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Research Article **Araştırma Makalesi**

A Survey of the Parasite Fauna and Evaluation of Histopathological Findings in the European Eel, *Anguilla anguilla* (L.), from Türkiye

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Abstract: In this study, European eels (*Anguilla anguilla*) were sampled from the drainage channels feeding Kocagöl Lake in the Dalaman district of Muğla Province, Türkiye, and a total of 131 individuals were examined parasitologically. Microscopic examinations revealed the presence of the parasites *Pseudodactylogyrus anguillae* (Yin & Sproston, 1948), *Bothriocephalus claviceps* (Goeze, 1782), *Anguillicola crassus* Kuwahara, Niimi & Itagaki, 1974, and *Ergasilus gibbus* von Nordmann, 1832. Prevalence values were calculated for each parasite species, and the pathological alterations associated with *A. crassus* infection were evaluated based on both histopathological and macroscopic findings. Lesions such as swim bladder wall thickening, haemorrhage, fibrosis, and lumen narrowing were observed in association with *A. crassus* infection. In addition, a comprehensive review of the parasite fauna reported from *A. anguilla* in Türkiye was conducted through an extensive literature survey, and the findings were compared with those of the present study. This review revealed the diversity and distribution of helminth and crustacean parasites as well as molluscan glochidia reported from *A. anguilla* populations in Türkiye, with particular emphasis on the spread and potential impacts of the invasive parasite *A. crassus*. The findings provide additional information on parasite–host interactions and the health status of European eels from the Kocagöl Lake drainage system and, together with previous records, contribute to the current knowledge of the parasite fauna of this species in Türkiye.

Keywords
- *Anguillicola crassus*
- Host–parasite interactions
- Invasive parasites
- Parasite diversity

1. INTRODUCTION

European eel, *Anguilla anguilla* (Linnaeus, 1758), is an important representative of the genus *Anguilla*, which comprises approximately 19 species and subspecies within the order Anguilliformes and the family Anguillidae. This species is widely distributed throughout Europe and North Africa and inhabits freshwater, brackish, and coastal marine environments (Aoyama et al., 2001; Watanabe, 2003; Arai, 2020). *Anguilla anguilla* has a complex, prolonged catadromous life cycle, spending most of its life in inland waters before migrating to the Sargasso Sea in the Atlantic Ocean to spawn (Deelder, 1984; Tesch, 2003).

The European eel has historically been a species of considerable economic importance for both fisheries and aquaculture worldwide (Heinsbroek, 1991). However, a marked decline in its populations has been observed since the 1980s, and the species is currently classified as Critically Endangered by the International Union for Conservation of Nature (IUCN) (Dekker, 2003; ICES, 2011). Recent data indicate that recruitment levels have declined to 0.4–8.8% of historical abundance, highlighting the critically depleted status of the stock (ICES, 2023). This decline has been attributed to the combined effects of multiple factors, including overfishing, habitat degradation, pollution, barriers to migration, and oceanic processes associated with climate change. In addition, parasitic and viral infections adversely affect host health, reducing migratory performance and reproductive success, thereby further increasing pressure on eel populations (Henderson et al., 2012; Aschonitis

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et al., 2017; Haenen, 2019).

The present study aimed to investigate the diversity and prevalence of parasitic species infecting European eels (*A. anguilla*) collected from drainage channels connected to Kocagöl Lake in the Dalaman district of Muğla Province, Türkiye. Furthermore, parasitic infections reported from European eels in Türkiye to date were comprehensively reviewed and evaluated in conjunction with the findings of the present study. In addition, histopathological findings in the swim bladder induced by *A. crassus*, one of the most pathogenic parasites of European eels, were investigated.

2. MATERIAL and METHODS

2.1. Study Area and Fish Sampling

During November 2025, European eels (*Anguilla anguilla*) (n = 131) were captured using fyke nets from the drainage channels feeding Kocagöl Lake in the Kapukargın locality of Dalaman district, Muğla Province, Türkiye (36°41′50.65″ N, 28°49′02.57″ E and 36°41′45.05″ N, 28°49′02.04″ E). The physicochemical parameters were recorded at the sampling site on 22 November 2025. At the sampling site, the water temperature was 18.9 °C, salinity was 3.1‰, conductivity was 9.6 mS/cm, specific conductivity was 9.55 mS/cm, and dissolved oxygen concentration was 8.04 ppm. The total length of the examined eels ranged from 32.7 to 63.2 cm (46.59 ± 7.60 cm, mean ± SD), while body weight ranged from 53.38 to 576.70 g (194.63 ± 102.95 g, mean ± SD). Of the 131 specimens examined, 129 were female, one was male, and the sex of one specimen could not be determined.

2.2. Parasitological Examination

Following capture, the eels were transported alive to the Central Unit of the Mediterranean Fisheries Research, Production and Training Institute (Döşemealtı, Antalya, Türkiye) and maintained in holding tanks for approximately 48 h. Subsequently, the fish were euthanised by immersion in a 2-phenoxyethanol solution (0.6 mL L^{-1}), after which necropsies and parasitological examinations were performed. Parasite specimens collected during the examinations were preserved in microcentrifuge tubes containing 70% ethanol until microscopic identification. Morphological identification of the parasite specimens was carried out at the Fish Diseases Diagnostic Laboratory of the Demre Unit of the Institute (Demre, Antalya, Türkiye) using a light microscope (CX23 Binocular Microscope, Olympus Corporation, Tokyo, Japan). Species identification was based on diagnostic morphological characteristics and the illustrations and descriptions provided in the relevant literature (Yamaguti, 1963; Kabata, 1979; Scholz, 1997a; Morales-Serna & Camacho-Zepeda, 2024). All parasite specimens obtained during the study, including permanent slide-mounted preparations and ethanol-preserved materials, are deposited in the parasitological collection of the Fish Diseases Diagnostic Laboratory of the Demre Unit of the Mediterranean Fisheries Research, Production and Training Institute.

2.3. Parasitological indices

Prevalence was calculated for all parasite species, whereas mean intensity and mean abundance were calculated only for *Anguillicola crassus* due to its well-documented pathogenic effects on the European eel, following the definitions of Bush et al. (1997), using the following formulas:

Prevalence (%) = (number of infected hosts / total number of examined hosts) × 100

Mean intensity = total number of parasites / number of infected hosts

Mean abundance = total number of parasites / total number of examined hosts

2.4. Histopathological Examination

Representative swim bladder tissues exhibiting severe macroscopic lesions associated with *Anguillicola crassus* infection were fixed in 10% neutral buffered formalin for 24–48 h. Following fixation, the tissues were trimmed, placed into tissue cassettes, and washed in running tap water for 16 h. Tissue processing was carried out using an automated tissue processor (Leica TP 1020). The tissues were dehydrated sequentially in 70% ethanol for 2 h, 80% ethanol for 1 h, 90% ethanol for 1 h, 96% ethanol twice for 1 h each, and absolute ethanol for 30 min. Subsequently, the samples were cleared in xylene three times for 30 min each, infiltrated in a xylene–paraffin mixture for 30 min, then in soft paraffin (46–48 °C) for 20 min, and followed by hard paraffin (56–58 °C) for 20 min, and finally embedded in paraffin blocks. Sections of 5 µm thickness were cut from the paraffin blocks using a microtome (Leica RM 2125RT, Germany), mounted on poly-L-lysine-coated glass slides, and dried overnight at 56 °C. The sections were deparaffinized in xylene three times for 5 min each, rehydrated through a graded ethanol series (absolute, 96%, 80%, and 70% ethanol; 3 min each), and rinsed with tap water. Thereafter, the

sections were stained with hematoxylin for 3 min, washed in tap water for 2 min, and differentiated in 1% acid alcohol. Following a further wash, the sections were treated with ammonia water and counterstained with alcoholic eosin for 1 min. After staining, the sections were dehydrated through a graded ethanol series (96% I–II and 100% I–II, 1 min each), cleared in three changes of xylene for 5 min each, and mounted with Entellan® mounting medium (Cat. No. 107961, Merck, Darmstadt, Germany). Histopathological examinations were subsequently performed using a light microscope (CX23 Binocular Microscope, Olympus Corporation, Tokyo, Japan).

2.5. Review methodology

A literature review was conducted to compile all published records of parasites reported from the European eel (*A. anguilla*) in Türkiye. Relevant publications available up to June 2026 were identified through searches of Google Scholar, PubMed, DergiPark, TR Dizin, and the National Thesis Center (Council of Higher Education, Türkiye) using combinations of both English and Turkish keywords, including "*Anguilla anguilla*", "European eel", "eel", "parasite", "helminth", "monogenea", "digenea", "nematode", "copepod", "Turkey", and "Türkiye", as well as "yılan balığı", and "parazit". The reference lists of all retrieved publications were also screened to identify additional relevant studies. Only peer-reviewed articles and postgraduate theses reporting parasite records from European eels collected in Türkiye were included. Information on parasite species, infection site, locality, prevalence, mean intensity (when available), and corresponding references was extracted and summarised in Table 2.

3. RESULTS

3.1. Parasitic Findings

Microscopic examinations identified the crustacean specimens as *Ergasilus gibbus* von Nordmann, 1832; the monogenean specimens as *Pseudodactylogyrus anguillae* (Yin & Sproston, 1948); the cestode specimens as *Bothriocephalus claviceps* (Goeze, 1782); and the nematode specimens as *Anguillicola crassus* Kuwahara, Niimi & Itagaki, 1974. The prevalence values and infection sites of the detected parasite species are presented in Table 1, with prevalence ranging from 3.82% to 58.78%. Because *A. crassus* is considered one of the most pathogenic and ecologically important parasites of European eels, prevalence, mean intensity, and mean abundance were also evaluated for this species.

Table 1. Parasite species detected in European eel (*A. anguilla*) examined in the present study and their prevalence.

Taxonomic group	Parasite species	Infection site	Prevalence (%)
Monogenea	*Pseudodactylogyrus anguillae*	gills	58.78 (77/131)
Cestoda	*Bothriocephalus claviceps*	intestines	3.82 (5/131)
Nematoda	*Anguillicola crassus**	swim bladder	24.43 (32/131)
Copepoda	*Ergasilus gibbus*	gills	14.50 (19/131)

*A total of 75 *A. crassus* specimens were recovered from 32 infected eels. The mean intensity and mean abundance were 2.34 parasites per infected eel and 0.57 parasites per examined eel, respectively.

3.2. Histopathological Findings

The swim bladders of uninfected eels were characterised by thin, transparent walls through which the internal structures of the organ could be readily distinguished. In contrast, swim bladders infected with *A. crassus* exhibited marked increases in opacity, darkening of tissue colouration, and pronounced thickening of the bladder wall. In advanced infections, adult nematodes were readily visible within the lumen, whereas in heavily infected individuals, the parasites occupied a substantial portion or even the entirety of the swim bladder lumen. Moreover, severe infections were associated with organ distension and deformation, indicating a marked disruption of its normal morphological architecture. Histopathological examination revealed substantial structural alterations in swim bladders infected with *A. crassus*. These changes included pronounced thickening of the swim bladder wall, submucosal fibrosis, epithelial degeneration, and intense inflammatory cell infiltration. In addition, cross-sections of adult *A. crassus* were observed within the connective tissue. These pathological alterations are likely to impair the gas-secreting capacity and functional integrity of the swim bladder.

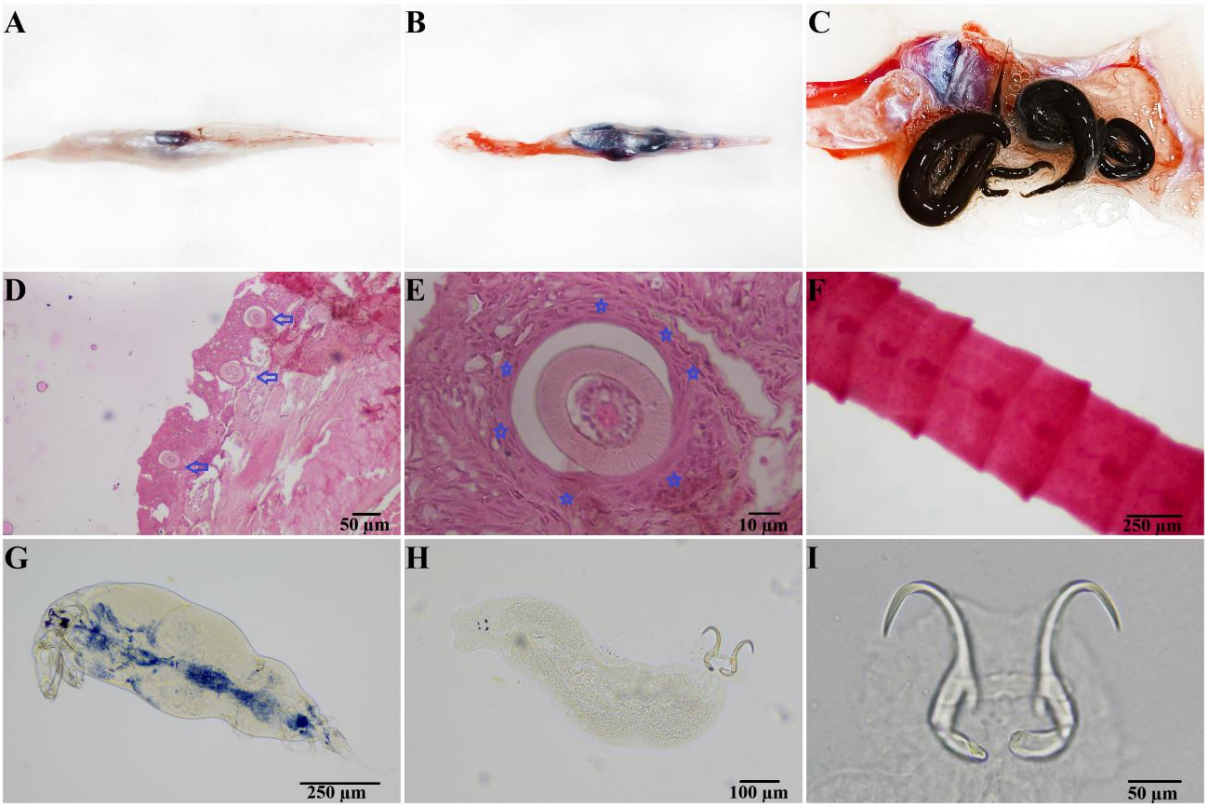


Figure 1. Histopathological and parasitological findings in European eel, *Anguilla anguilla*. (A) Normal swim bladder. (B) Swim bladder infected with *A. crassus*. (C) Adult *A. crassus* specimens recovered from the swim bladder lumen. (D–E) Histopathological sections showing cross-sections of adult *A. crassus* (blue arrows) within the swim bladder wall and associated inflammatory cell infiltration (blue stars). Hematoxylin and eosin (H&E) stain. (F) Acetocarmine-stained proglottids of *B. claviceps*. (G) Female *E. gibbus*. (H) Adult specimen of *P. anguillae*. (I) Attachment apparatus of *P. anguillae*.

4. DISCUSSION

The present study provides an updated overview of the parasite fauna of the European eel (*A. anguilla*) in Türkiye by combining original parasitological findings with a comprehensive review of previous records. To date, a total of 14 parasite taxa representing Monogenea, Trematoda (Digenea), Cestoda, Nematoda, Acanthocephala, Copepoda, and Mollusca have been reported from European eels in Türkiye (Table 2). Among these, the swim bladder nematode *A. crassus* is by far the most frequently reported species, having been recorded from numerous localities throughout the country, whereas records of most other taxa remain sporadic and geographically restricted. The available data indicate that investigations on eel parasites in Türkiye have largely focused on a limited number of localities and have primarily addressed infections caused by *A. crassus*.

Table 2. Parasite species reported from the European eel (*A. anguilla*) in Türkiye to date.

		Parasite species	Infection site	Location	Infection data*		References
					n (inf./exam.)	Prev. (%)	
Monogenea	Pseudodactylogyridae	*Pseudodactylogyrus anguillae*	Gills	Köyceğiz-Dalyan	60/73	82.2	Çolak et al., 2012
				Lake Sığırcı	NR/5	NR	Çolak, 2013
				Lake Gala	NR/5	NR	Soylu, 2014

		Parasite species	Infection site	Location	Infection data*		References
					n (inf./exam.)	Prev. (%)	
				drainage canals feeding Kocagöl Lake	77/131	58.78	Present study
		Pseudodactylogyrus bini		Lake Sığırcı	NR/5	NR	Çolak, 2013
				Lake Gala	NR/5	NR	Soylu, 2014
Trematoda (Digenea)	Bucephalidae	*Bucephalus anguillae*	Intestines	Köyceğiz-Dalyan	11/73	15.1	Çolak et al., 2012
	Diplostomidae	*Diplostomum* sp.	NA	Lake Gala	NR/5	NR	Soylu, 2014
Cestoda	Bothriocephalidae	*Bothriocephalus claviceps*	NA	Lake Gala	NR/5	NR	Soylu, 2014
			Intestines	drainage canals feeding Kocagöl Lake	5/131	3.82	Present study
		Tetraphyllidea (larvae)	Intestines	Köyceğiz-Dalyan	1/73	1.4	Çolak et al., 2012
Nematoda	Anisakidae	*Raphidascaris acus*	Intestines	Büyük Menderes River	NR/30	NR	Şimşek et al., 2016
	Anguillicolidae	*Anguillicola crassus*	Swim bladder	Ceyhan River	50/64	78.2	Genç et al., 2005
				Ceyhan River	90/120	75.0	Şahan et al., 2007
				Asi River	48/212	22.64	Yalçın-Özdilek & Solak, 2007

		Parasite species	Infection site	Location	Infection data*		References
					n (inf./exam.)	Prev. (%)	
				Asi River	11/18	61.1	Genç et al., 2008
				Köyceğiz-Dalyan	29/73	39.71	Çolak et al., 2012
				Lake Sığırcı	NR/5	42.5**	Çolak, 2013
				Lake Gala	NR/5	NR	Soylu, 2014
				Göksu River	13/45	28.8	Koyuncu et al., 2017
				Seyhan River	8/42	19.04	
				Ceyhan River	8/42	19.04	
				Asi River	18/41	43.9	
				Manavgat River	14/22	63.6	İnnal et al., 2019
				Göksu River	17/28	60.7	
				Seyhan River	15/20	75.0	
				Çamaltı Tuzla, Izmir Bay	2/89	2.25	Gürkan et al., 2022
				Gediz Estuary	52/776	6.7	Salman, 2023
				Güllük Lagoon	17/120	14.14	Bahrioğlu, 2025
				Lake Bafa	6/22	27.27	Kan et al., 2025
				drainage canals feeding Kocagöl Lake	32/131	24.43	Present study
Acanthocephala	Echinorhynchidae	*Acanthocephalus anguillae*	NA	Lake Sığırcı	NR/5	33.3**	Çolak, 2013
		Acanthocephalus clavula	Intestines	Köyceğiz-Dalyan	5/73	6.8	Çolak et al., 2012
		Acanthocephalus lucii	NA	Lake Sığırcı	NR/5	NR	Çolak, 2013
Copepoda	Ergasilidae	*Ergasilus gibbus*	Gills	Köyceğiz-Dalyan	38/73	52.1	Çolak et al., 2012

		Parasite species	Infection site	Location	Infection data*		References
					n (inf./exam.)	Prev. (%)	
				drainage canals feeding Kocagöl Lake	19/131	14.50	Present study
		Ergasilus lizae		Köyceğiz-Dalyan	19/73	26.0	Çolak et al., 2012
Mollusca	Unionidae	Glochidia (larvae)	NA	Lake Gala	NR/5	NR	Soylu, 2014

Abbreviations
NA: Not available; NR: Not reported.
*Infection data are presented as the number of infected/examined hosts [n (inf./exam.)] and prevalence [Prev. (%)].
**Prevalence values are reported as presented in the original source (Çolak, 2013). Although five *A. anguilla* specimens were reported as examined, the published prevalence values cannot be reconciled with this sample size; the number of infected hosts was not reported separately.

Anguillicola crassus (Kuwahara, Niimi & Itagaki, 1974), a swim bladder parasite of the European eel (*A. anguilla*), is an invasive nematode species widely reported throughout the Western Palearctic region (Jakob et al., 2009; Eren et al., 2025). In Türkiye, this parasite has been recorded on numerous occasions in European eels, with reported prevalence values ranging from 2.25% to 78.2% (Genç et al., 2005, 2008; Çolak et al., 2012; Çolak, 2013; Soylu, 2014; Koyuncu et al., 2017; İnnal et al., 2019; Gürkan et al., 2022; Salman, 2023; Bahrioğlu, 2025; Kan et al., 2025). In the present study, the prevalence of *A. crassus* was 24.43% (32/131).

The life cycle of *A. crassus* begins with reproduction by adult worms inhabiting the swim bladder of the eel. Eggs containing second-stage larvae (L2), produced by female nematodes, pass through the pneumatic duct into the digestive tract and are subsequently released into the aquatic environment with faeces of the host. Following hatching, the free-living L2 larvae are ingested by copepods, which serve as intermediate hosts, where they develop into the infective third-stage larvae (L3). When infected copepods are consumed by eels, the L3 larvae penetrate the intestinal wall and migrate to the swim bladder, where they develop into L4 larvae and subsequently mature into adults, thereby completing the life cycle (De Charleroy et al., 1990; Moravec et al., 1993).

Infection with *A. crassus* is known to induce pronounced structural and functional alterations in the swim bladder of the European eel (Kirk, 2003; Myrenås et al., 2023; Tınar & Umur, 2024). Larval migration and the blood-feeding activity of adult nematodes result in haemorrhage, inflammation, hyperplasia, and fibrosis of the swim bladder wall, which may lead to narrowing of the lumen and, in severe cases, complete collapse of the organ (Molnár et al., 1993; Van Banning & Haenen, 1990; Würtz & Taraschewski, 2000). These pathological changes impair the gas secretion mechanism of the swim bladder, reduce oxygen content, and significantly compromise swimming performance (Würtz et al., 1996; Sprengel & Lüchtenberg, 1991). Infected eels may also exhibit elevated stress responses, haematological disturbances, and increased susceptibility to mortality when exposed to additional environmental stressors (Boon et al., 1990; Sures et al., 2001; Kirk, 2003). Consequently, particularly under conditions of heavy infection, *A. crassus* may adversely affect both the migratory capacity and the overall physiological fitness of its host (Kirk, 2003).

To date, five species of the genus *Ergasilus* have been reported from fishes in Türkiye, namely *E. barbi* Rahemo, 1982, *E. briani* Markevich, 1933, *E. gibbus* von Nordmann, 1832, *E. lizae* Krøyer, 1863, and *E. sieboldi* von Nordmann, 1832 (Özer, 2022; Míč et al., 2025). Among these, *E. gibbus* and *E. lizae* have previously been reported infecting the European eel (*A. anguilla*) in Türkiye (Çolak et al., 2012). According to the comprehensive checklist compiled by Jakob et al. (2009), three

species of *Ergasilus* have been recorded worldwide on the European eels: *E. gibbus*, *E. lizae*, and *E. sieboldi*.

The morphological differentiation of these species is based primarily on the structure of the basal segment of the second antenna, the morphology of the fifth leg (P5), and the presence or absence of spiniform processes. In *E. gibbus*, the basal segment of the second antenna is distinctly swollen, and P5 is unsegmented, bearing two apical and one subapical seta. In contrast, the basal segment is not swollen in *E. sieboldi*, and P5 is two-segmented, with two setae on the distal segment. *Ergasilus lizae* can be distinguished from both species by the presence of a spiniform process at the junction of the exopod and endopod on the basis of the second leg (P2), as well as by a conspicuous dorsal depression between the cephalosome and the first pediger. Body length ranges from 1.2–2.0 mm in *E. gibbus*, 1.0–2.0 mm in *E. sieboldi*, and 0.8–1.2 mm in *E. lizae* (Kabata, 1979; Morales-Serna & Camacho-Zepeda, 2024).

In the present study, *Ergasilus* infestation was detected in 14.50% (19/131) of the examined eels, and all collected specimens were identified as *E. gibbus*.

Two species of the genus *Pseudodactylogyrus* have been reported parasitising the gills of the European eel (*A. anguilla*), namely *P. anguillae* (Yin & Sproston, 1948) and *P. bini* (Kikuchi, 1929) (Jakob et al., 2009). Both species have previously been recorded from European eels in Türkiye (Çolak et al., 2012; Çolak, 2013; Soylu, 2014). These species can be readily distinguished morphologically, primarily by the size and structure of the hamuli (anchors). In *P. anguillae*, the hamuli are long and slender, with dorsoapical hamuli measuring approximately 90–151 μm in length, whereas in *P. bini* they are shorter and more robust, measuring approximately 44–86 μm. In addition, *P. bini* possesses a shorter connecting bar and a longer cement gland, whereas *P. anguillae* is characterised by a longer connecting bar. The body width ranges from 138–364 μm in *P. anguillae* and from 120–336 μm in *P. bini* (Buchmann et al., 1987; Gelnar et al., 1996; Zolovs et al., 2016).

Infections with *Pseudodactylogyrus* spp. are associated with hyperaemia of the gills, excessive mucus production, destruction of gill tissues, penetration of the hamuli into host tissues, extensive haemorrhage, and epithelial hyperplasia (Køie, 1991; Buchmann & Bresciani, 2006). In the present study, *Pseudodactylogyrus* infection was detected in 58.78% (77/131) of the examined eels, and all recovered specimens were identified as *P. anguillae*.

Bothriocephalus Rudolphi, 1808 is a cosmopolitan genus of cestodes inhabiting the intestines of fishes, occurring in both freshwater and marine environments and infecting a wide range of fish orders. Although the genus comprises approximately 70 species, its taxonomy remains complex due to considerable morphological similarities among species, and the validity of many taxa remains controversial (Schmidt, 1986; Scholz, 1997a; Gil de Pertierra et al., 2015). In the fish fauna of Türkiye, the genus is represented by three species: *B. acheilognathi*, *B. claviceps*, and *B. scorpii* (Özer, 2021).

Bothriocephalus claviceps, an intestinal cestode considered a host-specific parasite of eels (*Anguilla* spp.), has been reported only rarely from Türkiye, and information on its occurrence and prevalence remains limited (Scholz, 1997b; Soylu, 2014). Studies conducted in different countries have reported prevalence values ranging from 0.6% to 61.5% (Jakob et al., 2016). In the present study, *B. claviceps* was detected in 3.82% of the examined eels (Table 1). The relatively low prevalence of *B. claviceps* in the present study may partly reflect local ecological conditions and its indirect transmission strategy. The sampling site was a slightly brackish drainage-channel habitat (salinity 3.1‰), and transmission of *B. claviceps* depends on suitable copepod intermediate hosts, the availability and composition of which may influence infection levels in eel populations (Nie & Kennedy, 1992; Scholz, 1997b). Host size and associated feeding habits may also affect exposure, as smaller eels have been reported to consume proportionally more small crustaceans involved in the transmission of *B. claviceps* (Kristmundsson & Helgason, 2007).

The present study has several limitations that should be considered when interpreting the findings. The examined eels were obtained from a single sampling area within the Kocagöl Lake drainage system and during a single sampling period. Therefore, the prevalence and diversity of parasites observed in the present study should be regarded as representative of the sampled population and period rather than of European eel populations throughout Türkiye. In particular, the single-period sampling design does not allow assessment of potential seasonal variation in parasite occurrence and infection levels.

Consequently, the potential effects of ecological factors, such as habitat characteristics, seasonality, and salinity, on parasite diversity and infection levels could not be fully evaluated. Future studies incorporating repeated seasonal sampling across multiple localities and years would provide a more comprehensive understanding of the spatial and temporal dynamics of European eel parasite communities in Türkiye.

5. CONCLUSION

In conclusion, although 161 parasite species/taxa have been reported from the European eel (*Anguilla anguilla*) across approximately 30 European and North African countries (Jakob et al., 2016), knowledge of the parasite fauna of the European eel (*A. anguilla*) in Türkiye remains relatively limited, with only 14 taxa reported to date (Table 2). The available literature indicates that most studies have focused primarily on the invasive swim bladder nematode *A. crassus* rather than on the overall parasite community of the host. This emphasis is likely attributable to the high pathogenicity of the parasite and its well-documented effects on host health, fitness, and population dynamics. Nevertheless, comprehensive investigations addressing the full spectrum of parasitic diversity associated with European eels remain scarce. The limited number of studies conducted in Türkiye highlights the need for further research on species diversity, geographical distribution, and host–parasite relationships in this threatened fish species. In this context, the present study expands current knowledge of the parasite fauna of *A. anguilla* in Türkiye and provides additional baseline data for future ecological, parasitological, and conservation-oriented studies.

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CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests.

AUTHOR CONTRIBUTIONS

Conceptualisation: GE, EV, AM, UO; Methodology: GE, EV, AM, UO; Necropsy and parasitological examination: GE, EV, AM, UO, NBM; Identification of parasite specimens: GE; Histopathological analyses: EV; Data analysis: GE, EV; Investigation: GE, EV; Manuscript writing: GE, EV, UO; Supervision: GE. All authors approved the final draft.

ETHICAL STATEMENTS

This study was approved by the Animal Experiments Local Ethics Committee of the Mediterranean Fisheries Research, Production and Training Institute, Türkiye (Approval No: 2022/05; 16 May 2022).

DATA AVAILABILITY STATEMENT

Data supporting the findings of the present study are available from the corresponding author upon reasonable request.

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