

## FOOD HABITS OF SEASTAR *Asteropecten polycanthus polycanthus* MULLER AND TROSCHEL FROM NORTH – WEST ARABIAN GULF

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### ABSTRACT

A total of 158 specimen of seastar collected during the period from Feb. 1999 to Apr. 2000 from Khor Al- Umia (North-West Arabian Gulf). The stomachs of all collected seastar were dissected and the food composition were analyzed. Mollusca occurred in 87% of all stomachs containing food and contributed 94% of food volume. The most important food items were *Monodonata vermiculata*, *Mitrella blanda*, *Solen vagina*, *Paphia texilla*. There was no distinct seasonal difference in the composition of the diet, but tendency to minimize feeding activity in February-April, probably related to the spawning period.

**Keywords:** Seastar , Food habits , Seasonal changes , Khor Al- Umia

### INTRODUCTION

The Starfish *Asteropecten polycanthus* is widely distributed in the Northern Arabian Gulf (1). There was no previous study on the feeding biology of this species in Iraq. Meanwhile, there were many investigations on the feeding habits of several species throughout the world. The feeding behavior of the seastar *Meyenaster gelatinosus* was studied in the Chilean coast and reported that this species

feeds on different types of Gastropoda (2) . The competitive interaction between the seastar *Leptasterias polaris* and *Asterias vulgarius* was studied (3).

The aim of the present study is to investigate the following (1) the main food items of *Asteropecten polyconthus*, (2) the Seasonal changes in the diet composition of this species .

### MATERIALS AND METHODS

Specimens were collected from Khor Al- Umia (North-West Arabian Gulf)(fig.1) during the period from February 1999 to April 2000 by using the trawl ( 2 meter wide ) drown about 3000 meters along the bottom . The stomach of 158 *Asteropecten polycanthus polycanthus* were examined as soon as possible after fixation by using formalin 8%.

The composition of diet was recorded by the point method (4). Each stomach was investigated separately. The fullness was first assessed, and

(irrespective of size of the seastar) a fully distended stomach received 32 points, while 1,2,4,8,16, 24. points were given according to the relative proportion of the stomach content in relation to full stomach, after the fullness of the stomach was assessed the total number of points were subdivided between the various food items present using the same point values, The sum of point given to each type of food was given as percentage of the total, given of quantitative expression of composition of the diet.



**Table (2) Number of point and percentage of mollusca (prosobranchi and lamellibranchia) in stomach of *Astropecten polyacanthus polyacanthus* .**

Species	No. of point	%
<i>Mondonta vermiculata</i> (Proso.)	403	23.43
<i>Mitrella blanda</i> (Proso.)	363	21.1
<i>Clypeomorus Caeruleum</i> (Proso.)	83	4.8
<i>Dentalium octangulatum</i> (Proso.)	53	3.0
<i>Nassarium arcularius plicatus</i> (Proso.)	34	1.97
<i>Natica vilellus</i> (Proso.)	41	2.38
<i>Solen vagnia</i> (lamell.)	343	19.94
<i>Paphia gallus</i> (lamell.)	332	19.30
<i>Paphea gallus</i> (lamell.)	27	1.56
<i>Mitra sp.</i> (Proso.)	26	1.51
<i>Apolymetis angulata</i> (lamell.)	15	0.87
Total	1720	

**Seasonal variations**

There were no distinct seasonal variation in the composition of diet of the seastar (Table 3). The proportion of mollusca, the dominant food group varied between 94 % and 97 %. This variation here is believed to be caused by variation in sampling site rather than seasonal variation. Table (4) shows

that the percentage of feeding is high in summer (June 1999) and autumn (October 1999) with the lake of sampling during Spring 1999 while the decline occurred in winter (64 %) (February 1999) and to 84 % (February 2000). It was also low in spring 76 % (April 2000).

**Table (3) Seasonal variation in the composition of diet of seastar *Astropecten polyacanthus*.**

Seasons	Percentage of food items		
	Mollusca	Crustacea	Fish remains
Winter 25/2/1999	95.31	2.34	2.08
Summer 13/6/1999	94.58	5.42	0
Autumns 17/10/1999	94.33	4.71	0.95
Winter 22/2/2000	97.26	2.74	0
Spring 20/4/2000	97.27	2.04	0.68

**Table (4) Seasonal variation in the amount of food taken by *Astropecten polyacanthus* in Khor Al-Umia.**

Parameters	Winter	Summer	Autumn	Winter	Spring	Total
	25.2.1999	13.6.1999	17.10.99	22.2.2000	20.4.2000	
No. of seastar examined	33	51	44	17	13	138
Total no. of point allotted	369	554	530	204	147	1804
Mean no. of point per seastar feeding	13.17	11.54	13.25	18.24	14.7	
No. of seastar feeding	28	48	40	11	10	132
Percent feeding	84 %	94 %	90 %	64 %	76 %	



طبيعة الغذاء لنجم البحر  
*Asteropecten polycanthus polycanthus* mullur and Troschel  
في شمال غرب الخليج العربي

خيري دفار سعود  
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الخلاصة

جمع 158 نموذج من نجم البحر *Asteropecten polycanthus polycanthus* من منطقة خور العمية (شمال غرب الخليج العربي) للفترة من شباط 1999 ولغاية نيسان 2000 وفحصت معدها مختبريا . شكلت النواع نسبة 87 % من مجموع المعد المفحوصة و 94 % من حجم الغذاء وان اهم الانواع التي ظهرت هي النواع *Mitrella blanda* ، *Monodonta vermiculata* ، *Paphia texilla* ، *Solen vagnia* . كما لوحظ عدم وجود تغيرات فصلية واضحة في تركيبة الغذاء للنوع المدروس. ولكن هناك انخفاض في نشاط التغذية في الفترة من شباط إلى نيسان.

مفاتيح داله : نجم البحر , طبيعة الغذاء , تغيرات فصلية , خور العمية .