RYSZARD HAITLINGER (*) - MILOJE ŠUNDIĆ (**)

IBIZELLA BALEARICA N. GEN., N. SP. (ASTIGMATA CANESTRINIIDAE)
FROM BALEARIC ISLANDS, SPAIN(*) *Institute of Biology, Department of Invertebrate Systematics and Ecology, Wrocław University of Environmental and Life Sciences, 53-631 Wrocław, Kozuchowska 5B, Poland; e-mail: ryszard.haitlinger@up.wroc.pl*(**) *Department of Biology, Faculty of Sciences, University of Montenegro, Cetinjski put b. b., 20000 Podgorica, Montenegro; e-mail: miloje@t-com.me*Haitlinger R., Šundić M. – *Ibizella balearica* n. gen., n. sp. (Astigmata Canestriniidae) from Balearic Islands, Spain.*Ibizella balearica* n. gen., n. sp. from Ibiza, Balearic Islands is described and illustrated, based on female, male and protonymph. All specimens were collected on undetermined *Blaps* sp. (Coleoptera: Tenebrionidae). *Canestrinia samsinaki* known from Bulgaria and Cyprus is included to the new genus *Ibizella*.KEY WORDS: Acari, Ibiza, new combination, taxonomy, *Blaps* sp.

INTRODUCTION

In Europe were known 16 genera of canestriniid mites: *Amansiella* Khaustov & Eidelberg, 2001, *Camirohylla* Haitlinger, 1991, *Canestrinia* Berlese, 1881, *Coleopterophagus* Berlese, 1882, *Dicanestrinia* Berlese, 1911, *Lombardiniella* Cooreman, 1950, *Mesophotia* Samšiniák, 1971, *Neophotia* Samšiniák, 1971, *Paramansia* Cooreman, 1950, *Paraphotia* Khaustov & Eidelberg, 2001, *Percanestrinia* Berlese, 1911, *Percanestriniella* Khaustov & Eidelberg, 2001, *Photia* Oudemans, 1904, *Procericola* Cooreman, 1904, *Pseudoamansia* Cooreman, 1950 and *Pseudocanestrinia* Khaustov & Eidelberg, 2001 (BERLESE, 1881, 1882, 1911, OUDEMANS, 1904, COOREMAN, 1950, SAMŠINIÁK, 1971, HAITLINGER, 1991, 2001, KHAUSTOV & EIDELBERG, 2001). In the genera *Camirohylla* and *Lombardiniella* females are unknown, BERON (1975) described *Canestrinia samsinaki* collected on *Gnaptor* sp. (Tenebrionidae) from Bulgaria. Later *C. samsinaki* was found on *Blaps* sp. (Tenebrionidae) in Cyprus (HAITLINGER, 1993) and Ibiza (Balearic Islands) (HAITLINGER, 2001). Specimens from Ibiza were mistakenly determined as *C. samsinaki*, they distinctly differs from Bulgarian and Cyprian specimens and now are described as new species. KHAUSTOV & EIDELBERG (2001) gave diagnosis for the genus *Canestrinia*. *C. samsinaki* differs from *Canestrinia* species in many characters. Moreover, members of the genus *Canestrinia* are associated only with lucanid beetles and scarabeid beetles of the genus *Pentodon*. In this paper for both species we propose new genus *Ibizella*. *C. samsinaki* known from Bulgaria and Cyprus is included to the genus *Ibizella*.

MATERIAL AND METHODS

Four females, one male and two protonymphs were collected in Sant Antoni, Ibiza, Balearic Islands, Spain from *Blaps* sp. (Coleoptera: Tenebrionidae). The specimens were collected by R. Haitlinger and preserved in 70% ethanol. Mite specimens were cleared in Nesbitt's solution and mounted in Berlese's medium. All measurements are given

in micrometers (µm) using microscope NIKON Eclipse 80i. Figures were drawn using Carl Zeiss Axio Imager A2 with differential contrast and phase contrast. The terminology and abbreviations follow GRANDJEAN (1939), GRIFFITHS *et al.* (1990), NORTON (1998) and TRACH & KHAUSTOV, 2011). Additional abbreviations: IL - length of idiosoma, IW - width of idiosoma, GL - length of gnathosoma, GW - width of gnathosoma, PPL - length of propodosomal plate, PPW - width of propodosomal plate, SW - width of sucker, SS - distance between suckers measured between center of suckers, ANL - length of anus.

Family Canestriniidae Berlese, 1884

Ibizella gen. n.

The new genus includes two species: *Ibizella balearica* gen. n., sp. n. and *I. samsinaki* (Beron, 1975) comb. n.

ETYMOLOGY – The genus was named after the island where holotype was collected.

DIAGNOSIS – Male - Propodosomal plate narrow, sejugal suture weakly developed or absent, suckers present, dorsum without ornamentation or ornamented in median and posterior part of idiosoma, setae d_2 distinctly longer than setae d_1 , Hysterosoma with only 5 pairs of setae. Ventral side of idiosoma with 6 pairs of setae at posterior margin of idiosoma. Setae cG I distinctly longer than setae mG I. Tarsi I-IV very short.

Female - Propodosomal plate very narrow. Hysterosoma with 6 pairs of setae. Setae h_1 and h_2 on ventral side of idiosoma, shifted far from posterior margin of idiosoma. Setae c_1 and d_1 distinctly shorter than setae c_2 and d_2 . Setae cG on Ge I distinctly longer than setae mG. Tarsi I-IV very short.

Gender: feminine.

REMARKS – The new genus *Ibizella* belongs to genera group having propodosomal plate. The only genera

Camirohylla and *Canestrinia* are without this plate. *Ibizella* gen. nov. differs from *Amansiella* (males) in opisthosoma without caudal lobes vs. caudal lobes present, cG I seta longer than σ I and mG I vs. σ I > mG > cG, setae c_2 , d_2 distinctly longer than setae c_1 , d_1 , setae h_2 very long vs. setae h_2 very short, (females): setae c_2 , d_2 distinctly longer than c_1 , d_1 vs. these setae almost equal in length, setae h_1 placed on ventral part of idiosoma far from posterior margin of idiosoma vs. h_1 placed on dorsal side of idiosoma; from *Camirohylla* (males) in posterior margin without lobes vs. lobes present, caudal setae thin and long vs. caudal setae short, enlarged; from *Canestrinia* (males) in propodosomal plate present vs. propodosomal plate absent, five pairs of short hysterosomal setae vs. seven pairs of short hysterosomal setae, setae cG I distinctly longer than mG I and σ I vs. setae cG I not longer than σ I, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_2 , c_1 and d_2 , d_1 with similar length (females): differences as in males and setae h_1 and h_2 placed on ventral part of idiosoma, relatively far from its posterior margin vs. setae h_1 and h_2 placed at posterior margin of idiosoma; from *Coleopterophagus* (males) in adanal suckers present vs. adanal suckers absent, propodosomal plate narrow, short vs. propodosomal plate longer, setae cG I longer than mG and σ I vs. cG shorter or subequal with mG and σ I; from *Dicanestrinia* (males) in setae ve absent vs. setae ve present, 2 pairs of long caudal setae vs. one pair of long caudal setae, d_2 longer than d_1 vs. d_1 longer than d_2 , shorter tarsi IV (< 60 vs. > 80), females: setae ve absent vs. setae ve present, setae h_1 and h_2 on ventral side of idiosoma placed far from posterior margin of idiosoma vs. setae h_1 and h_2 on dorsal side and posterior margin of idiosoma, tarsi IV short, not longer than tarsi I vs. tarsi IV very long, distinctly longer than tarsi I; from *Lombardiniella* (males) in propodosomal plate narrow, short vs. propodosomal plate longer, posterior margin of idiosoma rounded vs. posterior margin of idiosoma straight, setae h_1 and h_2 placed on ventral side of idiosoma vs. setae h_1 and h_2 placed on posterior margin of idiosoma, tarsi I-IV short (< 40) vs. tarsi I-IV longer (> 60); from *Mesophotia* (males) in propodosomal plate very narrow, short vs. propodosomal plate longer, setae ve absent vs. setae ve present, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_2 and d_2 similar in length with setae c_1 and d_1 , tarsi IV with similar length as tarsi I vs. tarsi IV distinctly longer than tarsi I, (females): opisthosoma relatively wide, vs. opisthosoma narrow, propodosomal plate short vs. propodosomal plate long; from *Neophotia* (males and females) in 5 pairs of hysterosomal setae vs. 6 pairs of hysterosomal setae, setae c_2 and d_2 fourth times longer than setae c_1 and d_1 vs. setae c_2 and d_2 same length as setae c_1 and d_1 , setae ve absent vs. setae ve present; from *Paramansia* (males): – in posterior margin of idiosoma without lobes vs. posterior margin of idiosoma with two lobes, below genital region with 9 pairs of setae vs. 5 pairs of setae, σ I ~3 times shorter than cG vs. σ I and cG subequal in length, setae c_2 distinctly longer than setae c_1 vs. setae c_1 and c_2 the same length, (females): – setae ve absent vs. setae ve present, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_2 and d_2 the same length as setae c_1 and d_1 , legs I-IV short < 120 vs. legs I-IV distinctly longer > 150; from *Paraphotia*, (males and females): – in setae ve absent vs. setae ve present, propodosomal plate narrow vs. propodosomal plate wide, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_2 and d_2 the same length as setae c_1 and d_1 , σ I distinctly shorter than cG vs. σ I subequal in length with

cG, tarsus IV without enlarged ambulacral claw vs. tarsus IV with enlarged ambulacral claw; from *Percanestrinia* (males): – anterior part of opisthosoma wider than posterior part vs. anterior part of opisthosoma narrower than posterior part, σ I distinctly shorter than seta cG vs. σ I and seta cG subequal in length, tarsi I-IV short < 50 vs. tarsi I-IV longer > 60, (females): – bases of setae h_1 and h_2 placed far from posterior margin of idiosoma vs. bases of setae h_1 and h_2 placed at posterior margin of idiosoma, tarsi IV short < 60 vs. tarsi IV long > 100; from *Percanestriniella* (males and females): – in propodosomal plate narrow vs. propodosomal plate wide, 5 pairs of short hysterosomal setae vs. 6 pairs of short hysterosomal setae, setae ve absent vs. setae ve present, σ I distinctly shorter than cG vs. σ I longer than seta cG; from *Photia* (males): – in setae ve absent vs. setae ve present, propodosomal plate narrow vs. propodosomal plate wide, σ I distinctly shorter than seta cG vs. σ I subequal in length with seta cG; females – dorsum without reticulation or with residual reticulation vs. reticulation pattern strongly developed, a sickle-shaped structure absent vs. sickle-shaped structure present, distance c_1 - c_1 long vs. distance c_1 - c_1 short; from *Procericola* (males): – in adanal suckers well developed vs. adanal suckers very small, setae ve absent vs. setae ve present, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_1 , c_2 and d_1 , d_2 of similar length, idiosoma oval, opisthosoma not narrowed vs. idiosoma elongated, opisthosoma not narrowed, short vs. idiosoma elongated, opisthosoma narrowed, long, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_1 , c_2 , d_1 , d_2 with similar length; from *Pseudoamansia* (males): – in setae ve absent vs. setae ve present, propodosomal plate narrow vs. propodosomal plate wide, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_1 , d_1 and c_2 , d_2 very short, (females): – dorsum without ornamentation or with vestigial ornamentation vs. dorsum with distinctly ornamentation, setae ve absent vs. setae ve present, distance of setae c_1 - c long vs. distance of setae c_1 - c short, σ I distinctly shorter than seta cG vs. σ I subequal in length with cG; from *Pseudocanestrinia* (males and females): – in setae ve absent vs. setae ve present, propodosomal plate narrow vs. propodosomal plate wide, setae c_2 and d_2 distinctly longer than setae c_1 and d_1 vs. setae c_1 , d_1 subequal with setae c_2 , d_2 .

***Ibizella balearica* n. sp.**

Type host: *Blaps* sp.

Type locality: Sant Antoni, Ibiza, Balearic Islands, 8 September 2000, Spain.

Type material: 1 ♂ holotype, 4 ♀♀ paratypes, 2 protonymphs. Holotype and three paratypes are deposited at the Museum of Natural History, Wrocław University (MNHU), one paratype in Invertebrate collection, Biology Center of the Upper Austrian Museum, Linz, Austria.

ETYMOLOGY – The species was named after the name of archipelago where holotype was collected.

DIAGNOSIS – Propodosomal plate very narrow, short, long below 10, setae ve absent, setae c_1 and d_1 short < 35, c_2 , d_2 , long 76-110, 56-98 respectively, setae e_2 placed at lateral margins, sejugal suture absent. Tarsi very short < 30. Idiosoma 376-385 females, 290 male.

DESCRIPTION (FIGS. I-VI)

Male (based on holotype) – Idiosoma oval with ornamentation in its medial and posterior part, propodosomal plate narrow with setae vi. Propodosoma with long setae se and short setae sl and si. Hysterosoma with long setae c_2 , d_2 and shorter setae c_1 , d_1 and e_1 (Fig. I, 1). Ventral side of idiosoma with long setae h_1 , h_2 , cp and shorter setae h_3 , e_2 , f_2 , g, 1a, 3a, 4a, 4b, p_1 , p_2 and p_3 . Bases of setae h_1 and h_2 placed near posterior margin of idiosoma. Penis short. The adanal suckers well developed (Fig. I, 2). Gnathosoma not covered by idiosoma. Legs I-IV and tarsi I-IV very short (Fig. II, 1-4). Measurements are given in Table 1.

Females – Propodosomal plate narrow with setae vi. Propodosoma with 3 pairs of setae, only setae se long. Hysterosoma with 5 pairs of setae, only setae c_2 and d_2 long (Fig. III, 1). Ventral side of idiosoma with long setae cp, h_1 and h_2 . Bases of setae h_1 , h_2 placed relatively far from posterior margin of idiosoma. All short ventral setae thin: h_3 , c_3 , 1a, 3a, 4a, 4b, f, g, p_1 , p_2 , p_3 , ad_1 , ad_2 . Setae c_3 and h_3 longer than other ventral setae, excluding cp, h_1 and h_2 . Setae p_1 longer than setae p_2 , p_3 , ad_1 , and ad_2 . *Bursa copulatrix* positioned posteroventrally (Fig. III, 2). Gnathosoma not covered by idiosoma. Legs and tarsi I-IV very short (Fig. IV, 1-4). Measurements are given in Table 1.

Protonymphs – Dorsal side of idiosoma with long setae se and short setae sl, vi and si on propodosoma. Hysterosoma with 6 pairs of short setae c_1 , c_2 , d_1 , d_2 , e_1 , e_2 (Fig. V, 1). Sejugal suture absent. Prepropodosomal plate narrow. Ventral side of idiosoma with long setae cp, h_1 and h_2 and short setae 1a, 3a, c_3 , f_2 , g, p_1 , p_2 , p_3 and h_3 ; setae h_3 and c_3 longer than remaining ones (Fig. V, 2). Tarsi I-IV

and legs I-IV very short (Fig. VI, 1-4). Measurements are given in Table 2.

REMARKS - *Ibizella balearica* differs from *I. samsinaki* in (males, *measurements from Cyprian specimen, **calculated, basing on Beron's (1975) figures) in shorter IL (290 vs. 412*-504), IW (248 vs. 340*-365), PPW (40 vs. 75**), PPL (7 vs. 19*-25**), c_1 (17 vs. 72), c_2 (76 vs. 105), SW (19 vs. 27*-30), SS (37 vs. 55***-63*), vi (43 vs. 85); Ta I (21 vs. 37***-41*), Ta II (20 vs. 40*-50**), Ta III (17 vs. 39*-40**), Ta IV (24 vs. 40***-46*), ϕ I (77 vs. 103*), ϕ II (72 vs. 101*), ϕ III (66 vs. 87*), ϕ IV (54 vs. 98*), sejugal suture absent vs. sejugal suture weakly developed; females – in the shorter IL (376-385 vs. 493-574*), IW (305-323 vs. 374-412), c_1 (18-38 vs. 52), d_1 (11-24 vs. 60), e_2 (48-65 vs. 72), distance h_2 sockets – posterior margin of idiosoma (18-29 vs. 75**), distance anus – posterior margin of idiosoma (30-36 vs. 85**), Ta I (24-28 vs. 49*-52**), Ta II (24-25 vs. 48*-50**), Ta III (20-23 vs. 46*-48**), Ta IV (24-29 vs. 49*-52**), se (130-163 vs. 180), h_1 (271-320 vs. 403*-440) and h_2 (204-222 vs. 410).

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Fig. I – *Ibizella balearica* n. gen., n. sp. male. – 1, idiosoma, dorsal view; – 2, idiosoma, ventral view.

Fig. II – *Ibizella balearica* n. gen., n. sp. male. – 1, leg I; – 2, leg II; – 3, leg III; 4 – leg IV.

Fig. III – *Ibizella balearica* gen. n., sp. n. female. – 1, idiosoma, dorsal view; – 2, idiosoma, ventral view.

Table 1 – Metric data for male and females of *Ibizella balearica* n. gen. n. sp.; H - holotype, P - paratypes.

Character	H♂	P♀	P♀	P♀	P♀		H♂	P♀	P♀	P♀	P♀
IL	290	381	376	385	385	Ta I wa	17	15	21	22	18
IW	248	323	305	314	318	Ta I p	10	15	11	9	25
GL	85	83	98	88	95	Ta I q	13	11	8	9	12
GW	48	58	61	60	57	Ta I la	40		14	7	10
c ₁	17	40	33	28	33	Ta I ε	4		3		3
c ₂	76	86	110	93	99	Ti I φ	77	85	95	91	89
d ₁	16	26	23	20	24	Ge I σ	22	22	24	24	27
d ₂	77	80	94	98	89	Ge I mG	39	46	52	45	42
e ₁	42	40	52	50	58	Ge I cG	67	80	77	73	83
e ₂	33	48	58	65	54	Fe I vF	36	26	34	35	33
vi	43	55	54	53	67	Tr I vTr	41	53	30	47	52
si	42	-	57	56	47	Ta II ω	34	32	28	38	21
se	140	155	163	138	158	Ta II d	54	33	64	43	44
cp	155	189	198	213	200	Ta II e	36	24	29	31	24
h ₁	201	320	287	271	277	Ta II ra	11	8	34	24	34
h ₂	174	219	204	222	215	Ta II la	9	13	14	14	16
h ₃	60	-	110	94	103	Ta II wa	14	23	25	17	15
c ₃	55	62	57	66	77	Ti II φ	72	75	69	73	76
p ₁	25	43	31	54	33	Ge II σ	14	17	17	16	18
p ₂	3	19	21	32	27	Ge II mG	35	42	47	53	44
p ₃	10	16	24	20	18	Ge II cG	42	49	45	46	50
ad ₁		11	15	13	10	Fe II vF	32	35	41	29	31
ad ₂		13	25	18	22	Tr II vTr	33	35	27	33	23
g	14	31	28	34	30	Ta III d	65	39	66	67	53
4b	16	11	13	28	19	Ta III e	32	32	35	36	37
3a	30	29	44	55	45	Ta III w	11	22	22	24	21
4a	33	-	43	49	47	Ti III φ	66	69	68	73	70
1a	39	29	38	30	27	Ge III nG	48	45	45	43	48
sl	24					Tr III vTr	21	26	33	32	28
Ta I	21	26	28	28	24	Ta IV d	67	62	41	59	61
Ta II	20	24	25	24	24	Ta IV r	14	13	21	17	19
Ta III	17	23	22	21	20	Ta IV w	13	19	14	13	14
Ta IV	24	26	24	24	29	Ta IV e	36	40	31	40	34
Leg I	85	114	107	100	116	Ti IV φ	54	60	61	54	60
Leg II	81	111	110	108	110	Tr IV vTr	28	-	34	-	30
Leg III	87	110	96	89	109	PPL	7	8	10	7	6
Leg IV	90	105	86	95	102	PPW	40	55	54	53	58
Ta I ω ₁	26	27	28	28	31	SW	19				
Ta I ω ₃	31	42	39	42	35	SS	37				
Ta I d	50	54	41	58	64	PL	40				
Ta I e	31		29	34	19	ANL	46	55	56	62	65

Fig. IV – *Ibizella balearica* n. gen., n. sp. female.
– 1, leg I; 2, leg II; 3, leg III; 4, leg IV.

Fig. V – *Ibizella balearica* n. gen., n. sp. protonymph. – 1, idiosoma, dorsal view; 2, idiosoma, ventral view.

Fig. VI – *Ibizella balearica* n. gen., n. sp. protonymph.
– 1, leg I; 2, leg II; 3, leg III; 4, leg IV.

Table 2 – Metric data for protonymphs of *Ibizella balearica* n. gen., n. sp.

Character								
IL	228	200	1a	24	26	Ta II ω	21	16
IW	180	155	Ta I	17	18	Ta II d	39	40
GL	49	56	Ta II	15	15	Ta II e	27	27
GW	34	38	Ta III	17	15	Ta II la	11	16
c ₁	20	21	Ta IV	19	17	Ta II ra	14	25
c ₂	49	47	Leg I	72	71	Ta II wa	10	9
c ₃	50	44	Leg II	67	63	Ti II ϕ	51	49
d ₁	16	17	Leg III	60	56	Ge II σ	10	11
d ₂	35	38	Leg IV	61	56	Ge II cG	32	33
e ₁	34	32	Ta I ω_1	17	17	Ge II mG	25	31
e ₂	25	25	Ta I ω_2	6		Tr II vF	18	32
h ₁	143	146	Ta I d	29	40	Ta III d	40	43
h ₂	114	103	Ta I e	19	27	Ta III e	40	30
h ₃	43	38	Ta I p	15	19	Ta III w	21	20
se	109	114	Ta I q	8	8	Ti III ϕ	47	46
si	28	28	Ta I ra	25		Ge III nG	22	26
vi	31	31	Ta I wa	10	19	Ta IV d	36	41
p ₁	18	18	Ta I ϵ	4	7	Ta IV w	17	12
p ₂	18	18	Ti I ϕ	58	60	Ta IV r	22	25
p ₃	14	16	Ge I σ	19	18	PPL	30	28
f ₁	18	19	Ge I cG	39	48	PPW	5	5
g	11	12	Ge I mG	26	31	ANL	38	32
3a	35	27	Tr I vF	23	27			

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