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/ & " /

!B @ 0 = 8 F 0 1/3

4 8 0 = B C < (5 = 5 @ 8 = 8 : > A 8) - Adiantum capillus-veneris

gradinar, G 5 B 2 J @ B J : 21 < 0 9 2009 - 15:11:24

B 4 5 ; 0 ? @ 0 B > 2 8 - Pteridophyta

; 0 A Polypodiopsida

0 7 @ 5 4 Schizaeales

! 5 < 5 9 A B 2 > Adiantaceae - 4 8 0 = B > 2 8

> 4 A 5 < 5 9 A B 2 > Adiantoideae

> 4 Adiantum

Adiantum- 5 4 = 0 > B = 0 9 > 1 8 G 0 = 8 B 5 ? 0 ? @ 0 B 8 A = 0 4 2 0 0 2 8 4 0, = O : > 8 > B

: > 8 B > A 0 A B C 4 > C A B 9 G 8 2 8 8 @ 0 A B 0 B = 0 > B : @ 8 B >. A 5 > 1 1

; N 1 8 < 5 F 5 2 8 4 J B : 0 ? 8 ; C A - 2 5 = 5 @ 8 A = 0 @ 8 G 0 = C = 0 A 2 5 = 5 @ 8 =

8 ; 8 1 > 3 > @ > 4 8 G 5 = : > A J <. < 0 ? J ; 7 O 1 8 A B J 1 ; 0 , > B : > 8 B >

8 7 ; 8 7 0 B 8 7 O 1 = 8 ? 5 @ 5 A B 8 ; 8 A B 0 2 J @ E C = 5 6 = 8 G 5 @ = 8

4 @ J 6 : 8. A 8 G : 8 = 0 4 7 5 < = 8 G 0 A B 8 A 0 ? > : @ 8 B 8 A = 5 2 8 4 8 <

2 > A J G 5 = = 0 ; 8 ? 8 ? > B > 7 8 = 0 G 8 = ? > B O E = 5 A 5 7 0 4 J @ 6 0

2 > 4 0. B B C : 8 = 0 7 2 0 = 8 5 B > = 0 @ 0 A B 5 = 8 5 B >, B J 9 : 0 B > 0 4 8 0 = B C <

> 7 = 0 G 0 2 0 = 5 = 0 < > : @ O 5 <.

4 8 0 = B C < 8 B 5 = 5 > 1 8 G 0 B O @ : 0 B 0 A ; J = G 5 2 0 A 2 5 B ; 8 = 0.

@ 5 4 ? > G 8 B 0 B ? >; C A O = : 0 B 0. " 5 7 8 ? 0 ? @ 0 B 8 = 5 ? > = 0 A O B

A ; 0 = 8 B 5 8 > A B @ 8 O A B C 4 5 = 2 O B J @. ' C 2 A B 2 0 B A 5 7 ; 5 2 7 0 ? @ 0 H 5 = 8,

? @ > ? 8 B 8 A F 8 3 0 @ 5 = 4 8 < ? > < 5 1 5 = 8 O. ? B 8 < 0 ; = 0 B 0

B 5 < ? 5 @ 0 B C @ 0 7 0 0 4 8 0 = B C < 8 B 5 5 1 5 ° ! - 2 0 ° !. : > 5 ? > - B > ? ; >,

; 8 A B 0 B 0 8 < A B 0 2 0 B 1 ; 5 4 8, 6 J ; B 5 O B, A J E = 0 B 8 A 5 G C ? O B.

> ; 8 2 0 9 B 5 A < 5 : 0 2 > 4 0, : 0 B > 2 = 8 < 0 2 0 B 5 : > @ 5 = 8 B 5 4 0 = 5

> A B 0 2 0 B A C E 8. 8 < = 8 B 5 ? >; 8 2 : 8 A 0 ? >- @ 5 4 : 8, = > = 5 1 8 2 0 4 0

A 5 4 > ? C A : 0 ? @ 5 A J E 2 0 = 5. ; 0 6 = > A B B 0 = 0 2 J 7 4 C E 0 2

? > < 5 1 5 = 8 5 B > B @ 0 1 2 0 4 0 1 J 4 5 ? > 2 8 H 5 = 0, > A > 1 5 = > ? @ 5 7

; O B > B >. 0 ; 0 3 0 A 5 ? @ J A : 0 = 5 A ? C ; 2 5 @ 8 7 0 B > @ ? > = 5 4 2 0 ? J B 8

= 0 4 5 =. " 0 : 0 > A 2 5 = ? > 2 8 H 0 2 0 = 5 2 ; 0 6 = > A B B 0 = 0 2 J 7 4 C E 0 A 5

? > 4 4 J @ 6 0 8 G 8 A B > B 0 B 0 = 0 ; 8 A B 0 B 0. @ 5 7 ; O B > B > 0 4 8 0 = B C < 0

<> 6 5 4 0 A 5 ? > 4 E @ 0 = 2 0 A B 5 G 5 = B > @ = 0 2 A 5 : 8 4 2 5 A 5 4 < 8 F 8.

0 7 4 5 ; 5 B 5 : > @ 5 = 8 B 5.

0 ? @ 0 B 8 B 5 A 5 @ 0 7 A 0 6 4 0 B ? @ 5 7 ? @ >; 5 B B 0. > G 2 5 = 0 B 0 A < 5 A

B @ 0 1 2 0 4 0 1 J 4 5 > B 4 2 5 G 0 A B 8 B > @ D, 5 4 = 0 G 0 A B 3 > @ A : 0 ? > G 2 0 8

? O A J : . = 8 < 0 B 5 ; = > @ 0 7 4 5 ; 5 B 5 @ 0 7 @ 0 A B = 0 ; 8 B 5 A 5 : > @ 5 = 8 = 0

0 4 8 0 = B C < 0, 0 7 0 5 4 => A B O E 8 = 0 4 7 5 < = 0 B 0 G 0 A B. > @ 5 = > 2 0 B 0

H 8 9 : 0 = 5 B @ O 1 2 0 4 0 A 5 7 0 @ 0 2 O, B J 9 : 0 B > B > 2 0 <> 6 5 4 0 4 > 2 5 4 5
 4 > 7 0 3 = 8 2 0 = 5 = 0 <; 0 4 8 B 5 ; 8 A B 0. 0 7 <=> 6 0 2 0 B A 5 G @ 5 7
 A ? > @ 8, => B > 2 0 5 4 > A B 0 B @ C 4 > 5 < J : ? @ > F 5 A.

8 4 > 2 5:

- **Adiantum capillus veneris** : ; 0 A 8 G 5 A : 8 B 5 5 = 5 @ 8 = 8 : > A 8 A J A
 A 2 5 B ; > 7 5 ; 5 = 8 ; 8 A B 0, @ 0 7 ? > ; > 6 5 = 8 ? > G 5 @ = 8 3 J 2 : 0 2 8
 4 @ J 6 : 8 A 4 J ; 6 8 = 0 4 > 3 0 A <.
- **Adiantum polifilum** 5 = 0 9 - 5 4 @ 8 O 2 8 4 A 3 >; 5 < 8 : > @ 5 = 8 8 A B J 1 ; 0 A
 4 J ; 6 8 = 0 > : > ; > < 5 B J @, 0 = 5 3 > 2 8 B 5 G 5 @ = 8 B 2 J @ 4 8 4 @ J 6 : 8 A 0
 ? > : @ 8 B 8 A J A A 8 < 5 B @ 8 G = 8 < 0 ; : 8 ; 8 A B 5 = F 0.
- **Adiantum raddiantum** 8 < 0 G 5 @ = 8 A B J 1 ; 0 8 <=> 3 > G 8 A ; 5 = 8
 A 2 5 B ; > 7 5 ; 5 = 8 ; 8 A B 0.

B 3 ; 5 6 4 0 = 5:

! 2 5 B ; 8 = 0 ! 2 5 B ; >, = 5 ? @ O : 0 A ; J = G 5 2 0 A 2 5 B ; 8 = 0 !

" 5 < ? 5 @ 0 B C @ 0 : " > ? ; >, = > = 5 3 > @ 5 I >! O B > B > > ? B 8 < 0 ; = 0 to
 20o - 25o !; 7 8 < 0 B 0 < 8 = 8 < 0 ; = 0 to 10o !.

> ; 8 2 0 = 5: 1 8 ; = >, 7 8 < 0 B 0 A 5 = 0 < 0 ; O 2 0 < 0 ; : > A < 5 : 0 2 > 4 0
 A J A A B 0 9 = 0 B 5 < ? 5 @ 0 B C @ 0

@ J A : 0 = 5: 1 8 ; = > 8 G 5 A B >.

; 0 6 => A B: 8 A > : 0 2 J 7 4 C H = 0 2 ; 0 6 => A B! 0 A 5 4 J @ 6 8 2 J @ E C
 ? > 4 ; > 6 : 0 A < > : @ 8 : 0 < J G 5 B 0 ! > 4 E > 4 O I > 5 8 > B 3 ; 5 6 4 0 = 5 2
 B 5 @ 0 @ 8 C <.

" > @ 5 = 5: @ > ; 5 B, ; O B >, 5 A 5 = 2 5 4 = J 6 2 < 5 A 5 F 0 A 4 > 7 0,
 4 2 > 9 = > ? > - @ 0 7 @ 5 4 5 = 0 > B ? @ 5 4 ? 8 A 0 => B > = 0 > ? 0 : > 2 : 0 B 0

@ 5 A 0 6 4 0 = 5: A O : 0 3 > 4 8 = 0 0 ? @ 8 ; / < 0 9 ? > - 3 > ; 5 < 8 B 5
 @ 0 A B 5 = 8 O. > 1 J @ 4 @ 5 = 0 6.

0 7 <=> 6 0 2 0 = 5: 0 ? @ 0 B 8 B 5 A 5 @ 0 7 A 0 6 4 0 B ? @ 5 7 ? @ > ; 5 B B 0 2
 ? > G 2 5 = 0 A < 5 A B @ O 1 2 0 > B 2 G O A B 8 B > @ D, 1 G O A B ? O A J :
 0 <=> 6 0 2 0 = B 5 > A B 0 2 0 G @ 5 7 @ 0 7 4 5 ; O = 5 = 0 : > @ 5 = 8 1 0 B 0.
 " @ O 1 2 0 4 0 A 5 2 = 8 < 0 2 0 : > @ 5 = > 2 0 B 0 H 8 9 : 0 4 0 = 5 A 5 7 0 @ 0 2 O, B J 9
 : 0 B > B > 2 0 <> 6 5 4 0 4 > 2 5 4 5 4 > 7 0 3 = 8 2 0 = 5 = 0 <; 0 4 8 B 5 ; 8 A B 0.

@ > 1 ; 5 < 8:

- : > ; 8 A B 0 B 0 6 J ; B 5 O B, ? > O 2 O 2 0 B A 5 : 0 D O 2 8 ? 5 B = 0, ? @ 8 G 8 = 0 B 0
 <> 6 5 4 0 5 ? @ 5 : 0 ; 5 = > 2 8 A > : 0 B 5 < ? 5 @ 0 B C @ 0 = 0 4 2 5 > !,
 = 5 @ 5 4 > 2 = > 8 ; 8 = 5 4 > A B 0 B J G = > ? > ; 8 2 0 = 5 ;
- : > ; 8 A B 0 B 0 6 J ; B 5 O B 8 @ 0 A B 5 = 8 5 B > = 5 @ 0 A B 5 = 8 A : 0
 2 J 7 4 C H = 0 2 ; 0 6 => A B ;
- : > ; 8 A B 0 B 0 A 0 1 ; 5 4 8, ? > ; C ? @ > 7 @ 0 G = 8, 2 O ; 8 ? @ 5 : 0 ; 5 = >

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/ & " /

!B @ 0 = 8 F 0 3/3

A 8 ; = 0 A ; J = G 5 2 0 A 2 5 B ; 8 = 0;
- :> : @ 0 8 1 0 B 0 = 0 ; 8 A B 0 B 0 6 J ; B 5 O B 8 ; 8 8 7 A J E 2 0 B, @ 0 A B 5 = 8 5 B >
= 5 @ 0 A B 5 8 ; 8 @ 0 A B 5 ; > H > = 5 4 > A B 0 B J G = > ? > 4 E @ 0 = 2 0 = 5,
? @ 5 : 0 ; 5 = > < 0 ; : 0 8 ; 8 ? @ 5 : 0 ; 5 = > 3 > ; O < 0 A 0 : A 8 O ;
- :> ; 8 A B 0 B 0 6 J ; B 5 O B, : 0 D 5 = 5 O B, A 1 @ J G : 2 0 B A 5, 8 > ? 0 4 2 0 B
? @ 5 : 0 ; 5 = > = 8 A : 0 B 5 < ? 5 @ 0 B C @ 0, E ; 0 4 = > B 5 G 5 = 8 5,
? > ; 8 2 0 = 5 A J A A B C 4 5 = 0, B 2 J @ 4 0 8 ; 8 E ; > @ 8 @ 0 = 0 2 > 4 0.

:> A 5 ? > O 2 8 = O :> 9 > B 3 > @ = 8 B 5 ? @ > 1 ; 5 < 8, @ 0 A B 5 = 8 5 B > A 5
? > 4 @ O 7 2 0 ? > G B 8 4 > > A => 2 0 B 0 8 7 0 ? > G 2 0 > 1 8 ; = > ? @ J A : 0 = 5
1 5 ? > = 8 : = 0 B => 2 8 : ; > = : 8.

@ 5 4 8 B 5 ; 8:

- : 0 @ 8;
- 8 A B = 8 2 J H : 8;
- J 6 4 > 2 = 8 G 5 @ 2 5 8 ? @ > 2 5 @ O 2 0 A 5, 4 0 ; 8 3 8 8 < 0, : 0 B > A 0 : A 8 O B 0
A 5 = 0 : 8 A 2 0 2 @ 0 7 B 2 > @ > B : 0 ; 8 5 2 ? 5 @ < 0 = 3 0 = 0 B. : > 8 < 0
G 5 @ 2 5 8, B 5 1 5 8 7 ; O 7 0 B ? @ 5 7 4 @ 5 = 0 6 = 8 B 5 > B 2 > @ 8 8 ; 8 1 5 A 5
? > : 0 6 0 B = 0 ? > 2 J @ E => A B B 0 = 0 ? @ J A B B 0.

> ; 5 A B 8:

- ! 8 2 > 3 = 8 5 = 5 3 J 1 8 G = > 7 0 1 > ; O 2 0 = 5 ? > O 2 O 2 0 B A 5 G 5 @ = 8
? 5 B = 0 ? >
; 8 A B 0 B 0 ? @ 8 = 8 A : 8 B 5 < ? 5 @ 0 B C @ 8 8 ? @ 5 ? > ; 8 2 0 = 5.

0 A J 6 0 ; 5 = 8 5, 0 4 8 0 = B C < J B = 5 ? > = 0 A O ? @ J A : 0 = 5 A
E 8 < 8 G 5 A : 8 A @ 5 4 A B 2 0. : > B > 2 0 5 > A > 1 5 = > = 0 ; > 6 8 B 5 ; = >,
A ; 5 4 : 0 B > A 5 = 0 ? @ J A : 0 @ 0 A B 5 = 8 5 B >, 8 7 G 0 : 2 0 A 5 4 0 7 0 A J E = 5 8
A 5 > 1 ; 8 2 0 4 > 1 @ 5 A B > ? ; 0 2 > 4 0.

4 8 0 = B C < J B 5 = 0 9 - G C 2 A B 2 8 B 5 ; 5 = : J < ? > ; 8 2 0 = 5 B >. : >
? @ > ? C A = 5 B 5 4 0 3 > ? > ; 5 5 B 5, @ 0 A B 5 = 8 5 B > 2 5 4 = 0 3 0 @ 5 0 3 8 @ 0
: 0 B > 2 J @ E > 2 5 B 5 = 0 ; > = : 8 B 5 8 ; 8 A B 0 B 0 7 0 A J E 2 0 B. 0 : >
? > ; 8 2 0 B 5 ? @ 5 : 0 ; 5 = >, B > 0 4 8 0 = B C < J B @ 0 = > 8 ; 8 : J A = > 1 5
7 0 3 8 = 5. 0 9 - = 5 3 0 B 8 2 = > @ 5 0 3 8 @ 0 = 0 7 0 A B > O ; 0 B 0 2 > 4 0 2
? > G 2 0 B 0.