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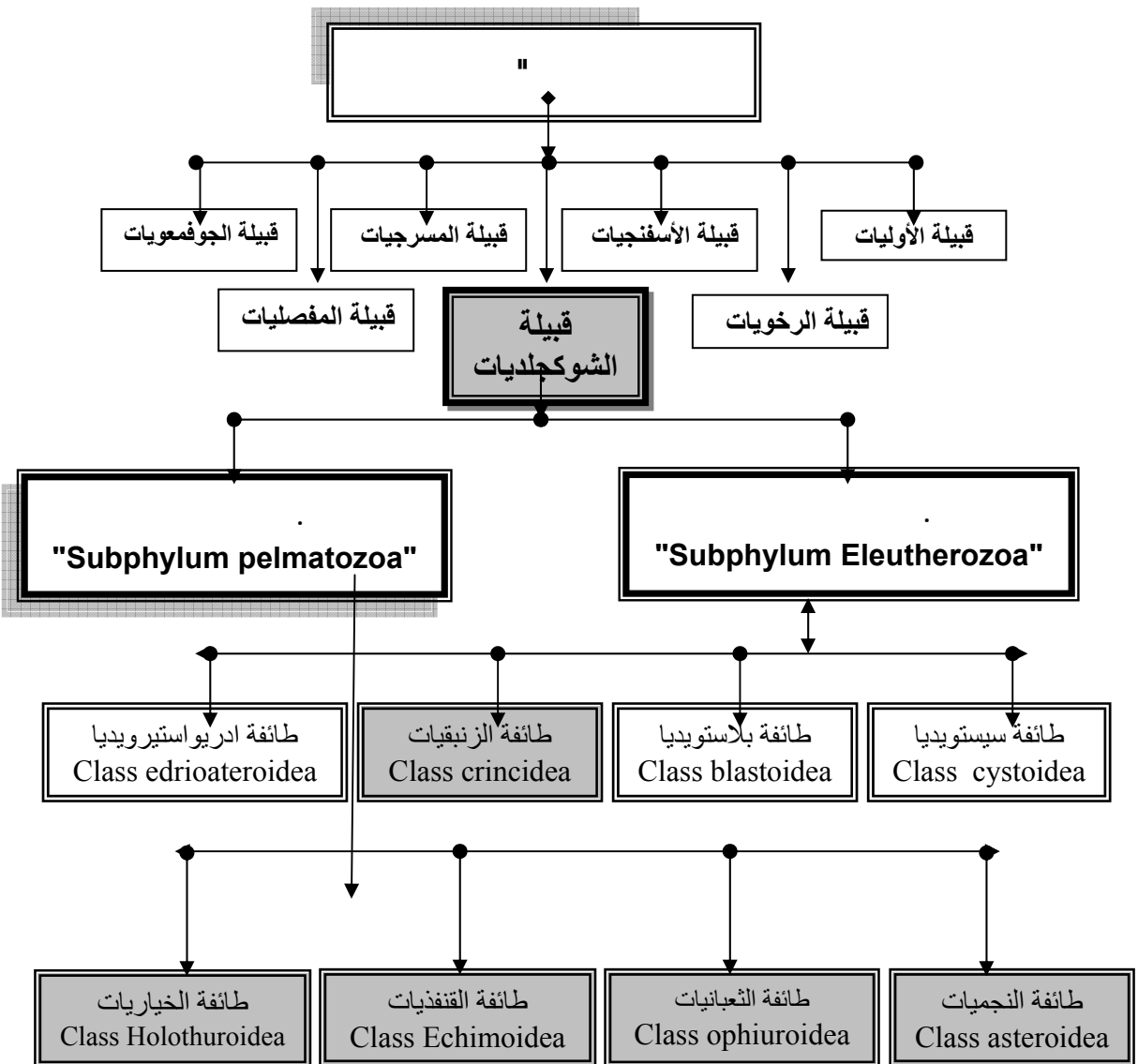
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1- 1 - محمد فتحى عوض الله ، عن هاملتون وآخرون(١٩٩٩):المعجم الجولوجى المصور فى المعادن والصخور والحفريات ، الهيئة المصرية للكتاب،ص٣٠٢.

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Phylu Echinodermata

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التذوق الفني في الطبيعة : ١٩٩٤ "

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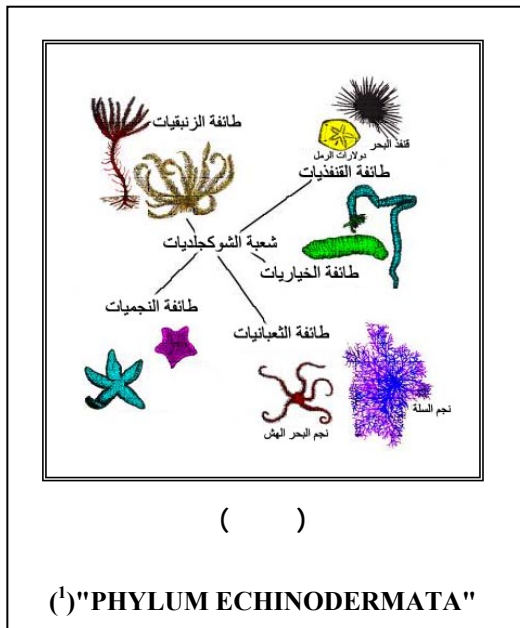
.Phylu Echinodermata :

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sand dollar

_____ : () - 1
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pycnopodia

echinosoma

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synapta

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. Hemithordats

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Asteroidea

Ophiuroide

Echinoidea

Holothuroidea

.Crinoidea

. Abracha

Brachiata

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:Brachiata

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¹- patrick i. colinMarine (1988): Invertebrates and Plants of the living reef, T.f.h. publications,inc.

:Asteroidea

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Asteroidea

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echinoderms

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Disc

Radial

Arms

Inter – Radial

.Star Fish

Sea - Star

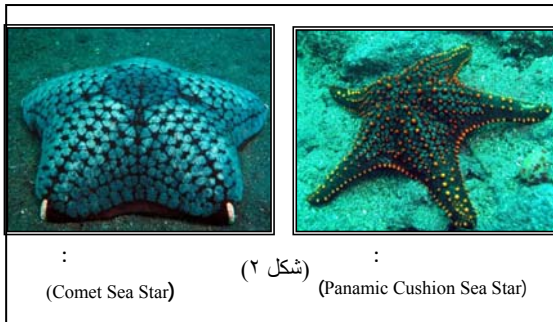
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Orai

Aborai



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(Comet Sea Star)

(شكل ٢) :
(Panamic Cushion Sea Star)

.(Paxillae)

¹ - محمد نظيم شحاته وآخرون (١٩٩٧): مرجع سابق ص ٧٩٤

³ - محمود حافظ وآخرون (١٩٩٦): مرجع سابق ، ص ٦٤٠

² - <http://www.embalmart.com/vb/showthread.php>.

() (Qgsicies)

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: Ophiuroidea

Ophiurs

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: External Features



¹ - paul A.meglitsch (1991): Invertebrate Zoology ,new yourk oxford.

² - محمود حافظ وآخرون (١٩٩٦) : مرجع سابق ص ٨٠٩

Basket

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Stars

: Grinoidea

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- ¹ - محمد نظيم شحاتة وآخرون (١٩٩٧) : مرجع سابق ص ٨١١
- ² http://animaldiversity.ummz.umich.edu/site/resources/Grzimek_inverts/Ophiuroidea/v01_id145_con_ophanat.jp
g/view.html
- ³ -The New Encyclopedia Britannica (1985):Vol.3, ,p576 -
- ⁴ - محمد حافظ وآخرون :مرجع سابقص ٦٥٦
- ⁵ http://animaldiversity.ummz.umich.edu/site/resources/Grzimek_inverts/Ophiuroidea/v01_id145_con_ophanat.jp
pg/view.html

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: Abracha .

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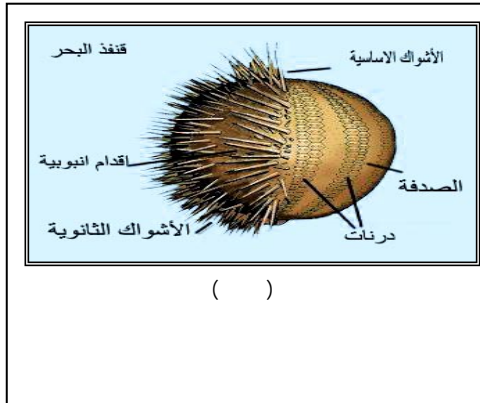
:Echinoidea -

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Sea – Hearts

Sea – Doliars



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:Class Holothurioldea

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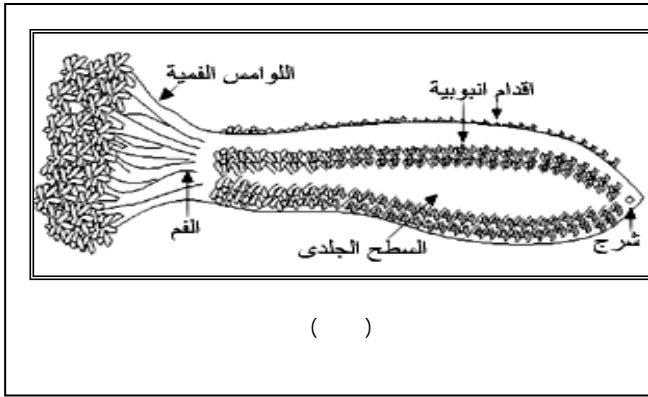
.Holothuroidea

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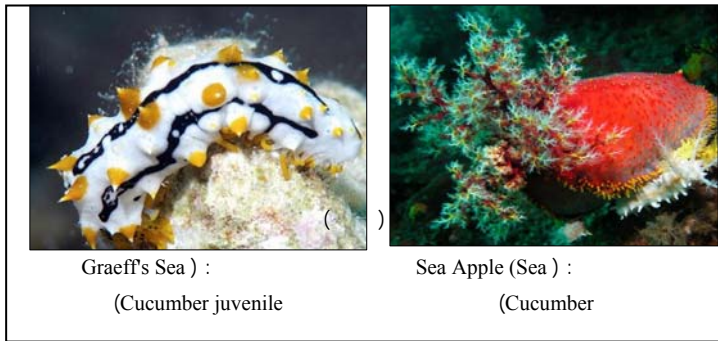
() ("Holothuria")

(Synapta) .()



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¹ - <http://saltaquarium.about.com/.../tp/prcucumberfam.htm>

² A. Meglitsch *Zoology* (1991); new York oxford , university press -

³ محمد نظيم شحاته واخرون: مرجع سابق ، ص ٦٦٤

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¹ - www.iraqiart.com/artists/Faraj_Aboo.htm

"Sea life Abstract"



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(¹). "Kathleen Emerson"

1024×768 :

¹ - <http://rocamiadesign.deviantart.com/art/Luminance-123471476>

(Featured in Design)



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()."Charlie Callahan"

¹ -www.artbusiness.com/1open/020208.html

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"George Hart"

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¹- www.georgehart.com/sculpture/roads-untaken.html



(Stony

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" George Hart"

Brook Student Center Lobby)

¹- www.cs.sunysb.edu/~george/zomeday



Michel de

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:"Broin"

¹-www.brandish.tv/2008/09/

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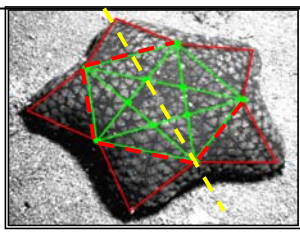
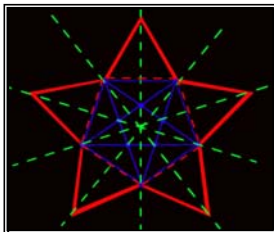
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:Asteroidea



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متماثل دائري حول شكل خماسي
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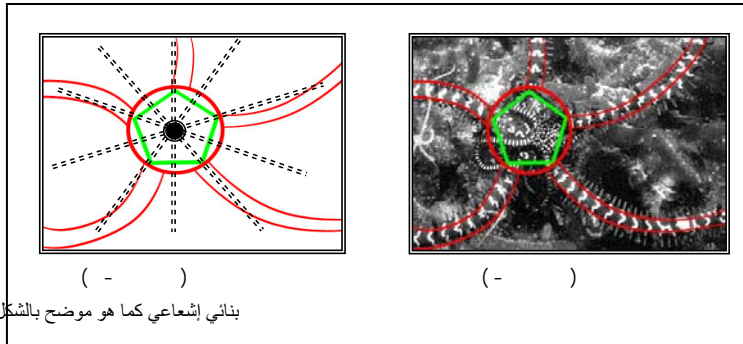
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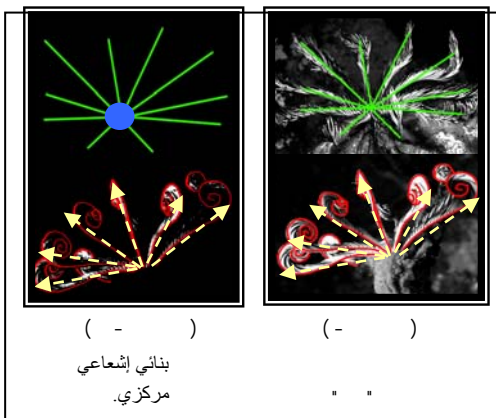
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:Ophiuroidea

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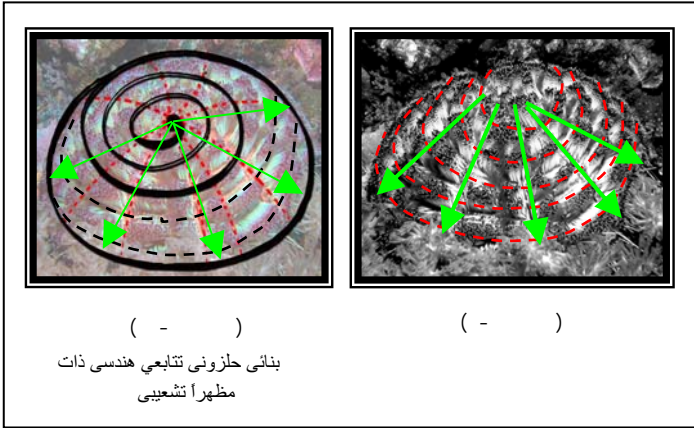
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:Echinoidea

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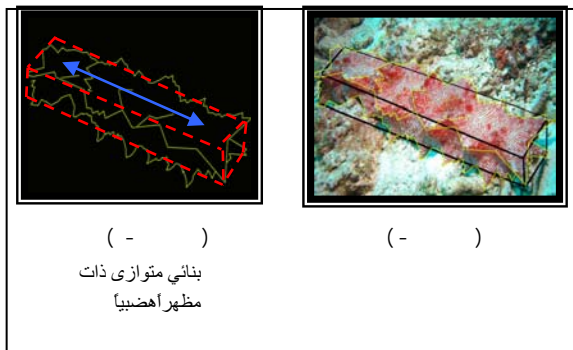
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:Class Holothurioldea

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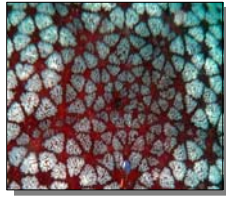
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(Adobe photoshop me)

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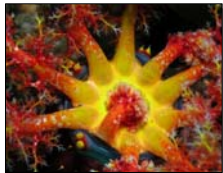
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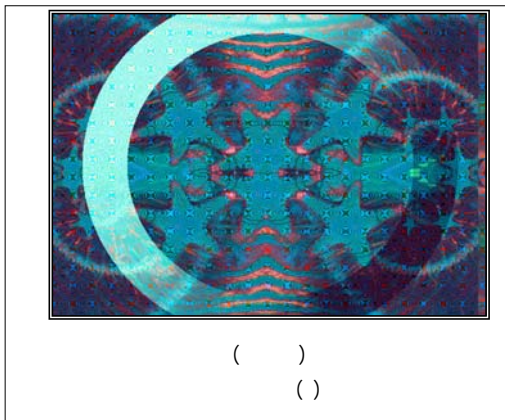


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1. patrick i. colin Marine (1988): Invertebrates and Plants of the living reef , T.f.h. publications ,inc.
2. paul A.meglitsch (1991): ,Invertebrate Zoology ,new York oxford.
3. The New Encyclopedia Britannica (1985):Vol.3.
4. A .Meglitsch Zoology (1991):, new York oxford , university press.

5. <http://saltaquarium.about.com>
6. www.embalmart.com
7. www.cs.sunysb.edu/~george/zomeday
8. www.mousou3a.educdz.com
9. <http://rocamiadesign.deviantart.com>
10. www.artbusiness.com
11. www.georgehart.com
12. www.iraqiart.com
13. www.brandish.tv