

**A preliminary revision of Weyrauch's unpublished names: taxa of the genus  
*Bostryx* Troschel, 1847 (Gastropoda, Pulmonata, Orthalicidae)**

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Part of the manuscript taxa distributed by Weyrauch of the genus *Bostryx* and originating from Peru are here identified. Of the 32 taxa treated in this paper, 23 could be referred to published names, while the remaining 9 prove to belong to new taxa: *Bostryx cajacayensis* spec.nov., *B. edmundi* spec.nov. and *B. granulatus* spec.nov.

Key words: Gastropoda, Pulmonata, Orthalicidae, *Bostryx*, systematics, Peru.

## INTRODUCTION

Wolfgang K. Weyrauch (1907-1970) was an eminent malacologist, who published many new taxa from South America (Barbosa et al., 2008). However, he also has distributed quite a lot of unpublished names, which are present as 'types' in several museums. According to the ICZN-rules these taxa do not exist, but as they are in so many museums it is becoming highly confusing. During the preparation of a revision of these many 'ghost taxa' from Weyrauch (Breure & Neubert, in preparation), we reached the conclusion that some of them are actually new to science. Although for practical reasons we are inclined to use the original manuscript names, we have chosen on this special occasion to deviate for one taxon.

While the complete revision will take some continued effort as a larger project, we present here a partial revision of Weyrauch's manuscript names pertaining to the genus *Bostryx*. Again, for practical reasons we are focussing on the material in Senckenberg and Naturalis collections from Peru and have limited ourselves in the present paper to museums in Europe and the USA. Additional data on *Bostryx* and other genera from these and other museums, together with our notes on the history of this material, will be published later.

## METHODS

The following abbreviations are used to refer to the depositories of the material: ANSP — Academy of Natural Sciences, Philadelphia, USA; BMNH — The Natural History Museum, London, UK; FLMNH — Florida Museum of Natural History, Gainesville, USA; FMNH — Field Museum of Natural History, Chicago, USA; IML — Instituto Miguel Lillo, Tucumán, Argentina; MCZ — Museum of Comparative Zoology, Boston, USA; MNHN — Muséum National d'Histoire Naturelle, Paris, France; RMNH — Nationaal Natuurhistorisch Museum / Naturalis, Leiden, the Netherlands; SBMNH —

Santa Barbara Museum of Natural History, Santa Barbara, USA; SMF — Natur-Museum Senckenberg, Frankfurt am Main, Germany; ZMB — Zoologisches Museum der Humboldt-Universität, Berlin, Germany.

Other abbreviations refer to the dimensions of the shells, measured with a digital sliding gauge and following the methods as described by Breure (1974: figs 2-3): D, diameter of the shell; H, height of the shell; HA: height of aperture; LW, height of last whorl; W, number of whorls; WA, width of aperture. All measurements in mm.

All localities have been georeferenced, as far as they could be traced, using the GEOnet Names Server (<http://earth-info.nga.mil/gns/html/index.html>). Altitudes have been derived from Google Earth when cited between square brackets, otherwise they are conform the original label by Weyrauch.

The specimens originally designated 'holotypes' by Weyrauch are marked with an asterisk (\*).

#### SYSTEMATIC PART

Family Orthalicidae Albers, 1860  
Subfamily Bulimulinae Tryon, 1867

*Bostryx* Troschel, 1847

*Bostryx acalles* (Pfeiffer, 1853) (figs 1-2)

*Bostryx cajamarcanus* Weyrauch MS.

Type locality. — Peruvian Andes.

Material. — Peru, Dept. Cajamarca, 10 km from Cajamarca on the road to San Marcos [07° 11' 07" S 078° 25' 47" W], 2750 m, ANSP 204501/9, FMNH 56708/10, RMNH 55417/6, SBMNH 137877/6, SMF 157531\*, 157532/1, 157533/1, 208020/5, ZMB 101805/3; Idem, 18 km from Cajamarca-San Marcos, Hacienda Cochambul [?07° 11' 18" S 078° 21' 45" W], 2850 m, SMF 157534/1, 208020/5; Idem, 3 km NW Cajabamba [07° 37' 24" S 078° 02' 43" W], 2800 m, SMF 162172/3, 162173/10.

Redescription. — Shell up to 17.5 mm, 1.78 times as long as wide, narrowly perforate, with rather convex sides, thin. Colour (a) whitish to tawny, with axial streaks at irregular intervals, the upper whorls usually darker than the last one, (b) with a lighter spiral band on the middle of the last worl. Surface slightly shining, with incrassate growth striae. Protoconch smooth. Whorls 6.2, rather convex; suture well impressed, in some specimens bordered by a small whitish spiral band below. Aperture ovate, 1.56 times as long as wide, 0.68 times the total length. Peristome thin and simple. Columellar margin hardly dilated above.

Remarks. — The only figures of this species were from a young specimen (Pfeiffer, 1854 in Küster & Pfeiffer, 1840-1855: pl. 30 figs 27-28) and the description by Pfeiffer is insufficiently detailed so that several species could be involved. The measurements of an adult specimen given by Pfeiffer and mentioned in Pilsbry (1896: 160 - H 14.0, D 7.5, HA 7.5, WA 4.0 mm) fall within the range of the material at hand. The colour pattern described under (b) has only been observed in some specimens from Cajabamba. Breure (1978: 47) referred material from Dept. La Libertad, Pampa Calquiche near Chagual, tentatively to this species. These specimens are more elongated, and have a relatively smaller aperture.

	H	D	HA	WA	LW	W	H/D	HA/ WA	HA/ H	LW/ H
10 km from Cajamarca (N = 11)										
M	12.6	7.2	5.7	3.6	8.4	6.2	1.76	1.59	0.45	0.67
s	1.08	0.48	0.61	0.36	0.62	0.34	0.12	0.14	0.03	0.03
max	14.7	7.9	6.7	4.4	9.4	6.7	1.93	1.97	0.50	0.75
min	11.1	6.3	5	3.2	7.6	5.7	1.54	1.45	0.41	0.61
18 km from Cajamarca (N = 6)										
M	12.9	7.4	4.9	3.3	8.7	6.3	1.75	1.49	0.38	0.67
s	0.84	0.63	0.47	0.32	0.79	0.26	0.13	0.14	0.02	0.04
max	14	86	5.6	3.7	10	6.7	1.89	1.66	0.40	0.72
min	11.9	6.9	4.3	2.9	7.8	6	1.59	1.30	0.33	0.60
3 km NW Cajabamba (N = 7)										
M	15.1	8.4	7.2	4.5	10.6	6.3	1.80	1.58	0.48	0.70
s	1.32	0.91	0.54	0.49	0.99	0.11	0.10	0.09	0.02	0.03
max	17.5	10	8.2	5.5	12	6.4	1.91	1.73	0.51	0.75
min	13.6	7.6	6.6	4	9.5	6.1	1.60	1.49	0.43	0.66

Table 1. Dimensions of *Bostryx acalles* (Pfeiffer, 1853)*Bostryx aguilari* Weyrauch, 1967 (fig. 3)*Bostryx chalaensis* Weyrauch MS.

Type locality. — Peru, Dept. Lima, Lomas de Amancaes. Holotype SMF 162163.

Material. — Peru, Dept. Arequipa, near Chala [15° 51' 57" S 074° 14' 49" W], 50 m, SMF 164170/4.

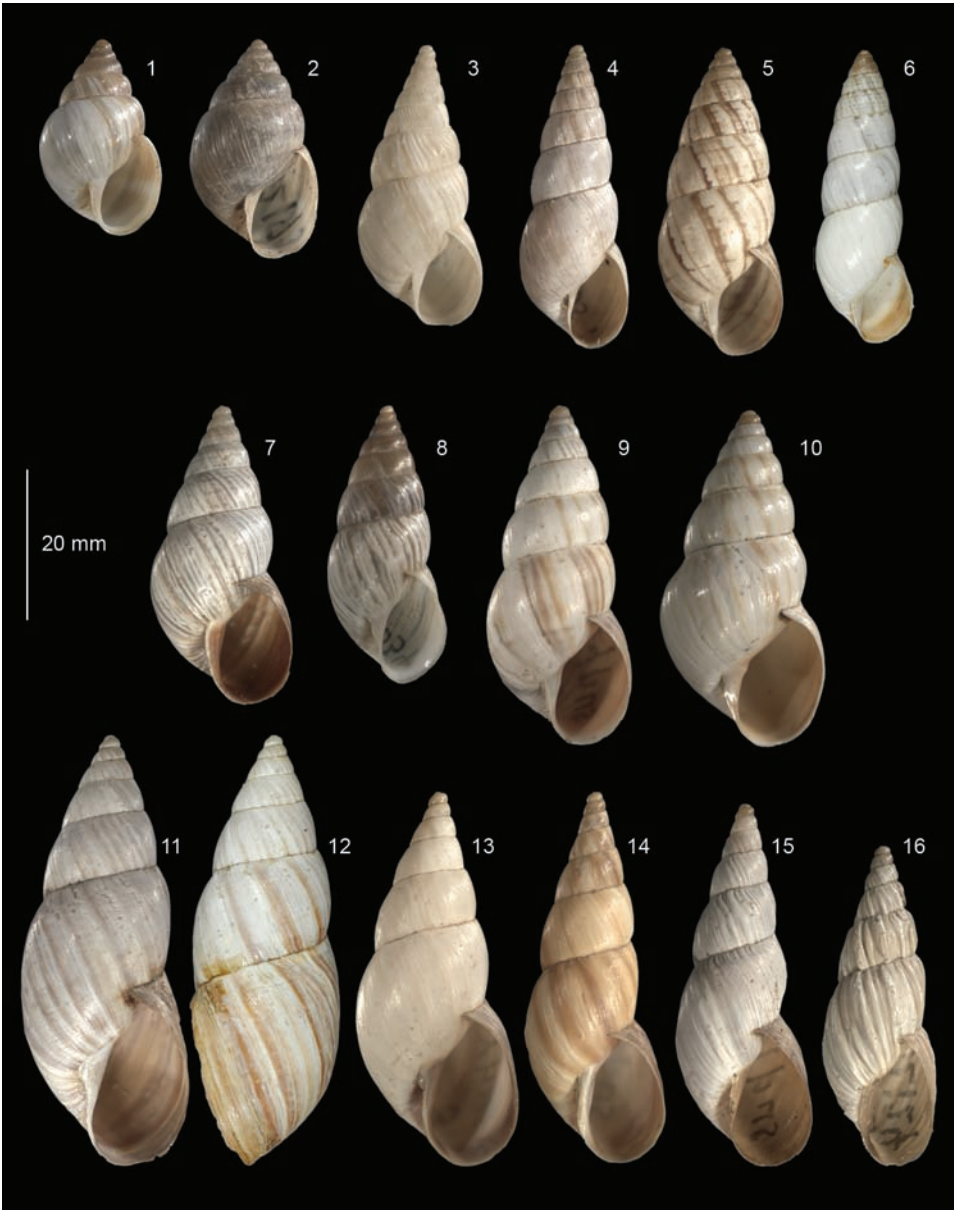
Remarks. — Differs from the original series by being whitish with faint brownish axial streaks.

*Bostryx anomphalus* Pilsbry, 1944 (figs 4-5)*Bostryx llaucanensis* Weyrauch MS.

Type locality. — Peru, Dept. Lima, near Chosica. Holotype ANSP 180002a.

Material. — Peru, Dept. Cajamarca, Río Llaucan valley, Cerro Choropampa [06° 26' 15" S 078° 20' 59" W], 2800 m, ANSP 204512/8, 355526/1, SBMNH 137881/5, SMF 162167\*, 162168/1, 162169/10.

Remarks. — This species has also been found at Dept. Ancash, Río Fortaleza, Caracayoc near Cajacay (SMF 156396a).



Figs. 1-16. *Bostryx* species. 1, *B. acalles* (Pfeiffer, 1853), 10 km from Cajamarca (SMF 157531), shell height 13 mm; 2, do., 3 km NW Cajabamba (SMF 162173), shell height 14.5 mm; 3, *B. aguilari* Weyrauch, 1967, near Chala (SMF 164170), shell height 18.6 mm; 4, *B. anomphalus* Pilsbry, 1944, Cerro Choropampa (SMF 162167), shell height 20.1 mm; 5, do., near Cajacay (SMF 156396a), shell height 20.4 mm; 6, *B. cajacayensis* spec.nov., holotype (SMF 156395), near Cajacay, shell height 19.4 mm; 7, *B. circuliportus* Breure, 1978, Puente El Diablo (SMF 155892), shell height 19.8 mm; 8, *B. delicatulus* Philippi, 1867, Hacienda Santo ►

*Bostryx cajacayensis* spec.nov. (fig. 6)*Bostryx punctistriatus* Weyrauch MS.*Bostryx punctistriatus cajacayensis* Weyrauch MS.

Description. — Shell up to 20.3 mm, 2.5 times as long as wide, narrowly perforate, with slightly convex sides, rather solid. Colour whitish, with irregularly spaced axial streaks of various shades of brown, in most specimens crossed by traces of equally coloured, interrupted spiral bands; upper whorls slightly darker. Surface slightly shining, with indistinct growth striae. Protoconch with dense and finely spiral striae. Whorls 7.6, hardly convex, suture hardly impressed. Aperture elongate-subovate, 1.5 times as long as wide, 0.33 times the total height. Peristome thin, slightly expanded at the parietal side. Columella margin straight, very narrowly dilated above.

Dimensions of holotype: H 19.3, D 7.8, HA 6.1, WA 4.1, LW 9.5 mm; 7.6 whorls.

Type material. — Peru, Dept. Ancash, Río Fortaleza, Caracayoc near Cajacay [10° 09' 23" S 077° 26' 38" W, 2560m]. Holotype SMF 156395\*, paratypes ANSP 204505/4, MCZ 233544/5, SBMNH 83422/3, 137886/5, 156396/4, 208039/4, SMF 156396/3, ZMB 101803/1. Excluded from the type series: Tapacocha [10° 01' 03" S 077° 34' 57" W, 3585m], ANSP 323136/2.

Comparisons. — This new species may be compared to *Bostryx chagualensis* (Pilsbry, 1932) from which it differs by having (1) the whorls smooth, (2) the columella straight (not with a sharp, oblique fold when viewing the aperture oblique), (3) the less convex sides of the spire. One specimen from the type material (SMF 156396a, fig. 5) appears to be *Bostryx anomphalus* Pilsbry, 1944. This species differs from *B. cajacayensis* spec.nov. by (1) being more slender (H/D 3.0), (2) having a more elongate aperture, and (3) the margins converging.

Etymology. — The epithet refers to the type locality.

	H	D	HA	WA	LW	W	H/D	HA/ WA	HA/ H	LW/ H
M	19.4	7.8	6.4	4.3	10.2	7.6	2.49	1.50	0.33	0.52
s	1.08	0.26	0.35	0.51	0.99	0.21	0.06	0.10	0.01	0.05
max	20.3	8	6.7	4.8	11.6	7.8	2.54	1.62	0.34	0.57
min	17.9	7.4	6	3.7	9.5	7.3	2.42	1.38	0.32	0.47

Table 2. Dimensions of *Bostryx cajacayensis* spec.nov.. (N = 4).

*Bostryx circuliportus* Breure, 1978 (fig. 7)*Bostryx circuliportus* Weyrauch MS.

Type locality. — Peru, Dept. Lima, 11.5 km SW Canta. Holotype RMNH 55169.

Material. — Peru, Dept. Lima, Río Chillón, Puente El Diablo [11° 39' 56" S 076° 47' 21" W, 1160 m], MCZ 233549/1, SMF 155892\*, 155893/1, 155894/1.

- ◀ Domingo (SMF 164034), shell height 18.4 mm; **9**, *B. depstus* (Reeve, 1849), Cerro Choropampa (SMF 157538), shell height 22.5 mm; **10**, do., Chontabamba (SMF 157266), shell height 22.3 mm; **11**, *B. edmundi* spec.nov., holotype (SMF 331475), Yacca, shell height 28.5 mm; **12**, do., lateral view; **13**, do., paratype (SMF 162135), shell height 24.8 mm; **14**, do., paratype (SMF 162129), shell height 24.6 mm; **15**, do., paratype (SMF 162130), shell height 24.0 mm; **16**, do., paratype (SMF 162124), shell height 21.2 mm.

*Bostryx delicatulus* Philippi, 1867 (fig. 8)

*Bostryx variabilis* Weyrauch MS.

Type locality. — Peru, Dept. La Libertad, Hacienda Unigambal.

Material. — Peru, [Dept. Cajamarca?], road Chiclayo-Cutervo, Hacienda Santo Domingo, 1000 m, MCZ 233532/3, SBMNH 83427/3, SMF 164034/6.

Remarks. — We have been unable to locate Hacienda Santo Domingo.

*Bostryx depstus* (Reeve, 1849) (figs 9-10)

*Bostryx depstus bambamarcaensis* Weyrauch, MS.

Type locality. — Peru, Dept. Amazonas, Chachapoyas. Lectotype BMNH 1975318.

Material. — Peru, Dept. Cajamarca, Bambamarca, Cerro Choropampa [06° 26' 15" S 078° 20' 59" W], 2800 m, ANSP 204514/9, SBMNH 137875/4, SMF 157538\*, 157265/8, 157263/3, 157264/1 juv..

*Bostryx chontabambaensis* Weyrauch MS.

*Bostryx depstus chontabambaensis* Weyrauch MS.

Material. — Peru, Dept. Cajamarca, near Huambos, Chontabamba [06° 33' 00" S 078° 27' 00" W], 2200 m, ANSP 204498/8, 355523/1, SMF 157266\*, 157267/1, 157258/1.

Remarks. — According to Pilsbry (1901: 136) there is quite some variation in colour and shape, but this form always has conspicuously convex whorls. The species has already been reported from the vicinity of Cajamarca by Breure (1978).

*Bostryx edmundi* spec.nov. (figs 11-16)

*Bostryx alisensis* Weyrauch MS.

*Bostryx alisensis costatus* Weyrauch MS.

*Bostryx descendens* Weyrauch MS.

*Bostryx longus* Weyrauch MS.

*Bostryx rugosus rugosus* Weyrauch MS.

*Bostryx rugosus costulatus* Weyrauch MS.

Type material. — Peru, Dept. Lima, Río Cañete valley, Yacca [Hacienda Yaca, 12° 32' 50" S 075° 55' 02" W, 2110 m], 2260 m. Holotype SMF 162195a, paratypes RMNH 109683/5, SMF 162195/17; Río Alis, Alis [12° 16' 43" S 075° 47' 13" W], 3300 m, MCZ 233542/10, RMNH 109684/5, SBMNH 83419/5, SMF 162130\*, 162131/5, 162132/2, 162135\*, 162136/25, 162137/3; 1 km of Alis on the road to Tintin, 3250 m, SMF 162124\*, 162125/2, 162126/5, 162129\*.

Description. — Shell up to 26.6 mm, 2.6 times as long as wide, narrowly perforate, elongate, with straight sides, rather solid. Colour whitish to tawny, usually with axial brownish streaks at irregular intervals, becoming more dense towards the aperture, rarely unicoloured; the upper whorls whitish or corneous. Surface slightly shining, with incrassate growth striae, in some specimens becoming costulae. Protoconch with dense and fine spiral striae, the upper part with traces of wrinkles. Whorls 7, convex; suture impressed. Aperture subovate, the margins converging; 1.75 times as long as wide, 0.38 times total shell height. Peristome thin and simple, rusty-pink coloured on the inside. Columellar margin straight, narrowly dilated above, with the same colour as the inside of the peristome.

Dimensions of holotype: H 28.3 D 10.9 HA 10.9 WA 6.2 LW 18.5; 7.1 whorls

Comparisons. — This new species resembles *Bostryx productus* (Philippi, 1867) but differs by (1) having a larger last whorl (0.58 vs. 0.40 shell height), (2) having in most specimens the outer side of the peristome darker, (3) being more rugose to costulate, and (4) having the aperture slightly smaller (0.37 vs. 0.40 times the shell height). It is also closely allied to *Bostryx fuligineus* Breure, 1978, from which it differs by (1) the different colour pattern, lacking the sooty dark colour near the aperture, (2) having the peristome rusty-pink coloured on the in- and outside, and (3) being smaller while retaining the same ratios.

Remarks. — This is a sibling species of *Bostryx fuligineus*, which occurs further north. Especially the population from Yacca resembles this species. Those from near Alis tend to be smaller in size and more resemble *Bostryx productus*.

Etymology. — Named in honour of Prof. Dr Edmund Gittenberger (Leiden) as a token of our longstanding friendship and as recognition of his many contributions to malacology.

	H	D	HA	WA	LW	W	H/D	HA/WA	HA/H	LW/H
Yacca (N = 8)										
M	27.6	11.7	11.5	6.6	18.4	7	2.35	1.76	0.42	0.67
s	1.69	0.64	0.40	0.65	0.70	0.26	0.14	0.13	0.02	0.02
max	29.4	12.7	12.1	7.3	19.3	7.4	2.60	2.00	0.47	0.71
min	24.6	10.9	10.9	5.6	17.2	6.5	2.10	1.61	0.42	0.64
Alis (N = 18)										
M	24.5	9.6	8.9	5.1	14.1	6.9	2.56	1.76	0.36	0.58
s	2.68	1.03	0.73	0.54	1.75	0.33	0.18	0.14	0.03	0.03
max	33	11.9	10.7	5.9	18.6	7.9	2.94	2.05	0.42	0.64
min	22.5	7.9	7.4	4.1	11	6.4	2.28	1.54	0.32	0.48
1 km of Alis (N = 4)										
M	23.4	9.1	8.5	5.1	13.4	7.1	2.61	1.67	0.36	0.57
s	1.60	1.58	0.79	0.51	1.27	0.34	0.31	0.04	0.02	0.05
max	24.5	11.3	9.6	5.8	15.3	7.5	2.91	1.73	0.39	0.62
min	21.1	7.8	7.8	4.7	12.5	6.7	2.17	1.65	0.34	0.51

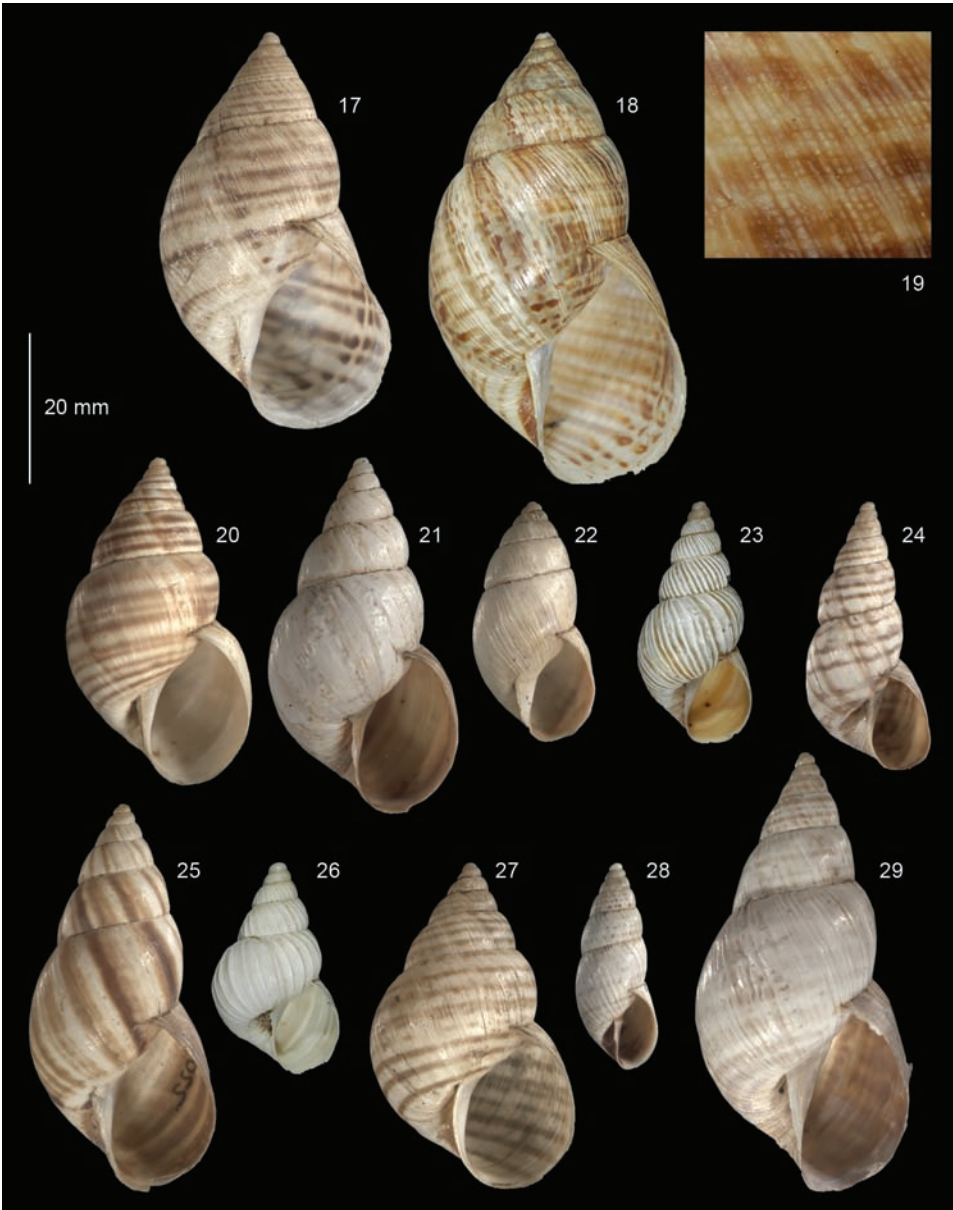
Table 3. Dimensions of *Bostryx edmundi* spec.nov..

### *Bostryx granulatus* spec.nov. (figs 17-19)

*Bostryx granulatus* Weyrauch MS.

Material. — Peru, Dept. Lima, Río Cañete valley, Yauyos, 3100 m [12° 27' 44" S 075° 55' 20" W]. Holotype SMF 162178, paratype SMF 162179/1.

Description. — Shell up to 29.9 mm, 1.8 times as long as wide, perforate, with slightly convex sides, rather thin. Colour ivory white, ornamented with coffee-brown spiral bands, either (a) continuous, ten on the ultimate whorl, leaving a white band on the periphery, or (b) punctilinate, coalescing in axial streaks of brown; umbilicus encircled by a broad brown band. Surface with incrassate growth striae, on the penultimate and last whorl becoming densely and finely granulate. Protoconch with hardly perceptible, dense and fine spiral striae. Whorls 6.3, hardly convex; suture well impressed. Aperture subo-



Figs 17-29. *Bostryx* species. 17, *B. granulatus* spec.nov., holotype (SMF 162178), Yauyos, shell height 26.3 mm; 18, do., paratype (SMF 162179), shell height 29.9 mm; 19, do., sculpture on last whorl of holotype; 20, *B. huarazensis* Pilsbry, 1944, Oyon (SMF 162180), shell height 21.7 mm; 21, *B. ignobilis* (Philippi, 1867), Cerro Huanyacayo (SMF 164169), shell height 23.6 mm; 22, *B. kathiae* Breure, 1978, Huamentanya (SMF 164131), shell height 15.9 mm; 23, *B. limensis* (Reeve, 1849), La Tablada (RMNH 109663), shell height 16.0 mm; 24, *B. obliquiportus laraosensis* Weyrauch, 1960, 4 km from Laraos (SMF 162154), shell height 17.8 mm; ▶



vate, the margins converging, coloured like the outside, whitish at the peristome; 1.6 times as long as wide, 0.5 times total shell height. Peristome thin, hardly expanded below, arcuate above. Columellar margin slightly oblique, slightly dilated above and receding; columella with a slight curve inside the aperture.

Dimensions of holotype: H 26.3, D 14.7, HA 13.6, WA 8.8, LW 20.2 mm; 6.2 whorls.

Comparisons. — This species may be compared to *Bostryx sordidus* (Lesson, 1826), from which it differs in (1) being larger; (2) having the aperture more broadly ovate; (3) having the columellar margin straight. It may also be compared to *B. virgultorum* (Morelet, 1863) from which it differs in (1) the granulation; (2) the more pronounced last whorl; (3) the narrower umbilicus; (4) having the aperture more elongate.

Remarks. — Weyrauch (1956) observed *Bostryx virgultorum* on the eastern slopes of the Cordillera in Dept. Cuzco, Río Urubamba valley at 800-1500 m, adhering to rocks in an open, arid, transitional zone between tropical savanna forest and subtropical bush steppe. This sibling species occurs on the western slope of the Cordillera at a higher altitude.

Etymology. — The epithet refers to the structure on the last whorls, which is characteristic of this taxon; (Latin) *granum*, grain.

*Bostryx huarazensis* Pilsbry, 1944 (fig. 20)

*Bostryx oyonensis* Weyrauch MS.

Type locality. — Peru, Dept. Ancash, Huaráz. Holotype ANSP 180000.

Material. — Peru, Dept. Lima, Río Huaura valley, Oyón [10° 40' 05" S 076° 46' 23" W], 3700 m, MCZ 233533/3, SBMNH 83421/3, SMF 162180\*, 162181/3, 162182/10.

Remarks. — This species has been redescribed by Breure (1978: 90). This is the southernmost record for this species.

*Bostryx ignobilis* (Philippi, 1867) (fig. 21)

*Bostryx tarmensis* Weyrauch MS.

Type locality. — Peru, Dept. Junín, Chanchamayo.

Material. — Peru, Dept. Junín, between Tarma and Acobamba, Cerro Huanyuncayoc [11° 22' 13" S 075° 40' 30" W], 3050-3300 m, SMF 164168/30, 164169/30, 277320/10.

*Bostryx kathiae* Breure, 1978 (fig. 22)

*Bostryx sanchezi* Weyrauch MS.

Type locality. — Peru, Dept. Lima, Río Cañete valley, 1 km above Puente Auco. Holotype RMNH 55175.

Material. — Peru, Dept. Lima, 20 km NE Canta, Huamentanya, 3500 m [?11° 24' 22" S 076° 32' 58" W], SMF 164131/2.

Remarks. — This is the first record for this species from the Río Chillón valley, a tributary to the Río Rimac, a river system north of the type locality.

- ◀ 25, *B. peruvianus* Pilsbry, 1944, Carayoc (SMF 164022), shell height 25.7 mm; 26, *B. scalariformis* (Broderip, 1832), Lachay (RMNH 109666), shell height 14.0 mm; 27, *B. sordidus* (Lesson, 1826), Cerro Coshco (SMF 155587), shell height 21.6 mm; 28, *B. subelatus* (Haas, 1948), 3 km NW Cajabamba (SMF 162174), shell height 13.7 mm; 29, *B. superbus* Weyrauch, 1967, Alís (SMF 162134), shell height 29.1 mm.

*Bostryx limensis* (Reeve, 1849) (fig. 23)

*Bostryx scalariformis atongoensis* Weyrauch MS.

Type locality. — Peru, Lima. Lectotype BMNH 1975326.

Material. — Peru, Dept. Lima, La Tablada [12° 21' 00" S 076° 43' 00" W], 200 m, RMNH 109663/10; Atocongo [12° 08' 00" S 076° 56' 00" W], 200 m, SBMNH 83423/5, ZMB 101807/2.

Remarks. — La Tablada probably refers to Tablada de Lurín, in the coastal plain near Lima. The species occurs on low hills ('lomas') with sparse vegetation.

*Bostryx obliquiportus laraosensis* Weyrauch, 1960 (fig. 24)

*Bostryx arbustorum* Weyrauch MS.

Type locality. — Peru, Dept. Lima, 5 km of Laraos. Holotype SMF 162187.

Material. — Peru, Dept. Lima, 4 km from Laraos [12° 20' 48" S 075° 47' 11" W], 3500m, SBMNH 83420/3, SMF 162154\*, 162155/1, 162097/10, 277312/4.

*Bostryx peruvianus* Pilsbry, 1944 (fig. 25)

*Bostryx fortalezaensis* Weyrauch MS.

*Bostryx peruvianus fortalezaensis* Weyrauch MS.

Type locality. — Peru, Dept. Ancash, Huaráz. Holotype ANSP 180008.

Material. — Peru, Dept. Ancash, near Cajacay [10° 09' 18" S 077° 26' 23" W, 2615 m], Caracayoc, ANSP 204502/7, RMNH 109664/6, SBMNH 137883/6, SMF 164022/16, 208037/3.

*Bostryx pictus* (Pfeiffer, 1855)

*Bostryx chanchamayoensis punctilineatus* Weyrauch MS.

*Peruniellus punctilineatus chanchamayoensis* Weyrauch MS.

Type locality. — Peru. Lectotype BMNH 1975 1975545.

Material. — Peru, Dept. Junín, Río Chanchamayo valley, San Ramón [11° 07' 17" S 075° 21' 11" W], 800 m, ANSP 194994/10, RMNH 109665/5, SBMNH 137858/5, SMF 208498/2.

Remarks. — Weyrauch himself must have been aware that the specimens, distributed earlier under these MS-names, were identical with *Bostryx punctilineatus* (Haas, 1951) [= *B. pictus* (Pfeiffer, 1855), see Breure, 1978: 109]. Weyrauch (1967: 498-499) depicted material from the above locality (SMF 162016) on a plate, with the legend mentioning "*Peruniellus punctilineatus* (Haas)". In the text of this paper there is no reference to these figures nor is the species dealt with. The genus name *Peruniellus* Weyrauch (mentioned in the summary on p. 457 only) is thus an unavailable name according to the ICZN-rules.

*Bostryx scalariformis* (Broderip, 1832) (fig. 26)

*Bostryx scalariformis paucicostatus* Weyrauch MS.

Type locality. — Peru, Dept. Lima, Ancón.

Material. — Peru, Dept. Lima, near Chancay, Lachay [11° 21' 00" S 077° 23' 00" W], (200-300m) 250m, FLMNH 109690/1, 111813/1, RMNH 109666/12, SBMNH 83424/5, 125365/10.

*Bostryx scalariformis planicostatus* Weyrauch MS.

Material. — Peru, Dept. Lima, Lomas de Lachay [11° 21' 00" S 077° 23' 00" W], 300m, ZMB 101806/3.

*Bostryx sordidus* (Lesson, 1826) (fig. 27)

*Bostryx coshcoensis* Weyrauch MS.

*Bostryx philippi coshcoensis* Weyrauch MS.

Type locality. — Peru, Dept. Ica, Cerro San Christóbal. Syntypes MNHN.

Material. — Peru, Dept. Ancash, near Chimbote, Cerro Coshco [09° 02' 04" S 078° 36' 54" W], 250-300 m, SBMNH 137884/5, SMF 155587\*, 155588/2, 155596/3.

*Bostryx subelatus* (Haas, 1948) (fig. 28)

*Bostryx cajabambaensis* Weyrauch MS.

Type locality. — Peru, Dept. Huánuco, Ambo. Lectotype FMNH 29146.

Material. — Peru, Dept. Cajamarca, 3 km NW Cajabamba [07° 37' 24" S 078° 02' 43" W], 2800 m, SMF 162174\*, 162175/2, 162176/6.

Remarks. — This is the northernmost locality for this species. The specimens from SMF differ from the types in being slightly larger (up to 13.6 mm), but otherwise fit the description and figure given by Haas (1948).

*Bostryx superbus* Weyrauch, 1967 (fig. 29)

*Bostryx superbus altorum* Weyrauch MS.

Type locality. — Peru, Dept. Lima, 4 km from Laraos on the trail to Quichao, Holotype IML 1137a.

Material. — Peru, Dept. Lima, Rio Cañete, near Alis [12° 16' 43" S 075° 47' 13" W], 3300m, RMNH 109667/3+2 juv., SMF 162134/3.

Remarks. — Specimens from this locality are somewhat slenderer than from the type locality, which is a few kilometers further south.

The following manuscript names for *Bostryx* species were also encountered in the collections considered, but will be dealt with in the forthcoming paper (Breure & Neubert, in preparation):

*Bostryx bequaerti* Weyrauch MS.

*Bostryx casmaensis* Weyrauch MS.

*Bostryx contractus* Weyrauch MS.

*Bostryx pilsbryi* Weyrauch MS.

*Bostryx primigenius* Weyrauch MS.

*Bostryx rotella* Weyrauch MS.

*Bostryx simbronensis* Weyrauch MS.

*Bostryx solutus insolutus* Weyrauch MS.

*Bostryx solutus intermedius* Weyrauch MS.

*Bostryx solutus solutissimus* Weyrauch MS.

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## REFERENCES

- BARBOSA, A.F., V.K. DELHEY & E.V. COAN, 2008. Molluscan names and malacological contributions by Wolfgang Karl Weyrauch (1907-1970) with a brief biography. — *Malacologia* 50: 265-277.
- BREURE, A.S.H., 1974. Caribbean land molluscs: Bulimulidae. I. *Bulimulus*. — *Studies on the fauna of Curacao and other Caribbean Islands* 45: 1-80.
- BREURE, A.S.H., 1978. Notes on and descriptions of Bulimulidae (Mollusca, Gastropoda). — *Zoologische Verhandlungen* 164: 1-255.
- BREURE, A.S.H. & E. NEUBERT, in preparation. The legacy of Wolfgang K. Weyrauch in Neotropical land snails, taking his manuscript names home (Gastropoda, Pulmonata).
- HAAS, F., 1948. Three new land shells from Peru. — *Fieldiana Zoology* 31: 189-193.
- KÜSTER, H.C. & L. PFEIFFER, 1840-1855 [1840-1865]. Die Gattungen *Bulimus*, *Partula*, *Achatinella*, *Achatina* und *Azeca*. — *Systematisches Conchylien-Cabinet von Martini und Chemnitz*, I, 13 (1): i-xix, 1-395 [Dates according to Smith & England, 1937].
- PILSBRY, H.A., 1895-1896. American Bulimi and Bulimuli. *Strophocheilus*, *Plekocheilus*, *Auris*, *Bulimulus*. — *Manual of Conchology* (2) 10: 1-213.
- PILSBRY, H.A., 1901-1902. Oriental bulimoid Helicidae; Odontostominae; Cerionidae. — *Manual of Conchology* (2) 14: 1-302.
- SMITH, E.A. & H.W. ENGLAND, 1937. Martini and Chemnitz (Kuester's edition) *Systematisches Conchylien-Cabinet*, 1837-1918. — *Journal of the Society for the Bibliography of Natural History* 1: 89-99.
- WEYRAUCH, W.K., 1956. The genus *Naesiotus*, with descriptions of new species and notes on other Peruvian Bulimulidae. — *Proceedings of the Academy of Natural Sciences of Philadelphia* 108: 1-17.
- WEYRAUCH, W.K., 1967. Descripciónes y notas sobre gastrópodos terrestres de Venezuela, Colombia, Ecuador, Brasil y Perú. — *Acta Zoologica Lilloana* 21: 457-499.