

Supplement 1. Analyzed gastropod shells from the Zaprešić Brijeg collections with drilling predation summ.ry.

FAMILY	INVENTORY NUMBER	n	DHS	UDHS	DF (%)	PE (%)	MULT-DHS		ENVIRONMENT	HABITAT	FEEDING TYPE
							633	113			
Trochidae	1419	1	0	0	0	0	0	0	marine	epifauna	grazers
Pisanidae	1481	1	0	0	0	0	0	0	marine	epifauna	carnivores
Neritidae	1420; 10305	32	0	0	0	0	0	0	marine, brackish	epifauna	grazers
Melanopsidae	10310	2	0	0	0	0	0	0	brackish	epifauna	grazers
Pachychilidae	1466	11	0	0	0	0	0	0	brackish	epifauna	grazers
Cerithiidae	1442; 1443; 1445; 1446; 1450-1452; 10318; 10319; 10373-10376	508	65	15	12.8	18.75	58	58	marine	epifauna	grazers
Litopidae	10317	1	0	0	0	0	0	0	marine	epifauna	grazers
Scalloidae	10320	1	0	0	0	0	0	0	marine	epifauna	grazers
Potamididae	1445; 1447-1449; 10311-10316; 10368-10372	4459	201	36	4.51	15.19	38	38	marine, brackish	epifauna	grazers
Turritellidae	1432-1436; 10321-10325; 10378; 10379	1253	181	28	14.45	13.4	117	117	marine	semi-infauna	suspension feeders
Rissoidae	10307; 10308	3	0	0	0	0	0	0	marine	epifauna	grazers
Seguenziidae	1429	2	0	0	0	0	0	0	marine	epifauna	grazers
Zebinidae	10309	1	0	0	0	0	0	0	marine	epifauna	grazers
Strombidae	1453; 1454; 10377	8	0	0	0	0	0	0	marine	epifauna	grazers
Aporrhaidae	1455; 10386	13	1	1	7.69	50	0	0	marine	semi-infauna	detritivores
Calyptraeidae	1423; 1424; 10383-10385	14	0	0	0	0	0	0	marine	epifauna	suspension feeders
Naticidae	1425-1427; 10326; 10327; 10380-10382	90	5	4	5.56	44.44	0	0	marine	semi-infauna	carnivores
Triviidae	10331	1	0	0	0	0	0	0	marine	epifauna	carnivores
Eratoidae	10328-10330	6	0	0	0	0	0	0	marine	epifauna	carnivores
Cassidae	1457	2	0	0	0	0	0	0	marine	epifauna	carnivores
Charoniidae	1458; 1459; 10332; 10387	6	0	0	0	0	0	0	marine	epifauna	carnivores
Epitoniidae	1430	1	0	0	0	0	0	0	marine	epifauna	carnivores
Eulimidae	10306	1	0	0	0	0	0	0	marine	epifauna	carnivores
Muricidae	1471; 1477-1480; 1482-1484; 1486; 1508; 10333; 10388-10392	150	10	2	6.67	16.67	11	11	marine	epifauna	carnivores
Tudicidae	1488; 1490; 1495; 1496; 10346; 10396	17	1	0	5.88	0	0	0	marine	epifauna	carnivores
Babylonidae	1464	1	0	0	0	0	0	0	marine	epifauna	carnivores
Buccinidae	1489; 10395	2	1	0	50	0	0	0	marine	epifauna	carnivores
Nassariidae	1465-1472; 1474; 1476; 10334-10344; 10393; 10394	2428	34	4	1.4	10.53	4	4	marine	semi-infauna	carnivores
Columbellidae	1461-1463	11	0	0	0	0	0	0	marine	epifauna	carnivores
Melongenidae	1491-1493	11	1	0	9.09	0	2	2	marine	epifauna	carnivores
Fasciariidae	1487; 10345; 10347; 10396; 10397	5	0	0	11.11	0	0	0	marine	epifauna	carnivores
Volutidae	1500-1502; 1538; 10349; 10400	18	0	1	0	100	3	3	marine	epifauna	carnivores
Mitridae	1498	3	0	0	0	0	0	0	marine	epifauna	carnivores
Costellariidae	1497; 1499	8	0	0	0	0	0	0	marine	epifauna	carnivores
Olividae	10348	1	0	0	0	0	0	0	marine	epifauna	carnivores
Ancillariidae	1503; 1504; 10398	70	2	2	2.86	50	1	1	marine	epifauna	carnivores
Cancellariidae	1473; 1505-1507; 1509; 1510; 10350-10352; 10401; 10402	14	2	0	14.29	0	0	0	marine	epifauna	carnivores
Conidae	1536; 1537; 1539; 10360-10363; 10414	12	0	0	0	0	0	0	marine	epifauna	carnivores
Borsoniidae	1532; 1534; 1535; 10359	18	1	0	5.56	0	0	0	marine	epifauna	carnivores
Drillidae	1518-1520; 10358; 10413	13	3	1	23.08	25	0	0	marine	epifauna	carnivores
Clavatulidae	1514a; 1516; 1517; 1522-1531; 10353-10357; 10403-10412	1813	122	17	6.73	12.23	44	44	marine	epifauna	carnivores
Turridae	1428; 1514; 1521; 1533	10	2	1	20	33.33	0	0	marine	epifauna	carnivores
Terebridae	1511-1513	4	1	1	25	50	0	0	marine	epifauna	carnivores
Pyramidellidae	1438	1	0	0	0	0	0	0	marine	epifauna	carnivores
Acteonidae	1540; 1541	15	0	0	0	0	0	0	marine	epifauna	carnivores
Ringiculidae	1542; 1543; 10364	15	0	0	0	0	0	0	marine	epifauna	carnivores
Cylichnidae	1544	5	0	0	0	0	0	0	marine	epifauna	carnivores
Retusidae	10365	1	0	0	0	0	0	0	marine	epifauna	carnivores

**Supplement 2. The most numerous gastropod families in the sample and their drilling analysis.**

FAMILY	n	DHS	UDHS	DF (%)	PE (%)	ENVIRONMENT	HABITAT
Potamididae	4459	201	36	4.51	15.19	marine, brackish	epifauna
Nassariidae	2428	34	4	1.4	10.53	marine	semi-infauna
Clavatulidae	1813	122	17	6.73	12.23	marine	epifauna
Turritellidae	1253	181	28	14.45	13.4	marine	semi-infauna
Cerithiidae	508	65	15	12.8	18.75	marine	epifauna
Muricidae	150	10	2	6.67	16.67	marine	epifauna
Naticidae	90	5	4	5.56	44.44	marine	semi-infauna

**Supplement 3. Occurrences of drilling in infaunal gastropods.**

FAMILY	n	DHS	UDHS	DF (%)	PE (%)
	<b>3784</b>	<b>221</b>	<b>37</b>	<b>5.84</b>	<b>14.34</b>
Turritellidae	1253	181	28	14.45	13.4
Aporrhaidae	13	1	1	7.69	50
Naticidae	90	5	4	5.56	44.44
Nassariidae	2428	34	4	1.4	10.53

## Supplement 4. Occurrences of drilling in epifaunal gastropods.

FAMILY	n	DHS	UDHS	DF (%)	PE (%)
	7279	412	76	5.66	15.57
Trochidae	1	0	0	0	0
Pisaniidae	1	0	0	0	0
Neritidae	32	0	0	0	0
Melanopsidae	2	0	0	0	0
Pachychilidae	11	0	0	0	0
Cerithiidae	508	65	15	12.8	18.75
Litiopidae	1	0	0	0	0
Scaliolidae	1	0	0	0	0
Potamididae	4459	201	36	4.51	15.19
Rissoidae	3	0	0	0	0
Seguenziidae	2	0	0	0	0
Zebinidae	1	0	0	0	0
Strombidae	8	0	0	0	0
Calyptraeidae	14	0	0	0	0
Triviidae	1	0	0	0	0
Eratoidae	6	0	0	0	0
Cassidae	2	0	0	0	0
Charoniidae	6	0	0	0	0
Epitoniidae	1	0	0	0	0
Eulimidae	1	0	0	0	0
Muricidae	150	10	2	6.67	16.67
Tudicidae	17	1	0	5.88	0
Babyloniidae	1	0	0	0	0
Buccinidae	2	1	0	50	0
Columbellidae	11	0	0	0	0
Melongenidae	11	1	0	9.09	0
Fascioliariidae	5	0	0	0	0
Volutidae	18	0	1	0	100
Mitridae	3	0	0	0	0
Costellariidae	8	0	0	0	0
Olividae	1	0	0	0	0
Ancillaridae	70	2	2	2.86	50
Cancellariidae	14	2	0	14.29	0
Conidae	12	0	0	0	0
Borsoniidae	18	1	0	5.56	0
Drillidae	13	3	1	23.08	25
Clavatulidae	1813	122	17	6.73	12.23
Turridae	10	2	1	20	33.33
Terebridae	4	1	1	25	50
Pyramidellidae	1	0	0	0	0
Acteonidae	15	0	0	0	0
Ringiculidae	15	0	0	0	0
Cylichnidae	5	0	0	0	0
Retusidae	1	0	0	0	0

**Supplement 5. Drilling results based on the feeding type of gastropods.**

Feeding type	n	DHS	UDHS	DF (%)	PE (%)
Carnivores	4754	185	33	3.89	15.14
Suspension feeders	1267	181	28	14.29	13.4
Detritivores	13	1	1	7.69	50
Grazers	5029	266	51	5.29	16.09

**Supplement 6. Categorization of the drill hole shape from the successfully drilled shells.**

FAMILY	n	DHS	Naticid DH	Muricid DH	UNDETERMINABLE
Potamididae	4459	201	91	11	99
Nassariidae	2428	34	23	2	9
Clavatulidae	1813	122	105	8	9
Turritellidae	1253	181	176	1	4
Cerithiidae	508	65	37	/	28
Muricidae	150	10	5	2	3
Naticidae	90	5	4	/	1
Ancillaridae	70	2	1	1	/
Borsoniidae	18	1	1	/	/
Cancellariidae	14	2	1	/	1
Aporrhaidae	13	1	1	/	/
Drillidae	13	3	1	/	2
Melongenidae	11	1	/	1	/
Turridae	10	2	/	/	2
Tudicidae	17	1	1	/	/
Terebridae	4	1	/	/	1
Buccinidae	2	1	1	/	/

**Supplement 7. Categorization of the drill hole shape from the unsuccessfully drilled shells.**

FAMILY	n	UDHS	Naticid DH	Muricid DH	UNDETERMINABLE
Potamididae	4459	36	5	/	31
Nassariidae	2428	4	3	/	1
Clavatulidae	1813	17	8	/	9
Turritellidae	1253	28	27	/	1
Cerithiidae	508	15	/	/	15
Muricidae	150	2	/	/	2
Naticidae	90	4	4	/	/
Ancillaridae	70	2	/	/	2
Volutidae	18	1	/	/	1
Aporrhaidae	13	1	/	/	1
Drillidae	13	1	/	/	1
Turridae	10	1	/	/	1
Terebridae	4	1	/	/	1

**Supplement 8. Comparison in abundance of Badenian gastropods from Zaprešić Brijeg locality (ZBL-C, this paper) with part of the documented gastropods from Várpalota, Hungary (V-H, after GÖRÖG & SOMODY, 1988), and Rakovica stream near Belgrade (RSB-S; GANIĆ et al., 2016). Legend: / = not recorded.**

FAMILY	Genus/Species/Subspecies	ZBL-C	V-H	RSB-S
Neritidae	<i>Vitta picta</i> (Férussac, 1823)	32	142	21
Cerithiidae	<i>Cerithium</i>	508	42	23
Litiopidae	<i>Gibborissoia</i> / <i>Alaba</i>	1	/	127
Scaliolidae	<i>Sandbergeria perpusilla</i> (Grateloup, 1827)	1	/	125
Potamididae	<i>Terebralia</i>	82	104	/
	<i>Terebralia bidentata lignitarum</i> Eichwald	32	36	/
	<i>Terebralia bidentata margaritifera</i> Sacco	8	37	/
	<i>Pirenella</i>	4377	2775	/
Turritellidae	<i>Turritella</i>	1211	556	57
	<i>Turritella (Haustator) badensis</i> Sacco	19	/	6
	<i>Oligodia bicarinata</i> (Eichwald, 1830) (= <i>Turritella bicarinata</i> Eichwald)	43	/	2
	<i>Turritella (Zaria) subangulata</i> (Brocchi, 1814)	2	/	41
Rissoidae	<i>Rissoa</i>	2	/	42
Aporrhaidae	<i>Aporrhais</i>	13	10	/
Calyptraeidae	<i>Calyptraea chinensis</i> (Linnaeus, 1758)	6	/	7
Naticidae	<i>Natica</i>	55	304	49
	<i>Naticarius stercusmuscarum</i> (Gmelin, 1791) (= <i>Natica millepunctata</i> Lamarck)	6	215	22
Epitoniidae	<i>Scala/Epitonium</i> sp.	1	/	2
Muricidae	<i>Ocinebrina</i>	116	10	/
	<i>Ocinebrina boeckhi</i> (Hoernes & Auinger, 1885)	1	/	/
	<i>Murex</i>	2	1	3
Tudicidae	<i>Euthriofusus burdigalensis</i> (Defrance, 1820)	1	32	/
Buccinidae	<i>Euthria</i>	2	/	5
Nassariidae	<i>Nassarius</i>	2383	521	78
	<i>Dorsanum</i>	2	1493	/
	<i>Nassa</i>	12	35	81
Columbellidae	<i>Columbella</i>	4	28	/
	<i>Mitrella</i>	6	/	91
Melongenidae	<i>Galeodes (Galeodes) cornutus</i> Agassiz, 1843	11	8	/
Volutidae	<i>Athleta</i>	16	/	82
Ancillariidae	<i>Amalda glandiformis</i> (Lamarck, 1810)	70	95	25
Conidae	<i>Conus</i>	12	/	119
	<i>Conus (Conolithus) dujardini</i> Deshayes	1	/	21
	<i>Conus (Chelyconus) fuscocingulatus</i> Bronn.	1	/	96
Borsoniidae	<i>Genota</i>	16	149	/
Drilliidae	<i>Stenodrillia bellardii</i> (Desmoulins, 1842) (= <i>Clavus (Drillia) allionii</i> Bellardi, 1877)	7	71	/
Clavatulidae	<i>Clavatula</i>	484	/	39
	<i>Clavatula (Clavatula) asperulata</i> (Lamarck, 1822)	35	/	29
	<i>Turricula</i>	16	/	13
Turridae	<i>Turris</i>	1	/	18
Terebridae	<i>Myurella basteroti</i> (Nyst, 1845)	2	8	7
Ringiculidae	<i>Ringicula</i>	15	/	6
Retusidae	<i>Retusa</i>	1	/	69