

JANUSZ BŁASZYK

MIDDLE AND UPPER VESULIAN OSTRACODS OF THE GENUS  
*GLYPTOCY THERE* BRAND & MALZ OF THE CZĘSTOCHOWA  
REGION (POLAND)

*Abstract.*—Ostracods of the genus *Glyptocythere* Brand & Malz, found in the Kujavian (= Vesulian) rocks penetrated by the boreholes Jaworznik, Iwanowice Wielkie and Choroń, are described. Two of the five species described—*Glyptocythere posterocostata* and *G. medisulcata*—are new. The intraspecific variability and stratigraphical distribution of particular species are discussed.

## INTRODUCTION

Numerous ostracods of the genus *Glyptocythere* were extracted from core material of the *Parkinsonia parkinsoni* and *Parkinsonia compressa* Zones, pierced by boreholes at Jaworznik, Iwanowice Wielkie and Choroń (Błaszyk, 1967)<sup>1</sup>. The ostracods of this genus are of particular importance in the Dogger as the majority of them is limited to the Bajocian and Lower Bathonian (Table 1, Figs. 1—4). During Bajocian this group has been strongly diversified specifically and intraspecifically. Among the species described in the present paper, *Gl. similis* Brand & Melz, 1966, is characterized by a particularly high variability of valve ornamentation. Moreover, attention should be drawn to two new species described below, the stratigraphical range of which seems to be limited to the *Parkinsonia parkinsoni* and *P. compressa* Zones. The species *Gl. tuberosa angularis* Błaszyk, 1967 is an exception among representatives of this genus in Poland, hence it appears as late as in upper part of the *P. compressa* Zone and continues up to the Upper Bathonian (the section at Jaworznik; cf. Błaszyk, 1967).

<sup>1</sup> In the paper by Błaszyk (1967) an error appears: on the profile in Fig. 2—should appear Jaworznik instead of Iwanowice Wielkie, and on profile in Fig. 4—instead of Iwanowice Wielkie, Jaworznik should appear.

The ostracods described below are housed in the Palaeozoological Institute, Polish Academy of Sciences, Warszawa (abbreviated as Z.Pal.). The photos were made using microscope "Laborlux", produced by Leitz-Wetzlar Co., and objective UO-4, with uniform enlargement,  $\times 70$ .

#### Acknowledgements

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#### DESCRIPTIONS

##### Family **Cytheridae** Baird, 1850

##### Subfamily **Progonocytherinae** Sylvester-Bradley, 1948

##### Genus *Glyptocythere* Brand & Malz, 1962

##### *Glyptocythere posterocostata* n.sp.

(Pl. XXXI, Figs. 1—5)

*Holotype*: Z.Pal.No.0.VII/5, figured in Pl. XXXI, Fig. 5.

*Type horizon*: Bajocian, the *Parkinsonia parkinsoni* Zone.

*Type locality*: Borehole Choroń, depth 69.00 m.

*Derivation of the name*: Lat. *posterocostata*—ornamented with two parallel costae in the posterior part.

*Diagnosis*.—Carapaces ovate (♀♀) to elongate, almost elliptical (♂♂). Valve surface ornamented with large tubercle, surrounded by wide furrow, which, in turn, is dorsally delineated by thick longitudinal rib. Six thick, short ribs begin at furrow margin; two of them continue parallel over posterior part of valve. Anterior marginal borders covered with 4—6 thin, longitudinal ribs on each valve.

*Material*.—Twenty well-preserved specimens, including right and left valves and complete carapaces.

Dimensions of adult female individual (Z.Pal. No. O.VII/5), figured in Pl. XXXI, Fig. 5 (in mm):

	Length	Height
Right valve . . . . .	0.68	0.43

Table 1

Distribution of *Glyptocythere* in the cores: Jaworzniak, Iwanowice Wielkie and Choroń

D O G G E R		K U I A V I A N		E F J C H
Parkinsonia parkinsoni				S T A G E S
				Z O N E S
		Position of sampling in metres		
	63.60			Glyptocythere medisulcata n.sp.
	65.60			
	66.70		+	Gl. posterocostata n.sp.
	68.90		+	Gl. similis Brand Malz 1966
	70.00			Gl. interrete Brand Malz 1966
	72.20			
	73.40		+	Gl. sp.

Fig.1.- Distribution of *Glyptocythere* in the core Jaworzniak. Ammonite Zone after J.Znosko, 1954.

D O G G E R		K U I A V I A N		P.c.	
P.parkinsoni					
	118.40				+
	122.00		+		
	137.00			+	

Fig.2.- Distribution of *Glyptocythere* in the core Iwanowice Wielkie. Ammonite Zone after J.Znosko, 1954. P.c. = *Parkinsonia compressa*.

D O G G E R		K U I A V I A N		Parkinsonia parkinsoni	
	65.00				
	69.00				
	71.20			+	
	74.40			+	+
	77.80				+
	81.00			+	+
	85.40				+
	87.60				+
	88.60				
	91.70				
	95.00				
	97.20				
	102.50				

Fig.3.- Distribution of *Glyptocythere* in the core Choroń. Ammonite Zone after J.Znosko, 1954

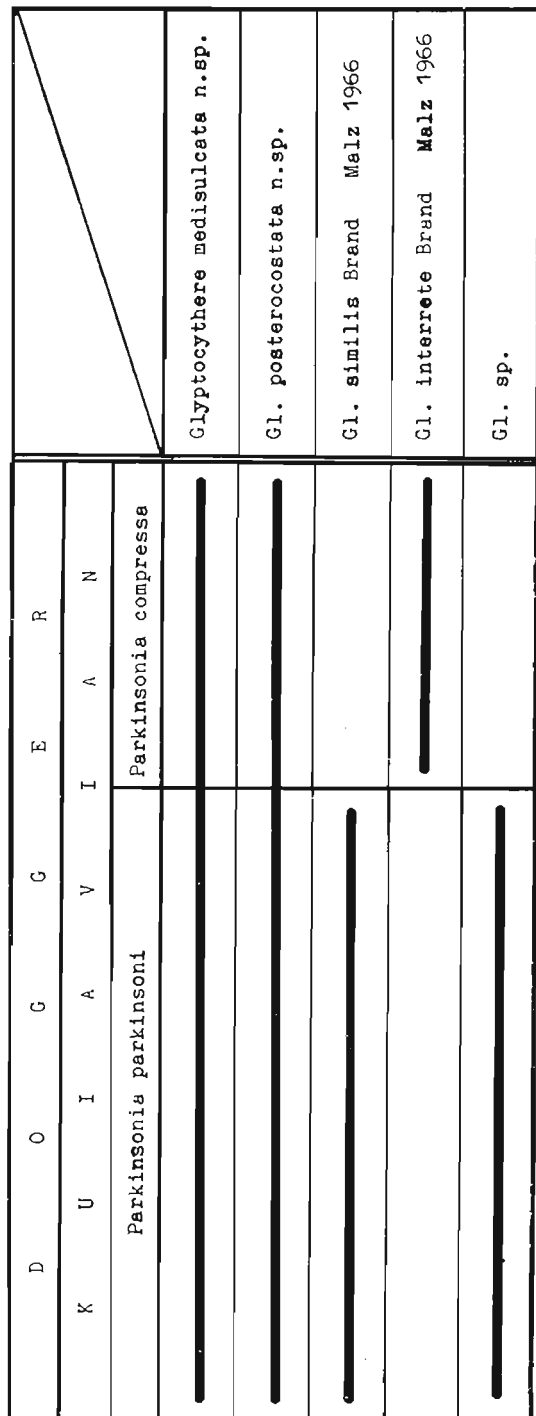


Fig.4.- Stratigraphic range of *Glyptocythere* from Middle and Upper Kuiavian of Częstochowa Region.

*Description.* — Left valve larger than right. Carapaces ovate (♀♀) to elongate, almost elliptical (♂♂) in lateral view. Anterior end somewhat oblique upward, rounded downward. Posterior end obtuseconcave in upper part. Dorsal margin of right valve somewhat bent in the middle, whereas straight in left valve. Ventral margin obscured by overhanging lateral surfaces of valves. Surface ornamented with anteromedial large tubercle, surrounded by wide furrow, connected with longitudinal furrow marked close to ventral margin. Anteroventral furrow from ventral side is bordered by a thick longitudinal rib, hooked upward in anterior part of the valve. Furrow surrounding tubercle gives rise to six ribs, radial, except for two, which continue parallel through posterior part of the valve. Anterior marginal borders ornamented with 7—8 radial pore canals, whereas posterior has 4—5 canals. Lateral outline almost rectilinear dorsally. Lines of lateral outline gradually converge towards anterior. Valves narrow in anterior and posterior parts, in front of flattened marginal borders. Ventral margin, seen from dorsal view, is somewhat concave in its middle part. Ventral marginal borders are ornamented with 4 to 6 longitudinal, fine costae on every valve. Hinges tripartite, with anterior section consisting of 8 dents, middle section — 11 sockets, and posterior section — 7 dents, in the case of right female valve. Anterior and posterior dents and medial sockets increase in size towards the middle of particular section. Hinges of male valves are less differentiated, which results from their greater length in comparison with female hinges. Muscle scars typical for the family Cytheridae.

*Remarks.* — *Glyptocythere posterocostata* n.sp. differs from *Gl. rudimenta* Brand & Malz (Brand & Malz, 1966, Pl. 56, Figs. 40—50) in having two thick parallel ribs continuing through posterior part of the valve.

*Occurrence.* — Poland: Jaworzniak, Middle Kuiavian (= Vesulian), the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 66.7; Iwanowice Wielkie, Middle and Upper Kuiavian (= Vesulian), in *P. compressa* and *P. parkinsoni* Zones, position of sampling (in m): 118.4 and 137.0; Choroń, Middle Kuiavian (= Vesulian), the *P. parkinsoni* Zone, position of sampling (in m): 69.0, 71.2, 74.4 and 81.0.

*Glyptocythere medisulcata* n.sp.

(Pl. XXXII, Figs. 1—5)

*Holotype:* Z.Pal.No.O.VII/7, figured in Pl. XXXII, Fig. 1.

*Type horizon:* Middle Kuiavian, the *Parkinsonia parkinsoni* Zone.

*Type locality:* Borehole, Jaworzniak, depth 73.40 m.

*Derivation of the name:* Lat. *medisulcata* — from deep transversal furrow marked in middle of valve.

*Diagnosis.* — Valve ovate in outline. Deep furrow continues through middle of valve, rapidly bending towards the anterior close to the lower

margin of valve. Large main tubercle is located at the bend of this median furrow. The second tubercle, two times smaller, occurs at the break of lateral rib, posteromedially. The main tubercle gives rise to three ribs; one continues towards the dorsal part of valve, whereas two others through ventral part towards posterior. Ventral marginal borders ornamented with 4 longitudinal ribs.

*Material.* — Ten well-preserved specimens, including right and left valves.

Dimensions of adult female individual (Z.Pal.No.O.VII/7), figured in Pl. XXXII, Fig. 1 (in mm):

	Length	Height
Left valve . . . . .	0.67	0.43

*Description.* — Valves ovate in outline; left valve larger than right. Anterior end evenly rounded, whereas posterior somewhat elongated, slightly concave upwards. Dorsal margin of right valve somewhat incurved in the middle, whereas that of left valve is almost straight. Ventral margin obscured by overhanging lateral surfaces of valves. Deep furrow continues transversally through the middle of valve, bending towards the anterior at an angle of about  $90^\circ$  in subventral part. Large ovate tubercle is located at this bend, giving rise to three ribs. The shorter rib continues towards the dorsal part of valve, limiting the transversal furrow. Two other ribs bend at an angle of  $180^\circ$  towards the posterior; external rib enters ventral marginal border, whereas internal rib limits the transversal furrow postero-ventrally. Internal rib gives rise to two others, the first of which bifurcates twice and the resulting four smaller riblets gradually fade away in posterior part of valve; the second rib separates from the internal one at the height of the main tubercle and continues towards the dorsal part of valve, being interrupted by smaller tubercle in the middle of its length. Postero-dorsal and antero-dorsal areas smooth. Valves ovate both in dorsal and ventral views. Ventral marginal borders ornamented with four longitudinal fine ribs. Ventral margin slightly concave in the middle. Hinges tripartite, consisting of 8 sockets along anterior section, 11 dents along middle section and 9 sockets along posterior section, in the case of left, female valve. Muscle scars typical of the family Cytheridae.

*Remarks.* — *Glyptocythere medisulcata* n.sp. differs from *Gl. similis* Brand & Malz (1966, Pl. 57, Figs. 51—57) in occurrence of rib, continuing from the main tubercle towards the dorsal margin and limiting the transversal furrow anteriorly, in continuity of internal rib and in occurrence of small tubercle located at the break in the second internal rib.

*Occurrence.* — Poland: Jaworzniak, Middle Kuiavian (= Vesulian), the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 73.40; Iwano-

wise Wielkie, Upper Kuiavian (= Vesulian), *Parkinsonia compressa* Zone, position of sampling (in m): 122.0.

*Glyptocythere similis* Brand & Malz, 1966

(Pl. XXXIII, Figs. 1-6; Pl. XXXIV, Figs. 1-2; Pl. XXXV, Figs. 3-5)

1966. *Glyptocythere similis* Brand & Malz; E. Brand & H. Malz, Die Arten der Gattung Glyptocythere..., pp. 508—509, Pl. 57, Figs. 51-57.

Material. — Forty well-preserved specimens, including right and left valves and complete carapaces.

Dimensions of adult female individuals figured in Pl. XXXIII, Figs. 1—2 (in mm):

	Length	Height
Right valve (Z.Pal.No.O.VII/12) . . .	0.73	0.50
Left valve (Z.Pal.No.O.VII/13) . . .	0.75	0.52

Dimensions of adult male individuals figured in Pl. XXXIII, Figs. 3—4 (in mm):

	Length	Height
Right valve (Z.Pal.No.O.VII/14) . . .	0.84	0.52
Left valve (Z.Pal.No.O.VII/15) . . .	0.86	0.54

*Diagnosis and description* — cf. Brand & Malz, 1966.

*Remarks.* — Polish specimens assigned to *Glyptocythere similis* B. & M. differ from the holotype (Brand & Malz 1966, Pl. 57, Figs. 57 a, b, ♂ left valve) in greater length of valves and more distinct ornamentation, particularly in the case of rib delimiting medial valve area posteriorly; this rib is evenly rounded, which is not observed in the holotype. Moreover, Polish specimens exhibit higher variability of valve ornamentation, i.e. one valve greatly differs from another in particular, but general pattern of ornamentation, typical for this species, is preserved.

*Occurrence.* — Poland: Jaworzniak, Middle Kuiavian (= Vesulian), the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 66.70; Choroń, Middle Kuiavian (= Vesulian), the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 74.80, 77.80, 81.00, 85.40, 87.60. NW and S Germany: Lower Bathonian.

*Glyptocythere interrete* Brand & Malz, 1966

(Pl. XXXV, Fig. 2)

1966. *Glyptocythere interrete* Brand & Malz; E. Brand & H. Malz, Die Arten der Gattung Glyptocythere..., pp. 528—529, Figs. 31-34.

*Material.* — Four young, well-preserved specimens, only right valves.

Dimensions of young individuals (Z.Pal.No.O.VII/24), figured in Pl. XXXV, Fig. 2 (in mm):

	Length	Height
Right valve . . .	0.42	0.24

*Diagnosis and description* — cf. Brand & Malz, 1966.

*Remarks.* — Polish specimens assigned to *Gl. interrete* B. & M. differ insignificantly from the holotype figured by Brand & Malz (1966, Figs. 33 a-c) in smaller particulars of valve ornamentation, which may be the result of their juvenile instar. From *Gl. costata* Bate (1965, Pl. 5, Figs. 1—7) they differ in valve outline.

*Occurrence.* — Poland: Iwanowice Wielkie, Upper Kuiavian (= Vesulian), the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 118.40. NW Germany: Upper Bajocian.

*Glyptocythere* sp.  
(Pl. XXXV, Fig. 1)

*Diagnosis.* — Valve elongated. Anterior end truncated upwards, rounded downwards. Dorsal margin slightly incurved in the middle. Main tubercle on the valve surface is surrounded by wide furrow, the branch of which passes along ventral part. Short, thick rib marked in postero-medial part. Ventral marginal borders ornamented with longitudinal ribs. The rest of valve surface ornamented with deep, irregular pits.

*Material.* — One specimen, right valve.

Dimensions of adult individual (Z.Pal.No.O.VII/23), figured in Pl. XXXV, Fig. 1 (in mm):

	Length	Height
Right valve . . .	0.57	0.37

*Description.* — Valve elongated. Anterior end somewhat truncated upwards, rounded downwards. Dorsal margin slightly incurved in the middle. Main tubercle on the valve surface surrounded by wide furrow, the branch of which passes along ventral part. Short, thick rib marked in postero-medial part. The rest of valve surface ornamented with deep, irregular pits. Ventral marginal borders are covered with longitudinal fine ribs. Nine simple pore canals marked in anterior marginal borders. Hinge tripartite, consisting of 8 dents along anterior section, 11 sockets along medial section and 9 dents along posterior section, in the case of the right female valve.

*Remarks.* — Valve identified as *Glyptocythere* sp. differs from *Gl. posterocostata* in the lack of the second posterior rib, from *Gl. rudimenta*

Brand & Malz (1966, Pl. 56, Figs. 40—50) in the lack of rib continuing from the main tubercle towards the anterior.

*Occurrence.* — Poland: Choroń, Middle Kuiavian (= Vesulian) the *Parkinsonia parkinsoni* Zone, position of sampling (in m): 81.00.

*Palaeozoological Institute  
of the Polish Academy of Sciences  
Warszawa, Al. Żwirki i Wigury 93  
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JANUSZ BŁASZYK

#### OSTRAKODY Z RODZAJU *GLYPTOCYTHERE* BRAND & MALZ ZE ŚRODKOWEGO I GÓRNEGO WEZULU OKOLIC CZĘSTOCHOWY

##### *Streszczenie*

Opisano ostrakody z rodzaju *Glyptocythere* Brand & Malz z osadów kujawu (= wezulu) z wierceń: Jaworzniak, Iwanowice Wielkie i Choroń. Z pięciu gatunków, dwa — *Glyptocythere posterocostata* i *G. mediusulcata* — opisano jako nowe. Przedstawiono również zmienność osobniczą i rozprzestrzenienie stratygraficzne opisanych gatunków.



ОСТРАКОДЫ РОДА *GLYPTOCYTHERE* BRAND & MALZ ИЗ СРЕДНЕГО  
И ВЕРХНЕГО ВЕЗУЛИЯ ОКРЕСТНОСТЕЙ ЧЕНСТОХОВЫ, ПОЛЬША

Резюме

В работе описаны остракоды рода *Glyptocythere* Brand & Malz из отложений куявийского (= везульского) яруса, пройденного скважинами Явожник, Ивановице-Вельке и Хоронь. В числе пяти видов, два — *Glyptocythere postero-costata* и *G. medisulcata* — описаны в качестве новых. Рассматриваются также индивидуальные особенности и стратиграфическое распространение изученных видов.

EXPLANATIONS OF PLATES

Abbreviations used in the plate explanation:

YI = young individual, PI = premature instar, A = adult, C = carapace, RV = right valve, LV = left valve.

Dimensions (in mm) of the individuals are given in parenthesis.

Magnifications of all figures — approximately  $\times 70$ .

Plate XXXI

*Glyptocythere postero-costata* n.sp.

- Fig. 1. (0.59) — YI: a RV lateral view, b RV internal view; O.VII/1, 71.2 m.  
 Fig. 2. (0.46) — YI: RV lateral view; O.VII/2, 71.2 m.  
 Fig. 3. ♂ (0.62) — A: a LV internal view, b LV lateral view; O.VII/4, 69.0 m.  
 Fig. 4. C. ♀ (0.62) — PI: a RV lateral view, b LV lateral view, c ventral view, d dorsal view; O.VII/3, 74.4 m.  
 Fig. 5. C. ♀ (0.68) — A: holotype: a RV lateral view, b LV lateral view, c ventral view, d dorsal view; O.VII/5, 69.0 m.  
 Fig. 6. ♂ (0.77) — A: RV lateral view; O.VII/6, 69.0 m.

Borehole Choróń, *Parkinsonia parkinsoni* Zone.

## Plate XXXII

*Glyptocythere medisulcata* n.sp.

- Fig. 1. ♀ (0.67) — A: a LV lateral view, b LV internal view, c LV dorsal view; O.VII/7, 73.4 m.  
 Fig. 2. ♀ (0.67) — A: a LV lateral view, b LV internal view; O.VII/8, 73.4 m.  
 Fig. 3. ♀ (0.66) — A: a RV lateral view, b RV internal view; O.VII/9, 73.4 m.  
 Fig. 4. ♀ (0.69) — A: a RV lateral view, b RV internal view; O.VII/10, 73.4 m.  
 Fig. 5. ♂ (0.80) — A: a RV lateral view, b RV internal view; O.VII/11, 122.0 m.  
 Figs. 1-4: Borehole Jaworzniak, *Parkinsonia parkinsoni* Zone;  
 Fig. 5: Borehole Iwanowice Wielkie, *P. compressa* Zone.

## Plate XXXIII

*Glyptocythere similis* Brand & Malz, 1966

- Fig. 1. ♀ (0.73) — A: a RV lateral view, b RV internal view; O.VII/12, 77.8 m.  
 Fig. 2. ♀ (0.75) — A: a LV lateral view, b LV internal view; O.VII/13, 77.8 m.  
 Fig. 3. ♂ (0.84) — A: a RV lateral view; O.VII/14, 81.0 m.  
 Fig. 4. ♂ (0.86) — A: LV lateral view; O.VII/15, 81.0 m.  
 Fig. 5. ♂ (0.84) — A: a LV lateral view, b LV internal view; O.VII/16, 77.8 m.  
 Fig. 6. ♂ (0.85) — A: a LV lateral view, b LV internal view; O.VII/17, 77.8 m.

Borehole Choroń, *Parkinsonia parkinsoni* Zone.

## Plate XXXIV

*Glyptocythere similis* Brand & Malz, 1966

- Fig. 1. c. ♂ (0.86) — A: a LV lateral view, b RV lateral view, c dorsal view, d ventral view; O.VII/18, 87.6 m.  
 Fig. 2. c. ♂ (0.86) — A: a LV lateral view, b RV lateral view, c dorsal view, d ventral view; O.VII/19, 74.4 m.

Borehole Choroń, *Parkinsonia parkinsoni* Zone.

## Plate XXXV

*Glyptocythere* sp.

- Fig. 1. (0.57) — A: a RV lateral view, b RV internal view; O.VII/23, 81.0 m.  
*Glyptocythere interrete* Brand & Malz, 1966  
 Fig. 2. (0.42) — YI: a RV lateral view, b RV internal view; O.VII/24, 118.4 m.  
*Glyptocythere similis* Brand & Malz, 1966  
 Fig. 3. C. ♀ (0.73) — A: a RV lateral view, b LV lateral view, c ventral view, d dorsal view; O.VII/20, 77.8 m.  
 Fig. 4. C. ♀ (0.73) — A: a RV lateral view, b LV lateral view, c ventral view, d dorsal view; O.VII/21, 77.8 m.  
 Fig. 5. (0.68) — PI: a RV internal view, b RV lateral view; O.VII/22, 77.8 m.  
 Figs. 1, 3-5. Borehole Choroń, *Parkinsonia parkinsoni* Zone;  
 Fig. 2. Borehole Iwanowice Wielkie, *P. compressa* Zone.

