

A study on the behaviour and reproduction of the weedsucker, *Eckloniaichthys scylliorhiniceps* (Smith, 1943)

Abstract

Eckloniaichthys scylliorhiniceps (Gobisociadae) is a highly abundant but little studied fish endemic to Southern Africa. Like other species in the family it adheres to substrates using its modified pelvic fins that form a disc. Observational data and samples were obtained near Simon's Town, South Africa. The average length was found to be greater than first reported by Smith (1943) and is now 49mm for females (n=14) and 38 mm for males (n=17). The diet of the weedsucker was found to consist wholly of crustacean meiofauna. Internal fertilization occurs and females lay between 120 and 150 eggs on the fronds of kelp. Reproduction is thought to take place year round. Further work needs to be conducted on predators of weedsuckers, tentatively suggested here to be diving birds (such as *Phalacrocorax capensis*) and mid-level benthic predators (such as *Poroderma africanum*). *Eckloniaichthys scylliorhiniceps* is an important part of the subtidal kelp forest ecosystem as it provides a link in the trophic food web between crustacean meiofauna and higher-level predators.

Chris Wilkes

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Supervisor: Colin Attwood

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The gobisociadae

The family Gobisociadae comprises 47 genera containing 161 species. Commonly known as cling-fish or sucker-fish, the family has a pan-global distribution and is found mostly in tropical or warm temperate shallow waters (Briggs, 1986). The defining and eponymous feature of the family is the proportionally large, adhesive or sucking disc found on the ventral side of the fish (Briggs, 1955). This disc is formed by the fusion of the pelvic fins and is covered in small papillae in various configurations. This disc allows the clingfishes to adhere strongly to substrates, which in turns makes clingfish particularly suited to areas with rough and turbulent sea conditions (Briggs, 1986). Their small size along with this ability to cling to rocks, algae or sea grasses facilitates the highly cryptic nature of clingfishes. This cryptic nature means that the study of clingfishes is difficult and the published literature rarely goes beyond an initial description. New clingfish species are still being discovered (see Briggs, 2002; Sampaio et al, 2004) and other relatively recent studies are beginning to focus on aspects of behaviour and physiology of this large and diverse family (see Cancino and Castilla, 1988; Gill, 1996; Patzner, 1999; Hofrichter and Patzner, 2000; Munoz and Zamora, 2011; Contreras et al, 2013).

In South Africa there are five species of clingfish described (Smith, 1986). One of these is *Eckloniaichthys scylliorhiniceps*, the weedsucker (Smith, 1943). There has been very little attention given to this ubiquitous fish. First described by JLB Smith in 1943, the external morphology was detailed and the distribution of *E. scylliorhiniceps* was said to extend from the Kei River to Port Elizabeth. Two years later Smith included *E. scylliorhiniceps* in his Sea Fishes of Southern Africa (Smith, 1945). The distribution was extended dramatically, and the range of *E. scylliorhiniceps* would extended from Lüderitz in Namibia through to the Kei River. Smith also added that *E. scylliorhiniceps* reproduces through internal fertilization and lays 10-20 eggs. The reference given for this new information was Smith's 1943 paper in which *E. scylliorhiniceps* was first described but this paper contains no mention of reproduction or egg-laying whatsoever.

E. scylliorhiniceps then underwent somewhat of an academic hiatus and only reappeared again in the 1960s in a paper on the modes of reproduction in fishes by Breder and Rosen (1966). This paper merely mentioned that *E. scylliorhiniceps* practices internal fertilization and the reference given was Smith's Sea Fishes (1955). From here it is mentioned again throughout the literature as an example of internal fertilization and always referenced back to

either Smith (1943) or Breder and Rosen (1966). These authors all reference the 1955 edition of Smith's Sea Fishes. Jachowksi (1970) contrasts the reproductive behaviour of the emerald clingfish (*Acyrtops beryllinus*) with that of *E. scylliorhiniceps*. Jachowksi refers to Breder and Rosen in his article. This pattern repeats itself with Ridley's Paternal Care (1978). The entry by JC Briggs, perhaps the world's foremost expert on clingfish, in Smith's Sea Fishes (1986) merely reiterates the initial description given by Smith in 1943. Thus, there exists a situation in which knowledge of *E. scylliorhiniceps* is restricted to one paper on which all others have expounded. The observational basis for the description therefore remains unclear.

There is one exception. In 1969 Mary-Louise Penrith captured a specimen in Lüderitz, Namibia and described its morphology (Penrith, 1969). The morphological description is similar to that first given by Smith in 1943, with the exception that a female was described. Penrith also notes that the colour of the specimens found west of False Bay are brown with a creamy underside, whilst those east of False Bay are bright green. This paper does not describe any behavioural or reproductive attributes of *E. scylliorhiniceps* nor does it comment on its ecology other than to say that it is very rare.

E. scylliorhiniceps reappeared in the literature in the 1980s. Allen and Griffiths (1981) conducted a survey on the flora and fauna of subtidal kelp canopies around the Western Cape. *E. scylliorhiniceps* was found to be the most abundant fish species in these surveys at a depth of between 0 m and 5 m, occurring at a density of 3 individuals.m⁻². Contrary to the claims of rarity put forward by Penrith (1969), the study found that *E. scylliorhiniceps* was the most abundant faunal component in the shallow water region (0-5 m). Later work by Prochazka (1995) confirmed that *E. scylliorhiniceps* is abundant in the kelp forests of the Cape Peninsula although on an order of magnitude smaller than what Allen and Griffiths (1981) found. However, two different methods were used to estimate density. Sampling of larval plankton in the mouth of the Kowie River Estuary by Kruger and Strydom (2011) showed that *E. scylliorhiniceps* dominated the faunal catches, making up 38% percent of the larval plankton in that area. A study by Smale and Buxton (1989) on the subtidal gully fish community found specimens of *E. scylliorhiniceps*. This is perhaps indicative of its cryptic nature and its close association with kelp. Smale and Buxton's study aside, the studies mentioned above all indicate that *E. scylliorhiniceps* is a highly abundant and widely distributed marine fish.

Apart from these studies there is very little or no mention of *E. scylliorhiniceps* in the scientific literature. The behaviour and a formal description of its reproductive methods have not been conducted. This could partly be due to the nature of this species. Whilst abundant, it is highly cryptic due to its small size and its colouration. It shows a variety of colour morphs which allow it to blend into the kelp (Penrith, 1969). This means that studying the behaviour of such a species is difficult (Willis and Anderson, 2003; Prochazka, 1998).

The character of the subtidal zone around much of South Africa makes any study challenging (Smale and Buxton, 1989). Turbulent waters combined with low visibility and cold water make any long-term observations daunting. Thus any mention of *E. scylliorhiniceps* occurs only when sampling methods have managed to remove the fish when it has already perished, as in the wholesale removal of kelp as in Allen and Griffiths (1981) or the blanketing of large areas of kelp forest with the fish poison, rotenone, as in Prochazka (1998). This is the first study of the behaviour of *E. scylliorhiniceps* and it is the first formal description of its reproductive methods.

If this fish is as abundant as previous studies have suggested then it may form an important part of the sub-tidal kelp forest ecosystem. Its behaviour and feeding methods therefore might have an impact on the sub-tidal ecosystem larger than its small size would suggest. As such, the diet and behaviour of this important ecosystem component needs to be formally ascertained.

There is no formal description of the reproductive habits of *E. scylliorhiniceps*. The existing literature outlines a distribution and an external morphology, and very little else. This study was undertaken to answer key questions concerning the behaviour, reproduction, and ecology of *E. scylliorhiniceps*.

Methods

Behavioural observations and capture of fish were conducted at A-Frame, near Simon's Town on the Cape Peninsula, South Africa (S34°12.484' E018°27.662') in 2013. The site was chosen due to its ease of access and relatively sheltered conditions

Behavioural observations were conducted by free diving and SCUBA diving, with the majority being conducted on SCUBA. A GOPRO (ver. Hero 3 Black edition) underwater

camera was used in conjunction to note taking to record visual data. A dive computer was used to record depth and temperature at each site.

Searches were conducted in a grid pattern until the fish was found. Thereafter the subject would be observed from a distance of 1.5m to 2m. Notes on the following were recorded: position on kelp, orientation on kelp, depth, total epiphyte load on kelp (low, medium or high), species of kelp, presence or absence of other organisms on kelp.

Collection of specimens was conducted whilst freediving and using SCUBA. Several methods were attempted in the collection of *E. scylliorhiniceps*. Initially, a simple handheld fishing net on a short bamboo pole was used whilst underwater in an attempt to net the fish. This proved unsuccessful. Another method that was attempted was using a slurp gun of a kind similar to that used in the collection of wild tropical fish for use in aquaria. *E. scylliorhiniceps* proved to be too skittish for this method to prove effective.

A large net was also designed and fabricated that would envelope an entire individual kelp. The kelp would then be severed at the holdfast and the entire kelp brought to the surface and examined for the presence of weedsuckers. This method was abandoned almost immediately due to the logistical requirements and a poor cost:benefit ratio. The destructive nature of this type of sampling was also a factor in deciding against it.

Eventually, a 1:9 mixture of clove oil, *Syzygium aromaticum*, and 90% ethanol was used to anesthetize the fish prior to capture (Soto, 1995). The clove oil mixture was stored in a plastic squeeze bottle with a 15cm long nozzle. Once located, the fish would be approached cautiously from below. Taking note of the prevailing current a small jet of the clove oil mixture would be released into the water in order to reach the fish. The mixture was released below the fish because the clove oil floats to the surface. If the fish was not noticeably affected by the mixture a second jet was squirted out to surround the fish. This would normally result in the specimen being suitably retarded to make capture with a small fishing net relatively simple. On a few occasions the dose of clove oil resulted in the fish being totally stunned and releasing its grip on the kelp. Most of the time, though, a chase of some sorts to net the fish was necessary. Once the fish was securely in the net it was transferred to a clear plastic sample jar filled with seawater. A lethal dose of clove oil mixture (~15ml) was added to the jar at this point. Death occurs after approximately 30 seconds. These specimens were then transported to the laboratory where they were either frozen or preserved in formalin.

Dissections were conducted and reproductive organs and stomach contents were examined. Prey items were identified down to the lowest possible taxon and counted. MDS and cluster analyses were performed to determine a difference in the gut contents between juveniles and adults.

The gonads were removed and weighed in order to determine the gonadosomatic index (GSI) using the equation:

$$\text{GSI} = (\text{Gonad mass} / \text{Body mass} - \text{gonad mass}) \times 100$$

(Kreiner et al, 2001).

A Student's t-test was performed on the mass, length, gonad mass, and GSI of males and females to test whether there was a difference between males and females with regard to the aforementioned metrics.

Results

Table 1. Average mass, length, gonad mass, and GSI of mature male and female specimens sampled in the study (male n=17; female n=14). Included are the t-test results indicating significant difference for all but GSI.

	H ₀	♂ (n=17) \bar{x}	SD	♀ (n=14) \bar{x}	SD	T (d.f =29)	p	Reject H ₀ ?
Mass (mg)	♂ = ♀	546	77.6	1166	152.4	14.66	0.00	Yes
Tail Length (mm)	♂ = ♀	38	1.9	49	2.5	13.63	0.00	Yes
Gonad Mass (mg)	♂ = ♀	74	9.0	147	15.2	16.67	0.00	Yes
GSI (%)	♂ = ♀	14	1.1	13	2.3	1.67	0.15	No

There were multiple colour morphs observed in the observed and specimens (see Fig 1).

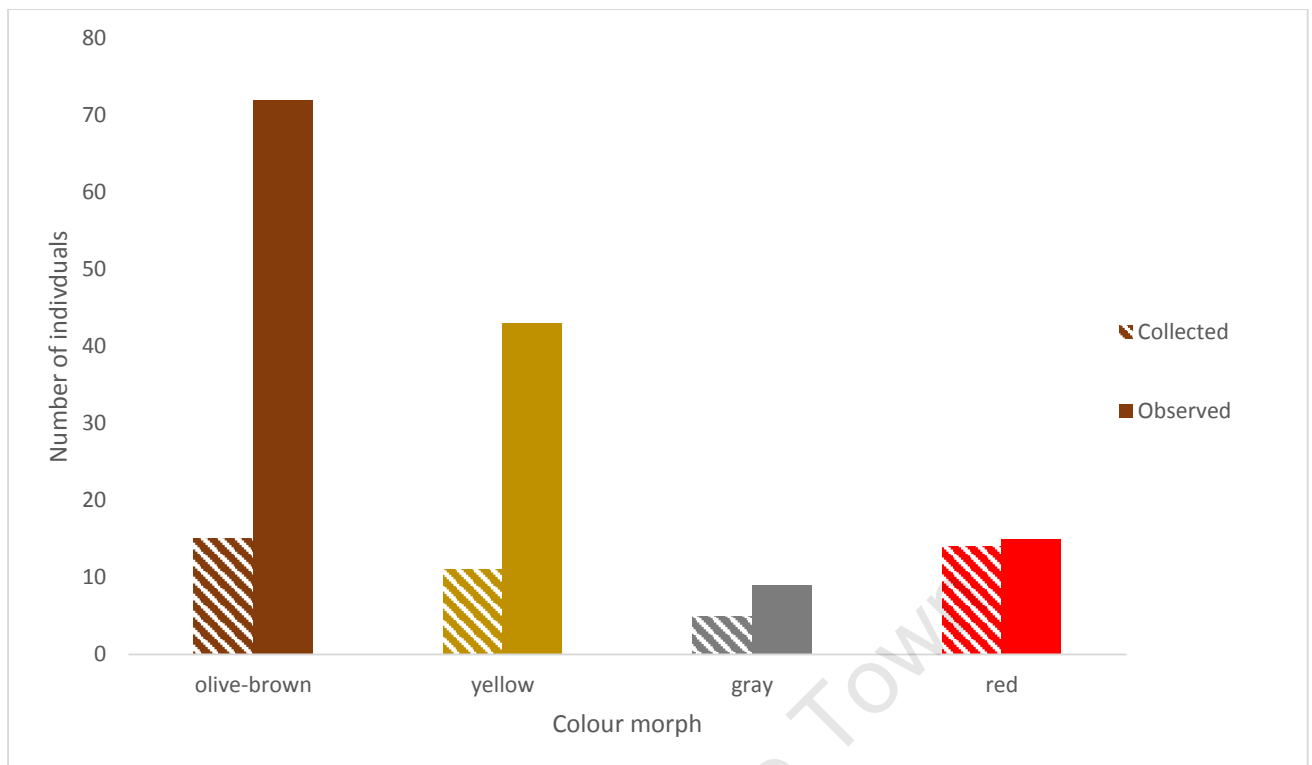


Figure 1. The number of specimens of each colour as represented in the samples observed and collected. The number observed includes specimens that were collected. The highest number of mature individuals were olive-brown (n=15), followed by yellow (n=11), then grey (n=5). All the red individuals were juveniles (n=14).

Individuals had speckled, circular patterns on the dorsal region regardless of colour with lighter underbellies. The juveniles had red dorsal sides and white underbellies. The colouration on the juveniles was striped in the smaller individuals (<5 mm) which began to resemble the patterns seen on the adults as the juvenile grew larger (5 mm-10 mm).

All of the specimens were scale-less and covered in a thick mucous layer. The mucous layer was uniform over the entire length of the body.

There were 14 sexually immature specimens captured that ranged in size from 4.9 mm to 26 mm. The juveniles resembled the adults closely in all but colour, which was a distinct red. The sucker-dish was fully formed on all of the juveniles. The juveniles were differentiated from the adults by a lack of developed gonadal tissue. This made sexing the specimens impossible.

Diet

The stomach contents of all the examined specimens comprised exclusively of crustacean meio-fauna. This diet of crustaceans was uniform in all *E. scylliorhiniceps* examined, from the smallest juvenile to the largest female. The gut consisted of a wide variety of isopods, amphipods, and copepods. Most were unidentifiable as they had already been partially digested but there were prey items that had only just been consumed with the organism still intact.

Identifiable prey items ranged in size from 0.5 mm to 5 mm. The two charts below only represent those prey items that were identifiable. Those which were not identifiable consisted mostly of partially digested carapaces and limbs. These made up about five percent of the gut contents. The abundance of identifiable prey items and the prevalence of those items were recorded in table 2.

Table 2. Gut content analysis (n=48) showing prey items divided by class or order where applicable. Occurrence (n) indicates the number of specimens in which that prey item was found. Occurrence (%) is the proportion of the specimens as a whole in which the prey item was found. Avg. Proportion (%) indicates the proportion of the gut contents that can be attributed to the prey item, averaged across all specimens in which that prey item was found.

<u>Prey item</u>	<u>Occurrence (n)</u>	<u>Occurrence (%)</u>	<u>Avg. Proportion (%)</u>
<u>Amphipoda</u>			
<i>Paramoera capensis</i>	42	88	15
<i>Porcellidium species</i>	41	85	25
<i>Hyales grandicornis</i>	38	79	20
<i>Leucothoe spinicarpa</i>	28	58	4
<u>Ostrocooda sp.</u>			
Ostrocod sp.	40	83	12
<u>Leptostraca</u>			
<i>Neballia capensis</i>	24	50	10
<u>Calanoida</u>			
Centropages sp.	15	31	2
<u>Isopoda</u>			
<i>Cirolana imposita</i>	9	19	2
<i>Joeropsis stebbingi</i>	4	8	4
<i>Spharamene polytylotos</i>	2	4	1
<u>Tanaidacea</u>			
Taniad sp.	3	6	5

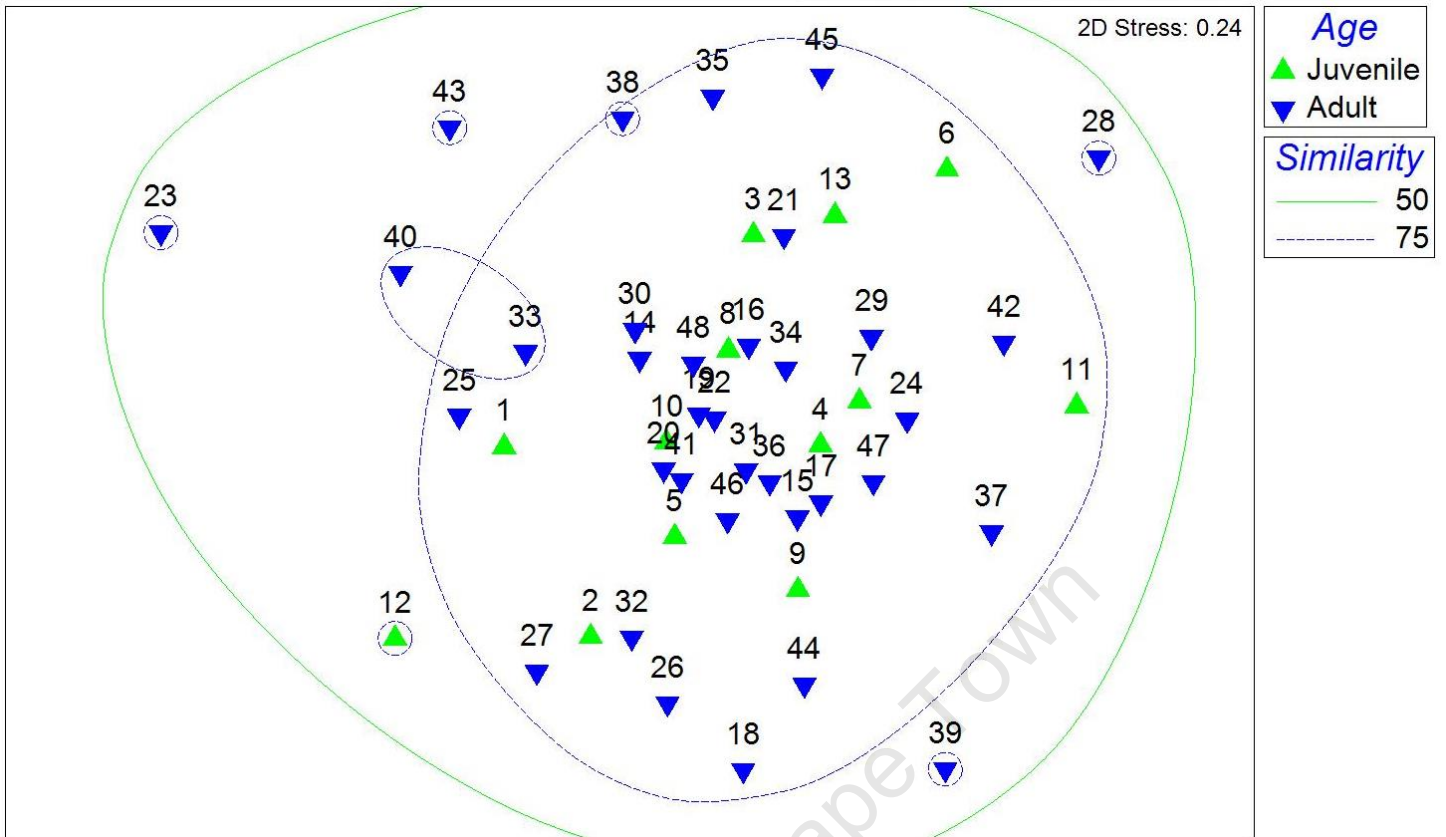


Fig 2. Gut content MDS analysis with cluster overlay at 50% and 75% levels of similarity (n=48). Juveniles are represented by green triangles and adults are represented by blue triangles.

There was no correlation between size of *E. scylliorhinceps* and prevalence of a particular prey item. The variation seen in the adults was the same as seen in the juveniles.

Reproduction

Average GSI for mature males and females was 16% and 15% respectively. The gonads ranged in length from 3-5 mm. The average mass of male gonads was 74 mg and the average mass of the female gonads was 147mg. Within each ovary there were approximately 100-150 eggs in varying stages of development. On average the amount of ripe eggs (eggs that were yellow and roughly 1 mm in diameter) was 60-80 per ovary. The rest of the eggs were 0.5 mm in diameter and smaller, and were clear in colour. These unripe eggs were found at the anterior end of the ovary.

Males of the species are readily identifiable and have relatively large (2-4 mm), protruding urogenital papillae. A duct runs through the centre of the organ and is connected to the testes. Found posterior to the anal opening, this organ is normally curled up beneath the male's body. During copulation this intromittent organ is extended and used to deliver sperm to the female. The females have a much reduced organ similar in appearance also posterior to the anal opening. It partially covers the urogenital opening of the female.

E. scylliorhiniceps undergoes internal fertilization. Copulation is conducted with the male of species clinging to the back of the female. The intromittent organ of the male then curls around the body of the female and up into the urogenital opening. Copulation occurs whilst the female is adhered to the stipe of the kelp. Approximately 150 eggs are laid at a time, based on 2 observations in the wild. The eggs are round and yellow in colour, with an average diameter of 1 mm.

Behaviour

E. scylliorhiniceps was encountered at a only at a depth of 5 meters or shallower. Dives below 5 meters did not reveal any individuals whatsoever. There were 140 individual observations of *E. scylliorhiniceps*. When encountered *E. scylliorhiniceps* was adhered to the stipe of *Ecklonia maxima* in one of three orientations: facing directly up (40%), facing directly down (55%), or horizontal (5%). Most (n=130) were found alone on the kelp but some (n=10) were found with two or more individuals on the same stipe.

Feeding

E. scylliorhiniceps clings to the stipe of fronds of algae using its adhesive disc it is able to make very fast 'leaps' along the stipe. It utilizes this ability to catch prey and whilst under observation the weedsucker is still for only very short periods (10-20 seconds) before it moves to capture more prey. There were no witnessed attempts to capture free-swimming prey. The swimming is typical of fish that do not possess swim-bladders. All prey items were captured on the same stipe as *E. scylliorhiniceps*. The leaps towards a prey item were estimated to be between 20 mm and 80 mm. Often the prey items were swallowed whole, but mastication of larger prey items was also witnessed.

Avoidance behaviour

When approached, in this instance by a SCUBA diver, *E. scylliorhiniceps* will move around to the opposite side of the kelp stipe in an attempt to hide. When threatened, by a net or a diver getting too close, *E. scylliorhiniceps* will dart up into the canopy of the kelp and adhere itself to the fronds. Normally this is the same kelp plant but on rare occasions *E. scylliorhiniceps* will dart quickly to another plant if it is close enough. Away from the kelp these fish are poor swimmers and are easy to capture if brushed off the kelp. On several occasions *E. scylliorhiniceps* would become dislodged from the kelp and seek sanctuary on the very same diver that was trying to capture it. This tactic would often succeed as the fish is difficult to find once attached to a dark wetsuit.

Discussion

Smith (1943), and all authors since, have reported the length of *E. scylliorhiniceps* as 35 mm. This study indicates the average length of the sexually mature individuals is greater than the previous reports have indicated and is 49mm for females (n=14) and 38 mm for males (n=17). There is also a significant sexual dimorphism with the females being both heavier and longer than the males.

The thick mucous layer has been described before on other clingfish and interpreted as a defence against desiccation (Cancino and Castilla, 1988). A study by Hori et al (1979) showed that for at least one species of clingfish this mucous was an effective ichthyotoxin, and they surmised that it was intended for predator defence. This might be the case for *E. scylliorhiniceps*. Their slow response to predation (in this case a human with a net) could mean that *E. scylliorhiniceps* relies on other means to prevent predation.

Penrith (1969) indicated that there were two colour morphs in the species. An olive-brown colour morph that extend from Luderitz to False Bay, and a light green colour morph that extended from False Bay eastwards to the Kei River. This study found several different colour morphs, more than the two mentioned above. This leads to several questions that

would benefit from further study: are the two colour morphs hybridizing in False Bay and producing the variety exhibited in this study? Or are there two species of weedsucker represented in South Africa? The range of *E. scylliorhiniceps* extends through two different and distinct temperature regimes, that of the West Coast and South Coast, with fairly different ecologies (Bustamante and Branch, 1996) therefore the existence of two similar species is likely.

E. scylliorhiniceps, like other members of the family, is strictly carnivorous (Briggs, 1986). Even at early life stages when the individuals are still sexually immature the diet is similar to that of fully grown adults. The content also shows the same variation as the adults. This indicates that there is no shift in diet during the course of *E. scylliorhiniceps*'s life. There was also a large variation in the diet. This is contrary to the findings of Prochazka (1994). Her study on cryptic fish communities in the nearby Miller's Point found only *Percillidium* sp. in all of *E. scylliorhiniceps* sampled (n=22). The specimens that were sampled in this study showed gut contents that exhibited many of the common crustacean meiofauna present in the subtidal areas of False Bay. Some of the contents were identified to the species level. This was possible due to the prey having been recently consumed. Other contents allowed identification to order only due to partial digestion. There were certainly more than one species in the gut contents of all weedsuckers sampled. The abundance of each prey item also reflected the relative abundance of the prey in the general environment (Field, 1971; Allen and Griffiths, 1981; Bustamante et al, 1995). For example, *Paramoera capanesis*, *Hyales grandicornis*, and *Leucothoe spinicarpa* are three of the most common amphipods in the subtidal kelp community and this is reflected in the gut contents of *E. scylliorhiniceps* (See table 2). This indicates that that *E. scylliorhiniceps* is undiscerning in its choice of prey because it is simply consuming the most abundant prey available rather than seeking out particular species on which to feed.

It is possible, due to the small size and degraded condition of the prey items, that misidentification might have occurred for some of the species. But this would be at the lower taxa levels rather than a mistaken phylum. Therefore this does not alter the conclusions that can be drawn from the gut content analysis: *E. scylliorhiniceps* feeds exclusively on crustacean meiofauna.

Modes of fish reproduction vary dramatically (Breder and Rosen, 1966). The strategies run the full gamut of monogamous mate monopolization to aggregated spawning events on a large scale (Taborsky, 1998). The reproductive strategy of *E. scylliorhiniceps* is unusual as a relatively small number of teleost fish undergo internal fertilization (Meyer, 1993). Further observational work on how the process of mate selection is accomplished would be enlightening. Often two or more males would be found on the same kelp or on adjacent kelp. This could mean there is no territorial aspect to the ranges of the males. Rather, it might be the females that control territory as the females, with their larger size, were found always alone. This can only be speculated because the evidence is very thin.

E. scylliorhiniceps does not seem to undergo any courtship ritual found in some species of fish (Yanagisawa, 1982; Hagedorn and Heiligenberg, 1985; Amorim, and Almada, 2005). There is no parental care of the eggs during the gestation period but observations of eggs on fronds in the wild are few (n=2). The eggs are simply laid onto a frond of kelp in a tight agglomeration with no mature individual, male or female, nearby.

The GSI value for both males and females showed little variation over the time period sampled. The differentiation in the eggs, with some being clear, transparent and small and others large, yellow and ripe, indicate that there is no set spawning period (Hunter and Leong, 1985). Rather, the above indicates that *E. scylliorhiniceps* is able to continuously reproduce throughout the year. The density in which the species occurs would indicate that there is little difficulty in finding a mate. This would mean that the only impediment to reproduction would be food availability (Shultz et al, 1991). With the abundance of phytoplankton and zooplankton, including crustacean meiofauna, undergoing seasonal variation (Cliff, 1982; Field, 1971; Bustamante et al, 1995) food availability in False Bay could have an impact on the reproductive behaviour of *E. scylliorhiniceps*. But rather than completely halting the reproduction the time for a batch of eggs to ripen could increase. Therefore there could be a decrease in reproduction when food supplies begin to dwindle but not a complete stop. There is no evidence to indicate a spawning season but specimens were only collected for the period June-September.

The most likely predators of weedsuckers are diving birds such as cape cormorants (*Phalacrocorax capensis*) and larger fish species such as pyjama catsharks (*Poroderma africanum*). Studies on the diet of cormorants indicate that they often prey on small species of goby and other small teleost fish (Duffy et al, 1987).

Catsharks are known to feed on small reef fish, squid and octopus (Ebert et al, 1996). Studies have shown that the pyjama catshark will attempt to ambush squid when presented with the chance (Smale et al, 1995). This behaviour would be effective against *E. scylliorhiniceps*, making the catshark a potential predator.

Its abundance and voracious appetite for a wide variety of crustacean meiofauna indicate that *E. scylliorhiniceps* is an important link in the trophic web of subtidal kelp forests. Further work to identify the main predators would be beneficial to determine the nature of the energy flows from kelp to meiofauna to ichthyofauna and beyond. This study has expanded upon and formally clarified the existing information regarding *E. scylliorhiniceps*.

The findings of Kruger and Strydom (2011), in which *E. scylliorhiniceps* larvae dominated the faunal component of the Kowie Estuary are surprising. Previous studies have indicated that sparids and other species that rely on estuaries as nursery areas normally make up the highest proportion of the ichthyofaunal larvae in estuaries around South Africa (Beckley, 1983; Bennet, 1989; Cowley et al, 2001). The smallest juvenile *E. scylliorhiniceps* specimen recovered was 4.9 mm, indicating that there is not much growth occurring between hatching, spending time as midwater-pelagic larvae and then returning to the kelp plant. This short duration spent as larvae has been found with other species of Gobiosociade (Beldade et al, 2007) but the unusual aspects of Kruger and Strydom's (2011) findings are the abundance and location of the *E. scylliorhiniceps* larvae. Beldade et al (2007) indicate that species with short pelagic larval stages normally remain very close to shore, normally in the same area in which they hatched. Therefore it seems unlikely that *E. scylliorhiniceps* would have a life stage in which it would congregate around estuaries or travel far in its pelagic larval phase.

A repeat of the survey conducted by Alan and Griffiths (1981) is necessary in order to ascertain the current numbers of *E. scylliorhiniceps*. Abundance of weedsucker as reported by Prochazka (1998) is 10 times less than Alan and Griffiths found. The methods were different therefore it is necessary to determine whether this was an artefact of either study or if there is indeed a significant drop in the population of *E. scylliorhiniceps*.

E. scylliorhiniceps is a prime example of hiding in plain sight. This study has answered a few questions and created many more. Often the cryptic fish are overlooked and therefore it is difficult to gauge any change in community structure or abundance, not to mention behaviour and reproduction. Hopefully this study has nudged the weedsucker into the light of day and prepared it for further scrutiny.

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