

CONTENTS

	Page
Introduction	1
Material and Methods	4
1- Taxonomic revision	4
2- Ecological investigations	4
3- Chemical analysis :	4
A- Ash content.	5
B- Elemental composition of the ash	5
C- Total carbohydrate content.	6
D- Total nitrogen content	6
E- Total lipid content	6
F- Investigation of lipids in both shoot and seeds of the studied chenopods:	6
i- Extraction of lipids	6
ii- preparation of unsaponifiable matter	7
iii- preparation of unsaponifiable matter- methyl ester and investigation by Gas-liquid Chromatography .	7
iv - Preparation of free fatty acid- methylesters and investigation by Gas-liquid Chromatography .	8

Results.

PART (I) Systematic treatment

Synopsis of the studied taxa	10
Key to genera .	11
1- <i>Halocnemum strobilaceum</i> .	12
2- <i>Arthrocnemum macrostachyum</i>	20
Key to the species of <i>Salicornia</i>	28
3- <i>Salicornia europaea</i> .	29
4- <i>Salicornia fruticosa</i> .	35
5- <i>Salicornia lignosa</i> .	43
6- <i>Noaeo mucronata</i> .	48
Key to the species of <i>Anabasis</i> .	54
7- <i>Anabasis setifera</i> .	54
8- <i>Anabasis articulata</i>	61

PART (II) Ecology and Chemistry

Ecological and chemical studies of the chenopods under revision .	69
1- <i>Halocnemum strobilaceum</i> community .	73
- Plant analysis .	75
- Hydrocarbons and sterols content .	75
- Fatty acids content .	79

2- <i>Arthrocnemum macrostachyum</i> community .	83
- Plant analysis .	85
- Hydrocarbons and sterols content.	85
- Fatty acids content .	89
3- <i>Salicornia europaea</i> community .	93
- Plant analysis .	95
- Hydrocarbons and sterols content.	95
- Fatty acids content .	100
4- <i>Salicornia fruticosa</i> community .	104
- Plant analysis.	106
- Hydrocarbons and sterols content .	106
- Fatty acids content.	110
5- <i>Salicornia lignosa</i> .	114
- Plant analysis .	114
- Hydrocarbons and sterols content.	116
- Fatty acids content.	120
6- <i>Noaea mucronata</i> community .	124
- Plant analysis .	124
- Hydrocarbons and sterols content.	127
- Fatty acids content .	131
7- <i>Anabasis setifera</i> .	135
- Plant analysis	135
- Hydrocarbons and setrols content	135
- Fatty acids content.	137

8 - <i>Anabasis articulata</i> community	145
- Plant analysis .	145
- Hydrocarbons and sterols content	146
- Fatty acids content.	150
Discussion	
I- Evaluation of morphological characters of systematic value .	154
1- The embryo	154
2- Fruit- perianth	154
3- Stem and branches	155
4- Leaves.	155
II- The studied chenopods as treated by different authors .	155
III- Ecological Investigations	157
IV- Chemical Investigations .	
1- General Features of Ash and Cation Accumulation.	161
2- General Features of Metabolic Products.	165
3- General Features of Plant Extract.	167
A- Hydrocarobons	167
B- Sterols.	170
C- Fatty acids.	174
Summary and Conclusion	179
Literature cited	182
Arabic Summary.	