

Miscellaneous notes on West African *Maizaniella* (Prosobranchia: Maizaniidae)

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Reexamination of shells recently reported from Gabon as *Maizaniella* (*Spirulozania*) *lilliputiana* (Morelet) suggests that these might instead belong to *M. (S.) lukolelensis* (Bequaert & Clench). Another sample from Gabon is tentatively attributed to *M. (S.) chapini* (Bequaert & Clench). The status of these closely related taxa is discussed. *M. lukolelensis* and *M. chapini* are provisionally added to the Gabonese fauna list, both species so far being only known from Zaïre. *M. (S.) iterum* Van Bruggen was found sympatrically with *M. lukolelensis* in Gabon, but occurred in wetter habitats.

A new record of *M. (M.) leonensis* (Morelet) is given from Sierra Leone. The two shells are larger than the six known shells; in addition, both have a scalaroid body whorl, which might therefore be an adult shell character.

Two samples of *Maizaniella* (*Spirulozania*), probably belonging to two different species, were found in Ghana, and are the first Ghanaean records of this (sub)genus. The only adult shell seemed to belong to a new species, but is not formally described.

Key words: Gastropoda, Prosobranchia, Maizaniidae, *Maizaniella*, taxonomy, West Africa, Gabon, Sierra Leone, Ghana.

INTRODUCTION

A series of papers by Dr. A.C. van Bruggen on the African land prosobranch family Maizaniidae, in which he reviewed the scattered published information and added much new information, has significantly facilitated the identification of members of this group. At present the genus *Maizaniella* Bequaert & Clench, 1936, is made up of four subgenera, three of which are monotypic; the subgenus *Spirulozania* Van Bruggen, 1982, contains seven species, four of which were described since 1982.

Our knowledge of *Maizaniella* is still very insufficient, however. Apart from the fact that very little information is available on the anatomy, ecology and distribution, many taxonomic problems have remained. Ranges of the conchological characters supposed to differentiate between some species of the subgenus *Spirulozania* (nearly) overlap, which makes the assignment of individual shells to the species at times arbitrary, and casts doubt on the validity of some of the species recognized.

The main problem lies in the scarcity of material available. *Maizaniella* species appear to be very local, and rarely occur in larger numbers. This apparent rarity seems to be only partly due to insufficient collecting efforts. I have examined several dozens of leaf litter samples from Côte d'Ivoire, Ghana, Togo, Cameroon and Gabon, and only seven yielded a few shells of *Maizaniella*. However, the finding of eight specimens of *M. chapini* in the crop of a single forest guinea-fowl (see below) suggests that some creatures can do better.

In the present contribution some new records of *Maizaniella* are provided, and the ecology and taxonomic status of some species is discussed. All material will be deposited in the National Museum of Natural History, Leiden (NNM).

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NEW RECORDS OF *MAIZANIELLA* (*SPIRULOZANIA*) IN GABON

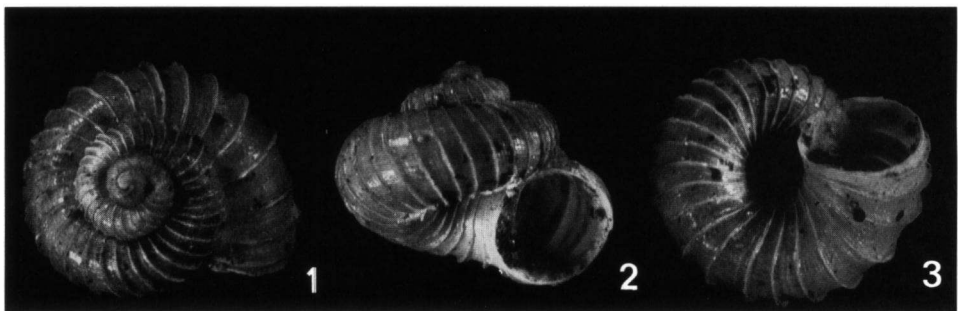
Until very recently only two records of *Maizaniella* species were available for Gabon: Morelet (1873) described the type species of *Spirulozania*, *Cyclophorus lilliputianus*, from 'Gabon', and Van Bruggen (1991) described *M. (S.) iterum* from Digaba (Province of Ngounié, 2°00'S 11°15'E).

De Winter (1995) reported additional material of both these species from the Ofoubou area (Prov. of Ngounié, c. 1°38'S 10°05'E). These records need some discussion.

Firstly it is open to doubt whether the Ofoubou specimens recorded as *M. lilliputiana* are indeed this species. Instead, they might belong to *M. lukolelensis* Bequaert & Clench, 1936, which was so far only known from two localities in Central Zaïre. The shells of the two taxa are very close, and the status of *M. lukolelensis* has been repeatedly discussed by Van Bruggen (1982, 1990). Two series of specimens resembling either *M. lilliputiana* or *M. lukolelensis* have both been reported from Bozene, Zaïre (Van Bruggen, 1990: 188). Apart from the number of major ribs on the body whorls in front view, none of the characters thought to be diagnostic allowed for an unequivocal separation of all specimens of the two sets of specimens (Van Bruggen, 1990).

Measurements of two adult Ofoubou shells are provided in table 1. The relatively low number of major ribs (24, whereas 25-30 is thought to be typical for *M. lilliputiana*), the relatively large diameter, and the high height/diameter ratio suggest these specimens to belong to *M. lukolelensis* (figs. 1-3), rather than to *M. lilliputiana*. The latter species is reported from a few localities embracing an enormous area in West Central Africa, from the coastal region of Gabon to eastern Zaïre (Van Bruggen, 1982). The Gabonese record would enlarge the known range of *M. lukolelensis* considerably.

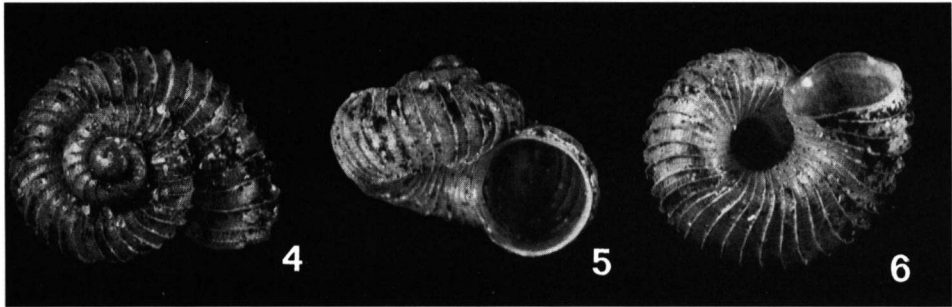
The situation becomes still more complicated by the finding of one adult and one juvenile shell NE. of Divangui (Prov. of Ngounié, 1°55'S 10°03'E) in a leaf litter sample from a forest on a poor soil of white sand with many *Monopetalanthus ledermannii* Harms



Figs. 1-3. Different views of shell of *Maizaniella* (*Spirulozania*) *lukolelensis* (Bequaert & Clench) from Gabon (coll NNM, Leiden).

| | H | D | H/D | W | R |
|-------------------------------------|-----|-----|------|-----|----|
| <i>M. lukolelensis</i> , Gabon* | 3.5 | 4.2 | 0.84 | 3.5 | 24 |
| <i>M. lukolelensis</i> , Gabon | 3.0 | 3.9 | 0.78 | 3.3 | 24 |
| <i>M. chapini</i> , Gabon* | 3.0 | 4.0 | 0.75 | 3.2 | 34 |
| <i>M. leonensis</i> , Sierra Leone* | 4.7 | 7.1 | 0.67 | 3.8 | – |
| <i>M. leonensis</i> , Sierra Leone | 4.6 | 6.8 | 0.67 | 3.7 | – |
| <i>M. spec.</i> (nov.?), Ghana* | 2.8 | 4.2 | 0.68 | 3.3 | 40 |

Table 1. Shell measurements in mm of *Maizaniella* species. H, height; D, maximum diameter; W, number of whorls; R, approximate number of ribs on body whorls. Shells marked by * are illustrated.



Figs. 4-6. Different views of shell of *Maizaniella* (*Spirulozania*) *chapini* (Bequaert & Clench) from Gabon (coll. NNM Leiden).

trees (Leguminosae, Caesalpinioideae), collected by J.J. Wieringa in October 1994. The largest specimen (figs. 4-6, table 1) has 34 or 35 major ribs on the body whorl. In all respects it agrees well with the description of *M. (S.) chapini* (Bequaert & Clench, 1936)¹ as provided by Van Bruggen (1982). This taxon was originally described as a variety of *M. lukolelensis*, and treated as a full species by Van Bruggen (1982). So far *M. chapini* was only known from Beni, Ituri, Eastern Zaïre, where the type species was found in the crop of a forest guinea-fowl. With the new Gabonese record, *M. chapini* would occupy approximately the same enormous range as *M. lilliputiana*.

The fact that the three taxa occupy largely the same range, precludes the possibility to consider them subspecies of the same species. They must either belong to the same, rather variable, species, or each represents a species of its own. When larger series from more localities become available, the extreme 'types' may turn out to be linked by intermediates. If we assume e.g. that the two samples from Bozene, Zaïre, one identified as *M. lukolelensis* and the other as *M. lilliputiana*, were once part of the same sample, one would perhaps not be inclined to recognize two taxa. Van Bruggen (1982: 193) mentioned a single shell from Gemena, Zaïre (which is relatively close to Bozene) with a rather large number of ribs, which he identified as *M. cf. erroris* Van Bruggen, 1982, a species otherwise only known from Liberia. However, with the scanty material avail-

¹ In Van Bruggen (1982, 1990 and 1991) the authorship is incorrectly attributed to 'Van Bruggen, 1982'

able, it seems premature to draw conclusions that would upset the present taxonomy of the group. Therefore, both *M. lukolelensis* and *M. chapini* are provisionally added to the Gabonese fauna list.

In contrast, there can be little doubt that *M. iterum* Van Bruggen, 1991, is not conspecific with any of the above species, not only because it deviates strongly in conchological characters (Van Bruggen, 1991), but also because it was found sympatrically with *M. lukolelensis/lilliputiana* in the Ofoubou area (De Winter, 1995). In the Ofoubou area twenty leaf litter samples were taken from either relatively dry high forest, or from rather wet, periodically inundated, forest. *M. lukolelensis* was found in three 'dry' samples, whilst *M. iterum* occurred in two 'wet' samples. This suggests that these species have a different ecology.

A NEW RECORD OF *MAIZANIELLA* (*M.*) *LEONENSIS* (MORELET, 1873) FROM SIERRA LEONE

This species is only known by the holotype from 'Sierra Leone', and by five specimens from Sierra Leone, Cape Lighthouse Peninsula. Other material mentioned in the literature proved to belong to another subgenus and species, *M. (Spirulozania) erroris* (see Van Bruggen, 1982). It seems therefore worthwhile to report a recently collected sample from Sierra Leone, Freetown Wilberforce, degraded bush, 300 m a.s.l., November-December 1991, R. Hutterer leg.

Both shells have the aperture completely detached from the body whorl (figs. 7-9). As both shells are somewhat larger (table 1) than those studied by Van Bruggen (1982), the scalaroid body whorl may be an adult shell feature, rather than an aberration. In that case *M. leonensis* would be the second maizaniid species known with a scalaroid shell, the other being *M. (Micromaizania) scalarioidea* Van Bruggen, 1983 from Malawi (fide Van Bruggen, 1983).

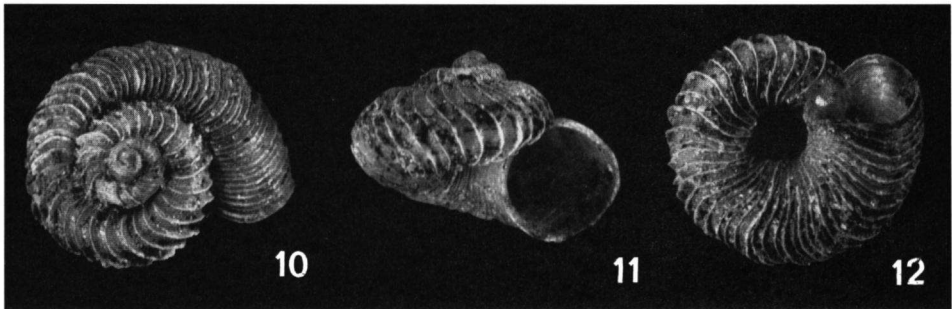
MAIZANIELLA (*SPIRULOZANIA*) IN GHANA

Two species of *Spirulozania* are known from the African forest belt West of the Dahomey Gap, viz. *M. erroris* Van Bruggen, 1982, from various localities in Liberia, and *M. hiemalis* Van Bruggen, 1990, from Guinée, Mt. Nimba. At my request Dr. C. Jongkind recently collected snails and leaf litter samples from a number of Ghanaian forests during his botanical explorations. Among numerous novelties awaiting description are two small samples of *Maizaniella*. Two juvenile shells were found among leaf litter from primary rainforest in the Atewa Range Forest Reserve (Eastern Region, c. 16°14'N 0°34'W, 600-700 m a.s.l., November 1994). The other sample of one adult and three juvenile shells was extracted from a huge litter sample collected in rainforest within the Ankasa Game Reserve (Western Region, c. 5°13'N 2°39'W, 150 m a.s.l., March 1995).

The adult shell from Ankasa (figs. 10-12, table 1) differs from any other species of *Spirulozania* in that the number of ribs strongly increases towards the aperture. In most other respects it agrees with *M. erroris*, viz., its large number of ribs, depressed shell and number of whorls relative to the diameter. It probably belongs to an as yet undescribed species, but description is postponed until more adult specimens become available to ascertain that the present shell is not a mere individual aberration.



Figs. 7-9. Different views of shell of *Maizaniella* (*M.*) *leonensis* (Morelet) from Sierra Leone (coll. NNM, Leiden).



Figs. 10-12. Different views of shell of *Maizaniella* (*Spirulozania*) spec. (nov.?) from Ghana, Ankasa Game Reserve (coll. NNM, Leiden).

The (juvenile) Atewa Range specimens deviate from the Ankasa juveniles in density of ribbing, as well as dimensions of the embryonic whorls, and probably belong to another species.

REFERENCES

- BRUGGEN, A.C. VAN, 1982. A revision of the African operculate land snail genus *Maizaniella* (Gastropoda Prosobranchia: Maizaniidae), with description of six new taxa. — Proc. Kon. Ned. Akad. Wet. (C) 85: 179-204.
- , 1983. On some terrestrial operculates (Mollusca, Gastropoda Prosobranchia) from Malawi with the description of two new species. — Proc. Kon. Ned. Akad. Wet. (C) 86: 1-14.
- , 1990. Notes on the genus *Maizaniella* (Gastropoda Prosobranchia: Maizaniidae), with the description of a new species from West Africa. — Basteria 54: 187-195.
- , 1991. *Maizaniella iterum* n. sp. from Gabon, another species of the subgenus *Spirulozania* (Gastropoda Prosobranchia: Maizaniidae). — Basteria 55: 103-110.
- MORELET, A., 1873. *Novitates Conchylologicae in itinere per Africam aequinoctialem a Cl. Marche et de Compiègne collectae.* — J. Conchyl. Paris 21: 329-332.
- WINTER, A.J. DE, 1995. Gastropod diversity in a rain forest in Gabon, western Africa. In: A.C. VAN BRUGGEN, S. WELLS & TH.C.M. KEMPERMAN, eds., *Biodiversity and conservation of the Mollusca*: 223-228. Oegstgeest/Leiden.