

MEDCORE CONFERENCE

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VERMETID TERRACES CHARACTERISTICS OF LEBANESE ROCKY SHORE (East Mediterranean)

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Climate

- * Mediterranean temperate: summer (25-30 °C), winter (8-12 °C)
- * Atmospheric humidity : 60-90%
- * Precipitation 1000 mm/year (coastal area)
- * Frequency average of raining 79-82 days/year
- * 45 snowing days > 1500m , covering snow 115 days

Hydrological Properties

- * Water surface temp.: 17-30°C
- * Salinity offshore: 39.40-39.75‰
- * Thermocline in summer 0-75 m
- * Isothermic conditions in winter
- * Semi-diurnal Low Tide Amplitude : 10-15cm
- * Rough waves in winter, spring , summer

Circulation

- * South-northern direction surface current
- * Origin of the Mediterranean Intermediate Water in west Basin

FORMATION OF TERRACES (TROTTOIRS)

- * Geological calcareous formation of Secondary and Tertiary (Pliocene Era)
- * Rocky Terraces, Rocky Platforms , Cliffs Falaises, (No vermetes)
- * Vermetid Terraces special habitat rich in fauna et flora
- * Biological Formations : Vermetids ,Algal Associations
- * Construction by vermetids and calcareous algae (encorbeillements),
- * Mechanical Erosion by breaking waves, Tide (Lapiés,Vasques)
- * Beach-rock broken Terraces , Homogenous Terraces
- * Narrow Terraces under cliffs (0.50-1m.=Grotte aux pigeons)
- * Wide Terraces 3-4 m : Amchit, Enfe, Bouar
- * Terraces in calm mode : Ras Chekka, Iles des Palmiers, Ras Beyrouth, Saadyet etc....
- * Terraces in “mode battu “(the more frequent terraces)

Rocky Platforms (Vermetid Terraces)

▶ Animal Associations of vermetid Terraces

* *Vermetus triqueter* , *Dendropoma petraeum*, *Brachydontes minimus*
(*Mytilus minima*) , *Mytilaster minimus* .

* Other invertebrates: Molluscs, Polychetes, Echinoderms, etc....

* Fish community **Blenniidae** 7 to 8 species , **Labridae** 4 species.

▶ Algal associations

1-Upper medio-littoral characterized with :

• Dominant red algae species *Laurencia papillosa*.

* Accompanied species *Enteromorpha sp*, *Cladophora sp.*,
Neogoniolithon motorisii, *Jania rubens*, *Carollina mediterranea*.

2-Lower medio-littoral, always covered with water, even at low tide.

***Dominant species:**

Alsidium sp., *Corallinum* sp. *Centroceras clavulata*
Sphacelaria furgicera.

Enteromorpha intestinalis, *Jania rubens*,
Corallina granifera, *Chaetomorpha* sp.,
Lithophyllum incrustans, etc...

3-Upper infralittoral and whose water is always renewed with breaking waves.

***Dominant species**

Centroceras clavulatum, *Alsidium heminthocorium*,
Sphacelaria tribuloides , *Sargassum vulgare*,

***Accompanied species**

Lithophyllum incrustans,
Corallina elongata, *Laurencia papillosa* ,
Padina pavonica, *Cystoseira fimbriata*

Benthic Macrophytes

Groups	N.Species in Lebanon	N.Introduced species
▶ <i>Xanthophyta</i>	1	?
▶ <i>Cyanophyta</i>	25	3
▶ <i>Chlorophyta</i>	56	17
▶ <i>Phaeophyta</i>	30	13
▶ <i>Rhodophyta</i>	128	35
▶ <i>Lichens</i>	2	?
▶ <i>Monocotyledonae</i>	3	1



Terraces view in Batroun 22.11.1999



**Broken vermetid Terraces near
Batroun area**



A



B

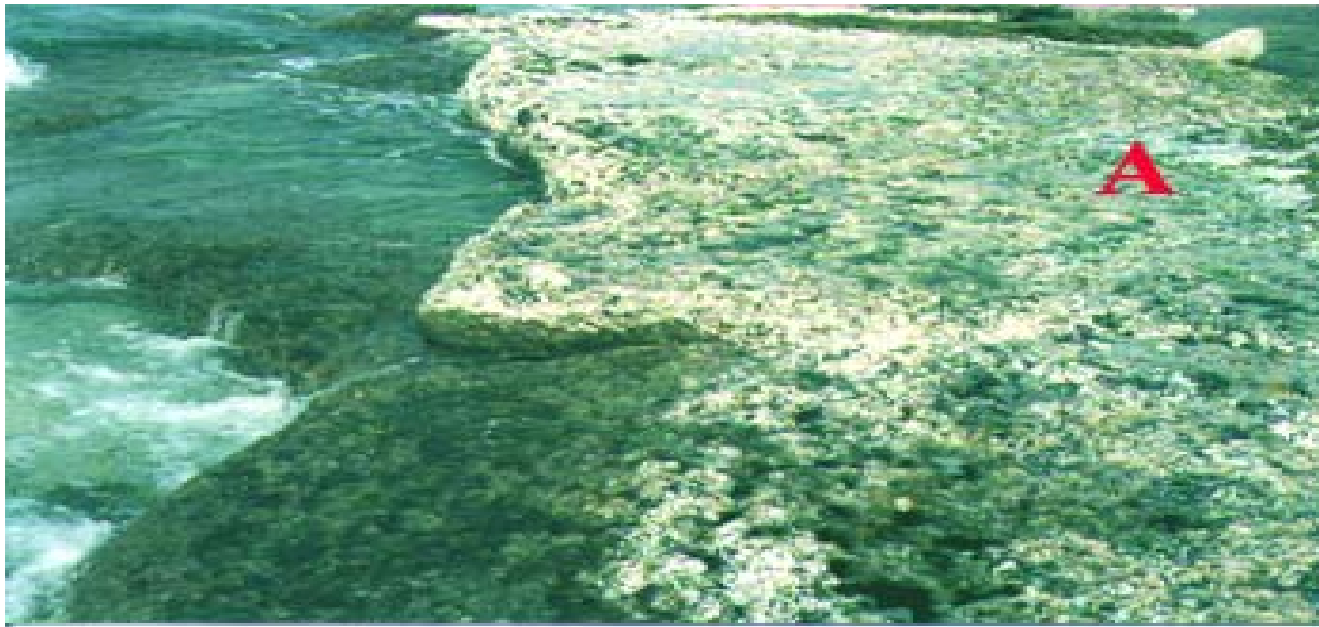




A: Vasques sur Trottoirs-Mares en balconets, Batroun, 22.11.1999

B: Terraces en mode battu: *Centroceras clavelata*, *Dendroporia brachydontes*





A: Double "Trottoir" Vermetid Terraces in the Mediolittoral at Batroun Bay .

B: "Beach-rock" in lower Mediolittoral showing Sargassum "belt"



CONCLUSION

- ▶ **Need for Protection of Vermetid Terraces Habitat characteristics of the Levantine Basin**
- ▶ **Conservation strategy to protect globally threatened Mediterranean and endemic species,**
- ▶ **Terraces Habitat characteristics in the biodiversity of marine fauna and flora.**
- ▶ **Threatened species the sensitivity levels of habitat**
- ▶ **Identify an efficient protection policy of concerned Habitats and species**
- ▶ **Determine priority protection objectives for rare, endemic and threatened species.**
- ▶ **Propose immediate conservatory measures for noteworthy species.**
- ▶ **Formulate headlines of a sustainable conservatory management strategy.**
- ▶ **Formulation of a monitoring program for species and key indicators**

THANK YOU

FOR YOUR ATTENTION