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Muhittin Görmüş
Ankara University

SUBJECTS

- 1. ULAKBİM**
- 2. Journal rules, article example**
- 3. Ethic Rules**

1. ULAKBİM



TÜBİTAK

ULAKBİM

ULUSAL AKADEMİK AĞ ve BİLGİ MERKEZİ



Türkiye Cumhuriyeti
SANAYİ VE TEKNOLOJİ BAKANLIĞI



ARA

Kurumsal

Hizmetler

Projeler

Etkinlikler

İletişim

TÜBİTAK ULAKBİM COVID-19 Salgını Nedeniyle Üniversitelerin Artan Taleplerini Eksiksiz Karşılıyor

TÜBİTAK ULAKBİM, COVID-19 salgınının gündeme geldiği ilk andan itibaren verdiği hizmetlerin hiçbir şekilde aksamaması için gerekli tedbirleri almıştır.

▶ devamı



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Tümü

ÜAK Doçentlik Başvurusu İçin Kabul Edilen

Uluslararası Bilimsel Yayınları Teşvik Programı (UBYT)

ULAKBİM Üye Giriş

Kullanıcı Adı:

Şifre:



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ULAKBİM

ULUSAL AKADEMİK AĞ ve BİLGİ MERKEZİ



Türkiye Cumhuriyeti
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ARA

Kurumsal

Hizmetler

Projeler

Etkinlikler

İletişim

Ağ Teknolojileri Birimi (ATB)

Ağ İstatistikleri

Eduroam

ULAK6NET

UUYS

Cahit Arf Bilgi Merkezi (CABİM)

EKUAL

TR Dergileri Dizini

DergiPark

UBYT

Bibliyometrik Analiz

Belge Sağlama

Eğitim Teknolojileri Hizmetleri (ETB)

Özel Eğitim Projeleri

Fatih e-İçerik

Müfredat ve Ders İçerikleri

Pardus

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1963 - 2019

Tüm Alanlarda







Toplam Dergi: 1342

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			2019	Sosyal
			2018	Sosyal
			2017	Sosyal
			2016	Sosyal
			2015	Sosyal
			2014	Sosyal



DergiPark AKADEMİK

 <p>FBE</p>	 <p>Matematik</p>	 <p>Nispetiye</p>	 <p>MATDER</p>	 <p>Türk Bilgisayar</p>	 <p>Fen Matematik</p>
Balkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi	Matematik Eğitiminde Güncel Araştırmalar	Nispetiye Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi	MATDER Matematik Eğitimi Dergisi	Türk Bilgisayar ve Matematik Eğitimi Dergisi	Fen Matematik Girişimcilik ve Teknoloji Eğitimi Dergisi
HABER 2024 2024	HABER 2024 2024	HABER 2024 2024	HABER 2024 2024	HABER 2024 2024	HABER 2024 2024
1400 2 Sayfa	1400 2 Sayfa	1400 2 Sayfa	1400 2 Sayfa	1400 2 Sayfa	1400 2 Sayfa
Q 718 & 3008	Q 0 & 0	Q 1099 & 1028	Q 430 & 408	Q 308 & 308	Q 820 & 338

Ana Sayfa

DergiPark Türkiye'de En Çok Ziyaret Edilen Siteler Arasında

Haber Arşivi

A⁺ A⁻

TÜBİTAK ULAKBİM çatısı altında hizmet veren DergiPark'ın günlük ziyaretçi sayısı 80 bini aştı. Ayda görüntülenen makale sayısının 2 milyondan fazla olduğu DergiPark'ın Google gibi arama motorlarında ilk sıralarda gelmesi, dünyanın birçok bölgesinden ziyaret edilme sıklığını artırıyor. Ülke ve dillere göre en çok ziyaret edilen sitelerin takip edildiği platformlarda DergiPark; Türkiye'de haber ve alışveriş sitelerinin de aralarında bulunduğu ilk 150 site içerisinde yer alıyor.

**TÜBİTAK Türkiye Adresli
Uluslararası Bilimsel Yayınları Teşvik (UBYT)
Programının Değerlendirilmesi**

Yaşar Tonta
Hacettepe Üniversitesi

TÜBİTAK ULAKBİM
Ankara

Yaşar Tonta, TÜBİTAK Türkiye Adresli Uluslararası Bilimsel Yayınları Teşvik (UBYT) Programının Değerlendirilmesi.

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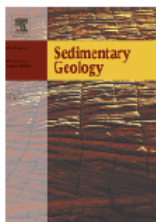
SEDIMENTARY GEOLOGY

An International Journal of Pure and Applied Sedimentology

AUTHOR INFORMATION PACK

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DESCRIPTION

Sedimentary Geology is a journal that rapidly publishes high quality, original research and review papers that cover all aspects of sediments and sedimentary rocks at all spatial and temporal scales. Submitted papers must make a significant contribution to the field of study and must place the research in a broad context, so that it is of interest to the diverse, international readership of the journal. Papers that are largely descriptive in nature, of limited scope or local geographical significance, or based on limited data will not be considered for publication.

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Cretaceous rudist-bearing platform carbonates from the Lycian Nappes (SW Turkey): Rudist associations and depositional setting

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ABSTRACT

Lycian Nappes (in SW Turkey) lie between the Menderes Massif and Bey Dağları carbonates and comprise thrust sheets (nappes piles) of Paleozoic-Cenozoic rocks, ophiolitic and tectonic mélanges and serpentinized peridotites. This study focuses on identification of rudists and their palaeoenvironmental features observed within the Cretaceous low grade metamorphic successions (dominated by recrystallized limestones) from the Tavas and Bodrum nappes. The study is based on fifteen stratigraphic sections measured from Tavas, Fethiye, Köyceğiz, Bodrum, Ören and Bozburun areas. The Lower Cretaceous successions with rudists are very sparse in the Lycian Nappes and a unique locality including a Berriasian epidiceratid-requieniid assemblage is reported so far. A new requieniid-radiolitid assemblage was found within the pre-Turonian (?Albian-?Cenomanian) limestones. Four different Late Cretaceous rudist assemblages were firstly identified as well: 1) Caprinid-Ichthyosarcolitid assemblage (middle-late Cenomanian); 2) Distefanellid assemblage (late Turonian); 3) Hippuritid-Radiolitid assemblage (late Coniacian-Santonian-Campanian); 4) Radiolitid-Hippuritid assemblage ('middle'-late Maastrichtian). Microfacies data and field observations indicate that the rudists lived in the inner and outer shelves of the Cretaceous carbonate platform(s) in this critical part of the Neotethys Ocean. Rudists formed isolated patchy aggregations in very shallow palaeoenvironments and deposited as shell fragments particularly on the outer shelf environment, which is characterized by higher energy and platform slope characteristics.

1. Introduction

The Late Cretaceous rudist faunas are a typical constituent of the Cenomanian-Maastrichtian formations and distributed widely in various tectono-stratigraphic units of Turkey (Fig. 1A) such as the İstanbul Zone, central Anatolia, central and eastern Pontides of the Sakarya Zone, Bornova Flysch Zone, metamorphic massifs (Menderes Massif, Tavşanlı and Afyon zones), Bey Dağları Autochthon and eastern Anatolia of the Anatolide-Tauride Block and southeastern Anatolia of the northernmost part of the Arabian Platform/Plate

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(see Steuber, 2002 for complete list; Özer, 2002, 2010a,b; Özer et al., 2008, 2009; Sarı, 2006a,b; Sarı and Özer, 2002, 2009; Sarı et al., 2004; Steuber et al., 2009). The Early Cretaceous rudist faunas are only known from the Zonguldak-Amasra area in the western Pontides, the Karaburun Peninsula in the western Turkey and Bey Dağları in the western Taurides until now (Douvillé, 1896; Fenerci-Masse, 2006; Masse et al., 2002, 2004, 2008, 2009). Although there is much information about the stratigraphic and geographic distribution of rudists in Turkey, we have almost no data on the rudists in the Lycian Nappes, which is one of the important tectono-stratigraphic units in the western Anatolia. The presence of the rudists and/or their fragments was reported from the platform-type carbonates of the Lycian Nappes (Akdeniz, 2011a,b; Bernoulli et al., 1974; Collins and Robertson, 1997, 1998, 1999, 2003; de Graciansky, 1968, 1972; de Graciansky et al., 1967; Gutnic et al., 1979; Kaaden and Metz, 1954; Konak, 2007; Konak et al., 1987;

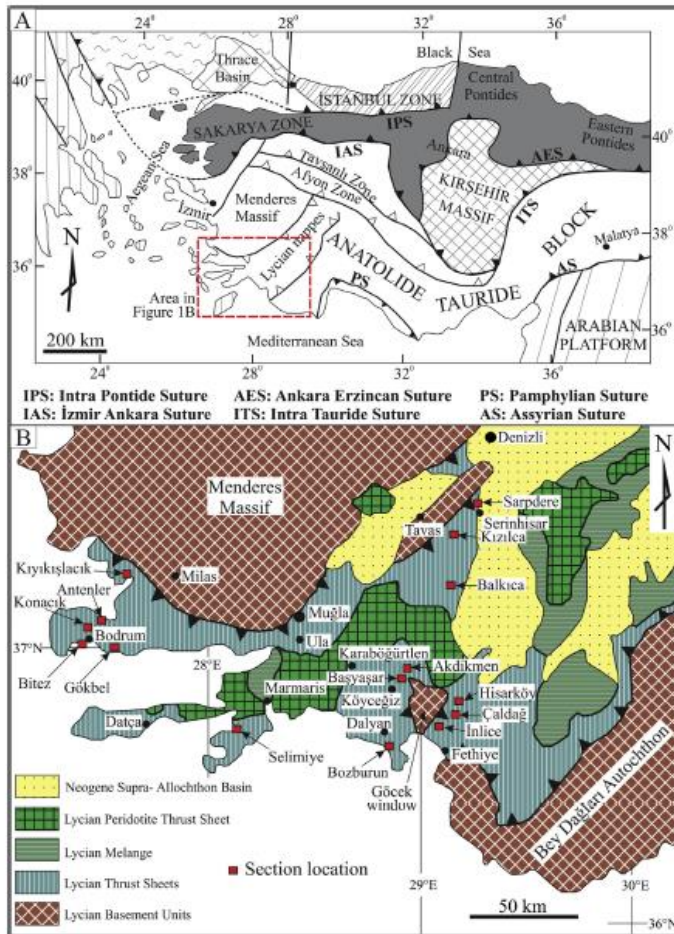


Fig. 1. A-Tectonic map showing the studied area and location of the Lycian Nappes in the tectono-stratigraphic units of Turkey and surroundings (after Okay and Tüysüz, 1999). B-Map showing localities of the measured-stratigraphic sections (red squares) with rudists in the tectonic units of the Lycian Nappes (simplified from Collins and Robertson, 1998). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Özkaya, 1990; Poisson, 1977; Şenel, 1997a,b,c). However, none of the studies above focused on the rudists. Some rudists were described from the Cenomanian monotonous, platform-type marbles in a single locality (Serinhisar, Tavas, Denizli) by Özer (1998, 1999) and Özer et al. (2001) and from the Berriasian limestone megablock in the Bodrum area by Masse et al. (2015). The platform carbonates of the Serinhisar area were attributed to the cover rocks of the Menderes Massif in studies of the 1980's and the 1990's (Collins and Robertson, 1999; Çağlayan et al., 1980; Okay, 1989;

Özkaya, 1990, 1991). Later, they were included into the Lycian Nappes (Akdeniz, 2011a,b; Konak, 2007; Şenel, 1997a,b,c). This study deals with the presence of the Cenomanian-Maastrichtian and the Early Cretaceous rudist bivalves (radiolitic, hippuritid, canaliculate rudists) from the Lycian Nappes. So, the aims of this study are to present the Cretaceous rudist associations from several localities such as Tavas-Denizli, Köyceğiz, Fethiye, Bodrum, Ören and Bozburun-Muğla areas through the Lycian Nappes (Fig. 1B) and emphasize the depositional

environments characteristics of rudist-bearing platform carbonates of the nappe piles.

2. Material and methods

The rudist material described and interpreted herein comes from the fifteen measured-stratigraphic sections (Figs. 1B, 2–4). The coordinates and explain better of these sections are given in Table 1.

As the rudists are mostly embedded within the pure, indurated limestones, it was impossible to collect matrix-free, loose specimens. We prepared transverse sections of rudists from the collected limestone samples to determine their internal features. The main problem in studying rudist-bearing limestones is recrystallization due to metamorphism during transportation of the nappe piles and internal tectonic movements. Fortunately, we have found stratigraphic intervals including 'preserved' rudist shells from several localities. We studied thin sections of the numerous limestone samples collected through the stratigraphic sections to describe the microfacies characteristics and microfossils as well. All the micropaleontologic data will be presented in separate papers.

The rock samples with rudists (nos S 92 01/M, 14-108 A-I, 14-149R, 15-57 A, 15-58 A, B, C, 15-59 A, B, 15-60 A, B, 15-168 A, B, C, D) are displayed in the museum showcases of the Geological Engineering Department of Dokuz Eylül University, İzmir, Turkey. Thin sections (nos 14-27, 14-29, 14-109, 14-151 A, B, 14-209, 14-266,

14-426, 15-02, 15-13, 15-57, 15-99, 15-118, 15-167, 15-176) are deposited in the paleontology laboratory of the same department.

3. Geological setting

Lycian Belt is located between the Menderes Massif and the Bey Dağları Autochthon in the western Turkey (Fig. 1B). Various tectonic models have been proposed for the origin of the Lycian Belt. According to the most favored tectonic concepts, the nappes originated from the north of the Menderes Massif and thrusted southward during the late Cretaceous to Burdigalian/Langhian interval (de Graciansky, 1972; Dürr, 1975; Dürr et al., 1978; Gutnic et al., 1979; Ricou et al., 1979; Şengör and Yılmaz, 1981; Okay, 1989; Collins and Robertson, 1997, 1998, 1999, 2003; Güngör and Erdoğan, 2001; Oberhänsli et al., 2001; Rimmelé et al., 2006; Okay et al., 2012; Pourtau et al., 2016). But, some alternative studies considered a dual origin for the Lycian Nappes. Poisson (1985) proposed that the sedimentary thrust sheets originated from an intra-continental rift basin (the Kızılca-Çorakgöl basin, which corresponds to the eastern prolongation of the Ionian Zone of Greece) between the Menderes and the Bey Dağları platforms, except the peridotite nappes drifting from the north of the Menderes Massif. Özkaya (1990, 1991) suggested that the thrust slices of the Lycian Nappes were derived from the İzmir-Ankara Zone to the north and the Alakaya Basin to the south of the Menderes Massif. Ersoy (1993a) accepted the dual origin concept of Poisson (1985). The tectonic klippe of the Lycian Nappes are very

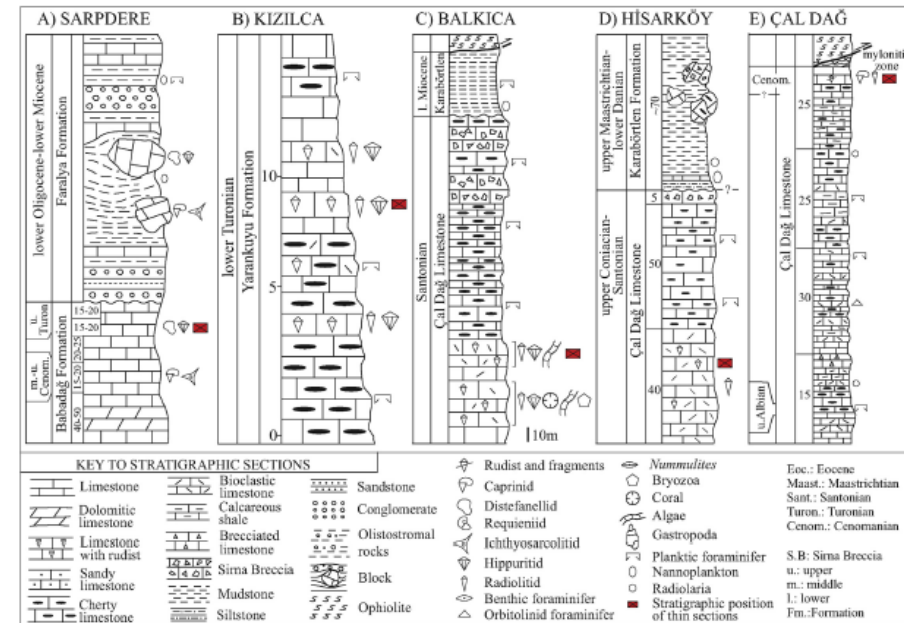


Fig. 2. Measured-stratigraphic sections and key to the stratigraphic sections (see Fig. 1B for locations of the sections). Numbers show meters.

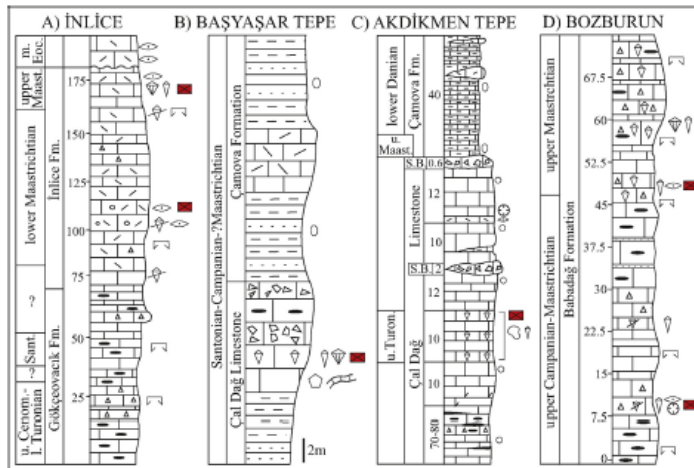


Fig. 3. Measured-stratigraphic sections (see Fig. 1B for locations of the sections and Fig. 2 for explanations). Numbers show meters.

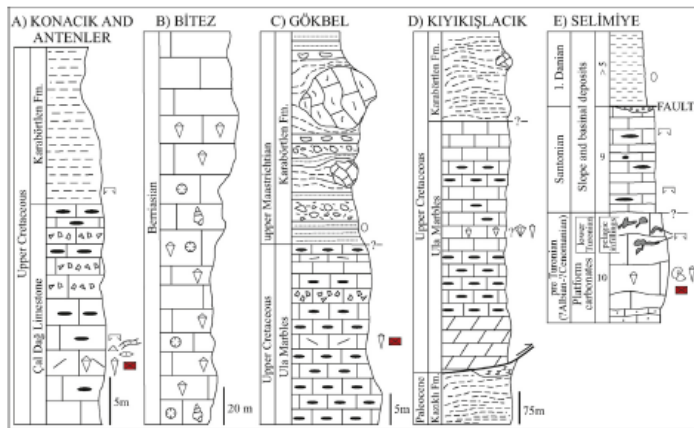


Fig. 4. Measured-stratigraphic sections (see Fig. 1B for locations of the sections and Fig. 2 for explanations). Numbers show meters.

sparse above the Mendere Massif and only found in the Söke-Selçuk area (the Dilek Peninsula) to the west (Güngör and Erdoğan, 2001), around the Borlu area to the north (Rimmelé et al., 2006) and in the surroundings of Cal-Civril area to the east (Sözbilir, 1997; Özer et al., 2001; Rimmelé et al., 2006).

In the early studies the Lycian Nappes were firstly subdivided into three main tectonic units such as: (i) the autochthonous series, (ii) the intermediate complex consisting of imbricated thrust sheets (the Karadağ, the Teke Dere, the Köyceğiz, the Haticeana Dağ and

the İnlice series) and (iii) the peridotite nappe (de Graciansky et al., 1967; de Graciansky, 1968, 1972; Bernoulli et al., 1974). Later, the Lycian Nappes were separated into eight units (i.e. the Tavas, the Bozdağ, the Domuzdağ, the Yavuz and Yeleme, the Gümüşlü, the Gülbahar, the ophiolitic nappe, the Kızıldağ mélangé) by Poisson (1977), four major units (i.e. the Elmalı, the Köyceğiz, the Tavas, the Tefenni units) by Özkaya (1990), eight structural units (i.e. the Beydağları Autochthon, the Marmaris Ophiolitic Nappe, the Yeşilbarak, the Tavas, the Bodrum, the Dumanlıdağ, the Domuz Dağ,

Table 1
Table showing the locations, UTM coordinates and corresponding figures of the measured-stratigraphic sections in the Lycian Nappes.

No	Section	Location	UTM Coordinates (35S)	Fig.
1	Sarpdere	1 km north of Serinhisar town (formerly Kızılbisar)-Tavas	0700210/4163554; 0700259/4163524	2A
2	Kızılda	10 km southwest of Serinhisar town, near Kızılda village	0688930/4152406	2B
3	Balkca	25 km south of Tavas town, 1 km east of Balkca village	0687830/4132597; 0687744/4133476	2C
4	Hisarıkü	64 km northeast of Fethiye, southeast of Ürmik Dağ, around Hisarıkü village	0691733/4115105; 0690475/4115850	2D
5	Cal Dağ	22 km northwest of Fethiye, 6 km northwest of Arpaçık (formerly Nif) village	0688880/4082277; 0691755/4081569	2E
6	İnlice	6 km east of Göcek town, north of İnlice village	0677407/4070017; 0677044/4069119	3A
7	Başyaşar Tepe	18 km northeast of Köyceğiz town, 7 km west of Otmanlar village	0666170/4100742; 0666156/4100578	3B
8	Akdikmen Tepe	15 km northeast of Köyceğiz town	0659450/4097855; 0659157/4098570	3C
9	Bozburun Tepe	23 km southeast of Köyceğiz town	0646207/4070449; 0646052/4070553	3D
10	Konacık	3 km northwest of Bodrum town, northeast of Konacık village	0536816/4101635; 0536731/4102034	4A
11	Antenler	3 km northeast of Bodrum town	0539943/4102445; 0539340/4102230	4A
12	Bitez	3 km southwest of Bodrum town, near Bitez	0533821/4097382; 0533808/4095944	4B
13	Gökbel	Between YukarıMazıkü and Gökbel villages, 2 km northwest of Gökbel village	0567365/4099593; 0567359/4098273	4C
14	Kiryıkışlacık	5 km southwest of Kiryıkışlacık village	0551076/4126024; 0549298/4125720	4D
15	Selimiye	10 km northeast of Bozburun town, 6 km northeast of Selimiye village	0599527/4065148; 0599525/4065140	4E

the Gülbahar nappes) by Şenel (1997a,b,c) and three tectono-stratigraphic units (i.e. the Lycian thrust sheets consisting of Yavuz, Karadağ, Teke and Köyceğiz units, the Lycian mélangé and the Lycian peridotite thrust sheet) by Collins and Robertson (1997, 1998, 1999).

The rudists examined in this study come from the Köyceğiz and the İnlice Series of de Graciansky (1972), the Tavas and the Bozdağ massifs of Poisson (1977), the Köyceğiz and the Tavas units of Özkaya (1990), the Tavas and the Bodrum nappes of Şenel (1997a,b,c) and the Köyceğiz thrust sheet of Collins and Robertson (1997, 1998). The tectono-stratigraphic nomenclature (the Tavas and the Bodrum nappes) followed here is that of Şenel (1997a,b,c).

When examining previous studies, we can suggest that the Tavas and the Bodrum nappes show almost the same lithologic succession consisting of alternation of limestones and cherty limestones. However, dolomitic limestones, cherty limestones and calciturbiditic limestones are more dominant in the Bodrum nappe, which tectonically overlies the Tavas nappe. The main difference between the Tavas and the Bodrum nappes is the presence of chert breccias named as 'Sirma breccia' in the uppermost part of the Upper Cretaceous succession of the Bodrum nappe, separating the platform-type carbonates from the turbidites. The Sirma breccia does not exist in the Tavas Nappe and the coeval stratigraphic interval is represented by an unconformity.

4. Stratigraphy and comparison

The rudists are found in the slightly metamorphic limestones of the Tavas, Fethiye, Köyceğiz, Ören, Bodrum and Bozburun areas. Location of the rudist-bearing measured-stratigraphic sections are given in Fig. 1B and the sections are presented in Figs. 2–4. The rudist contents of the measured-stratigraphic sections are presented in the following chapter.

4.1. Tavas area

Mesozoic monotonous platform-type limestones, showing low-grade metamorphism, have widespread outcrops between Tavas and Denizli (Fig. 1B). Previous studies suggest an imbricated internal structure for these carbonates (Collins and Robertson, 1999; Okay, 1989; Özkaya, 1990; Poisson, 1977, 1985). Microfossils are very poor or absent in these limestones due to the metamorphism. However, the rudist-bearing limestones can be found in the top-most part of the sequence, as explained below in Sarpdere (Serinhisar) section (Fig. 2A). They are the unique and important palaeontologic data for the recrystallized carbonate sequence in the area (Çağlayan et al., 1980; Özkaya, 1990; Özer, 1998; Özer et al.,

2001; Özer and Sarı, 2008). Three stratigraphic sections with rudists were measured in this area (Fig. 2A–C); Sarpdere section belongs to Tavas nappe, Kızılda and Balkca sections to Bodrum nappe (Akdenez, 2011a,b; Şenel, 1997a,b,c). The details of the sections are given below;

4.1.1. Sarpdere section

Sarpdere is located to the north of Serinhisar town (formerly Kızılbisar) in the Tavas area (Fig. 1B) and represents an excellent outcrop of rudist-bearing limestone that allowed us to understand the stratigraphy of the carbonate sequence. Our new observations show that the uppermost part of the Babadağ Formation consists of, in ascending order (Fig. 2A), (i) a 40–50-m-thick, intercalation of grey, massive dolomitic limestones and dark grey, unfossiliferous massive limestones, (ii) a 15–20-m-thick, dark grey, bituminous, thick-bedded limestones with canaliculate rudists indicating a middle-late Cenomanian age. Some radiolites, requeniids and *Chondrodonta* sp. are also present (Fig. 5A–E). (iii) a 20–25-m-thick, grey, unfossiliferous massive limestones, (iv) a 15–20-m-thick, light grey, thick-bedded limestones characterized mainly by *Distafanella*, but radiolites and hippurites are also present (Fig. 5F–N). The rudists indicate a late Turonian age, (v) a 15–20-m thick, grey, unfossiliferous thick-bedded limestones. This succession shows low grade metamorphism effects and so the microfossils are totally masked due to the recrystallization. The depositional texture can be only observed in upper Turonian limestones. Internal structure of the rudists can be distinguished despite the recrystallization.

Rudist-bearing limestones are unconformably overlain by megabreccias consisting mainly of serpentinites and limestone clasts and also limestone blocks with middle-upper Cenomanian and upper Turonian rudists in the reddish-metaclastic matrix of the Faralya Formation (Fig. 2A). These megabreccias rest on the various stratigraphic levels of the rudist-bearing platform-type limestones and continue with intercalation of reddish, cherty and laminated micritic limestones, mudstones, conglomerates and sandstones to the top. The matrix of the Faralya Formation yields nanofossils suggesting an early Oligocene-early Miocene age (Özer et al., 2016).

Previous studies suggested Late Cretaceous or Cenomanian and Santonian ages for the rudist-bearing limestones in this section (Çağlayan et al., 1980; Okay, 1989; Özkaya, 1990; Özer, 1998; Özer et al., 2001, 2008; Akdeniz, 2011a). But, the new data obtained from the Late Cretaceous rudist fauna in the Sarpdere section indicate middle-late Cenomanian and late Turonian ages for the limestones. The Cenomanian-Turonian succession of the Sarpdere section shows clear similarity with the rudist-bearing limestones of the Bey Dağları Carbonate Platform (Özer, 1988; Sarı, 2006a; Sarı

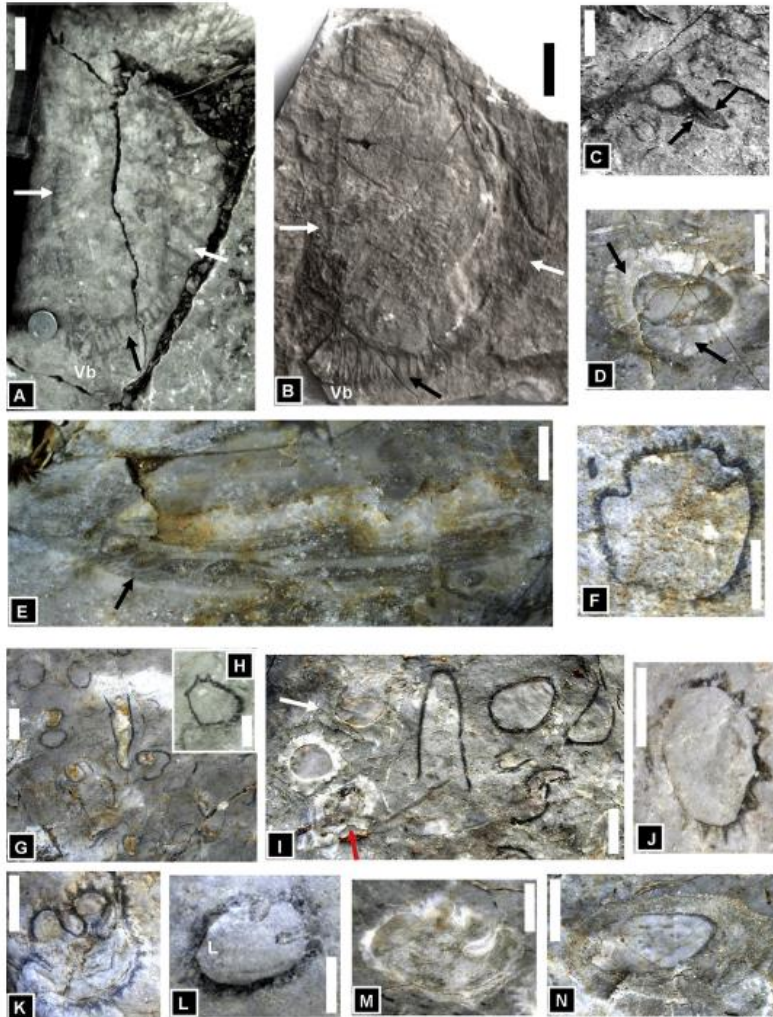


Fig. 5. Rudists of the Sardere section (C–N are the outcrop photographs). A–E—middle-upper Cenomanian rudists (A and C from Özer, 1988). A–B—*Neocaprina gigantea* Plienčar, the natural transverse sections of the right valve, sample nos S92.01/M and 14–1498, the ventral canals (black arrow), the accessory cavities (white arrows) and the external carina (Vb) can be observed. Note the ghost appearances of the accessory cavities (white arrows) in B. C—*D-Durania* sp., the transverse section of the right valve. Note the well-developed ridges and small round or oval canals (black arrows). D—*Durania* sp., the right valve transverse section with thick outer shell layer showing partially preserved polygonal prisms (black arrows). E—*Caprinula* aff. *boissyi* d'Orbigny, the oblique section of the right valve showing a row of large canals on inner side following one or three rows of small, round and may be sparse piriform pallial canals (black arrow). F–N—upper Turonian rudists. F—*Distofanella montagni* Slišković, the transverse section of the right valve showing the concave radial bands characteristic of the species. G—*Distofanella salmoiraghi* Parona, the transverse and radial sections of the right valves. Note the different shape of valve sections (round, oval or subtriangular). H—*Distofanella salmoiraghi* Parona (= *Distofanella tanzianana* Özer), the transverse section of the right valve, note the concave radial bands. I—the

and Özer, 2009; Sari et al., 2009). The succession should be compared to sequences of southern Apennines-Italy (Cestari and Laviano, 2012) and of island of Cres-Croatia (Korbar et al., 2001) due to similarities of both lithologic aspects and faunal contents and also having recrystallization.

4.1.2. Kızılca section

Kızılca village is located to the southeast of Tavas town (Fig. 1B), where the first detailed Liassic-uppermost Cretaceous stratigraphic section was presented by Poisson (1977) and Poisson and Sarp (1985). Later, Lower Liassic algal limestones (Ağaçlı Formation), overlying Upper Liassic-Cenomanian reddish mudstones (Babadag Formation) and uppermost Cretaceous cherty limestones comprising limestone lenses with rudists (Yarankuyu Formation) were reported by Akdeniz (2011a) and Çakmakoglu (1986). Kızılca section is measured in the ancient marble quarry located approximately 1 km north to the Kızılca village. The base of the approximately 15-m-thick section consists of a 3-m-thick, pinkish cherty and laminated limestones (Fig. 2B). A 0.15–0.40-m-thick chert bands are parallel to the strike of the limestones. The cherty limestones are intercalated with rudist-bearing bioclastic limestones at the lower half of the section. Upward in the section, intercalations of the grey limestones and bioclastic limestones with rudists are seen. Cherty limestones appear at the top of the section again. The rudists are the main components of the bioclastic limestones and are observed as generally shell fragments. Many right valve sections of Radiolitiidae show the prismatic cellular structure of the outer shell layer and acute costae (Fig. 6A, B). The cherty limestones comprise well-preserved planktic foraminifera indicating an early Turonian age for the Yarankuyu Formation (Özer et al., 2016). Similar pelagic successions are reported from the lower Turonian of Brac Island (Sveti Duh Formation) by Davey and Jenkyns (1999) and Mom et al. (2002). However, the Sveti Duh Formation includes only calcispheres, possibly as a result of reduced water depth. Lower Turonian pelagic cherty limestones (without bioclastic limestones with rudists) are also found in the Inlice section (Fethiye area) as explained below, which may be compared with the Kızılca section.

Poisson (1977) and Poisson and Sarp (1985) suggested a Cretaceous age for the rudist fragments-bearing brecciated limestones. Akdeniz (2011a) and Çakmakoglu (1986) inferred a latest Cretaceous age for the formation and separated rudist-bearing limestones as a rock unit. However, our data indicate that the bioclastic limestones consist of reworked rudist shell fragments within the lower Turonian 'deep water' limestone sequence.

4.1.3. Balkica section

Balkica section was measured to the southernmost of Tavas town (Fig. 1B). This section consists of platform-type carbonates (Çal Dağ Limestone), which are overlain by turbidites (Karabörtlen Formation) (Fig. 2C). The peridotites overthrust the Karabörtlen Formation. The lower boundary of the carbonate succession is not seen in the section. The succession is characterized by a 40–45-m-thick, grey, bioclastic limestones at the base. The rudists are the main components of these bioclastic limestones. Although they are mostly fragmented, some of them could be determined and may be suggested a Santonian age (Fig. 6C–F). Hermatypic corals, red

algae, gastropods and some reworked benthic foraminifers are also present (Fig. 6H). These bioclastic limestones do not include any index microfossils. The bioclastic limestones continue with a 130-m-thick, unfossiliferous dark grey, massive limestones and cherty limestones, which are intercalated with chert breccias (Sirma breccia). The limestone clasts including the prismatic outer shell layer fragments of radiolitiids are observed within the chert breccias (Fig. 6G). The cherty limestones yield some planktic foraminifera suggesting a middle Turonian-Santonian age (Özer et al., 2016). According to the rudist fauna and planktic foraminifera a Santonian age may be suggested for the limestone succession. The pinkish calcareous shales and mudstones intercalated with greenish-grey sandstones and siltstones of the Karabörtlen Formation rest unconformably over the cherty limestones. Nannofossil data indicate an early Miocene age for the Karabörtlen Formation (Özer et al., 2016).

Previous studies suggest a latest Cretaceous age for the limestones of the Balkica section based on very limited palaeontologic data such as some foraminifera (Poisson, 1977; Göktaş, 1988; Akdeniz, 2011a,b). However, a Santonian age is suggested for the limestones in this study.

4.2. Fethiye area

Compiled stratigraphy of the Nif Mountain (Çal Dağ) and Hisarköy area to the north of the Fethiye town (Fig. 1B) comprises from old to young; the Lower Jurassic dolomitic limestones, the Middle Jurassic-Cenomanian limestones and calcarenites, and overlying uppermost Cretaceous-Paleocene turbidites (Colin, 1962; de Graciansky et al., 1967; de Graciansky, 1972; Akdeniz, 2011a). The Çal Dağ section first presented by de Graciansky (1972, fig. 56) was a reference section for the Çal Dağ Limestone unit, which has been referenced in several studies (Akdeniz, 2011a; Bernoulli et al., 1974; Poisson, 1977; Şenel, 1997a,b,c; de Graciansky (1972) reported occurrences of some planktic and benthic foraminifera in the Cretaceous limestones and also rudist debris in the Albanian upper Cenomanian limestones from the Çal Dağ section. The Inlice Series (Inlice-Göcek, NW Fethiye) comprise from bottom to top, unfossiliferous cherty limestones, Maastrichtian limestones with benthic foraminifera and Eocene limestones and detritic rocks with *Nannulites*, which was recorded by de Graciansky (1972), Poisson (1977) and Şenel (1997a,b,c) as well. According to de Graciansky (1972) and Poisson (1977), Inlice Series belong to "intermediate complex" showing some stratigraphic differences from the other sections of the Lycian Nappes. The Çal Dağ and Hisarköy sections belong to the Bodrum nappe (Akdeniz, 2011a,b; Şenel, 1997a,b,c).

4.2.1. Hisarköy section

This section comprises the Çal Dağ Limestone, which is overlain unconformably by the Karabörtlen Formation (Fig. 2D). The lower boundary of the carbonate succession is absent in the section. The Çal Dağ limestone can be divided into two parts: a 40-m-thick basal part consists mainly of grey, thick-bedded bioclastic limestones with rudists. Rudists are generally observed as shell fragment and may be occur from Coniacian to Maastrichtian (Fig. 6I–K). Gastropods, corals, algae and indeterminate bivalvia fragments are also present

transverse and radial sections of the right valves of *Distofanella salmoiraghi* Parona and the transverse sections of the right valves of *Durania cf. gamsii* (Dacqué) and *Durania* sp. (in the left side). Note one of *Durania* sections has a wide and depressed ventral radial band (red arrow) of *D. gamsii* (Dacqué) showing typical character of the species and the ghost of this genus (white arrow). J—*Distofanella salmoiraghi* Parona, the transverse section of the right valve. Note the well-developed costae. K—*Vaccinites cf. praegiganteus* (Toucas), the transverse section of the right valve. L—*Hippurites cf. socialis* Douville, the transverse section of the right valve, the slightly developed rounded Lis marked. M—*Vaccinites cf. rousselli* Douville, the transverse section of the right valve. N—*Durania* sp. (Durania aff. *laevis* Douville), the transverse section of the right valve. Note distinct closely spaced radial ribs. Scale bars are equal to 10 mm. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

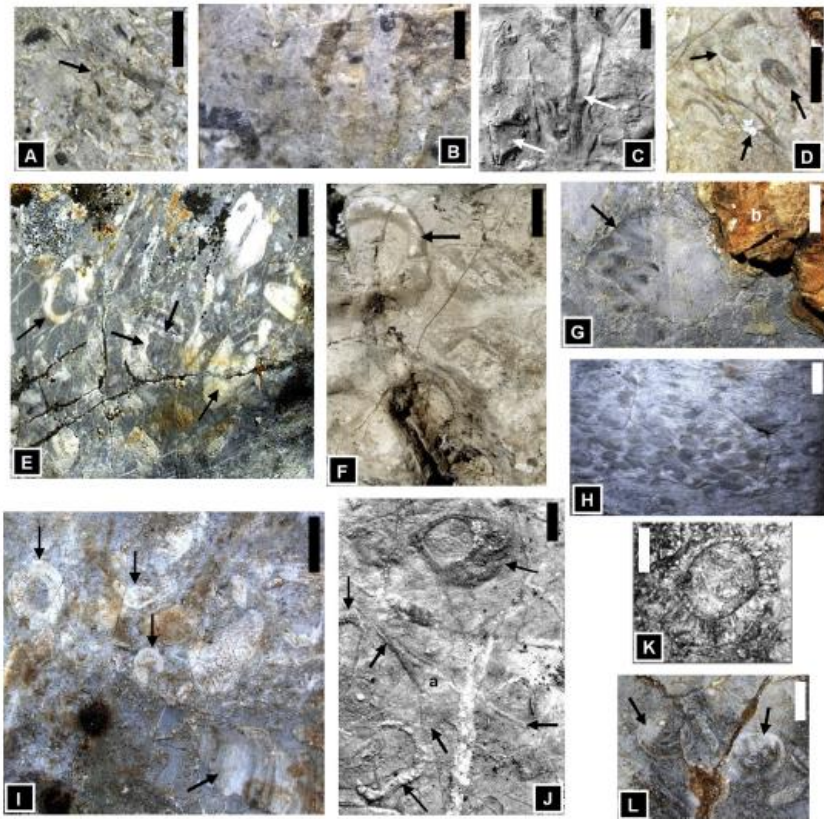


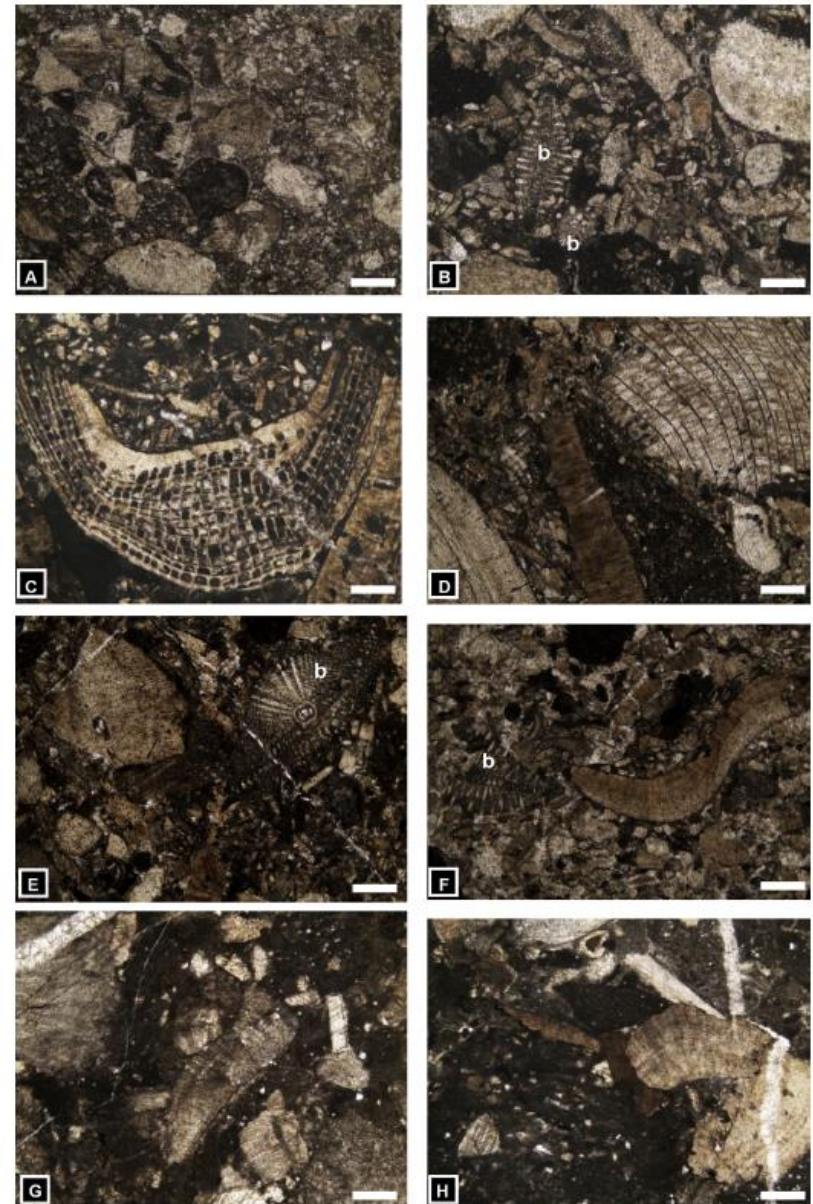
Fig. 6. Outcrop photographs of rudist sections from several stratigraphic sections. A–B–rudists of the Kızıldağ section, lower Turonian: A–a transverse section of the right valve (black arrow) of radiolite fragment, B–the general view of the bioclastic limestone showing transverse sections of the right valves fragments of undeterminable radiolites, C–G–rudists of the Balka section, Santonian, C–the general view of the bioclastic limestone showing the fragments of indeterminate small tubular radiolites (arrows), D–the sections of indeterminate radiolites (black arrows) within the bioclastic limestones, E–some sections probably belong to tubular rudists (thin black arrows). Two concave structures (thick black arrows) may be belong to pillars of hippuritids, F–right valve transverse sections of indeterminate radiolite sections. One of the sections (arrow) may be compared with *Bourmonia* aff. *herensis* Pejović. G–a limestone clast including the prismatic outer shell layer fragments of radiolites (black arrow) within the chert breccias (b), H–hermatypic corals, Balka section, I–K–rudists of the Hisarköy section, upper Coniacian-Santonian-Campanian, I–small tubular (indeterminate) radiolite sections (thin black arrows) and a radiolite fragment (thick black arrow) showing the cellular structure, J–the general view of the bioclastic limestone consisting of indeterminate right valve transverse sections of Radioliteidae (thin black arrows), K–the right valve transverse section of indeterminate radiolite. The radial ridges (arrows) of one of these sections (a) may be compared with *Bourmonia wionozeki* Pejović. L–gastropod sections (?acteonellid), Hisarköy section. Scale bars indicate 10 mm.

(Fig. 6L). Microfossils are not seen in the rudist-bearing limestones. A 50-m-thick upper part of the succession is characterized by thick-bedded, grey, cherty limestones. A 5-m-thick Sima breccia consists of angular chert fragments and is observed at the uppermost part of the section. The planktic foraminifera suggesting a late Coniacian-Santonian age were described from the cherty limestones (Özer et al., 2016). So, the late Coniacian-Santonian age can be suggested for the Çal Dağ Limestone. The Karabörtlen Formation consists of mudstones, sandstones, thin calcareous shale lens and limestone blocks. Nannofossil assemblages in fine-grained rocks indicate a late Maastrichtian-early Danian age (Özer et al., 2016).

Akdeniz (2011a) named limestones with rudist fragments as Ürmükdagi Limestone and reported that age of the formation is Berriasian-Cenomanian according to the stratigraphic relations. However, our data show that the lower part of the section comprises bioclastic limestones with some determinable rudists and the upper part includes cherty limestone with planktic foraminifera showing a late Coniacian-Santonian age.

4.2.2. Çal Dağ section

The Çal Dağ section comprises a 180-m-thick pelagic limestone succession (Fig. 2E). A 95-m-thick middle and upper parts of the



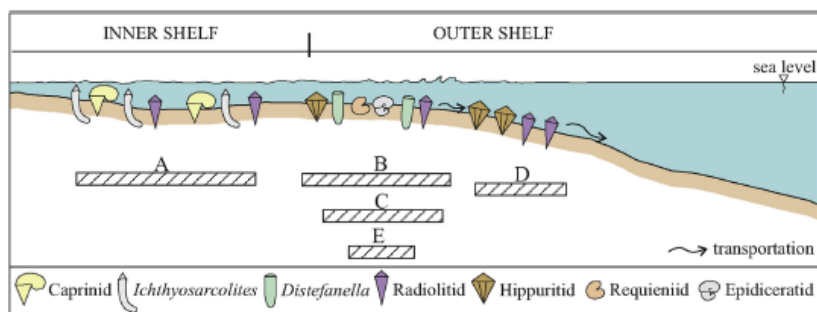


Fig. 13. Schematic carbonate platform model showing depositional settings of rudists and distribution of the rudist associations. A-caprinid-ichthyosarcollites, B-distefanellid, C-hippuritid-radiolittid, D-radiolittid-hippuritid and E-epidiceratid-requiiniid and radiolittid-requiiniid assemblages. Not to scale.

packstone (Fig. 11D, E). Occurrence of highly diversified rudist fauna, lithologic and microfacies characteristics of the succession indicate that the limestones were deposited under moderate to sometimes high hydrodynamic conditions in an outer platform environment.

The upper Turonian neritic recrystallized limestones comprise small patches of *Distefanella*, *Durania* and *Bournonia* and their fragments in the Akdikmen Tepe section. Rudist composition suggests an outer platform setting with moderate to high-energy conditions. The grainstone/packstone depositional texture shows collapse of the internal part of the rudist valve sections filled with totally calcite cement and intense recrystallization affected the outer shell layer of the valve and masked the microfossils (Fig. 11F). Presence of chert breccias and coral fragments at the upper part of the succession may indicate development of a gently dipping carbonate ramp depositional settings. Existence of rare planktonic foraminifera in a calcareous mudstone interbed and overlying turbidites indicates development of pelagic conditions in depositional environment. The rudist-bearing Turonian limestones with rudists are mostly deposited in outer platform, shelf margin and ramp settings in the circum Mediterranean Tethys, but inner platform records are also present (Moro, 1997; Moro et al., 2002; Bauer et al., 2002, 2003; Bachmann et al., 2003; Abdelgawad et al., 2011; Hennhöfer et al., 2014). Cestari (2005) indicates that the species of *Distefanella* are found in the outer platform of a shelf margin settings. Cestari and Pons (2007, 2008) suggest that the genus *Distefanella* lived in moderate to high-energy conditions. They also noted that the genus specifically lived in the shelf margin environments with a high sediment accumulation rate, which may be adapted for the Sarpdere and Akdikmen Tepe limestones with *Distefanella*.

The rudist-bearing upper Coniacian-Santonian-Campanian massive and bioclastic limestones are widely observed in the Lycian Nappes when compared with those of Cenomanian and Turonian. Some rudist sections observed in the massive marbles of the Kykışlaçak section may suggest a shallow-marine conditions. The marbles do not yield information for microfacies characteristics as the Cenomanian-Turonian strata.

The bioclastic limestones are also observed in the Balkaça, Hisarköy and Başyaşar Tepe stratigraphic sections. They are grey, light grey, thick bedded with small rudist patches and/or accumulations of radiolittids and hippuritids, which are associated with hermatypic corals and gastropods. Depositional texture is mainly represented by packstone/floatstone/grainstone and locally grainstone, which comprise mainly rudist fragments. Besides,

benthic foraminifera, red algae and sponge are also observed. The oriented rudist fragments commonly have micritic envelopes (Figs. 11G, H, 12A). These features suggest an outer platform settings for the rudist-bearing limestones. Increasing of the amount of transported rudist debris (i.e. floatstone and grainstone textures) especially in the uppermost part of sequence indicates development of the high energy marginal slope conditions in the depositional environment. The grading upward of these bioclastic limestones to the pelagic, cherty thin bedded, laminated limestones with chert breccias confirms the slope environment. Existence of rudist debris and neritic limestone clasts within the cherty limestones indicates an intense transportation from outer platform through the slope. The facies characteristics of the succession suggest a moderate to high energy shallow-marine environment for the initial stages and a deeper-water setting for the later stages of the Coniacian-Campanian interval. Several studies have reported similar Coniacian-Santonian-Campanian rudist-bearing limestones reflecting an outer platform settings with marginal slope influenced by the pelagic conditions (Carbone, 1993; Carannante et al., 1998; Laviano et al., 1998b; Moro and Cósović, 2000; Stössel and Bernoulli, 2000; Moro et al., 2002, 2016; Simone et al., 2003; Steuber et al., 2005; Sari, 2006b; Sari and Özer, 2009; Cestari and Laviano, 2012).

The Maastrichtian rudist-bearing limestones present two types of facies: (i) bioclastic limestones and (ii) calciturbiditic (allogenic) limestones. The first facies is observed in the İnlice section, which is mainly characterized by bioclastic limestones overlying the uppermost Cenomanian-Santonian pelagic cherty limestones. The basal part of the bioclastic limestones consists of packstone/rudstone depositional textures with abundant benthic foraminifera and rudist debris showing intense fragmentation, micritization and bioerosional features (Fig. 12B). Coral and red algae debris accompany the rudists and benthic foraminifera. Planktic foraminifera are generally rare throughout the section, but abundantly present at some levels. Several limestone breccia levels are observed within the succession and rudist debris are abundantly presented in the upper part of the succession. These levels are represented by rudstone/grainstone/packstone depositional textures with abundant rudist debris showing intense fragmentation, micritization, bioerosional features. Sparry (equant) calcite cement and fine-grained carbonate sediments entirely or partially filled the cellular outer shell layer of radiolittid fragments (Fig. 12C). These data reflect margin of an outer platform environment. Here, the bioclastic limestones were deposited under high to moderate energy

conditions. Sometimes, pelagic incursions occurred probably in that gently slope settings, where transported rudist debris abundantly deposited. The second facies is detected in the Bozburun section, which is characterized by cherty limestones, calciturbiditic (allogenic) limestones with rich planktic foraminifera, and some benthic foraminifera. Rudists are observed in the limestones without cherts and they are commonly fragmented due to mechanical compaction, but determinable rudist sections were found towards the upper part of the section. These rudist fragments could have been derived from small patches of rudist aggregations from adjacent environments. The rudstone/packstone/grainstone depositional textures with abundant rudist debris showing micritization, bioerosional features and sparry (equant) calcite cement entirely filled the cellular outer shell layer of radiolittid, are described (Fig. 12D–F). The bioclastic limestones of Konackı and Gökböl sections consist of packstone/floatstone depositional textures with abundant rudist debris showing intense fragmentation and micritization (Fig. 12G–H). These data indicate outer platform, slope depositional settings. The Maastrichtian facies and depositional environment features of the limestones with rudists of our study are comparable with those of Mediterranean Tethys (mostly central) presented by Accordi et al. (1982, 1988, 1989), Carbone (1993), Gallemi et al. (1997), Laviano (1996) and Steuber et al. (2005, 2007).

The facies and depositional features of the rudist-bearing limestones of the Lycian Nappes show that the rudists lived and formed associations in the inner and outer shelves of the carbonate platforms (Fig. 13).

7. Conclusions

The Cretaceous rudist associations and the depositional settings are first described from the low grade metamorphic successions (dominated by recrystallized limestones) of Lycian Nappes. The rudist data was obtained from fifteen measured-stratigraphic sections in Tavas, Fethiye, Köyceğiz, Ören, Bodrum and Bozburun areas.

The Lower Cretaceous with rudists is very sparse in the Lycian Nappes and an epidiceratid-requiiniid assemblage (Berrisian) is only reported from the Bitez limestone block in the Bodrum Peninsula (Masse et al., 2015). It has a low density and consists of *Heterodicerus lucii* (DeFrance), *Heterodicerus* sp.1, *Heterodicerus*? sp. and *Hypelasma salevensis* (Joukowsky and Favre). A requiiniid-radiolittid assemblage showing a low density is first found in the platform-type limestones of the Bozburun Peninsula. The age of this association is clearly older than Turonian (?Albian?-Cenomanian), due to the presence of the lower Turonian pelagic infillings within the upper part of the rudist-bearing limestones. But, further detailed palaeontological data are required for precise determination of the Lower Cretaceous stages.

The Upper Cretaceous sequences have widespread distribution in the Lycian Nappes than the Lower Cretaceous. Four main rudist assemblages are distinguished within the Upper Cretaceous sequences of the Lycian Nappes:

- 1) Caprinid-Ichthyosarcollites assemblage (middle-late Cenomanian; Sarpdere, Serinhisar-Tavas and Çal Dağ-Fethiye) comprises *Neocaprina gigantea* Plenier, *Caprina schiosensis* Boehm, *Schioia* cf. *schiosensis* Boehm, *Sphaeracarina* cf. *woodwardi* Gemmelan, *Ichthyosarcollites bicarinatus* (Gemmelan), *I. triangulatis* Desmarest, *I. monocarinatus* Slišković, *I. poljaki* Polšak, *Caprinula* aff. *boisyi* d'Orbigny, *Eoradiolites* sp., *Durania* sp. and requiiniids (*Apricardia* sp.).
- 2) Distefanellid assemblage (late Turonian; Sarpdere, Serinhisar-Tavas and Akdikmen Tepe-Köyceğiz) is represented by *Distefanella salmojmghii* Parona, *D. montagnesi* Slišković, *Hippurites*

cf. *socialis* Douvillé, *Vaccinites* cf. *praegiganteus* (Toucas), *V. cf. rousseli* Douvillé, *Durania arnaldi* (Choffat), *Durania* cf. *gaensis* Daqué, *Durania* sp. (*Durania* aff. *laevis* Douvillé), *Bournonia africana* Douvillé and *Sauvagesia/Durania* sp.

- 3) Hippuritid-Radiolittid assemblage (late Coniacian-Santonian-Campanian; Balıcaça-Tavas, Hisarköy-Fethiye, Başyaşar Tepe-Köyceğiz, Gökböl and Kykışlaçak-Ören-Ula, Konackı and Antender-Bodrum) consists of *Hippurites* cf. *nabresinensis* Futterer, *Hippuritella* aff. *laprousei* (Goldfuss), *Vaccinites* sp., *Hippurites* sp., *Bournonia* aff. *hvarensis* Pejović, *Bournonia* aff. *wiontzeiki* Pejović, *Biradiolites* sp. (*Biradiolites* aff. *fiscicostatus* d'Orbigny), *Biradiolites* sp., *Sauvagesia* sp. and *Durania* sp.
- 4) Radiolittid-Hippuritid assemblage ('middle'-late Maastrichtian; İnlice-Fethiye and Bozburun Tepe-Köyceğiz) comprises *Bournonia* aff. *adriatica* Pejović, *Bournonia* cf. *fascicularis* (Pirona), *Bournonia* sp., *Biradiolites* sp. (*Biradiolites* aff. *chaperi* Toucas), *Lapeirousia* sp., *Durania* sp., *Sauvagesia* sp. and *Hippurites cornucopiae* Defrance.

This study reveals for the first time that the rudists, which were regarded as shell fragments in previous studies comprise assemblages indicating different ages in the Lycian Nappes. The biostratigraphic data obtained from rudists provide valuable contribution to better understand the Upper Cretaceous stratigraphy of the Lycian nappe piles.

The rudists and the microfacies characteristics of the limestones provide information on the depositional environments of the Cretaceous successions. The data obtained reveal that the limestones were deposited in the inner and outer shelves of the Cretaceous carbonate platform(s). Rudists formed small isolated patches and aggregations in these environments and commonly deposited as shell fragments particularly on the outer shelf in response to increasing energy and platform slope characteristics.

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3. Ethic rules

Bilimsel Etik Üzerine...

SDUGEO
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Özellikle üniversitelerimizde yaşanan bilimsellik dışı davranışlar, gerek öğrendilerimizi, gerekse de öğretim elemanlarımızı etkilemektedir. Bilimsel objektifliği yakalamak için konan ilkeler ve kavramlar halen tartışılmaktadır. Bu yazıda etik konularının önemlileri üzerinde durulmuş, farklı yönleri ele alınmış ve öneriler getirilmiştir. Belirtilen bilimsel etik konularının özellikle gelecek nesillerimiz olacak öğrencilerimiz ve genç öğretim elemanlarımız tarafından dikkate alınacağı düşünülmü. Genel olarak lisansüstü eğitim ve akademik çalışmalarda dikkate alınan bilimsel etik kurallarının ve bilimsel araştırma temel ilkelerinin, lisans ve öncesinde de dikkate alınması, yaptırımların ise objektif bulgulara göre yapılması önerilir.

Giriş

Çoğumuz bilimsel etik kurallarını önemsemeye çalışır, fakat bazen hatalar yaparız sonucunu düşünmeden... Yapılan hataların telafisi zor olur çoğu kez... Kendini ön plana çıkarmak, başkalarını önemsememek, bir kariyer elde etmek, bilimselliğin sunum ilkelerini bilmemek, bilgi ve deneyim eksikliği, özensizlik, ihmal, kasit gibi birçok neden, bu hataların belli başlıcalarıdır. Bilimsel etik üzerine yazılmış değerlendirmelerde, etik kavramının 1980'li yıllardan sonra daha çok önemsendiği, 1991 yılındaki TÜBİTAK tarafından düzenlenen "yayın etiği" sempozyumunun ise önemli bir aşama olduğu belirtilmiştir (Ruacan, 2009). Aynı inceleme makalesinde 2005, 2006, 2007 ve 2008 doçentlik başvuru değerlendirmelerinde, ortalama 3000 başvurudan ortalama 100 civarında dosyanın bilimsel etik açısından ele alındığı ve ortalama 30 civarında adaya yaptırım uygulandığı, haksız yazırlık ve alıntı yapma hatalarının daha çok olduğu ortaya konmuştur.

2000'li yıllardan sonra çıkarılan Doçentlik sınav yönetmelikleri, 2005 yılında yayınlanan "etiğe aykırı davranışlar" yönergeleri üniversiteler tarafından dikkate alınmış, bu konularda birçok etik kurulları oluşturularak bilimsel etik konuları tartışılmış, konu üzerinde klavuz ve bröşürler hazırlanarak sunumlar gerçekleştirilmiştir (http://www.anadolu.edu.tr/arastirma/bilim_etigi_klavuzu.aspx; <http://sablon.sdu.edu.tr/idari/etikkurul>).

Tüm bunlara rağmen, günümüzde dahi gerçekleştirilen makaleler, sunumlar, web düzenlemeleri vb. ayrıntılı incelendiğinde alıntı hataları, haksız yazırlık gibi konuların dikkate alınmadığı görülmektedir. Özellikle lisansüstü çalışmalar ile doktora sonrası araştırmalarda bilimsel etik konularının ele alındığı, lisans ve öncesindeki eğitim-öğretim kapsamında ise bilimsel temel ilkelerin ve etiğin çok az oranda anlatıldığı anlaşılmaktadır. Fakat bu konular, yaşamımızın her safhasında öğrenilmeli ve öğretilmelidir. Bu nedenlerdendir ki bilimsel etik kurallarını bilmek, yapılan yanlışlıkların sonrasında nelerle karşılaşabileceğimizi öğrenmek, özellikle de öğrencilerimize ve genç öğretim elemanlarımıza bilimin bu temel ilkelerini hatırlatmak zorundayız...

Her bir etik kuralının üzerinde eksileri ve artıları ile tartışma gerekliliği ortaya çıkmaktadır. Çünkü doçentlik başvurularında birçok çelişkili ifadelerle doçentlik başvuru subjektif bir davranışa yönlendirilmektedir. Şöyle ki makalelerin doktora ilgili olup olmaması (a), SCI ve Türkçe yayınların oranları (b), tek bir konuda uzmanlaşıp, uzmanlaşmama (c), tek yazarlı ya da çok yazarlı çalışmak (d), bir makalenin bütün ya da kısmi olarak yayınlanıp yayınlanmaması (e), impakt faktörü (f), ulusal ve uluslararası sempozyum, kongre vb. aktivitelere katılım oranları (g) gibi konular, hakemlerin ön yargılı ve yanlı olması durumunda adayı zor durumda bırakmaktadır. Benzer eleştiriler diğer kariyerler için de geçerli olabilmektedir.

Keza, yayınlarda yapılan etik hataları bazen göz ardı edilmekte, bazen de en ince ayrıntısında gizlenen konulara saptırılmaktadır.

Yukarıda değinilen nedenlerden dolayı, yazının amacı, etik ihlalleri üzerinde tartışmak ve objektifliği yakalamak için ne yapılması gerekliliğini önermektir.

Kavramlar

Bilim, bilinen yöntemler ya da yeni geliştirilen yöntemlerle bilinmeyenlerin keşfi ya da icadı olarak tanımlanabilir. Etik, eski Yunancadaki Ethos (Karakter-Terbiye) kelimesinden kaynaklanmış bir terim olup, her türlü eylemde iyiyi, doğruyu ve gerçeği düşünmeye, uygulamaya ve kullanmaya ait kuram ve kurallardır

(<http://sablon.sdu.edu.tr/idari/etikkurul>). Bir başka tanım ise doğru ve yanlış davranışlara ilişkin kavramlar geliştiren, bu kavramları savunan ve bunların kullanımını öneren felsefe dalı olarak verilmiştir

(www.utm.etm.edu/research/iep/e/ethics.htm).

Etik ve ahlak terimlerinin birbirinden farklı kavramlar olduğu; etik kavramının ahlak felsefesini, ahlak kavramının ise etiğin araştırma konusunu içerdiği belirtilmiştir

(<http://sablon.sdu.edu.tr/idari/etikkurul>). Bilimsel etik, bilimsel aktarımlarda kullanılan kurallardır.

Aynı zamanda ise bilimsel etik, bir çalışma faaliyetinde bulunan insanların ahlak ilkelerini, davranış biçimlerini, görevlerini ve zorunluluklarını belirleyen kuralları zindirir

(<http://sablon.sdu.edu.tr/idari/etikkurul>).

Kuralların işleyişinde yönetmelik ve yönergeler benimsenmiş olup, değişik kurum ve kuruluşlardaki işleyişlere göre yönetmelikler ortaya konmuştur.

Bilimsel Etik Dışı Davranışlar

Yalnızca başlıklar verilen bu davranışların bilmemezlik, ihmal, kasit ve çıkar nedenlerine göre irdelenmesi aşağıdaki gibidir.

Aşırma (İntihal)-Alıntı: Bir başkasına ait bilginin, verinin kısmen ya da tamamen kendisininmiş gibi kullanmanın çoğu kez kasit ve çikara dayandığı görülür.

Çünkü bir bilimcinin bilmemezlik ve ihmal gibi bir nedenle aşırma yapması beklenemez. Bazen küçük cümle alıntıları, birkaç fotoğraf kullanımı sehven mümkün gözükebilir. Fakat, bunların dahi anlaşıldığında hemen düzeltilmeye gidilmesi gerekmektedir. Kişi kendisinin yazdığı önceki bilgileri dahi yeniymiş gibi sunamaz. Kasıtlı yapılan aşırmanın ise bilimsel bir hırsızlık olduğu düşünülmelidir. Bu nedenle kasıtlı aşırma ile bilmeden yada ihmalden kaynaklanan küçük alıntıların cezaları farklı olmalıdır.

Sahtecilik (Uydurma): Bulunmayan, elde edilmeyen verilerin uydurularak sunulması bilimsel bir yalancılığı ortaya koymaktadır. Yine burada ihmalden daha çok, kasit ve çıkar ilişkisinin ön plana çıktığı görülür. Verileri tahrif, bulguları uydurma cezasının da yine ağır olması beklenir. Bazı ufak uydurmalar ile metnin tamamının uydurulması, ya da tahrifat yaparak uydurma miktarları farklı değerlendirilebilir.

Çarpıtma: Verilerin, yöntemlerin ve sonuçların çarpıtılması yine kasit gerektiren bir durumdur. Sahtediliğin bir başka görünümü olarak düşünülebilir. Burada yine çarpıtma oranına göre cezalar verilebilir.

Duplikasyon: Özellikle araştırma sonuçlarının birden fazla bilimsel dergide referans verilmeden tekrarı, ilk kez yayınlanıyormuş gibi verilmesi bilimsellik dışı bir davranıştır. Bununla beraber, Türkçe yayınlanmış bilimsel bir makalenin kısmen, tamamen ya da değiştirilerek bir başka yabancı dilde yaklaşık eş zamanlı tarihlerde yayınlanması emek harcanarak ve bu kuralın bilinmeden yapılması durumunda bir uyan cezasını gerektirdiği düşünülür. Şöyle ki bilimsel olarak farklı bir dilde yayınlanmasında yarar görülümüş ve yayın kuruluşundan izin alınma gerekliliği bilinmemiş olabilir. Değerlendirmede yayınlardan birinin puan değeri dikkate alınabilir. Fakat, bilimsel etik ile ilgili YÖK ve üniversite yönetmeliklerinin yayınlanmasından sonra gelişen böyle bir davranışa yine ağır bir ceza gerekliliği ortadadır. Çünkü bilim insanlarının tabi olacakları yönetmelikleri iyi bilmesi gerekmektedir.

Dilimleme: Bazı dergilerdeki sayfa sınırlandırmaları, bilimsel hırsızlığın önüne geçmek ya da emeğin bir an evvel ortaya konulması gibi durumlarda makalelerin fazla olması beklenebilir. Bu nedenle tartışmalı olabilecek bu konuda dilimleme olayının gerçeği yansıtmayı yansıtmadığı ile ilgili olarak adaydan görüş sorulmalı,

hakemin ya da yazanın bu konuda art niyeti olup olmadığı ortaya konmalıdır. Sonuçta yayın sayısını artırmak amacı güdülüp, güdülmeyeceği yayınlardaki emek, sunum ve görüşler ile değerlendirilmelidir.

Haksız yazarlık: Makalede emeği olmayan birisinin yazar olarak belirtilmesi çıkar ilişkilerine dayanmaktadır. İlgili bazı yönetmeliklerde yazarlık hakkının, çalışmanın tasarımı; veri toplanması, analizi veya değerlendirilmesi ile yazımında katkı vermiş olması ile ilişkilendirilmesi gerekliliği; sadece yazım aşamasında katkıda bulunmanın yazarlık hakkı doğurmadığı belirtilmiştir. Bu nedenle, makalede bulunan her emeğin dikkate alınması, belki yazım aşamasında görüş, öneri ve emeklerinin ne olduğunun katkı belirtme bölümünde verilmesi gerekmektedir. Keza, yazar sıralaması değiştirmek, emeği olduğu halde kişiyi yazmamak çıkar ve kasıt taşımaktadır. Çok rastlanılan böyle bir etik dışı davranış değerlendirilmede haksızlık yapma olasılığı görülmektedir. Bunu önlemek için, makalelerdeki katkı oranları ve katkılarının ana hatları istenebilir.

Lisansüstü çalışmalardan üretilen yayınlarda öğrencinin veya danışmanın ismini yazmamak: Şüphesiz ki lisansüstü çalışmalar yetenek ve emek isteyen araştırma ya da çalışmalardır. Bu çalışmaların danışman ve öğrencinin birlikte çalışması gerekliliği ortada iken kişisel çalışmalarını ile isim yazılmaması tabiki uygun gözükmemektedir. Bununla beraber, danışmanın ismini koymada eğer danışman tarafından isminin konulmaması istenmiş ise bu konunun dikkate alınması gerekmektedir. Ayrıca emek açısından kimin emeği daha çok ise ona göre yazar sıralamasının yapılması daha uygundur. Saygı emeğin önüne geçmemelidir.

Destek veren kişi, kurum veya kuruluşlar ile onların araştırmadaki katkılarını açık bir biçimde belirtmemek: Son yıllarda özellikle maddi destekler değişik kurum ve kuruluşlarca yapılmakta olup, maddi desteği veren kişi, kurum ve kuruluşun belirtilmeden makale yazılmasının çıkar ve kasıt içerebileceği düşünülebilir. İhmale ya da kasıta dayanan bir belirtmemenin hangisinin olduğunun anlaşılabilmesi için görüş alınmalıdır.

İnsan ve hayvanlar üzerinde yapılan araştırmalarda etik kurallara uymamak: Anket çalışmaları ya da hayvanlarla ilgili araştırmalarda etik kurallara uymama cezasını değerlendiren kurul görüşlerinin önemsenmesi

gerekliliği düşünülür.

Yayınlarda hasta haklarına saygı göstermemek: Özellikle tıp alanındaki bu çalışmaların yine etik kurullarla değerlendirildiği düşünülür.

Doçentlik başvurusunda jüri üyelerini yanıltıcı, yanlış ya da eksik beyanda bulunmak: Çıkar doğrultusunda yapılan bu hataların delillere dayandırılması gereklidir.

Jüri üyeliğini kötü amaçlı kullanmak: Maalesef ülkemizde çıkar ve siyaset ön plana çıkmakta ve bilimsellik dışı bu davranışlarla da karşılaşmaktadır.

Yaptırımlarda Objektiflik

Bilimsel etik dışı davranışlara ait yaptırımlar aşağıdaki çizelgede sunulmuştur. Bununla birlikte yaptırımlarda objektifliğin yakalanması için bilimsel hata nedenlerin çok iyi irdelenmesi (1), yaptırımlar hakkında bilgilendirmelerin yapılması (2), genel olarak lisansüstü çalışmalarda ve akademik araştırmalarda dikkate alınan bilimsel etiğin lisans ve öncesine de yaygınlaştırılması (3) gerekliliği ortaya çıkmaktadır. Kendini ön plana çıkarmak ve başkalarını önemsemeyen araştırmacıların etik dışı davranışları, editörlük, hakemlik ve jüri üyeliğindeki davranışları da irdelenmelidir. Sınavlardaki sözlü değerlendirmelerde adayların yaptıkları eğitim-öğretim ve araştırma faaliyetleri dışındaki sorgulama art niye dayanmaktadır. Ayrıca, bilimselliğin sunum ilkelerini bilmemek, bilgi ve deneyim eksikliği, özensizlik, ihmal gibi durumların, bilimsel ilkeleri bilerek kasıtlı davranma ile aynı değerlendirilmeyeceği düşünülür. Bilimsel ihmal, şüphesiz kabul edilemez bir davranıştır. Çünkü araştırmacının böyle bir durumda kasıtlı olarak değil, bilgi, beceri ya da deneyim yetersizliğinden dolayı yanlış bilgi sunduğu dolayısıyla, yalnızca başkalarını bilimsel olarak yanıltmakla kalmadığı, kendi kendini de kandırması olduğu belirtilmiştir (http://www.anadolu.edu.tr/araştırma/bilim_etigi_klavuzu.aspx). Özellikle kasıt taşıyan davranışların delillere dayandırılması gerekmektedir. Örneğin çarpıtma, tahribat gibi hatalar... Alıntılardaki hata oranı (kişi kendinden yaptığı alıntılarını dahi ihmal etmemeli, bir fotoğrafın dahi izinle kullanılmasına özen göstermelidir), haksız yazarlık, duplikasyon ve dilimleme gibi diğer etik dışı davranışlarda yine objektiflik için delillendirmelerine gidilmelidir.

Çizelge 1. Üniversitelere rası Kurul tanımlamasında yer alan etiğe karşı davranışlar ve yaptırımları
(<http://sablon.sdu.edu.tr/fidari/etikkurul>)

ETİĞE AYKIRI DAVRANIŞLAR	YAPTIRIMLARI DOÇENTLİK SINAV YÖNETMELİĞİ (11.md)	DISİPLİN YÖNETMELİĞİ ¹	FİKİR ve SANAT ESERLERİ KANUNU ²
ASIRMAK - İNTİHAL - Başkalarının verilerini-çalışmasını atıf yapmadan kısmen-tamamen almak veya sunmak - Başkalarının hipotez aşamasındaki fikirlerini aşarak kendine mal etmek - Yabancı dilden tercime yaptıklarını kendi yazmış gibi basmak	Bir daha Doçentlik Sınavına başvuramama	11-a/3: Üniversite öğretim mesleğinden çıkarma cezası	5846 s.FSEK 71-d ve 3: İki yıldan dört yıla kadar hapis ve 50-150 bin yıl para cezası (evletin ağırlığına göre her ikisine hükme lunabilir)
SAHTEÇİLİK - Sunulan belgeyi gerçeğe aykırı düzenlemek ya da belgeyi dejiřirmek veya hut gerçeğe aykırı belgeyi bütöek kulllanmak - Arařtırma ya dıřanmayan veriler üretmek, raporlamak, yayımlamak - Yapılmamıř bir arařtırmayı-çalıřmayı yapılmıř göstermek	Bir daha doçentlik sınavına başvuramama	9-e: Kademe ilerlemesinin durdurulması cezası	
ÇARPTIRMA - Arařtırma kavıřları-verilerini tahrif etmek - Arařtırma diğ olunan yöntem-cihaz-materyalleri kullanıř göstermek - Arařtırma hipotezine uymayan verileri deđerlendirmeye almamak - İlgili teori-varsayma uydurmak için veriler-sonuçlarda oynamaya yapmaktır	1-3 yıl arası doçentlik sınavlarına girme yasađ	84 ve 8-n: Aylıktan kesme cezası	
DUPLİKASYON -Arařtırma sonuçlarını birden fazla yerde yayımlamak	0 yıl yapılan doçentlik başvurusunun reddi	5-e: Uyuma cezası; kasıtlı olması halinde 8-d: Aylıktan kesme cezası	
DİLİMLEME - Arařtırma sonuçlarını bütünliđi bozacak geçide parçalara ayırıp yayımlamak	0 yıl yapılan doçentlik başvurusunun reddi	5-e: Uyuma cezası	
HAKSIZ YAZARLIK - Çalışmaya aktif katkı koř olmayanları yazarlar arasında göstermek - Aktif katkı koř olanları yazarlar arasında göstermemek	1-3 yıl arası doçentlik sınavlarına girme yasađ	8-d: Aylıktan kesme cezası	
- Yazar sıralamasını deđerletmek	0 yıl yapılan doçentlik başvurusunun reddi	En hafifi 5-e ve 5-h: uyuma cezası; kasıtlı olması halinde 9-f: kademe ilerlemesinin durdurulması cezası	
DIĐER ETİK İHLALLERİ - Makul ölçülerini ařan almamaları yapmaktır	1-3 yıl arası doçentlik sınavlarına girme yasađ	En hafifi 5-e: uyuma cezası; kasıtlı olması halinde 8-d: aylıktan kesme cezası	
- Lisansli öđal sınıflarda öđrenci veya danışmanının olmaması	0 yıl yapılan doçentlik başvurusunun reddi	En hafifi 5-h: uyuma cezası; kasıtlı olması halinde 8-d ve 8-i: aylıktan kesme cezası	
- Arařtırma ya destek olanların çalışmada belirlenmemesi	0 yıl yapılan doçentlik başvurusunun reddi	En hafifi 5-h: uyuma cezası; kasıtlı olması halinde 8-d ve 8-i: aylıktan kesme cezası	
- İnsan-hayvanlar üzerindeki çalışmalarda etiđe uymama	1-3 yıl arası doçentlik sınavlarına girme yasađ	84: Aylıktan kesme cezası	
- Hasta haklarına saygı göstermeden bilgileri yayımlama	1-3 yıl arası doçentlik sınavlarına girme yasađ	84: Aylıktan kesme cezası; idareciлик görevi olanlar için 7-b: yönetim görevinden ayırma cezası	
-Doçentlik başvurusunda jüriyi yanıltan yanlış-eksik beyanda bulunma	0 yıl yapılan doçentlik başvurusunun reddi	8-d: Aylıktan kesme cezası	

Üniversitelerarası kurul tanımlamasında yer alan başka etiđe aykırı davranışlar

İnternetten bilgiye intihal etmek	1-3 yıl arası doçentlik sınavlarına girme yasađ	9-e: Kademe ilerlemesinin durdurulması cezası	
Konferans katılmaması	1-3 yıl arası doçentlik sınavlarına girme yasađ	8-d veya 8-e: aylıktan kesme cezası	
Çalıřmada diđer yazarın ismini etiketik notasyonu ile etik ismi kullanılmaması	Bir daha doçentlik sınavına başvuramama	11-a/3: Disiplin öđretimi mesleğinden çıkarma cezası	
Puđok yayıncıdan paragraflar alıp kendisi deđerleştirmek veya yayımlamak	1-3 yıl arası doçentlik sınavlarına girme yasađ	En hafifi 5-e: uyuma cezası; kasıtlı olması halinde 8-d: aylıktan kesme cezası	
Yük lisansları almak için para karşılıđı makale yayımlamak veya yayımlanmak	Bir daha doçentlik sınavına başvuramama	11-a/3: Disiplin öđretimi mesleğinden çıkarma veya aylıktan durdurma gibi cezalara 11-b de: kamu görevinden çıkarma	

¹ Yükseköđretim Kurumları Yönetici, Öđretim Elemanı ve Memurları Disiplin Yönetmeliđinin 12.maddesinde; "Yukarıda sayılan ve disiplin cezası verilmesini gerektiren fiil ve hallerle nitelik ve ađırlıklıca itibariyle benzer eylemlerde bulunanlara da aynı türden disiplin cezaları verilir" denilmektedir.

² 5846 sayılı Fikir ve Sanat Eserleri Kanunu'nun 5.Bölümünde (66 ve devamı maddeler) öngörölmüş olan Hukuk Davaları (örneđin; 66.md. Tecavüzün Ref'i veya Men'i, Tazminat Davaları vb) ile diđer hukuksal taileplere deđinilmemiřtir.

