27. JURASSIC OSTRACODA FROM LEG 79, SITE 547[1]

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INTRODUCTION

Eighteen samples from the Early Jurassic (Hettangian to Pliensbachian) and nine from the Bajocian to Berriasian interval have been examined. The ostracode fauna has been left largely in open nomenclature pending a more detailed study. At least four new genera, listed simply as Gen. nov. A–D sp. nov. have been recognized. Although many new species are present, there is a similarity between this ostracode fauna and that of northwest Europe of comparable age. This is particularly true for the Early Jurassic from which *Bairdia guttulae* Herrig, 1979, *Ptychobairdia* cf. *aselfingenensis* (Lord and Moorley, 1974), *Monoceratina scrobiculata* Triebel and Bartenstein, 1938, *Bairdia* sp. 4134 Michelsen, 1975, *Ogmoconcha* cf. *contractula* Triebel, 1941, and *Paracypris* cf. *redcarensis* Blake, 1876 have been obtained. *Monoceratina vulsa* (Jones and Sherborn, 1888), present in the Toarcian to Callovian of Britain, is recorded here from a sample provisionally dated as Bajocian to Callovian on foraminiferal evidence. The more important species are illustrated and their distribution recorded in Table 1.

DISCUSSION

From the samples of Early Jurassic age (Hettangian to Pliensbachian), dated on foraminifers, calcareous nannofossils, and palynomorphs, a diverse ostracode fauna has been obtained that is indicative of marine shelf conditions. Unornamented ostracodes dominate the fauna and it is tempting to suggest that they represent outer shelf conditions, but this is by no means certain as there is a persistent presence of inner shelf species. In Section 547B-20-1, 133–141 cm for example, the presence of a single specimen tentatively ascribed to the genus *Timiriasevia* (the internal details are perhaps more closely allied to those of *Timiriasevia* than the general outer appearance suggests) may be indicative of the proximity to land from which this ostracode was derived; the specimen is rather delicate and its condition would suggest that it had not been transported over a particularly great distance. The presence at Site 547 of slumped sediments within the Jurassic could also suggest a possible mechanism for the transportation of the ostracode.

Only a small fauna has been obtained from the Hettangian (?Rhaetian) sediments; the most important is a species assigned tentatively to the genus *Lutkevichinella* (Plate 1, Figs. 4–6), a useful marker index for this interval. It should be stressed that the two samples from which this ostracode was obtained have been dated by nannofossils as Hettangian to early Sinemurian and as Trias to Hettangian, respectively. Nevertheless, we consider the presence of *Lutkevichinella* sp. to be significant for dating as our material is comparable to *Lutkevichinella keupera* (Will, 1969) figured by Urlichs (1972) from the late Triassic of the Alps. It is hoped that a more detailed study will resolve these rather imprecise dates.

The most diverse fauna has been obtained from sediments of Sinemurian to Pliensbachian age. *Paracypris* cf. *redcarensis* is close to the species *redcarensis* described by Blake (1876) from the Sinemurian of northeast England and *Monoceratina scrobiculata* is also of this age, both in England and northern Europe. *Ptychobairdia hahni* and *Ptychobairdia aselfingenensis* were both described by Lord and Moorley (1974), under the generic assignment of *Bairdia*, from the Pliensbachian of Europe. *Ogmoconcha* cf. *contractula*, if proved to be conspecific with that species, confirms the Pliensbachian date based on benthic foraminifers. *Bairdia* sp. 4134 is considered to be conspecific with the species so named by Michelsen (1975) from the Pliensbachian of Denmark.

Three new cytheracean genera, the species of which are also new, occur in the Sinemurian to Pliensbachian interval, Gen. nov. A, B, and C sp. nov. Gen. nov. B sp. nov. ranges from the Simemurian to Pliensbachian whereas A and C, possibly assignable to the Cytheruridae, are restricted to the Sinemurian. Gen. nov. D sp. nov. (similar to Gen. nov. B sp. nov., not yet assignable to a family) is of ?Rhaetian to Hettangian age. Sediments of this age in northwest Europe characteristically contain the genus *Lutkevichinella*, although not abundantly.

Relatively little is known about the Callovian to Berriasian interval at this site, which precludes any significant comment here. The presence of *Monoceratina vulsa*, although first appearing in the Toarcian but considered to be indicative of Bajocian to Callovian sediments in Europe, is found in a sample dated on foraminifers as Bajocian–Callovian. Its presence here supports this age assignment. With respect to the overall dating of these sediments, the ostracode species present, previously recorded from Europe, corroborate the nannofossil and fo-

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Table 1. Distribution table of ostracodes present in Site 547 Jurassic sediments.

	Triassic?–Lower Jurassic											Middle Jurassic	Upper Jurassic–Lower Cretaceous			
	Rhaetian/Hettangian		Sinemurian					Pliensbachian				Bajocian–Callovian	Kimmeridgian		Tithonian–Berriasian	
Ostracodes	547-24,CC	547-21,CC	547-20-2, 25–30 cm	547-20-1, 133–141 cm	547-18-2, 5–7 cm	547-18-1, 22–34 cm	547-17,CC	547-15-2, 58–65 cm	547-15-1, 10–20 cm	547-11,CC	547-11-4, 99 cm	547-10-3, 125–128 cm	547-7,CC	547-7-4, 135–137 cm	547-7-3, 72–82 cm	547-7-3, 55–60 cm
?Isobythocypris sp.	r															
Gen. nov. D sp. nov.	r															
Lutkevichinella sp.	r	r														
Gen. nov. B sp. nov.			r													
Ogmoconchella sp.			r													
Isobythocypris sp.			r													
Ektyphocythere sp.			r													
Orthonotacythere sp. nov. A				r	r											
"Timiriasevia" sp.				r												
Monoceratina scrobiculata				r												
Ogmoconcha cf. *contractula*				r				r								
Gen. nov. A sp. nov.				r												
Palaeocytheridea sp.					r											
Polycope cf. *pelta*					r											
?Kinkelinella sp. juv.					r											
?Palaeocytheridea sp.					r	r										
Metacopine gen. nov.						r										
Gen. indet. A						r										
Procytherura sp. nov. A						r										
Procytherura sp. nov. B						r										
Gen. nov. C sp. nov.						r										
Paracypris cf. *redcarensis*						r	r									
Paracytheridea sp. nov. A						r										
Ogmoconcha sp.									r							
Ptychobairdia hahni										r						
Bairdia sp. 4134										c						
Bairdia guttulae										c						
?Paracypris										r						
?Kinkelinella sp.										r						
Gen. indet. C										r						
Cytheropteron sp.										r						
Gen. indet. D										r						
Rutlandella sp.										r						
Gen. indet. B										r						
?Monoceratins sp.										r						
Isobythocypris										r						
Isobythocypris sp. A										r						
Isobythocypris cf. *tatei*										c						
Bairdia cf. *carinata*										r						
Ptychobairdia cf. *aselfingenensis*										r						
Bairdia molesta										r						
Cytherelloidea sp.										r						
"Bythocypris" sp.											r					
Polycope sp.											r					
Bairdia sp.											r					
Paracypris sp.											r					
Monoceratina vulsa												r				
Polycope sp. A												r				
Eucytherura sp.												r				
Orthonotacythere sp. B												r				
Polycope sp. B												r				
Acanthocythere sp.													r			
Bairdia sp. A													r			
Tethysia sp.													r			
Cytherella sp.														r		
Paracypris sp.														r		
"Bythocypris" sp.															r	r
Polycope sp.															r	
Bairdia sp.																r
Paracypris sp.																r
?Cytherella sp.																r

Note: r = 1–3; c = 4–10.

raminiferal evidence. However, some tightening of the Rhaetian/Hettangian dating of the base of the section is necessary.

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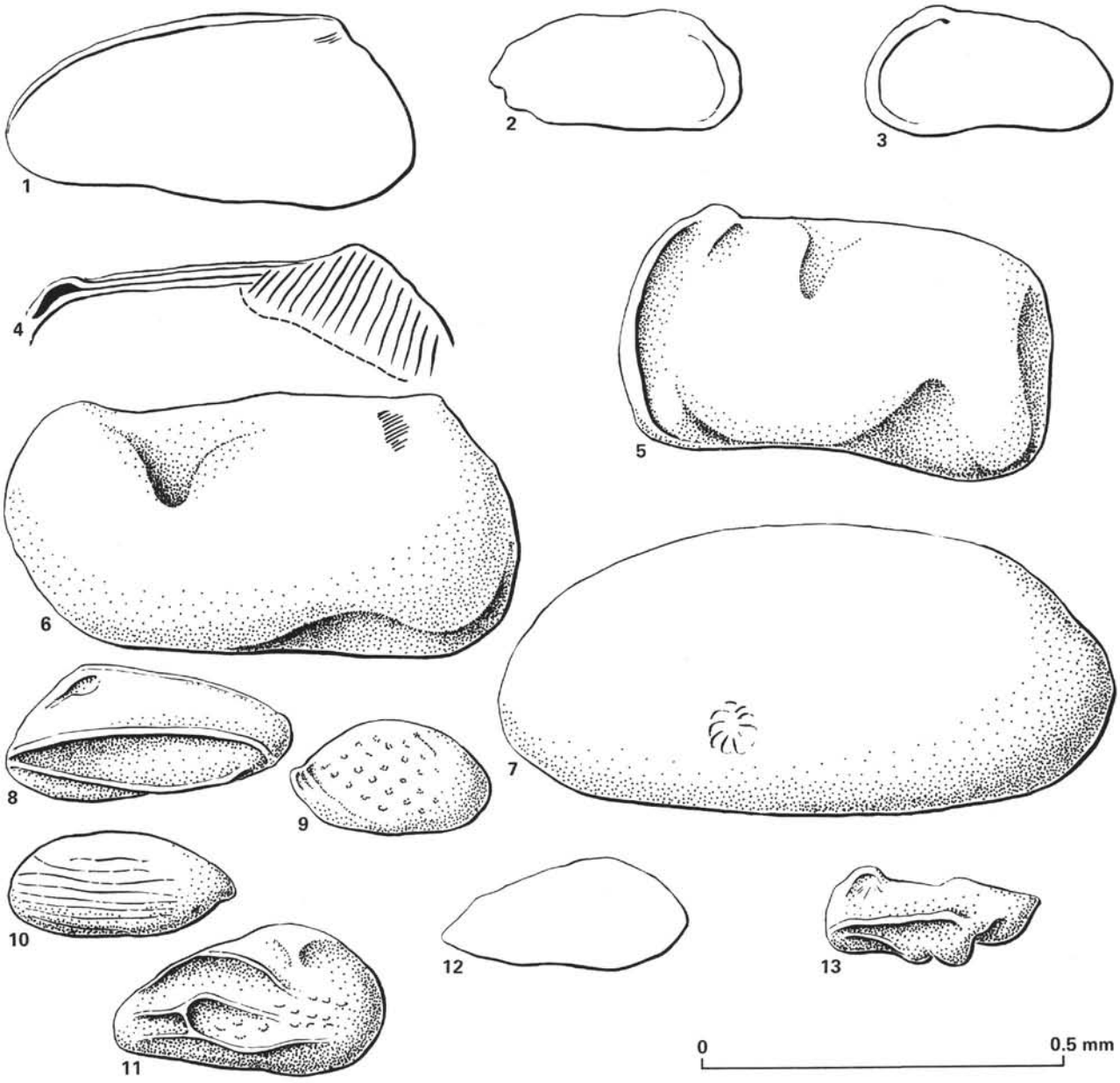

Plate 1. Rhaetian? to Hettangian; Sample 547-24,CC (6–12 cm). **1.** ?*Isobythocypris* sp. **2, 3.** Gen. nov. D sp. nov. **4–6.** *Lutkevichinella* sp. Sinemurian; Sample 547-18-1, 22–34 cm. **7.** Metacopine—gen. nov. **8.** *Palaeocytheridea*? sp. **9.** *Procytherura* sp. nov. A. **10.** *Procytherura* sp. nov. B. **11.** Gen. nov. C sp. nov. **12.** *Paracypris* cf. *redcarensis* Balke. **13.** *Paracytheridea* sp. nov. A.

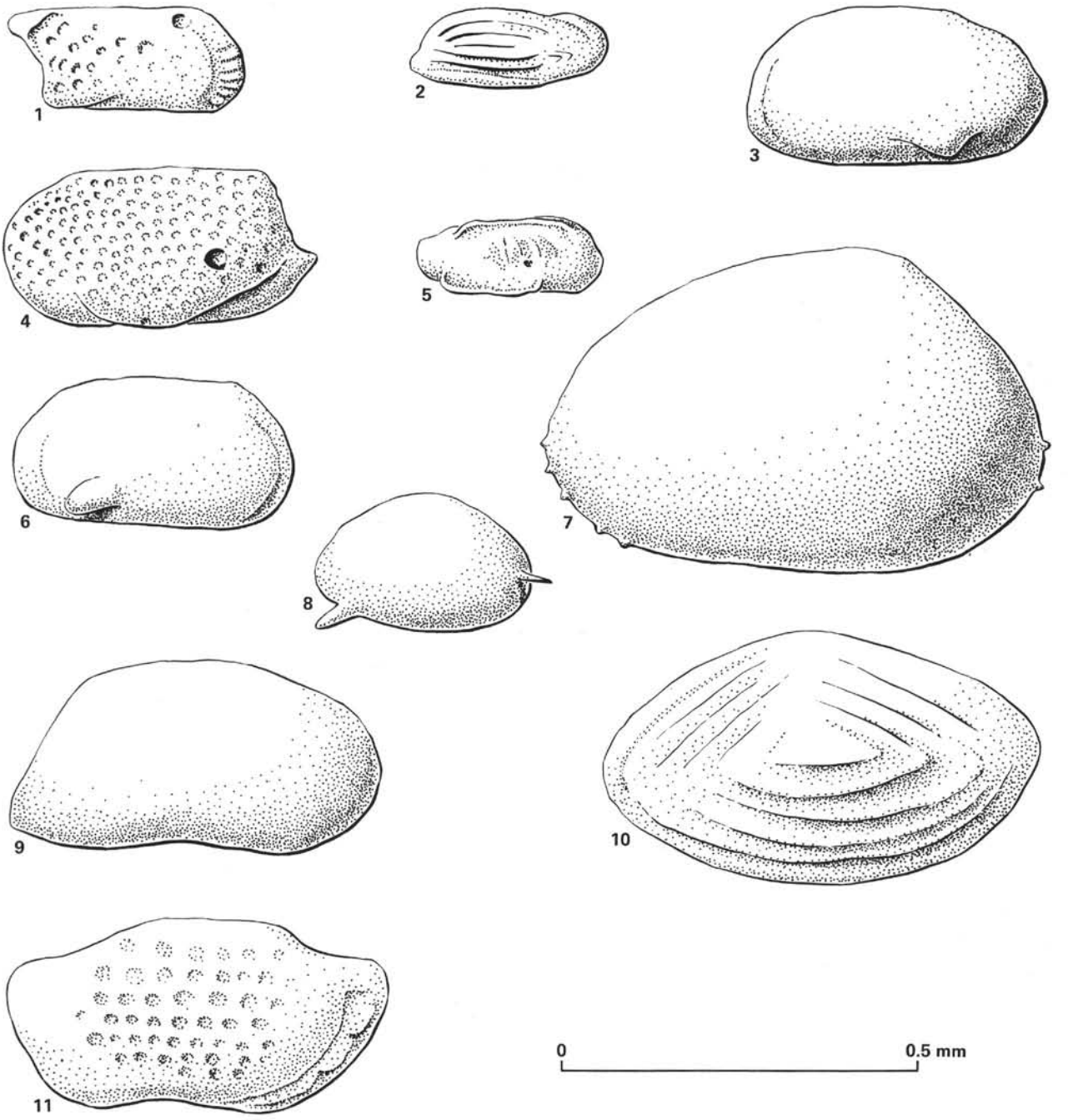

Plate 2. Sinemurian. **1.** *Orthonotacythere* sp. nov. A, Sample 547-20-1, 133–141 cm. **2.** *"Timiriasevia"* sp., Sample 547-20-1, 133–141 cm. **3, 6.** Gen. nov. B sp. nov., Sample 547-20-2, 25–30 cm. **4.** *Monoceratina scrobiculata* Triebel and Bartenstein, Sample 547-20-1, 133–141 cm. **5.** Gen. nov. A sp. nov., Sample 547-20-1, 133–141 cm. **8.** *Ogmoconchella* sp., Sample 547-20-2, 25–30 cm. **9.** *Isobythocypris* sp. Sample 547-20-2, 25–30 cm. **10.** *Ektyphocythere* sp. nov., Sample 547-20-2, 25–30 cm. Pliensbachian. **7.** *Ogmoconcha* cf. *contractula* Triebel, Sample 547-15-2, 58–65 cm. **11.** *Ptychobairdia hahni* (Lord and Moorley), Sample 547-11,CC.

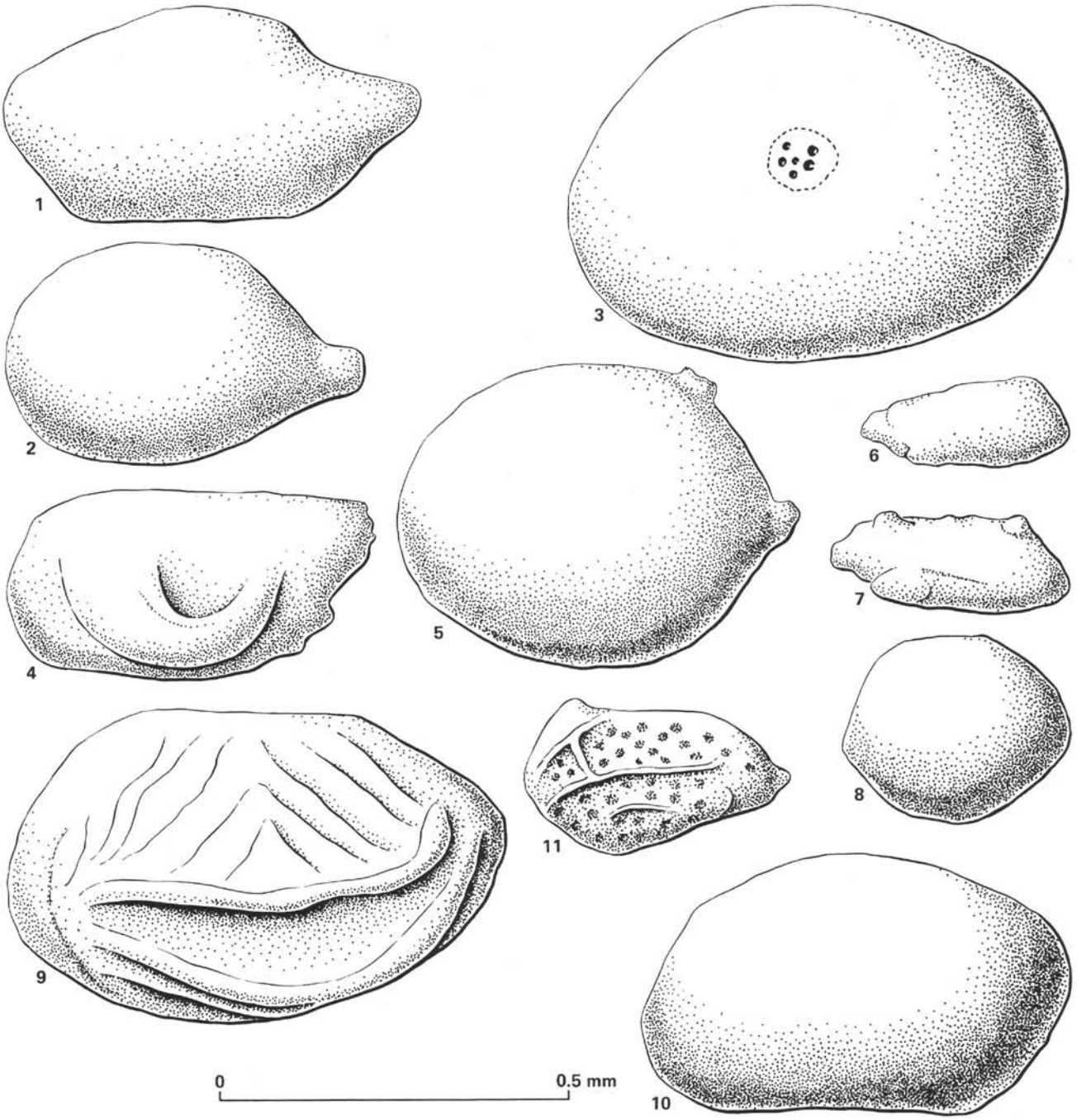

Plate 3. Pliensbachian. **1.** *Bairdia* sp. 4134 Michelsen, Sample 547-11,CC. **2.** *Bairdia guttulae* Herrig, Sample 547-11,CC. **3.** *Ogmoconcha* sp., Sample 547-15-1, 10–20 cm. Bajocian–Callovian; Sample 547-10-3, 125–128 cm. **4.** *Monoceratina vulsa* (Jones and Sherborn). **5.** *Polycope* sp. A. **6.** *Eucytherura* sp. **7.** *Orthonotacythere* sp. nov. B. **8.** *Polycope* sp. B. Kimmeridgian; Sample 547-7,CC. **9.** *Acanthocythere* sp. **10.** *Bairdia* sp. A. **11.** *Tethysia* sp.

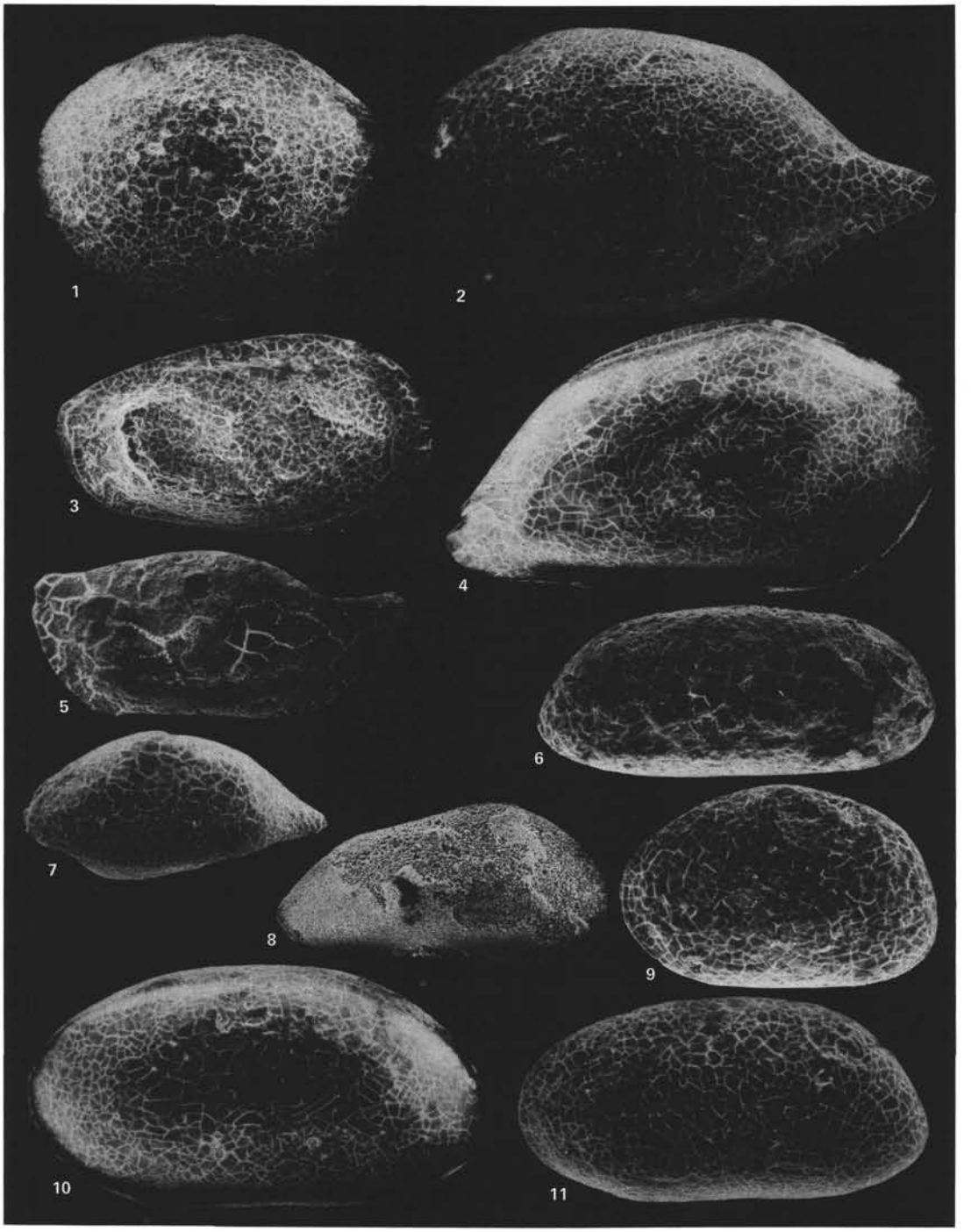

Plate 4. Liassic ostracoda. (Figs. 1, 3–11, × 160; Fig. 2, × 120.) **1.** *Polycope* cf. *pelta* Fischer, Sample 547-18-2, 5–7 cm, No. 5376. **2.** *Bairdia guttulae* Herrig, Sample 547-11,CC, No. 5404. **3.** *Cytherelloidea* sp., Sample 547-11,CC, No. 5392. **4.** *Bairdia molesta* Apostolescu, Sample 547-11,CC, No. 5403. **5.** *Ptychobairdia* cf. *aselfingenensis* (Lord and Moorley), Sample 547-11,CC, No. 5406. **6.** *Isobythocypris tatei* (Coryell), Sample 547-11,CC, No. 5399. **7.** *Bairdia* cf. *carinata* Drexler, Sample 547-11,CC, No. 5405. **8.** *Paracypris redcarensis*? (Blake), Sample 547-17,CC, No. 5402. **9.** *Isobythocypris* sp., Sample 547-11,CC, No. 5393. **10.** *Isobythocypris* sp. A, Sample 547-11,CC, No. 5395. **11.** *Isobythocypris* sp. A, Sample 547-11,CC, No. 5400.

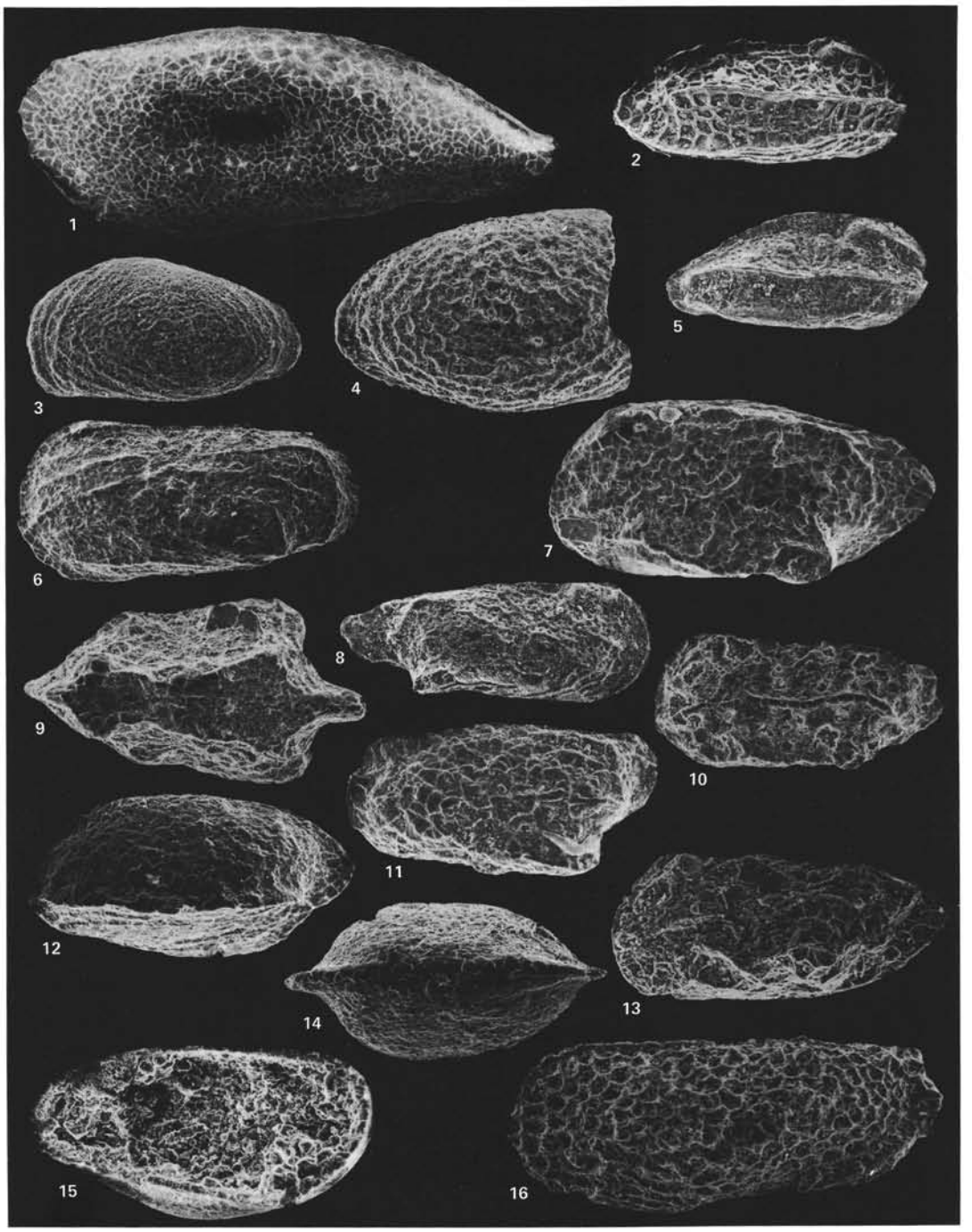

Plate 5. Liassic ostracoda (×158). **1.** ?*Paracypris* sp., sample 547-11,CC, No. 5407. **2.** *Palaeocytheridea* sp., Sample 547-18-2, 5–7 cm, No. 5377. **3.** ?*Kinkelinella* sp. juv., Sample 547-18-2, 5–7 cm, No. 5374. **4.** ?*Kinkelinella* sp., Sample 547-11,CC, No. 5381. **5.** ?*Palaeocytheridea* sp., Sample 547-18-2, 5–7 cm, No. 5378. **6.** Gen. indet. C, Sample 547-11,CC, No. 5389. **7.** *Cytheropteron* sp., Sample 547-11,CC, No. 5384. **8.** *Orthonotacythere* sp. A., sample 547-18-2, 5–7 cm, No. 5373. **9.** Gen. indet. D, Sample 547-11,CC, No. 5382. **10.** *Rutlandella* sp., sample 547-11,CC, No. 5386. **11.** Gen. indet. D, Sample 547-11,CC, No. 5383. **12.** Gen indet. B, Sample 547-11,CC, No. 5390. **13.** Gen. indet. A, Sample 547-18-1, 22–24 cm, No. 5408. **14.** Gen. indet. B, Sample 547-11,CC, No. 5391. **15.** Gen. indet. B, Sample 547-11,CC, No. 5388. **16.** ?*Monoceratina* sp., Sample 547-11,CC, No. 5385.