BULLETIN OF THE
MINERAL RESEARCH AND EXPLORATION

Foreign Edition **2003** **Number : 126**

CONTENTS

POSTAL ADDRESS

Maden Tetkik ve Arama Genel Müdürlüğü
Redaksiyon Kurulu Başkanlığı
06520 Ankara - TURKEY

The English and Turkish issues of the "Bulletin of the Mineral Research and Exploration" can be obtained from "BDT Dairesi with charge, either directly or with correspondance and paying the mailing fee as well.
e-mail : bdt@mta.gov.tr

ISSN : 0026 - 4563

Maden Tetkik ve Arama Genel Müdürlüğü (MTA) 06520 Ankara - Turkey www.mta.gov.tr

Printed : June - 2003

Mineral Res. Expl. Bull.. 126. 1-10. 2003

RECENT OSTRACODES OF THE YUMURTALIK GULF

Ümit ŞAFAK*

ABSTRACT.- In this study, 35 wash sample, recovered from shallow marine sediments in the Yumurtalık Bay, Sıddık Lake, Çökek watering trough and Adalar within the Yumurtalık Gulf and 25 wash sample from back the gulf, such as Çamlık Gulf, Darboğaz Dalyanı, Arap Gorge and Bayraklı Gorge were examined. *Cytherella vulgata* (Müller), *C. vandenboldi* Sissingh, *Cytherelloidea sordida* (Müller), *Leptoythere ramosa* (Rome), *Cythehdea acuminata neapolitana* Kollmann, *Tegmenia rugosa* Costa, *Celtia quadridentata* (Baird), *Basslerites berchoni* (Brady), *Pontocythere elongata* (Brady), *Neocytherideis cylindrica* (Brady), *N. faveolata* (Müller), *Carinocythereis carinata* (Roemer), *C. antiquata* (Baird), *Cistacythereis* pokcornyi(Ruggieri), *Aurila convexa* (Baird), *A. woodwardii* (Brady), *Urocythereis favosa* Roemer, *Cytheretta semiornata* (Egger), *Loxoconcha rhomboidea* (Fischer), *L. tumida* Brady, L. *concentrica* Bonaduce, Ciampo and Masoli, L. *parallela* Müller, *L. agilis* Ruggieri, *L. elliptica* Brady, *Paracythehdea depressa* Müller, *Semicytherura sulcata* (Müller), *Microcytherura* sp., *Xestolebehs depressa* Sars, *X. communis* Müller, *X. aurantia* (Baird), *X. ventricosa* Müller, *Cytherois fischeri* (Sars), *Argilloecia conoidea* (Sars), *Propontocypris dispar* Müller, *Aglaiocyphs complanata* Brady and Robertson, in general lagoonal and shallow marine ostracodes, were identified from the shallow marine sediments of the Yumurtalık Gulf. Ostracodes from these samples, such as *Cyprideis torosa* (Jones), which characterizes brackish environment and a few *Ilyocypris bradyi* Sars which characterizes freshwater environment explain the effect of ancient Seyhan river bed, and the development of freshwater swamps and mud flats. *Cyprideis torosa* (Jones) was the major ostracodes back the gulf whereas *Hirschmannia viridis* (Müller), *Loxoconcha elliptica* Brady were also identified. The geographical distribution of observed ostracodes types was correlated with the similar studies carried out in the region of the Mediterranean, Aegean Sea and the Atlantic.

INTRODUCTION

The survey area, Yumurtalık Bay locates at western side of the Gulf of iskenderun, westerly to the Yumurtalık township and that falls into the range of Mersin O35-d1 and d2 topographic quadrangles at 1/25 000 scale (Fig-1).

The goal of this study has been to scrutinize the ostracod assemblage at Yumurtalık Bay and to determine the depositional and living environments.

Schmidt (1961), Doruk (1975), Kelling et al. (1987), Gökçen et al. (1987), Uffenorde el al. (1990), Şafak (1993), Nazik (1994) and Şafak (2001) has surveyed the area enveloping the investigation site, either geologically or paleontologically.,

Besides those, Çukurova University, Faculty of Fisheries has executed a lot of studies in and arounds the Yumurtalık Bay. That group has comprised the ones for fishes by Avşar and Çiçek (1999a and 1999b), and Avşar, Çiçek and Akamca (1999) and that by Yüceer and Başıbüyük (1999), from Environmental Engineering Dept, to search the contamination in sea water.

The testing samples have been collected from Yumurtalık iniet, water mass westerly to the Yumurtalık town and the enclosing coastal zone, Çamlık lagoon, Darboğaz, Darboğaz fishpond, Arap Gorge, Arapboğazı lakelet, Dalyan passage, the Isles, Kokar Pass and Kokar Pond as washing samples by dredging. Then these grab samples has firstly been washed off as separately packages, each one

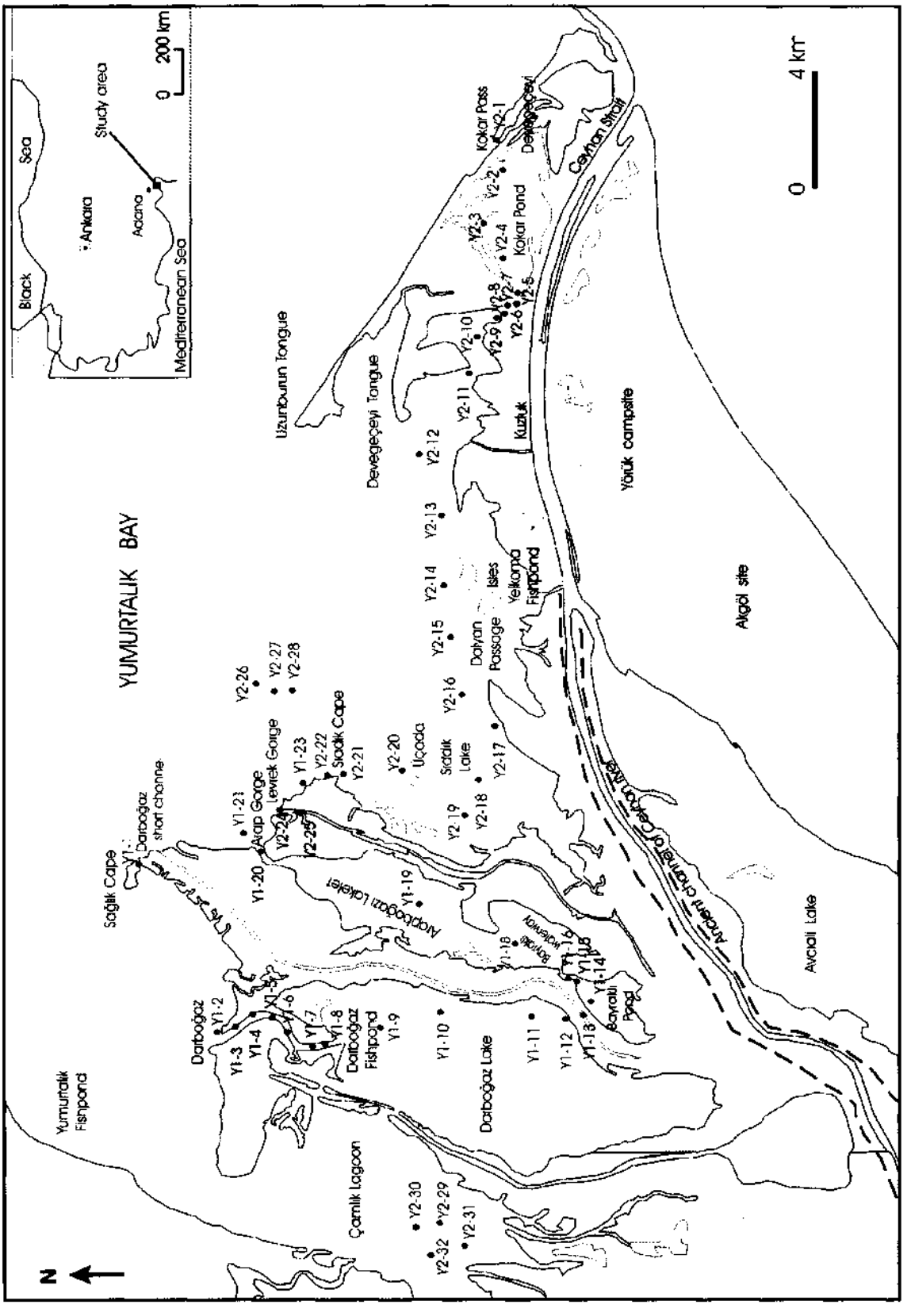


Fig. 1 - The map, stretching survey area and sample sites

weighing 50 g and secondly been picked up; and got prepared to determine the ostracod species. Counting the ostracod genera and species gathered at microfossil files and subsequently to bring about the abundance and the frequency of occurrence both vertical and lateral sides have been the following steps. For depicting the varying abundance levels of ostracods, different symbols were used in the Frequency Chart.

CHARACTERISTICS OF YUMURTALIK BAY AND THE SAMPLING SITES

Yumurtalık Bay situates at the western side of Gulf of İskenderun and triangular in shape. As an inlet of the Gulf, stretching at the northeastern part of Cilicia Basin, the Bay has naturally undergone sub-tropic climatic conditions, predominating the whole region. Because of the shallow water depth and being intruded into the land considerably, the Bay is more affected from hot weather than surrounding regions. The average water-depth and areal extension for the surficial 0-10 m depth zone are 2.83 m and 53.12 square km, respectively; for the second depth zone, 10-20 m, those range to 13.88 m and 22.86 square km, and for the 20-50 m depth zone, the 35.32 m and 35.32 square km (Avşar, et. al., 1999).

The area between mouth of the Ceyhan river and Yumurtalık Bay characterizes itself by a huge wetland system constitutes of lagoons, salt marshes, freshwater swamps, mud flats, rushy areas, watered grasslands, dunes and a pine forest. That search has been executed at shallowest areas, namely in the area that settles between Kokar Pond, Kokar Pass and protruding of the watered troughs in the system, Çamlık lagoon. In contrast to the other wetlands in the system, that area depicts a changing shoreline, not an uniform type; and so, the area opens to the sea at several points. The ancient channel of Ceyhan river passes over the area. Yelkoma Pond is a shallow lagoon, bounded by salt marshes and as being dried partly up during the spring and summer seasons, vast mud flats occupy the area especially at the northern sect. There are rushy areas at places, where the freshwater from dunes trickles into the pond. As the water level rises in winter, the Çamlık lagoon and Darboğaz Pond, surrounded by salt marshes and mud flats, converge into a larger lake. The fishponds have been formed at the opening of Yelkoma lagoon, at mouth of the ancient channel of Ceyhan river and at the site, where the Çamlık lagoon opens into the Bay (Yarar and Magnin, 1997).

Besides that, through the surveys focused on pollution and vulnerability to pollution in the watery areas of the site and surrounding lagoons, it has been revealed that DCO (demand for chemical oxygen) exceeds 500 mg/lt, and DBO (demand for biochemical oxygen) is over 100 mg/lt. Moreover, the ratio of DCO/DBO reaches up about 5 and that implies the presence of dissolved organic material. not easily disaggregated.

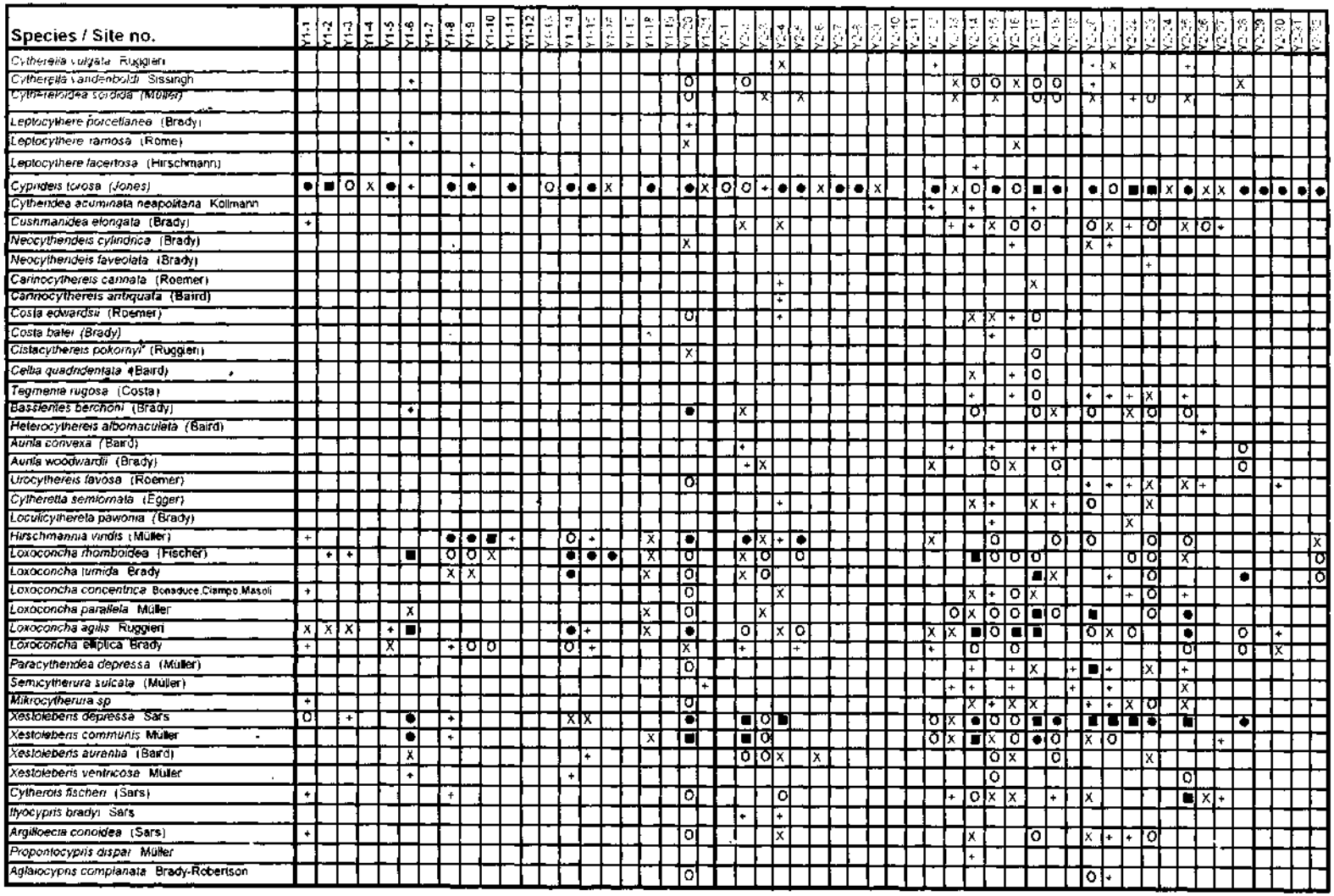
Surface water temperatures range up from 17 ˚C in February to 26.9 ˚C in August; and so, as a result of densely evaporation, salinity reaches up its maximum levels in August (Yüceer and Başıbüyük, 1999).

Only 53 of the 60 washing samples, examined through that study has included ostracods. These specimens have been grabbed from the area stretching in Mersin O35 d_1-d_2 quadrangles at 1/25 000 scales and, from the sites and water depths depicted in Table 1. Table 1 displays the ostracod distribution at first sampling sites, those at secondary sampling sites. Photos of all the ostracod genera and species found, have been attached as Plate 1 and Plate 2.

Table 1- Sites and recovery depths of samples, collected from survey area

Sample No	Site	Water depth (cm)
Y1-1	Darboğaz short channel	150
Y1-2	Mouth of Darboğaz	150
Y1-3	Darboğaz	50
Y1-4	Darboğaz	15
Y1-5	Darboğaz	35
Y1-6	Darboğaz	90
Y1-7	Darboğaz	50
Y1-8	Darboğaz	100
Y1-9	Inside the Darboğaz Pond	100
Y1-10	Inside the Darboğaz Pond	110
Y1-11	Darboğaz Lake outflow	100
Y1-12	Darboğaz Lake outflow	60
Y1-13	Opening to Arapboğazı Lakelet	200
Y1-14	Northern sect of Bayraklı Pond	60
Y1-15	Bayraklı Waterway	100
Y1-16	Bayraklı Waterway	80
Y1-18	Inside the Arapboğazı Lakelet	80
Y1-19	Inside the Arapboğazı Lakelet	90
Y1-20	Arap Gorge	40
Y1-21	Off the Arap Gorge	70
Y2-1	Kokar Pass	70
Y2-2	Inside the Kokar Pond	40
Y2-3	NW sect of Kokar Pond	40
Y2-4	NW sect of Kokar Pond	80
Y2-5	Western coast of Kokar Pond	80
Y2-6	Western ashore of Kokar Pond	70
Y2-7	West ashore of Kokar Pond	70
Y2-8	West ashore of Kokar Pond	90
Y2-9	West ashore of Kokar Pond	70
Y2-10	Devegeçeyi southern trough	70
Y2-11	Devegeçeyi southern trough	40
Y2-12	Devegeçeyi southern trough	40
Y2-13	East of Isles	100
Y2-14	Off the Isles	70
Y2-15	Off the Isles	80
Y2-16	Dalyan Passage	80
Y2-17	Sıddık lakeshore	35
Y2-18	Inside the Sıddık Lake	30
Y2-19	Inside the Sıddık Lake	80
Y2-20	Üçada (on Sıddık Lake)	60
Y2-21	Sıddık Cape	100
Y2-22	Sıddık lakeshore	100
Y2-23	Sıddık lakeshore	100
Y2-24	Gateway to Levrek Gorge	60
Y2-25	Levrek Gorge	30
Y2-26	Yumurtalık Bay	500
Y2-27	Yumurtalık Bay	400
Y2-28	Yumurtalık Bay	400
Y2-29	Çamlık Lagoon	300
Y2-30	Çamlık Lagoon	500
Y2-31	Çamlık Lagoon	300
Y2-32	Çamlık Lagoon	400

Table 2- Distribution of ostracodes at sampling sites in Yumurtalık Bay Y1: The first sampling sites Y2: Seconday (repeated) sampling sites



Frequency symbols: + uttermost sparsely x sparsely o common ■ frequent ● very abundant

RESEARCH FINDINGS

That survey, executed on 60 samples recovered from Yumurtalık Bay has revealed the presence of 29 genera and 43 species of ostracods.

Geographic distribution of the identified species has been designed by examining the different studies surveyed at Mediterranean Sea, at shores of Atlantic Ocean (Gulf of Gascony) and the ones at Sea of Marmara and the Aegean Sea (Morkhoven, 1963; Sissingh,1972; Uffenorde, 1972; Ruggieri, 1976; Bonaduce et al., 1979; Yassini, 1979; Guillaume et al., 1985; Stambolidis, 1985; Nazik, 1994; Kubanç, 1995; Tunoğlu, 1999; Şafak, 2001) (Table 3).

To determine the living environments of the ostracods, Morkhoven (1963) has been made in-effect. According to so-called criteria, the genus *Ilyocypris* represents a limnic environment, while the *Cyprideis* suggests a lagoonal environment, the *Leptocythere, Cytheridea, Heterocythereis, Hirschmannia and Loxoconcha* point out both lagoonal and littoral environments, the *Xestoleberis* littoral-epineritic, the genus *Cytherelloidea, Cushmanidea, Neocytherideis, Basslehtes, Aurila, Urocythereis, Cytheretta, Loculicytheretta, Paracytheridea, Semicytherura, Microcytherura, Cytherois* and *Aglaiocyphs* epineritic, the *Cytherella, Carinocythereis, Costa, Cistacythereis, Celtia, Tegmenia* and *Propontocypris* epineritic-infraneritic, the *Argilloecia* infraneritic setting. But when the water depths that the samples have been recovered, have been considered, a very shallow water marine fauna has been determined, including the ostracod genera reflecting mainly lagoonal-littoral and an epineritic environment as well.

Of the species identified through the survey the *Cytherella vulgata* Ruggieri, *Cytherella vandenboldi* Sissingh, *Cyprideis torosa* (Jones), *Cytheridea acuminata neapolitana* Kollmann, *Carinocythereis carinata* (Roemer), *Carinocythereis antiquata* (Baird), *Costa edwardsii* (Roemer), *Costa batei* (Brady), *Celtia quadridentata* (Baird), *Aurila convexa* (Baird), *Urocythereis favosa* (Roemer) and *Cytheretta semiornata* (Egger), have also been determined at surveys at Crete, Rhodes Island, Adriatic Sea, Italy, Tunisia, Algiers, Gulf of Gascony, Sea of Marmara and Aegean Sea, carried out by Sissingh (1972), Uffenorde (1972), Ruggieri (1975), Bonaduce et al. (1979), Yassini (1979), Guillaume et al. (1985), Kubang (1985) and Tunoğlu (1999).

The *Cushmanidea elongata* (Brady), *Basslehtes berchoni* (Brady), *Loculicytheretta pavonia* (Brady), *Loxoconcha rhomboidea* (Fischer), *Loxoconcha tumida* Brady, *Xestoleberis depressa* Sars, *Xestoleberis communis* Müller, *Cytherois fischeri* (Sars) and *Aglaiocyphs complanata* Brady-Robertson have also been revealed in surveys for Algiers, Gulf of Iskenderun, Aegean Sea, Sea of Marmara and Gulf of Mersin, realized by Yassini (1979), Stambolidis (1985), Nazik (1994), Kubanç (1985), Tunoğlu (1999) and Şafak (2001).

And the *Leptocythere lacertosa* (Hirschmannn), *Neocytherideis cylindrica* (Brady), *Xestoleberis depressa* (Müller) and *Xestoleberis aurantia* (Baird) have been determined in surveys for Gulf of Gascony, Italy, Gulf of İskenderun Gulf of Mersin and the Netherlands, by Guillaume et al. (1985), Nazik (1994) Şafak (2001) and Morkhoven (1963).

Table 3- Geographic distribution of ostracods found in Yumurtalik Bay and the living environments according to van Morkhoven, 1963.

Ostracod species	Spatial Extension														Environment			
	The Netherlands (Markhoven, 1963)	Crete (Sissing, 1972)	Rhodes Island (Sissing, 1972)	Adriatic Sea (Uffenorde, 1972)	Italy (Ruggieri, 1975)	Tunisia (Bonaduce et al., 1979)	Adriatic Sea (Bonaduce et al., 1979)	Algiers (Yassini, 1979)	Gulf of Gascony (Guilbaume et al., 1985)	Northern Aegean Sea (Stamboliöka, 1985)	Gulf of Iskenderun (Nazik, 1994)	Aegean Sea (Kubanç, 1995)	Gulf of Mersin (Şafak, 2001)	Sea of Marmara (Tunoğlu, 1999)	Lake	Lagoon	Littoral	Neritic
Cytherella vulgata Ruggieri		X	X									X	X					
Cytherella vandenboldi Sissingh		X										X	X	X				
Cytherelloidea sordida (Müller)					X			X			X							
Leptocythere porcellanea (Brady)									X			X						
Leptocythere ramosa (Rome)									X	X		X						
Leptocythere lacertosa (Hirschmann)									X									
Cyprideis torosa (Jones)		X		X				X		X		X						
Cytheridea acuminata neapolitana Kollmann		X	X	X						X	X	X	X					
Cushmanidea elongata (Brady)								X	X		X	X	X					
Neocytherideis cylindirica (Brady)					X						X		X					
Neocytherideis faveolata (Brady)								X										
Carinocythereis carinata (Roemer)		X	X	X	X			X	X	X	X	X	X					
Carinocythereis antiquata (Baird)		X		X	X			X	X		X	X	X					
Costa edwardsii (Roemer)		X	X	X	X			X	X	X		X						
Costa batei (Brady)			X		X			X	X		X		X					
Cistacythereis pokornyi (Ruggieri)																		
Celtia quadridentata (Baird)		X						X										
Tegumenia rugosa (Costa)		X									X		X					
Bassierites berchoni (Brady)				X	X			X		X	X		X					
Heterocythereis albomaculata (Baird)								X	X									
Aurila convexa (Baird)		X		X	X			X	X	X	X		X					
Aurila woodwardii (Brady)				X				X										
Urocythereis favosa (Roemer)		X	X				X				X		X					
Cytheretta semiornata (Egger)		X									X		X					
Loculicytheretta pavonia (Brady)								X			X		X					
Hirschmannia viridis (Müller)									X				X					
Loxoconcha rhomboidea (Fischer)				X				X	X	X	X	X	X	X				
Loxoconcha tumida Brady					X			X				X	X	X				
Loxoconcha concentrica Bonaduce, Ciampo, Masoli								X			X							
Loxoconcha parallela Müller										X								
Loxoconcha agilis Ruggieri										X		X		X				
Loxoconcha elliptica Brady										X								
Paracytheridea depressa (Müller)				X				X			X		X	X				
Semicytherura sulcata (Müller)				X			X	X					X					
Microcytherura sp.													X					
Xestoleberis depressa Sars	X										X		X					
Xestoleberis communis Müller								X		X		X	X	X				
Xestoleberis aurantia (Baird)	X										X		X					
Xestoleberis ventricosa Müller		X																
Cytherois fischeri (Sars)				X					X	X	X		X					
Ilyocypris bradyi Sars																		
Argilloecia conoidea (Sars)								X	X				X					
Propontocypris dispar Müller																		
Aglaiocypris complanata Brady-Robertson							X	X		X			X					

CONCLUSIONS AND DISCUSSION

That survey, executed on 60 washing samples recovered from Yumurtalık Bay has revealed the presence of 29 genera and 43 species of ostracods.

The samples subjected to examining have been taken from Yumurtalık Bay westerly to the Yumurtalık town and the surrounding large wetland constitute of lagoons, gorges, lakes and ponds such as Çamlık lagoon, Darboğaz, Darboğaz fishpond, Arap Gorge, Arapboğaz lakelet, Dalyan passage, the Isles, Kokar Pass and Kokar Pond and at water-depth as ranging from 15 to 500 cm. The ostracod species and genera included among the washing samples have generally depicted a lagoonal-littoral and shallow marine setting.

Yumurtalık Bay generally pictures a complex facial pattern, made of coastal lagoon sediments, small salt marshes on lagoonal elongations toward land, coastal swamps represented by clayey muds transported by weak streams, short gorges and channels produced by tidal currents, beaches and backward beach sands. The parts where the coastal lagoons, channels and gorges locate, hosted the shallow marine faunal assemblage.

Since they have been recovered from the part of coastal zone that most affected by Gulf of iskenderun, the samples Y1-20 (from Arap Gorge), Y2-2, 3 and 4 (from Kokar Pass and Kokar Pond, where the sediment income is actually both from the land and sea), Y2-13 and 17 reveal marine characteristics, and therefore, these specimen have been found to be reflecting neritic fades.

The samples Y1-8, Y1-9 and Y1-10 from Darboğaz Pond and the ones Y1-14, Y1-15 and Y1-16 from Bayraklı Pond have represented the littoral environment where the sea water entered into the lagoon as a consequent of Wave action. Therefore the ostracods from those sites have usually characterized the lagoonal and littoral conditions.

The specimen Y1-20 at the mouth of Arap Gorge has been affected by lagoonal and littoral conditions effective at the part toward Arapboğazı lakelet and revealed affection from shallow marine environment at the sect toward the Gulf of İskenderun, and that variability has been evidenced by the species identified in that sample.

A characteristic indicator for the changing from marine to land environment is the genus *Cyprideis* and the presence of that genus frequently at all the sampling sites has been consequent of ill-development of longshore barriers fronting the waves intruding oftenly the environment, opening of the short passages and channels at the coastal zone of the Bay because of the tidal currents and that the steady development of lagoons since the sea water has wasted away the arising land areas.

The genus *Ilyocypris,* found uttermost sparsely through Kokar Gorge and inside the Kokar Pond has yielded from the freshwater of small distributaries of the Ceyhan river, discharging into the pond.

ACKNOWLEDGMENT

This study has been carried out as no MMF2002BAP12 project of Scientific Research Projects Unit of Rectorate of Çukurova University.

I kindly respect to Presidency of Scientific Research Projects (Rectorate of Çukurova University) for its sponsorship both at initializing and developing stages of the survey.

I also wish to send my best regards to deanship of Faculty of Fisheries, Çukurova University for helpful efforts in sampling and Dr Nazmi Tekelioğlu, the director of College of Fisheries, to District Environmental Management (Çevre İl Müdürlüğü), Adana who has stretched all the accessible sources and surely to manager the office, Dr Hatice Aysan, to Professor Nuran Gökçen and Professor Cemal Tunoğlu for their constructive critiques, to postgraduate Gonca Eroğlu for sketching the drawings and to academics of Geology Department for unpriceable supports.

Manuscript received July 9, 2002

REFERENCES

Avşar, D., Çiçek, E. and Akamca, E., 1999; Yumurtalık Koyu (Adana) Kıyısal Zonunun Yaz D6nemi Yavru Kemikli Balık Faunası. 10. Ulusal Su Ürünleri Sempozyumu Bildirileri, 22-24 Eylül, ss 420-29, Adana.

———and———, 1999a; Kuzey-Doğu Akdeniz Balık Faunası için Dört Yeni Tür Kaydı. 10. Ulusal Su Ürünleri Sempozyumu Bildirileri, 22-24 Eylül, ss 486-95, Adana.

———and———, 1999b; Yumurtalık Koyu (Adana) Kemikli Balık Yavrularının Yaz Periyodundaki Dağılımı ve Bolluğu. 10. Ulusal Su Ürünleri Sempozyumu Bildirileri, 22-24 Eylül, ss 664-77, Adana .

Bonaduce, G.; Masoli, M.; Minichelli, G. and Pugliess, N., 1979; The Benthic Ostracods- Geologie Mediterraneenne la Mer Pelagienne. tome VI-Numero 1: 280-84.

Doruk, N., 1975; Adana ve Antakya Havzaları Neojen ve Kuvaterner Ostrakod Mikrofaunasi ve Biyostratigrafisi. Cumhuriyetin 50. yılı Yerbi limleri Kongresi Tebliğleri, ss 143-50.

Gökçen, S. L; Kelling, G.Gökçen, N. and Floyd, P. A., 1987; Çukurova Baseni Misis Karmaşığının Stratigrafik ve Tektonik Evrimi. Yerbilimleri, 14: 231-43.

Guillaume, M. C.; Peypouquet, J. P and Tetart, J., 1985; Quaternaire et Actuel (edit. Oertli), Atlas des Ostracodes de France. Bull. Centres Rech. Explor. Prod. Elf Aquitaine, Mem. 9, pp 338-77.

Kelling, G.; Gökçen, S. L.; Floyd, P. A. and Gökçen, N., 1987; Neogene Tectonics and Plate Convergence in the Eastern Mediterranean: New data from Southern Turkey. Geology, 15: 425-29.

Kubanç, C., 1995; Ege Denizi Ostrakod (Crustacea) Faunası. İstanbul Üniv. Fen Bilimleri Enst. Doktora Tezi, 117s, İstanbul.

Nazik, A., 1994; İskenderun Körfezi Holosen Ostrakodları. MTA Bull., No 116, ss 15-20, Ankara.

Ruggieri, G., 1975 Contribute Alla conoscenza del Genere Aurila (Ostracoda, Podocopa) con Particolare Riguardo A Suoi Rapparesentanti nel Pleistocene Italiano. Estratto Dal Boll. Delia Soc. Paleontologica Italiana. vol. 14/1: 27-46.

———, 1976; La ostracofauna Pleistocenia della falesia di Cinisi (Sicilia). Boll. Soc. Paleont. Ital., 15, 1: 85-106, 13 abb.

Schmidt, G. C., 1961; Stratigraphic Nomenclature for the Adana Region Petroleum District. VII. Petroleum Administration Bull., 6: 47-63.

Sissingh, W., 1972; Late Cenozoic Ostracoda of the South Aegean Island Arc. Utrecht Micropaleontological Bulletins, vol. 6: 49-187.

Stambolidis, E. A., 1985; Zur Kenntnis der Ostracoden des evros-Delta (Nord-Agaisches Meer) Griechenland, Mitt. Hamb. Zool. Mus. Inst, Band 82, pp 155-254, Hamburg.

Şafak, Ü., 1993; Antakya Havzası Ostrakod Biyostratigrafisi. Türkiye Jeoloji Kurumu Bülteni, Cilt 36, sayı 2, ss 115-39.

———, 2001; Recent ostracoda fauna of the Mersin Gulf; Southern Turkey. Fourth International Turkish Geology Symposium, Abstracts, p 257, Adana.

Tunoğlu, C., 1999; Recent ostracoda association in the Sea of Marmara, NW Turkey. Yerbilimleri Dergisi, sayı: 21, ss 63-69.

Uffenorde, H., 1972; Ökologie und jahreszeitliche Verteilung rezenter benthonischer Ostracoden des Limski kanal bei Rovinj (nordliche Adria). Gottinger Arb. Geol. Palaont. 13, 121 ps., 41 Abb., 5 Tab., 12 Taf, Gottingen.

———, Lund, J. J. and Georgi, K. H., 1990; Biostratigraphy of the Neogene in the İskenderun Basin. 8th Petroleum Congress of Turkey; Turkish Association of Petroleum Geologists, UCTEA Chamber of Petroleum Engineers, pp 363-70.

Van Morkhoven, F. P. M., 1'962; Post-Paleozoic ostracoda. Elsevier edition, v 2: 1-478.

Yarar, M. and Magnin, G., 1997; Türkiye'nin Önemli Kuş Alanları. Dogal Hayatı Koruma Derneği yayını, ss 213-15., İstanbul.

Yassini, I., 1979; The littoral system ostracodes from the Bay of Bou-İsmail, Algeries, Algeria. Revista Espanola de Micropaleontologica, vol. XI, num. 3: 353-416.

Yüceer, A. and Başıbüyük, M., 1999; İskenderun Körfezi ve Kıyı bölgelerindeki Deniz Suyu Kirlenmesi Potansiyeli. 10. Ulusal Su Ürünleri Sempozyumu Bildirileri, 22-24 Eylül, ss 538-47, Adana.

PLATES

PLATE-I

Fig. 1- *Cytherella vandenboldi* Sissingh
Right valve, external, x40, sample Y2-14

Fig. 2- *Cytherelloidea sordida* (Müller)
Right valve, external, x55, sample Y2-20

Fig. 3- *Leptocythere lacertosa* (Hirschmann)
Left valve, external, x35, sample Y2-20

Fig. 4- *Cyprideis torosa* (Jones)
Carapace, right external view, x40, sample Y2-18

Fig. 5- *Cushmanidea elongata* (Brady)
Carapace, right external view, x50, sample Y2-27

Fig. 6- *Neocytherideis cylindrica* (Brady)
Carapace, right external view, x30. sample Y2-4

Fig. 7- *Carinocythereis carinata* (Roemer)
Right valve, external, x45, sample Y2-17

Fig. 8- *Cistacythereis pokornyi* (Ruggieri)
Left valve, external, x55, sample Y2-17

Fig. 9- *Costa batei* (Brady)
Carapace, left external view, x55, sample Y2-15

Fig. 10- *Basslerites berchoni* (Brady)
Carapace, left external view, x60. sample Y2-22

Fig. 11- *Celtia quadridentata* (Baird)
Left valve, external, x70, sample Y2-14

Fig. 12- *Heterocythereis albomaculata* (Baird)
Left valve, external, x45, sample Y2-26

Fig. 13- *Aurila convexa* (Baird)
Left valve, external, x45, sample Y2-13

Fig. 14- *Aurila woodwardii* (Brady)
Left valve, external, x40, sample Y2-28

Fig. 15- *Urocythereis favosa* Roemer
Right valve, external, x85, sample Y2-20

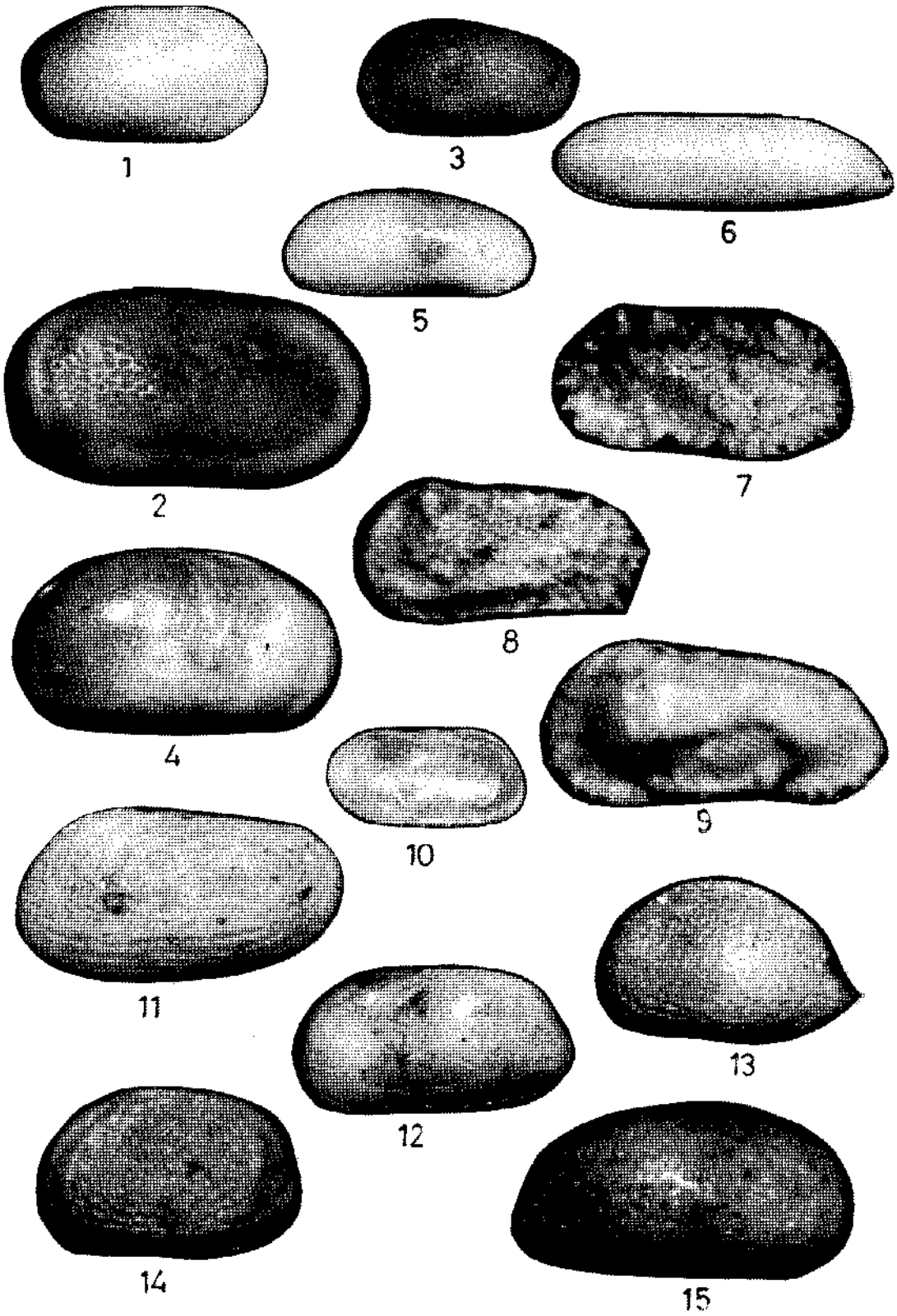

1
3
6
5
2
7
8
4
10
9
11
13
12
14
15

PLATE-II

Fig. 1- *Cytheretta semiornata* (Egger)
Left valve, external, x50. sample Y2-20

Fig. 2- *Loculicytherette pavonia* (Brady)
Left valve, external, x55, sample Y2-22

Figs 3-4 *Hirschmannia viridis* (Müller)
3. Carapace, left external view, x60, sample Y2-15
4. Carapace, left external view, x55, sample Y1-20

Fig. 5- *Loxoconcha rhomboidea* (Fischer)
Right valve, external, x70, sample Y2-20

Fig. 6- *Loxoconcha tumida* Brady
Left valve, external, x60, sample Y2-17

Fig. 7- *Loxoconcha concentrica* Bonaduce, Ciampo ve Masoli
Left valve, external, x50, sample Y2-17

Fig. 8- *Loxoconcha parallela* Müller
Carapace, right external view, x60, sample Y2-20

Fig. 9- *Loxoconcha elliptica* Brady
Carapace, right external view, x60, sample Y2-3

Fig. 10- *Paracytheridea depressa* Müller
Left valve, external, x65, sample Y2-14

Fig. 11- *Semicytherura sulcata* (Müller)
Right valve, external. x70, sample Y2-16

Fig. 12- *Microcytherura* sp.
Right valve, external, x70, sample Y2-14

Fig. 13- *Xestoleberis aurantia* (Baird)
Right valve, external, x65, sample Y1-6

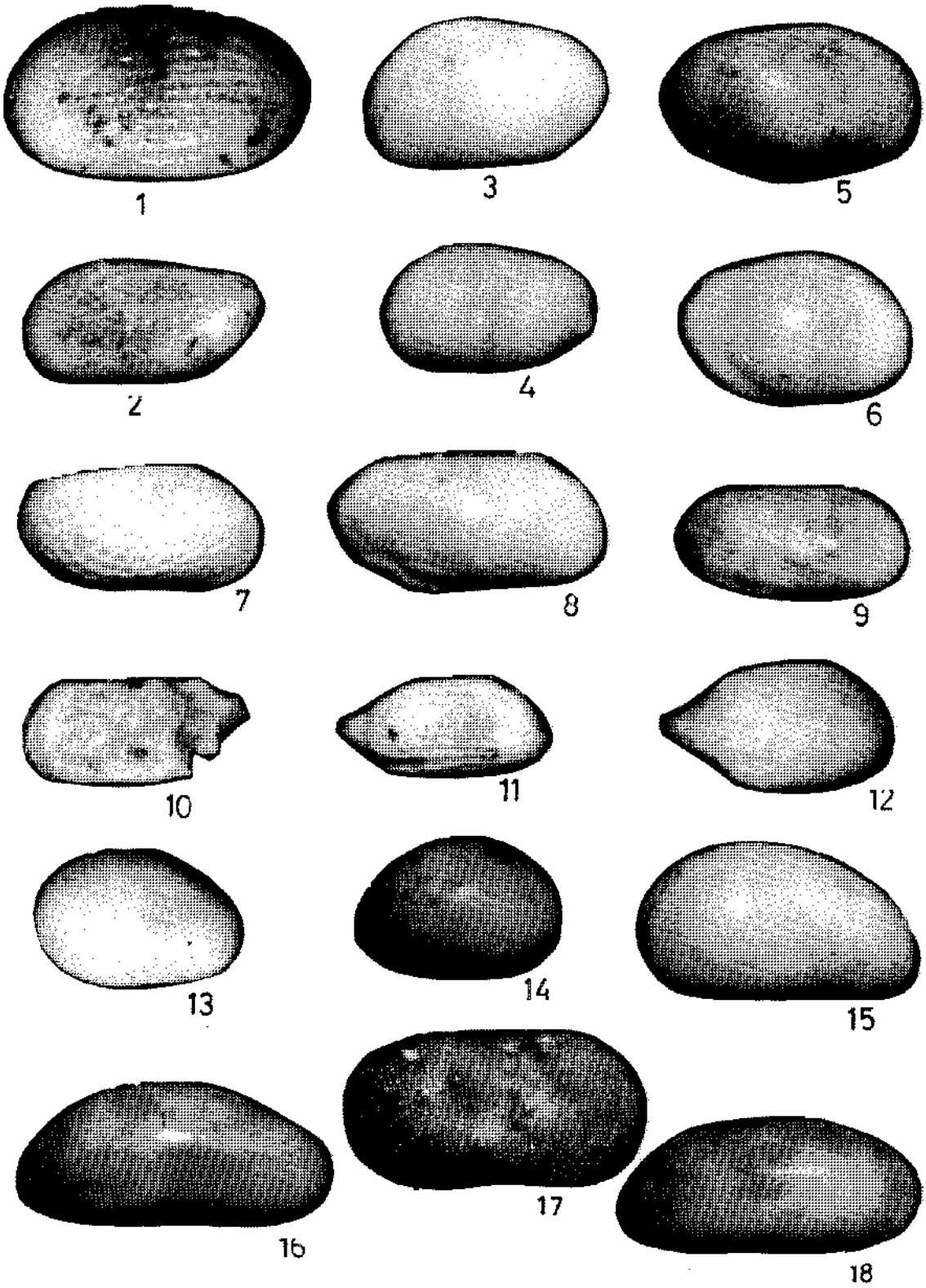
Fig. 14- *Xestoleberis communis* Müller
Left valve, external, x60, sample Y2-20

Fig. 15- *Xestoleberis depressa* Sars
Carapace, right external view, x55, sample Y2-25

Fig. 16- *Cytherois fischeri* (Sars)
Left valve, external, x40, sample Y2-27

Fig. 17- *Ilyocypris bradyi* Sars
Right valve, external. x30, sample Y2-4

Fig. 18- *Argilloecia conoidea* (Sars)
Right valve, external, x30, sample Y2-14


1
3
5
2
4
6
7
8
9
10
11
12
13
14
15
16
17
18