

BRIAN COLES *

NOTES ON THE LAND MOLLUSCA OF VAL TROMPIA (Province of Brescia, Lombardy, Italy)

SUMMARY - A list of the land Mollusca found in Val Trompia (Province of Brescia, Lombardy, Italy) is presented with collecting sites localised by means of the UTM grid. *Discus perspectivus* (v. Muhlged) and *Aegopinella graziadei* (Boeckel) are new additions to the fauna of the Province.

SOMMARIO - L'Autore presenta un elenco dei molluschi terragnoli raccolti durante una sua ricerca nel maggio del 1977 in Val Trompia. Le due specie *Discus perspectivus* (v. Muhlged) e *Aegopinella graziadei* (Boeckel) sono le due entità nuove rinvenute, finora sconosciute nella provincia.

Collection of the land mollusca of Val Trompia (Province of Brescia, Lombardy, Italy) during May 1977, resulted in the finding of two species new to the province, viz: - *Discus perspectivus* (v. Muhlged) and *Aegopinella graziadei* (Boeckel). These finds extend the known range of each species considerably. It was thought worthwhile to present a complete list of the mollusca found in Val Trompia on this occasion and to accurately localize collecting sites by means of the Universal Transverse Mercator grid. In this way the data is compatible with the current schemes concerned with accurate mapping of the European land and freshwater mollusca (KERNEY 1976, 1976 a).

Val Trompia runs northeast from Brescia to the high Adamello alps. Unlike the valleys of the Oglio (Val Camonica) to the west and Trentino to the east, Val Trompia does not provide an easy route to the Brenner Pass and the popular alpine areas of the Dolomites. Perhaps because of this the molluscan fauna has been rather neglected (ALZONA 1971, and references therein). Brescia, a busy industrial town, once renowned for metal-working, lies at the southern end of the valley. The town and its suburbs stretch north through calcareous pre-alpine hills, covered by drift, for about 6km until the valley begins to close-in. At Gardone, 18km north of Brescia, montane character becomes evident and this increases in extent as the valley rises to the pass of Croce Domini (1895m) some 50km northeast of Brescia.

* Department of Chemistry, University of York, York, England.

North of Gardone drift is largely absent from the hills so that soils are calcareous. The rocks of the pass, which belong to the Adamello massif, are apparently low in calcium. The drift covered hills around Brescia support chestnut woodland (*Castanea sativa* Miller) except on the southernmost slopes where scrub is evident. Most of the land further north consists of meadows with some mixed or coniferous woodland.

COLLECTION SITES

Localities are followed by their UTM grid reference, height above sea level and distance up the valley (except where stated otherwise) from Brescia, taken from 1:100 000 maps of the series M691, Istituto Geografico Militare, sheets 47 (Brescia) and 34 (Breno). (1) *Brescia town*; castle walls and grounds, NR955437 (200m). (2) *Brescia, via S. Gaetanino*; waste land, walls and grassy banks of a quiet street on the lower slopes of Mt. Maddalena, NR966442 (200m). (3) *Mt. Maddalena*; chestnut woodland and clearings on slopes of hills (on drift), NR9844 (400-600m) 3km E. of town. (4) *Summit of Mt. Maddalena*; open grassland with calcareous rocks, PR002446 (800 m) 5km E. of Brescia. (5) *Gresine*; ca. 2km S. of Iseo, S-facing calcareous slopes on southernmost pre-alps, open grassland and scrub, NR808553 (200m) 19km NW. (6) *Dernago*; abandoned quarry, PR020497 (200m) 9km. (7) *Binzago*; (Val Chiese) shaded gully in alpine meadows, PR063545 (500m) 24km NE. (8) *Bione*; mixed woodland in a stream gully, PR053603 (450m) 35km NE. (9) *Lembrio valley*; calcareous rocks, NR9762 (600m) 24km. (10) *W-facing slopes of Lembrio valley*; NR976616 (700m) 24km. (11) *Irma*; walls and rocks, NR988695 (900m) 30km. (12) *Irma*; chestnut woodland by stream, NR992696 (1000m) 30km. (13) *Lavone*; grassland by stream, NR970690 (400m) 29km. (14) *Pezzoro*; streamside in mixed woodland, NR942683 (1000m) 29km. (15) *Collio*; grassy bank and shaded, moss-covered rocks and trees, PR033738 (600m) 40km. (16) *San Colombano*; grass-covered slope, PR078757 (1200m) 48km. (17) *Pian della Pietra*; beginning of the pass of Maniva, rocks with plant debris and loose earth above tree line, PR095754 (1550m) 50km.

MOLLUSCA

The molluscan finds at the seventeen sites listed above are summarized in table 1; there are a number of points which are not evident from the table. (1) *Acicula lineolata* (Pini) and *Acicula lineata* (Draparnaud) are better known as *A. lineata* (Draparnaud) and *A. sublineata* (Andreae) respectively. The use of names here follows BOETERS and GITENBERGER (1977). (2) As subspecies *avenoides* (Westerlund). Specimens from the

TABLE 1. Occurrence of Mollusca at sites 1-17.

species	sites																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Cochlostoma septemspirale</i> (Razoumowsky)								+			+	+	+				
<i>Cochlostoma porroi</i> (Strobel)									+								
<i>Pomatias elegans</i> (Müller)	+				+												
<i>Acicula lineolata</i> (Pini) (1)			+					(+)		+		+					
<i>Acicula lineata</i> (Draparnaud) (1)													+				
<i>Carychium minimum</i> (Müller)								+									
<i>Cochlicopa lubrica</i> (Müller)				+													
<i>Columella columella</i> (v. Martens)																	+
<i>Argna valsabina</i> (Spinelli)										+							
<i>Pagodulina subdola</i> (Gredler)										+	+	+	+				
<i>Granopupa granum</i> (Draparnaud)					+												
<i>Chondrina megacheilos</i> (Cristofori et Jan) (2)					+							+					
<i>Granaria frumentum</i> (Draparnaud) (3)		+		+	+						+	+					
<i>Vallonia costata</i> (Müller)	+								+								
<i>Chondrula tridens</i> (Müller)								(+)									
<i>Jaminia quadridens</i> (Müller)					+												
<i>Ena obscura</i> (Müller)											+			+			
<i>Zebrina detrita</i> (Müller)		+															
<i>Itala itala</i> (v. Martens) (4)	+			+	+		+	+			+			+	+		
<i>Clausilia whateliiana</i> (Küster) (5)								+								+	
<i>Clausilia cruciata</i> (Stüder)								+		+							
<i>Macrogastera lineolata</i> (Held)								+						+	+	+	
<i>Neostyriaca strobili</i> (Porro)								+				+		+			
<i>Discus rotundatus</i> (Müller)	+					+											
<i>Discus perspectivus</i> (v. Muhlfield) (6)															+		
<i>Vitrea subrimata</i> (Reinhardt)			+					+		+							+
<i>Aegopsis gemonensis</i> (Férussac)			+											+			
<i>Aegopinella pura</i> (Alder)																	+
<i>Aegopinella nitens</i> (Michaud)																	+
<i>Aegopinella graziadei</i> (Boeckel) (7)		+	+	+	+		+			+		+	+	+	+		
<i>Nesovitrea hammonis</i> (Steröm)																	(+)
<i>Oxychilus mortilletti</i> (Pfeiffer)	+	+	+				+				+						+
<i>Oxychilus hidiatinus</i> (Rossmässler)					(+)												
<i>Vitriobranchium breve</i> (Férussac)			(+)		(+)	+	(8)		(+)	(+)							(+)
<i>Euconulus fulvus</i> (Müller)																	+
<i>Bradybaena fruticum</i> (Müller)	+	+												+			
<i>Candidula unifasciata</i> (Poiret)	(+)				(+)												
<i>Hygromia cinctella</i> (Draparnaud)					+												
<i>Trichia unidentata</i> (Draparnaud)																	+
<i>Euomphalia strigella</i> (Draparnaud)				+	+												
<i>Ciliella ciliata</i> (Stüder)		+						(+)		+			+				(+)
<i>Helicodonta obvolvata</i> (Müller)		+	+	+			+			+	+		+				
<i>Helicodonta angigyra</i> (Rossmässler)		+			+	+				+							
<i>Chilostoma cingulatum</i> (Stüder)	+	+								+							
<i>Cepea nemoralis</i> (L.)					+												
<i>Helix pomatia</i> L.										+							

+ = species present alive, (+) = species present as empty shells only.

Numbers in parentheses refer to notes in the text.

southern slopes of the pre-alps (site 5) are larger 7.3 - 9.4 mm in height than those from further north (site 11, 6.0 - 6.9 mm tall). (3) As subspecies *illyrica* (Rossmässler), considered as a separate species by several authors. Specimens of *Granaria* also show marked variation in size with site. Those from the southern sites (1,2,4 and 5) lie within the range 9.8 - 13.0 mm tall while those from site 11 are 8.4 - 9.6 mm tall. (4) Specimens of *Itala itala* (v. Martens) vary in height from 14.4 mm (site 15) to 19.9 mm (site 1). This variation again seems to be correlated with climate. All specimens were of the form *albopustulata* (Cristofori) (NORDSIECK 1963). (5) The forms of *Clausilia whateliana* (Küster) are discussed by Nordsieck (1966). (6) *Discus perspectivus* (v. Muhlfeld) is new to the province; formerly this species was known, in Italy, only from Veneto (MARCUSZI *et. al.* 1970). This new site is one of the most westerly stations of the species. *D. perspectivus* was common at Pezzoro under limestone rocks where there was an accumulation of earth. It is perhaps worth noting that *Discus rotundatus* (Müller) was found only at sites where there was much human disturbance *i.e.* Brescia castle grounds (site 1) and a disused quarry (site 6). This is quite unlike its common occurrence in northern Europe. (7) *Aegopinella graziadei* (Boeckel) is also new to the province, however, as Dr. L. Forcart has pointed out (personal communication) the type locality (BOECKEL 1940) and other localities are only some 100km distant in the provinces of Trento and Vicenza. The identity of these specimens was confirmed by dissection (FORCART 1959). The only other *Retinella* (*s. lat.*) species found were a single *Aegopinella nitens* (Michaud) (dissected) at site 15 where *graziadei* was also present and *Aegopinella pura* (Alder) and *Nesovitrea hammonis* (Ström) from site 17. *A. graziadei* was common in all habitats which provided some cover (*e.g.* wasteland, scrub and woodland). (8) This record is based on a living juvenile specimen which agreed with *Vitrinobrachium breve* (Férussac) in its shell but was too small to show diagnostic characters on dissection; empty adult shells of *breve* were also present.

ACKNOWLEDGEMENTS

I would like to thank Dr. L. Forcart (Basel) for confirming the identity of *Aegopinella graziadei*, Dr. E. Gittenberger (Leiden) for the identification of *Chondrina* and *Granaria*, Dr. M.P. Kerney (London) for confirming many of the identifications and Reg and Isobel Willard for their generous hospitality in Brescia.

REFERENCES

- ALZONA C., 1971 - Malacofauna Italica. Atti Soc. Ital. Sci. Nat. Mus. Civ. Storia Nat. Vol. CXI, Milano.
- BOECKEL W., 1940 - Beitrag zur Systematik alpiner *Retinella* Arten. Arch. Moll., 72: 10-21, Frankfurt am Main.
- BOETERS H.D. and GITTENBERGER E., 1977 - *Acicula (A.) lineata* (Draparnaud) und *A. (A.) lineolata* (Pini) (Prosobranchia, Aciculidae, 3). Zoologische Mededelingen, 52: 218-222, taf. 1, Leiden.
- FORCART L., 1959 - Taxionomische Revision palaarktischer Zonitidae, 55. Anatomisch untersuchte Arten des Genus *Aegopinella* Lindholm. Arch. Moll., 88: 7-34, Frankfurt am Main.
- KERNEY M.P., 1976 - European distribution maps of *Pomatias elegans* (Müller), *Discus duredatus* (Férussac), *Eobania vermiculata* (Müller) and *Margaritifera margaritifera* (Linnaeus). Arch. Moll., 106: 243-249, Frankfurt am Main.
- KERNEY M.P., 1976a - Atlas of the non-marine mollusca of the British Isles. Conchological Society - Natural Environment Research Council, London.
- MARCUZZI G., MORISI A. and LO CASTO E., 1970 - Elenco dei molluschi terrestri e d'acqua dolce del Veneto. Memorie Istit. Veneto Sci., Lettere ed Arti, 33 (2) Classe Sci. Math. e Nat.
- NORDSIECK H., 1963 - Zur Anatomie und Systematik der Clausilien, II. Die Formenbildung des Genus *Delima* in den Südalpen. Arch. Moll. 92: 169-203, Frankfurt am Main.
- NORDSIECK H., 1966 - Zur Anatomie und Systematik der Clausilien, III. *Clausilia whateliana* und ihre Beziehungen zu den übrigen *Clausilia*-Arten, besonders zum Subgenus *Neostyriaca*. Arch. Moll. 95: 19-48, Frankfurt am Main.

Author's address:

Dr. BRIAN COLES, 27 Dove Street - YORK (England)