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Description Of Spores Of Some Syrian Mosses By Using Scanning Electron Microscope

B. Al-Araj

Department of Plant Biology, Faculty of sciences, Damascus university, Syria

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ABSTRACT

This research is the first descriptive and classifiable study of the Syrian spores of mosses in Syria and Arab world by using the technique of scanning electron microscope.

Samples have been collected from several areas from Syria and their names have been defined and classified earlier.

The study of nine Spieces of Spores have been completed and their shapes, different faces and the shapes of redundant which they carry and their distribution by scanning electron Microscope are done in Jena University, Germany. Their sizes have been measured and viewed in several sizes.

It has been noticed clear differences in Spores, in the Shape of concavity of the frost face and in existence and relation of denseness and distribution of redundant on the faces. So, The characters of Spores can be added to other standards which are used in Classification of mosses.

Key Words: Syrian mosses, Spores, Scanning electron Microscope.

Bryophyta ()

.(Strasburger) 2005

Pteridophyta

Angiospermae

Gymnospermae

: Lichenophyta
Jungermaniopsida Hepaticopsida
.(Frahm & Frey Moosflora 1983, Strasbueger 2005)

.Sporology

(2008 2007 1999 1996)

(Erdtman, G.1965&Boros,A. & Jarai-Komlodi, 1975; Clark,G.C.S,1979)

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;1999 1996 &)

(2007, 2008

Frey, 1981; Frahm & Frey, 1983)

(Schubert, 1983; Johns, 1987; Wahlter,1983

(Hausknecht)

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(1)

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LEO 1450 VP)

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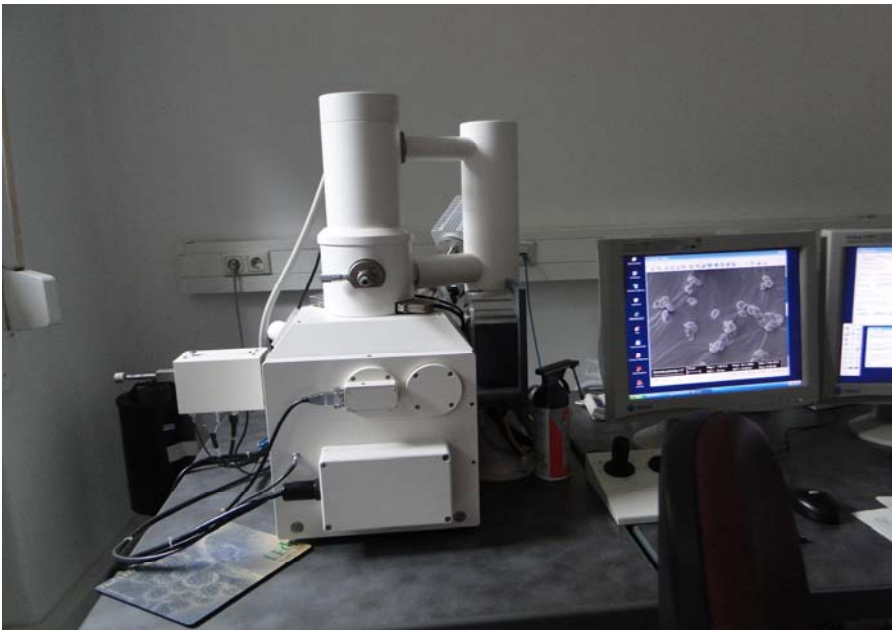
.(2)

(Zeiss

(10000 1000)

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(LEO 1450 VP Zeiss)

(2)

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-	1998/2/15	Grimmia pulvinata .1
-	1998/3/9	Syntrichia ruralis .2
-	1998/3/13	Syntrichia inermis .3
-	1998/3/9	Bryum capillare. 4
-	1998/3/9	Tortulla muralis .5
-	1998/3/9	Funaria hygrometrica .6
-	1998/3/9	Encalypta streptocarpa .7
-	2007/5/10	Cratoneurum filicinum .8
-	2007/5/10	Rhacometrinum canescens .9

Grimmia pulvinata
(L. ap. Hedw.) sm.

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Bryophyta – Musci

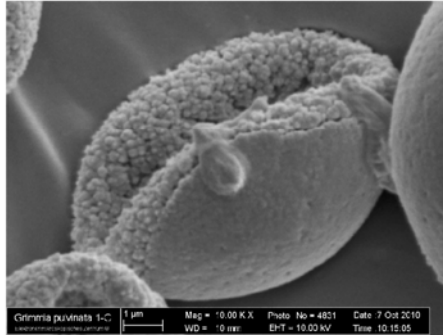
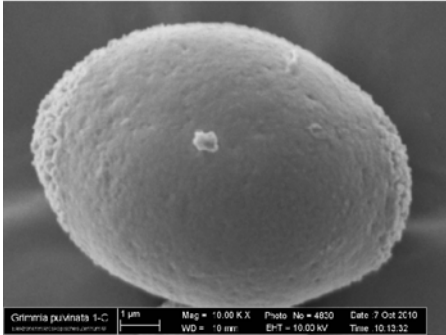
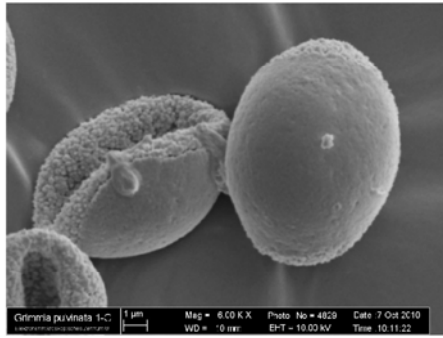
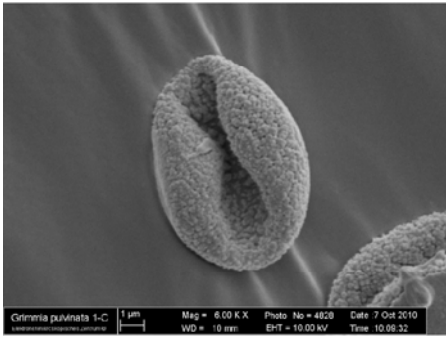
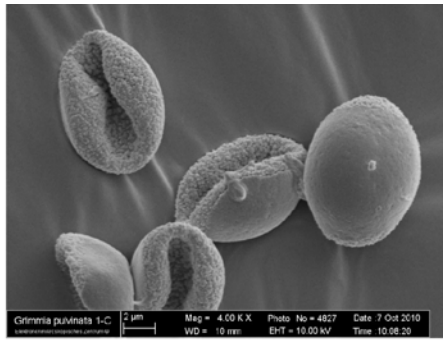
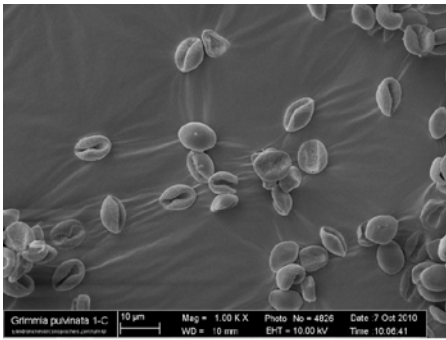
Bryopsida

Grimmiales

Grimmiaceae

*Grimmia**G. pulvinata*

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	()	-
	.(3) 8-7	-



Grimmia pulvinata (3)

X=4000 :

X=1000 :

X=6000 :

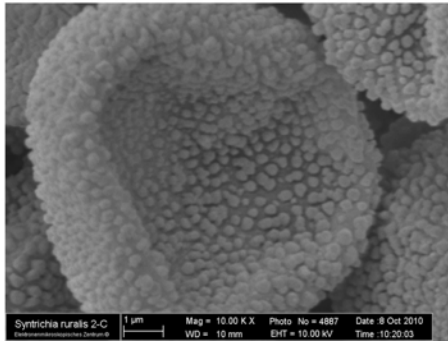
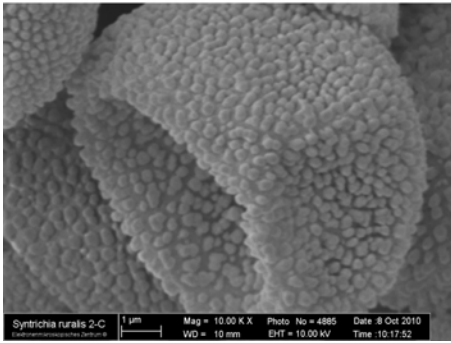
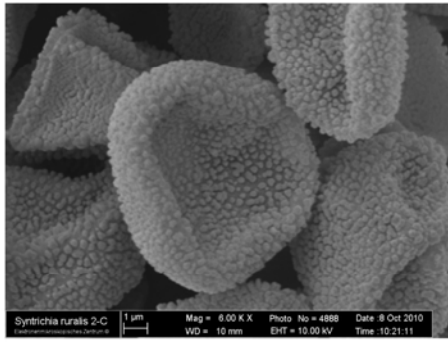
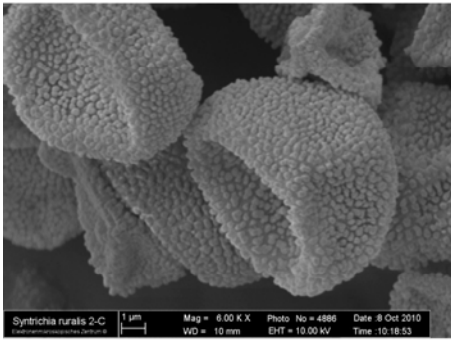
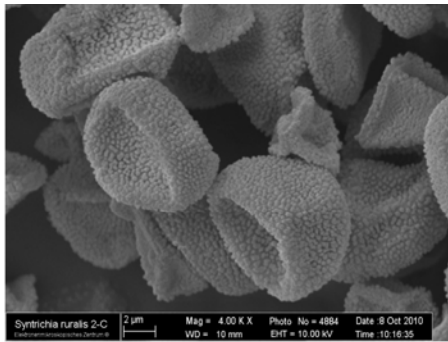
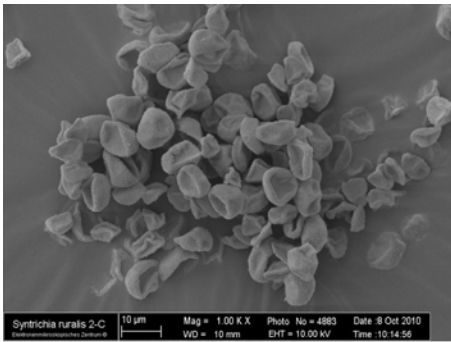
X=6000 :

X=10000:

X=10000 :

Syntrichia ruralis
(L.) Brid

		:
	Bryophyta – Musci	
	Bryopsida	
	Pottiales	
	Pottiaceae	
	<i>Syntrichia</i>	
	<i>S. ruralis</i>	
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		-
5-4	()	-
	()	-
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		-
		-
	(4) 8-7	-



Syntrichia ruralis (4)

X=4000 :

X=6000 :

X=10000:

X=1000 :

X=6000 :

X=10000 :

Syntrichia inermis
(Brid.) Bruch.

:

Bryophyta – Musci

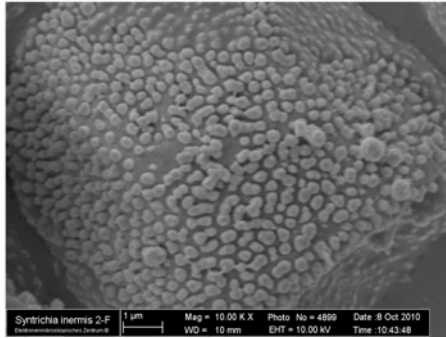
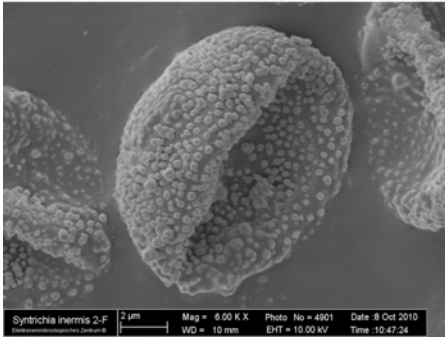
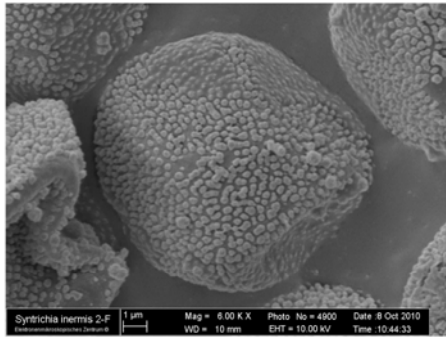
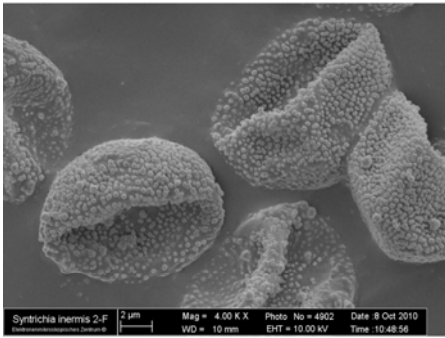
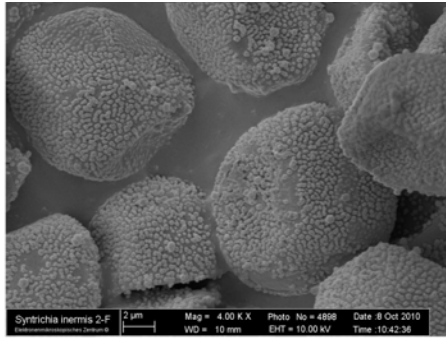
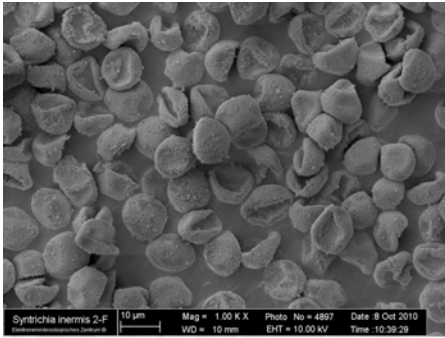
Bryopsida

Pottiales

Pottiaceae

*Syntrichia**S. inermis*

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-4		()		-
			5	-
		()		-
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	.S. ruralis			-
				-
	(5)	10		-



Syntrichia inermis (5)

X=4000 :

X=6000 :

X=10000:

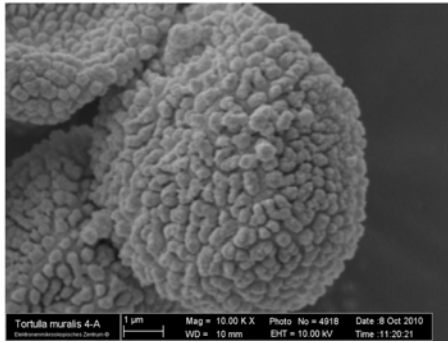
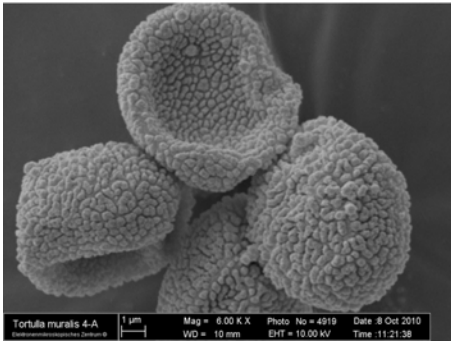
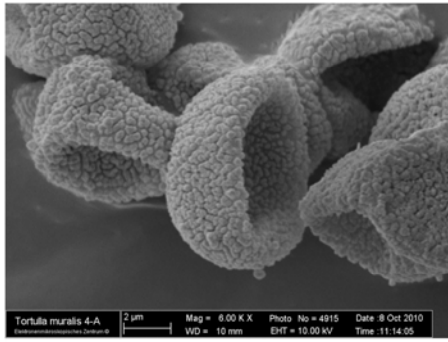
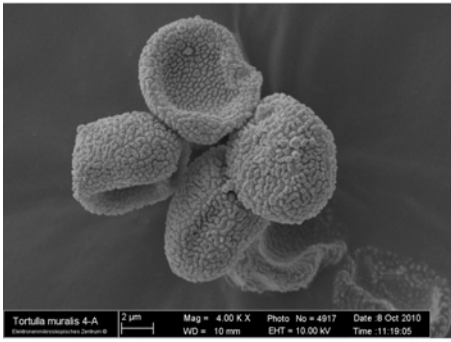
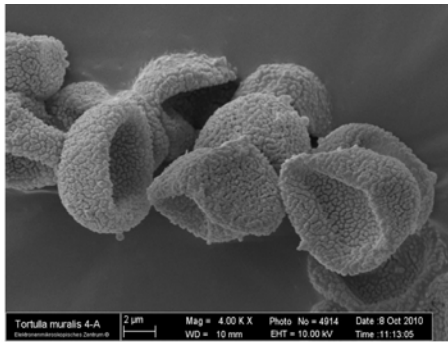
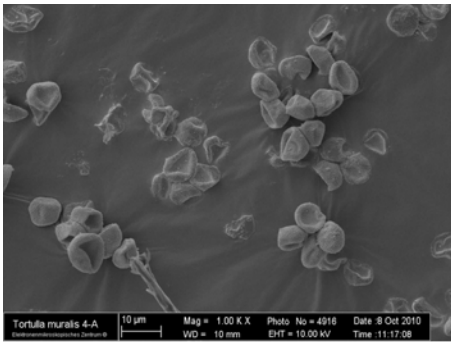
X=1000 :

X=4000 :

X=6000 :

Tortula muralis
(L.) Hedw.

		:
	Bryophyta – Musci	
	Bryopsida	
	Pottiales	
	Pottiaceae	
	<i>Tortula</i>	
	<i>T. muralis</i>	
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5-4	()	-
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8-7	S. ruralis	-
		-
		.(7)



Tortulla muralis (7)

X=4000 :

X=6000 :

X=10000:

X=1000 :

X=4000 :

X=6000 :

Bryum capillare
L. ap. Hedw.

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Bryophyta – Musci

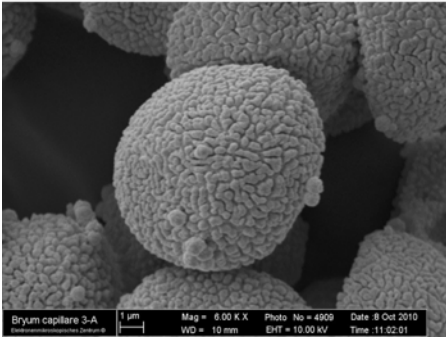
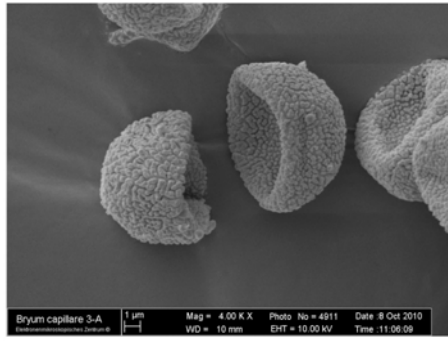
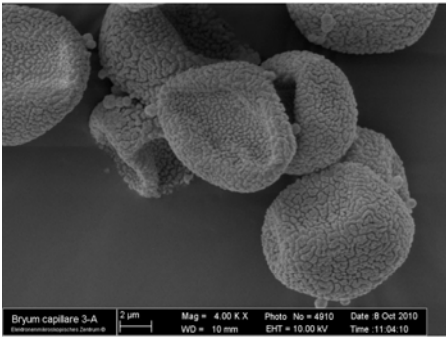
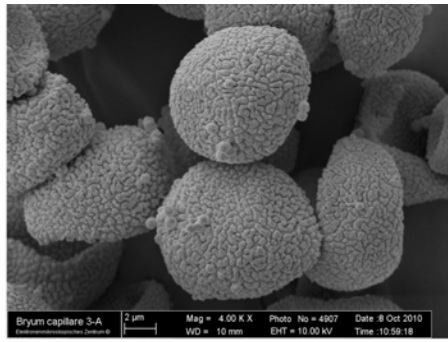
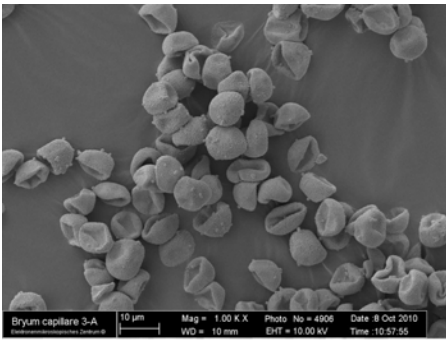
Bryopsida

Eubryales

Bryaceae

*Bryum**B. capillare*

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	(6)	10		-



Bryum capillare (6)

X=4000 :

X=4000 :

X=10000:

X=1000 :

X=4000 :

X=6000 :

Funaria hygrometrica
L. ap. Hedw.

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Bryophyta – Musci

Bryopsida

Pottiales

Funariaceae

*Funaria**F. hygrometrica*

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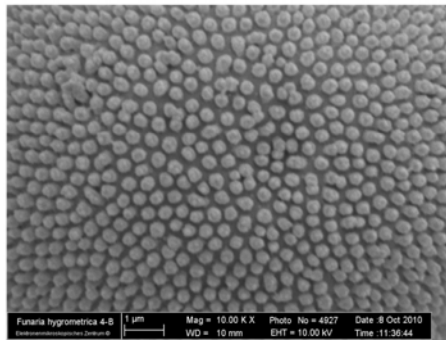
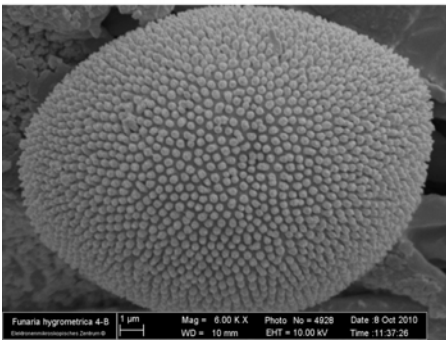
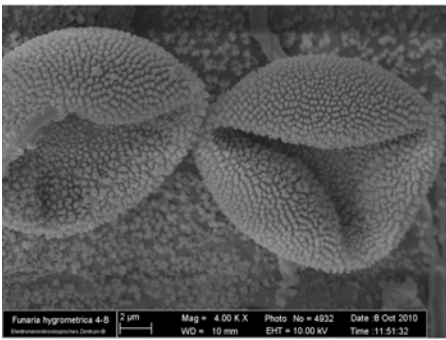
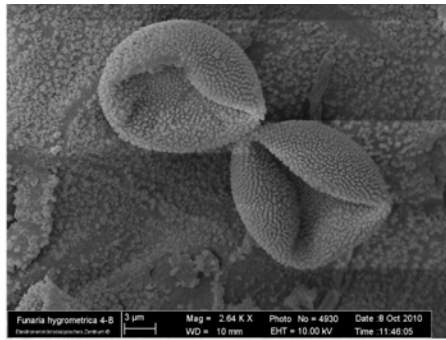
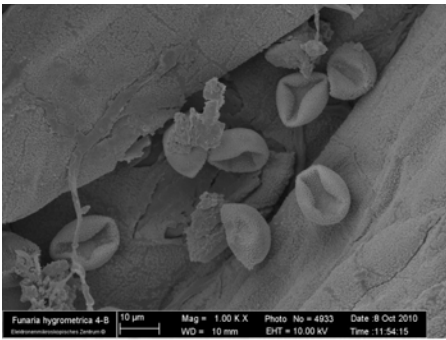
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12-10

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.(8)



Funaria hygrometrica (8)

X=2640 :
 X=4000 :
 X=10000:

X=1000 :
 X=4000 :
 X=6000 :

Rhacomitrium canescens

(Timm. ap. Hedw.) Brid.

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Bryophyta – Musci

Bryopsida

Grimmiales

Grimmiaceae

*Rhacomitrium**Rh. canescens*

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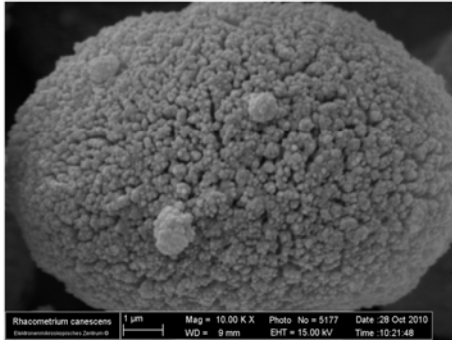
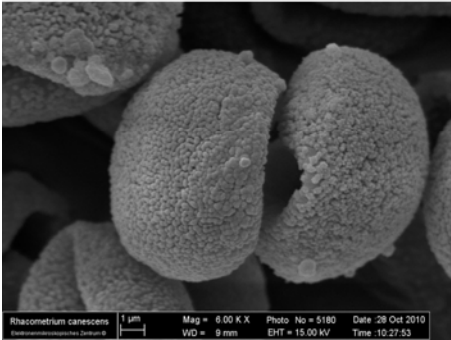
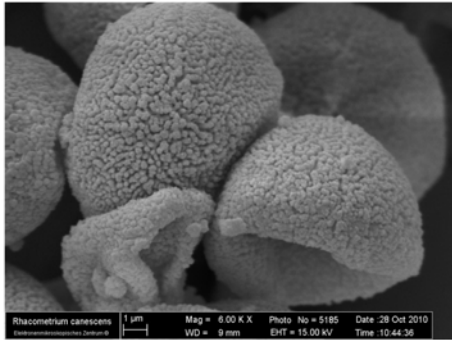
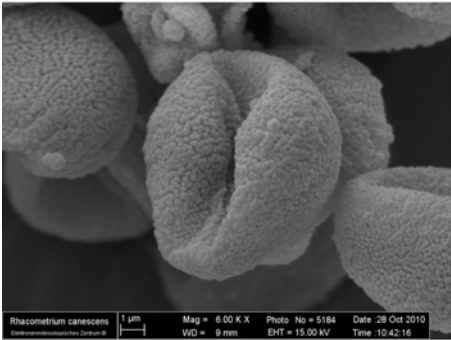
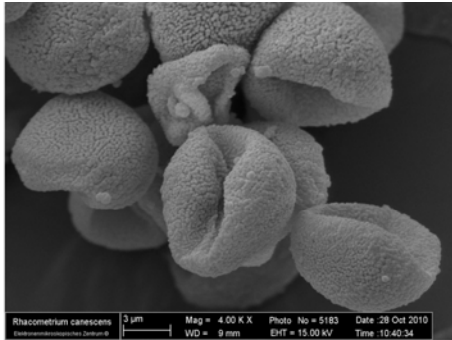
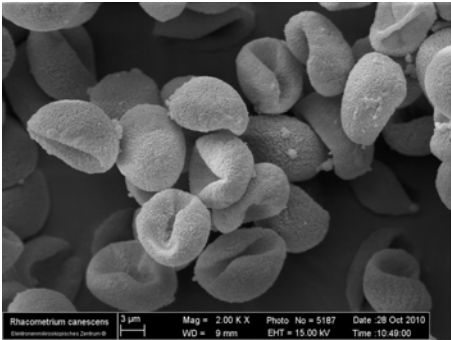
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.(9)

10-8

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Rhacomitrium canescens (9)

X=4000 :

X=6000 :

X=10000:

X=2000 :

X=6000 :

X=6000 :

Cratoneurum filicinum
(L. ap. Hedw.) Roth

Bryophyta – Musci

Bryopsida

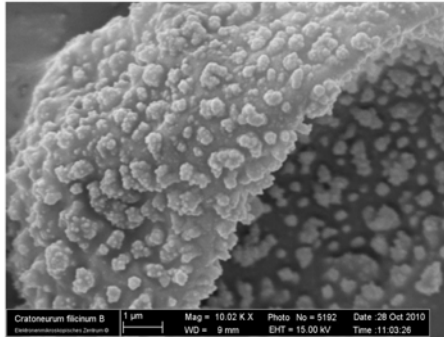
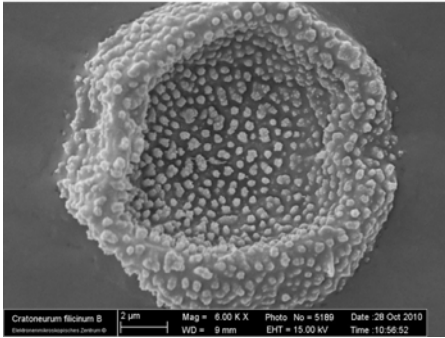
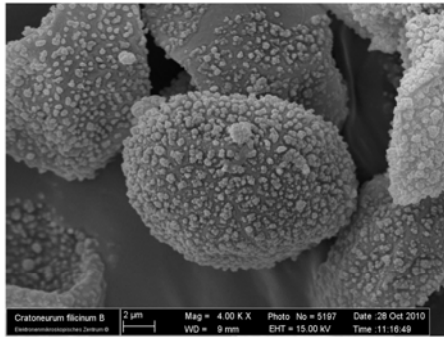
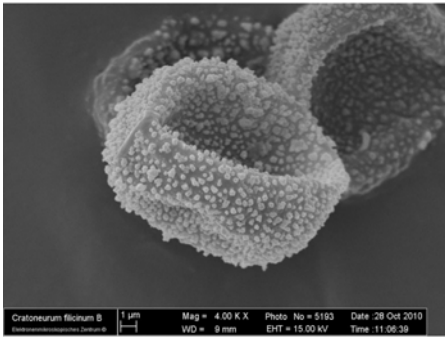
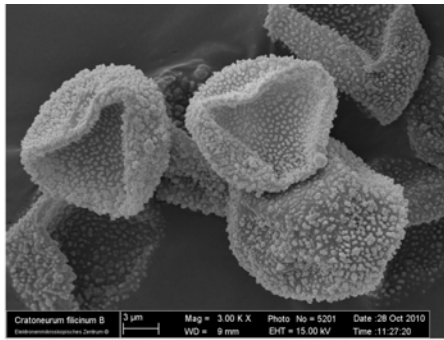
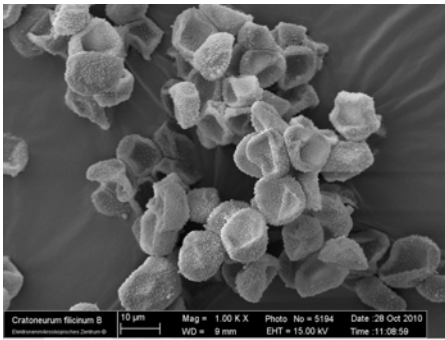
Hypnobryales

Amblystegiaceae

Cratoneurum

C. filicinum

(10) 10-8



Cratoneurum filicinum (10)

X=3000 :

X=4000 :

X=10000:

X=1000 :

X=4000 :

X=6000 :

Encalypta streptocarpa
Hedw

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Bryophyta – Musci

Bryopsida

Pottiales

Encalyptaceae

*Encalypta**E. streptocarpa*

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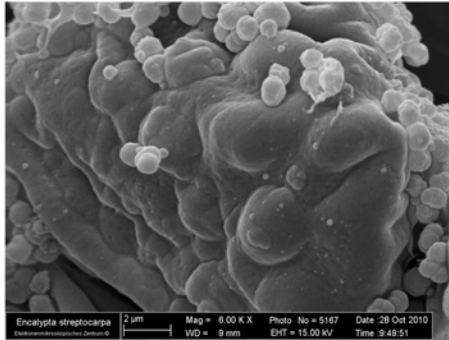
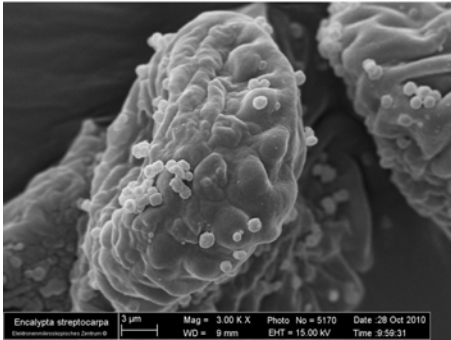
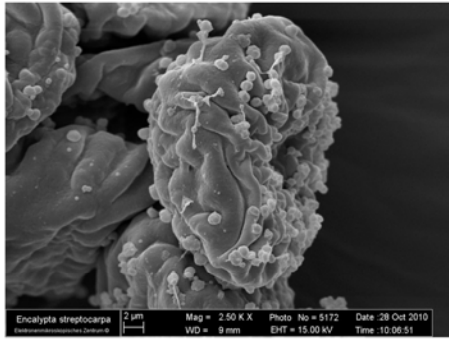
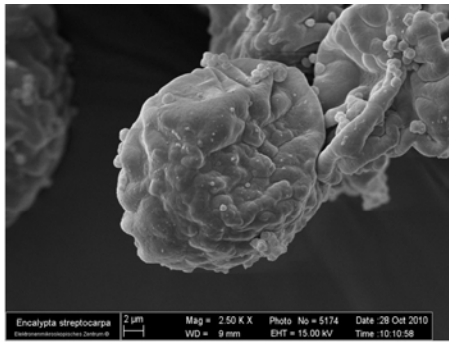
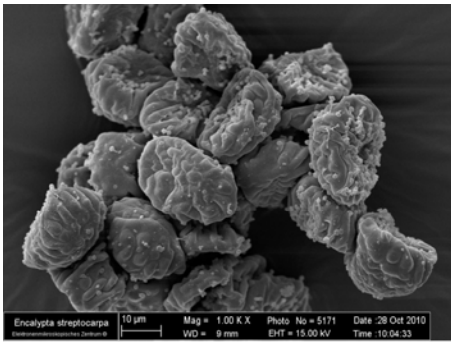
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.(11



Encalypta streptocarpa (11)

X=2500 :

X=2500 :

X=6000:

X=1000 :

X=2500 :

X=3000 :

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*Syntrichia ruralis**.Syntrichia innermis*

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 (Bryopsida) .(2008) .
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