Commission plenary powers to modify its force. There are hundreds of publications in the literature dealing with *Pleurocera*, in the sense of *acuta* as type, and this literature will mislead future workers if the name *Pleurocera* is transferred from one species group to another. Publications about *Pleurocera* based on the concept of *verrucosa* as type are very few. Future confusion should be prevented, especially when the basis for the transfer is not entirely rigorous.

It is pertinent to mention here that *Pleurocera acuta* is one of our best known species, due substantially to the fine monograph by B. Dazo (*Malacologia* vol. 3: 1-80). It is also abundant. *Lithasia verrucosa* is not well known and its continued survival is even in jeopardy because of potentia

status disruption. Future generic assignments involving *Pleurocera* would certainly be facilitated if *P. acuta* remained its type.

We are witnessing here a tiresome continuation of the sterile, ancient debate involving the interpretation of Rafinesque's names. I appeal to the Commission to settle this case, which is one of the most important issues involving Rafinesque's names, and to decide it on the basis of fostering stability and reducing confusion.

(4) By Carol B. Stein (*Museum of Zoology, Ohio State University, 1813 North High Street, Columbus, Ohio 43210*)

[Dr Stein is replying to a letter from the Secretary.]

1. *The status of Pleurocerus Rafinesque in Blainville, 1824.*

In your letter you state: 'On the strict letter of the law, and taking the name purely at its face value, *Pleurocerus* Blainville, 1824 (*Dict. Sci. nat.*, vol. 2: 236) is a new name for a new genus, since there is no direct link with *Pleurocera* Rafinesque, 1818 or 1819'. It appears to me that a vital part of the sentence that must be taken at face value is Blainville's last sentence in his discussion of *Pleurocerus*, at the bottom of: 236:

Observ. Nous n'avons vu ni l'animal, ni la coquille de ce genre, proposé par M. Rafinesque; peut-être n'est-ce que la paludine coupée de M. Say?'

Understand this sentence to mean, in English:

Observation. We have seen neither the animal, nor the shell of this genus, proposed by M. Rafinesque; is it, perhaps, nothing but the short paludine [i.e. *Paludina decisa* Say, 1819, see Blainville, 1824: 231] of Mr Say?'

Does this observation constitute a direct link with *Pleurocera* Rafinesque? Blainville says clearly that he himself had not seen either the animal or the shell of the genus proposed by Rafinesque, how could such a statement possibly be interpreted as an intent by Blainville to describe thereby a new species under a new name?

Pleurocerus Blainville, 1824, is evidently a misspelling of *Pleurocera* Rafinesque 1818. It is evident from Blainville's work that he was not careful to preserve the original spellings of scientific names, as shown in his use of *Olygyra* for the genus *Olygyra* Say, 1818 (*J. Acad. nat. Sci. Philadelphia* vol. 4: 41) and his 'Oxytrème Rafinesque' for *Oxytrema* Rafinesque, 1819 (*J. Philad. Acad. Nat. Sci.*, vol. 88: 423). *Pleurocera* should be retained as the correct original spelling.

Since Blainville was not careful with his spelling of *Olygyra* and it would appear that his use of a masculine ending *Pleurocerus* for *Pleurocera* is an incorrect subsequent spelling without status in nomenclature, it is unquestionably true that *Pleurocera verrucosa* Rafinesque, 1820, is, under the strict interpretation of the Code, the type species of *Pleurocera*, by subsequent monotypy.

2. The status of the specific names *acutus* and *oblongus* in Blainville, 1824

If Binney and Tryon's 1864 reprint of Rafinesque's work is correct, Rafinesque's original description of *Pleurocera acuta* was published in Philadelphia in November 1831. In that paper (: 67 of the reprint), Rafinesque described the species as '*Pleurocera Acuta*, Raf. 1818'. I have found no evidence that *acuta* was published in 1818. Perhaps that was the date when Rafinesque wrote a description of the species in his diary or journal; or perhaps in 1818 he wrote the manuscript that was later seen in that form by Blainville but never published. It is obvious that Blainville had never seen the animal or the shell of any of Rafinesque's species of the genus; hence we must attribute the descriptions published by Blainville of *Pleurocerus*, *oblongus* and *acutus* to Rafinesque.

This being the case, *Pleurocera acuta* Rafinesque, 1831 is a junior emendation of *Pleurocerus acutus* Rafinesque in Blainville, 1824, and accompanies a redescription of the species which makes it readily identifiable. The species is not identifiable from the 1824 description on its own. It could refer equally well to all the species described by Lea (1862, *Proc. Acad. Nat. Sci. Philadelphia* for 1862: 169) under *Trypanostoma*, and to *Io fluvialis* (Say, 1825) and its congeners. But there is no question of the identity of *P. acutus* Rafinesque, 1831.

If we do not take the course suggested above, then it would appear that *P. acutus* of 1824, regardless of authorship, would preoccupy *P. acuta* Rafinesque, 1831, which is adequately described and has been generally accepted for many years. The specific name should therefore be attributed to Rafinesque in Blainville, 1824.

The name *Pleurocerus oblongus* Rafinesque in Blainville, 1824, is not an available name, using the same reasoning. However, I have not found any evidence of a subsequent description of this species by Rafinesque or any other author, and it is not listed in Tryon's index (1873). I do not think a case can be made for its identifiability on the basis of the 1824 description. The name remains a *nomen dubium*.

3. The status of the generic name *Oxytrema*.

It seems obvious that Blainville meant, by his '(G. Oxytrème. Rafinesque)', to refer to *Oxytrema* Rafinesque, 1819, just as, a few lines above, he used the same construction, '(G. Olygira. Say)', to refer to what is obviously *Olygira* Say, 1818. It would seem that this usage should be considered, like *Pleurocerus*, an incorrect subsequent spelling of *Oxytrema* Rafinesque, 1819. However, since Blainville evidently used it in the sense of a subgenus, separating it from the group of *Pleurocerus* s.s. exemplified by *P. oblongus* in couplet A of his key, Morrison (1954: 360) was correct in stating: 'Blainville, in 1824 and again in 1825 (p. 442), placed one species of Rafinesque under this generic name. He gave as the sole example of the subgenus *Pleurocerus (Oxytrema)* [*Oxytrème acutus* (Rafinesque) [Rafin.]], validating the specific name in 1824. Rafinesque (1831, p.3) again described his *Pleurocera acuta*, and at the same time declared that he had given the name in 1818. From 1824 on, *Oxytrema* has been the earliest available name for the group because the genotype was fixed at that

names *acutus* and *oblongus* in Blainville, 1824.

The 1864 reprint of Rafinesque's work on *Pleurocera acuta* was published in that paper (: 67 of the reprint), Rafinesque, 1818. I have found no evidence, perhaps that was the date when Rafinesque wrote his diary or journal; or perhaps in 1815, or seen in that form by Blainville. Blainville had never seen the animal or the genus; hence we must attribute the names of *Pleurocerus*, *oblongus* and *acutus* to Rafinesque.

Pleurocera acuta Rafinesque, 1831 is a synonym of *acutus* Rafinesque in Blainville, 1824, and a species which makes it readily identifiable from the 1824 description on its own. It was first described by Lea (1862, *Proc. Acad. Nat. Sci. Philad.*) under *Trypanostoma*, and to *Io fluviatilis*. There is no question of the identity of *Pleurocera acuta*.

If the course suggested above, then it would appear that the authorship, would preoccupy *P. acuta* Rafinesque, described and has been generally accepted. It should therefore be attributed to Rafinesque.

Pleurocera oblongus Rafinesque in Blainville, 1824 is a synonym of *oblongus* Rafinesque, 1818. The same reasoning. However, I have not found any mention of this species by Rafinesque or any other author's index (1873). I do not think a case can be made on the basis of the 1824 description. It should be attributed to Blainville.

On the generic name *Oxytrema*.

Blainville meant, by his '(G. Oxytrème. Rafinesque, 1819, just as, a few lines above, he used '(G. Say)', to refer to what is obviously *Oxytrema*. This usage should be considered, like *Pleurocera*, as a synonym of *Oxytrema* Rafinesque, 1819. However, in the sense of a subgenus, separating it from *Pleurocera*, as exemplified by *P. oblongus* in couplet A of the Code, is correct in stating: 'Blainville, in 1824 and again in 1825, placed species of Rafinesque under this generic name. He introduced the subgenus *Pleurocerus* (*Oxytrema*) [Oxytrème] in 1824, validating the specific name in 1824. Rafinesque validated the specific name in 1824. Rafinesque validated *Pleurocera acuta*, and at the same time declared the generic name *Pleurocera* in 1818. From 1824 on, *Oxytrema* has been the generic name of the group because the genotype was fixed at that time.

Pleurocera (*Oxytrema*) *acuta* Blainville by monotypy. With no serious doubt raised about the identity of *acuta*, the genotype, doubts about the identity of the genus *Oxytrema* vanish.'

As explained in section 2 above, I disagree with Morrison concerning authorship and identity of *acuta* 1824, I believe he is correct in stating that *acuta* dates from 1824 and that it is the type, by monotypy, of the genus (or subgenus) *Oxytrema* Rafinesque.

If the ICZN should decide to reject the Law of Priority and Article 60, under which *Pleurocera verrucosa* must be the type species of the genus (*Pleurocerus*), and should rule in favour of perpetuating the usage of *acuta* as its type species, then it would be placing *acuta* in the position of being the type species of both *Pleurocera* and *Oxytrema*.

On the use of the plenary powers to designate *acuta* as the type species of *Pleurocera*.

In my training as a scientist, I have been taught that even the most established concepts, hypotheses, theories, and even 'natural laws' are subject to change. If, when tested, they prove to be in error, they must be modified or abandoned. For thousands of years men 'knew' the Earth was flat. The 'scientific consensus' on the subject was probably unanimous in agreeing that this was the case. Giordano Bruno was burned at the stake for his insistence that the evidence showed the earth was not flat, but spherical. Yet gradually those who looked objectively at the evidence came to abandon the old opinion, and the Church's 'plenary powers'. I understand that when the astronauts' pictures of the Earth from outer space were published, even the last members of the Flat Earth Society gave in to reality.

It would be pleasant to think that the ICZN could look objectively at the abundant evidence that *verrucosa* is, by its own Code, inevitably the type species of *Pleurocera*, as shown by Hannibal (1912: 169), Pilsbry (1917: 110), Lea (1951) and Morrison (1954), and would not use their plenary powers to suppress this correct usage and to deliberately perpetuate an error, simply because this error has been in use by a majority of authors for several years.

The current state of pleurocerid systematics is in a state of flux. Taxonomic limits are not at all certain at present. New taxonomic techniques, such as electrophoretic analysis of proteins, karyotype studies, and scanning electron microscope studies are just beginning to provide new comparative data which to base a more realistic view of the phylogenetic relationships of the genus taxa of pleurocerid snails. Morrison's 1954 studies have started the ball rolling by using anatomical features of the soft parts and behavioral characteristics in conjunction with shell characters to define genera. But there is much more to be done. If the nomenclature is to be solidly based, we simply must go back to the Law of Priority and establish what is the earliest name for any genus in the group and what is its type species. Then we go on to the next oldest one, and see if its type species is, or is not, congeneric with that of the first genus. And so we build on rock, not on the sand of a plenary powers decision based on the temporal popularity of an erroneous usage a century and a half later.

(5) Observations on Dr Stein's comment by the Secretary, International Commission on Zoological Nomenclature

Dr Stein's remarks in her Section 1 on the status of *Pleurocerus* Blainville, 1824, are illuminating and constructive. It is clear that Blainville was discussing a genus of shells of which he had seen no representative, but which he attributed to Rafinesque. *Pleurocerus* is therefore best treated as an erroneous subsequent spelling of *Pleurocera* Rafinesque, 1818.

Her remarks in her Section 2 on the authorship of the specific names *acutus* and *oblongus* seem more debatable. There is no internal evidence in any of Rafinesque's works prior to 1831 that he ever intended a species *Pleurocera acuta*, and none at all that he intended a species *P. oblonga*. On the other hand, the evidence of Blainville's work taken at its face value, it seems to me that he must be regarded as the author of both names. There is not the same connection to Rafinesque as there is for *Pleurocerus*. The Commission could, however, be invited to rule on this matter.

In her Section 3, on the status of *Oxytrema*, Dr Stein, following Morrison, is not correct. Blainville's 'Oxytrème' is a French vernacular name and does not enter zoological nomenclature at all. Consequently, the type species of *Oxytrema* Rafinesque, 1819 (a genus established without indication of a type species) cannot be determined by reference to Blainville's work. Under the provisions of Article 69a(ii) strictly interpreted, the type species of *Oxytrema* would appear to be *Oxytrema crenulatum* Menke, 1830, *Syn. meth.* 3 (ed. 2): 317. Information on the current usage of this generic name would be helpful.

In her Section 4 Dr Stein resorts to special pleading that can easily be turned against her. The Law of Priority is an excellent example of a law which has been tested and many times found wanting. She is wrong to imply that the Commission cannot look objectively at the application of the Code to the question of the type species of *Pleurocera*. It is less than true to say that 'if she considers an error has been 'in use by a majority of authors for 50 years'. It has been in majority use for well over a hundred years.

As may be inferred from the succeeding comment by Dr George Davis, the rules for determining the type species of a genus established with multiple included species have changed with time. It is true that the Paris (1948) Congress agreed that the type species of such a genus should be that species, one of those species, first subsequently referred to that genus (*Bull. zool. Nomencl.* 4: 159-160, 346); but that decision only took effect on the publication of the revised text of the *Règles* (*Bull. zool. Nom.* vol. 5: 58-59), and that took place only on the publication of the first edition of the present Code in 1961. Prior to 1961, therefore, the situation was governed by Opinion 46. Under Opinion 46, as Walker had shown in 1917 (see *Bull. zool. Nom.* vol. 3: 33), *Pleurocera acuta* was the first species eligible to be the type of the genus. Consistent usage for 50 years before his work, and majority usage thereafter until 1961, in that sense cannot, therefore, be considered irregular in terms of

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tion 46. Moreover, the fact that, since 1961, *P. verrucosa* has been the type species under Article 69a(ii) clearly has not affected majority usage in favour of *P. acuta*. This is true for workers who are fully up to date with the latest taxonomic techniques.

To sum up, therefore, the effect of Dr Stein's comment is that the Commission should be asked to rule on the author and date of the specific name *acuta* (*acutus*). Is it to be attributed to Blainville, 1824, or to Rafinesque, 1824? She does not seem to me to have undermined the solid evidence in favour of the use of the plenary powers to declare *P. acuta* the type species of *Pleurocera*, as is favoured by a large majority of those who have expressed their views known to the Commission.

Finally, under Article 80 and 80(i) of the Code (*Bull. zool. Nom.* vol. 33 (1976)), the publication of my report in *Bull. zool. Nom.* vol. 33 (1976) created a compulsory period of maintenance of current usage, which is clearly in favour of *P. acuta*.

(6) By George M. Davis (*Academy of Natural Sciences, Philadelphia, PA 19103*)

I argue most strongly that *Pleurocera acuta* Rafinesque be designated as the type species of *Pleurocera*. The arguments are clearly ones of the spirit of the Code versus the letter of the law. The arguments set forth by Walker, 1917, and Rosewater, 1976, are persuasive for the following reasons:

- (1) The generic definition given by Rafinesque, 1818, is quite clear. It encompasses taxa grouped on the basis of *P. acuta* as type species of *Pleurocera*. It excludes the *Lithasia*-*Angitrema* concepts to which *P. verrucosa* Rafinesque clearly pertains. As Walker, 1917, pointed out, *P. acuta* was 'the first identifiable species described as *Pleurocera* and complying with the original generic diagnosis'.
- (2) It is clear that users of the name *P. acuta* accepted Walker's argument as valid within the framework of the *Règles* as they then stood. It is also clear that the concepts of *Lithasia* including *L. verrucosa* and *Pleurocera* including *P. acuta* were well established by Tryon, 1873, in his monumental monograph on the PLEUROCERIDAE (= STREPOMATIDAE) of North America. For well over 100 years the concepts of *Lithasia* and *Pleurocera* have been stable. A vast literature in ecology, systematics and parasitology has grown based on *P. acuta* as type species of *Pleurocera*.
- (3) This is an age of legal involvement concerning rare and endangered species. It is of utmost importance to safeguard the stability of nomenclature. Dictating that *verrucosa* be type species of *Pleurocera* would cause extreme havoc in pleurocerid systematics in North America including extreme problems with the U.S. Federal listing of endangered species, where taxa have been nominated on the basis that *acuta* was the type species of

Pleurocera and that *Lithasia*, including *verrucosa*, was a quite distinct genus. I provided such a report as a service contracted by the U.S. Fish and Wildlife Service on rare and endangered species from south-eastern U.S.A. (Davis, 1974).

More recently, Burch, 1978, has produced an outline classification of the Recent freshwater gastropods of North America in preparing a manual for the U.S. Environmental Protection Agency on North American freshwater gastropods. He considered *acuta* to be the type species of *Pleurocera*.

Clearly it would not be in the service of North American malacological, ecological and parasitological sciences to cause a small switch in names that would create enormous chaos at so many levels of involvement: science, government and the law.

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COMMENT ON THE PROPOSALS REGARDING THE GENERIC NAME
PECTINARIA LAMARCK, 1818. Z.N.(S.) 2202
(see vol. 34: 112; vol. 35: 18, 25)

By Karl Banse (Department of Oceanography, University of Washington
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I am a polychaete taxonomist just completing the second and final volume of keys for the about 460 species known from the Oregon Biogeographic Province and have, therefore, something at stake regarding the nomenclature of species. Yet my main concern regarding *Pectinaria* is directed at the family and genus level. Here, the arguments in this case centre evidently on the question of priority versus usage. The gist of my comment is to ask that the