E 8 = > : 0 : B C A - Echinocactus

gradinar, ? 5 B J : 18 N ; 8 2008 - 11:00:47

> 4 0 5 > ? 8 A 0 = 7 0 ? J @ 2 8 ? J B ? @ 5 7 1827 3. > B Heinrich Friederich Link 8 Friederich Christoph Otto. 0 8 < 5 = > 2 0 = 8 5 B > ? @ > 8 7 E > 6 4 0 > B ; 0 B 8 = A : 0 B 0 4 C < 0 "echinatus" - 1 > 4 ; 8 2 8 8 4 2 0 > B 2 @ 5 < 5 B >, : > 3 0 B > ? > 2 5 G 5 B > > 1 ; 8 : 0 : B C A 8 A 0 A 5 > B = 0 A O ; 8 : J < @ > 4 0 E 8 = > : 0 : B C A, 0 B 5 7 8 A F 8 ; 8 = 4 @ 8 G = 0 D > @ < 0 = 0 A B J 1 ; 0 B 0 - : J < @ > 4 0 & 5 @ 5 C A 8 ; 8 E 8 = > A 5 @ 5 C A.

> 4 0 2 : ; N G 2 0 > : > ; > 4 5 A 5 B 2 8 4 0, 8 7 < 5 6 4 C = 0 9 - 3 > ; 5 < 8 B 5 > B 8 7 2 5 A B = 8 B 5 > 1 ; 8 8 F 8 ; 8 = 4 @ 8 G = 8 : 0 : B C A 8. ; 8 7 : 8 @ > 4 A B 2 5 = 8 F 8 A 0 A $ 5 @ > : 0 : B C A 8 B 5. ! B J 1 ; 0 B 0 A 0 O @ : > 7 5 ; 5 = 8, 3 ; 0 4 : 8 8 1 ; O A : 0 2 8, 2 ? @ 8 @ > 4 0 B 0 4 > A B 8 3 0 B 3 < 5 B @ 0 = 0 2 8 A > G 8 = 0 8 4 > 1,5 < 5 B @ 0 2 4 8 0 < 5 B J @. 5 1 @ 0 B 0 A 0 < = > 3 > = 0 1 @ > 9, ? @ 0 2 8, A 8 ; = > 2 J > @ J 6 5 = 8. > ; 5 < 8 B 5 0 @ 5 > ; 8 = 0 2 J @ E 0 ? > G B 8 A 5 A ; 8 2 0 B ? > < 5 6 4 C A 8 8 > 1 @ 0 7 C 2 0 B ? ; J B = >, 2 J ; = 8 A B > ? > : @ 8 B 8 5. > 4 ; 8 B 5 = 5 A 0 < = > 3 > 1 @ > 9 = 8, F 2 5 B 0 8 < 5 : 5 E ; 8 1 0 @ 5 = >- 6 J ; B, 4 5 1 5 ; 8 A 0, A 4 J ; 6 8 = 0 2-7 A <., 2 1 > ; H 8 = A B 2 > B > > B 2 8 4 > 2 5 B 5 A 0 < = > 3 > 7 4 @ 0 2 8 8 B 2 J @ 4 8, A H 8 ; > 2 8 4 = 0 D > @ < 0. ? @ 8 @ > 4 0 B 0 F J D B O B A 0 < > A B 0 @ 8 B 5 @ 0 A B 5 = 8 O, 2 4 > < 0 H = 8 C A ; > 2 8 O ? > ? @ 8 = F 8 ? E 8 = > : 0 : B C A 8 B 5 = 5 7 0 F J D B O 2 0 B. & 2 5 B > 2 5 B 5 A 0 6 J ; B 8 8 ; 8 B J < = > @ > 7 > 2 8, A D > @ < 0 B 0 = 0 : > @ > = 0, = 5 3 > ; 5 < 8, A 4 8 0 < 5 B J @ 2-5 A <., 8 < 0 B B 5 A = 8, : > ? 8 5 2 8 4 = 8 2 5 = G 5 ; 8 A B G 5 B 0, @ 0 7 ? > ; 0 3 0 B A 5 2 : @ J 3 > : > ; > 2 J @ E 0 = 0 A B J 1 ; > B >. ? @ 8 @ > 4 0 B 0 A 5 > ? @ 0 H 2 0 B > B = 0 A 5 : > < 8 8 ; 8 < 0 ; : 8 ? B 8 F 8. & 2 5 B = 0 B 0 B @ J 1 8 G : 0 5 : J A 0, @ 5 A = 8 G 5 A B 0, ? > : @ 8 B 0 A ; N A ? 8. ; > 4 > 2 5 B 5 A 0 A C E 8, @ 0 7 B @ > H 0 2 0 B A 5.

> ? C ; O @ = 8 2 8 4 > 2 5 A 0: . viereckii, . amoenus, . enneacanthus, . acifer, . engelmanii.

0 : B C A 8 B 5 > B B > 7 8 @ > 4 A 0 @ 0 7 ? @ > A B @ 0 = 5 = 8 2 N 3 > 7 0 ? 0 4 = 8 B 5 G 0 A B 8 = 0 !) 8 A 5 2 5 @ = 8 B 5 G 0 A B 8 = 0 5 : A 8 : >. 0 A B 0 B = 0 3 ; 8 = 5 A B >- 2 0 @ > 2 8 B 0 ? > G 2 0, 3 ; 0 2 = > 2 ? C A B 8 = = 8 < 5 A B = > A B 8, 2 ? > 4 = > 6 8 5 B > 8 ? > A : ; > = > 2 5 B 5 = 0 A : 0 ; 8, 2 ? ; 0 = 8 = A : 8 : ; 8 A C @ 8, : J 4 5 B > ? > G B 8 = O < 0 4 @ C 3 0 @ 0 A B 8 B 5 ; = > A B. 1 ; 8 7 : > B > < 8 = 0 ; > 1 5 H 5 = 0 ? J ; = > 2 J 7 < > 6 = > 4 0 A 5 A @ 5 I = 0 B 3 > ; 5 < 8 3 @ C ? 8 > B E 8 = > : 0 : B C A 8 = 0 2 J 7 @ 0 A B > B 200 4 > 400 3 > 4 8 = 8, 2 4 = 5 H = > 2 @ 5 < 5 5 B @ C 4 = > 4 0 A 5 > B : @ 8 O B 4 > @ 8

5 4 8 = 8 G = 8 5 : 7 5 < ? ; O @ 8 = 0 B 0 : 0 2 0 2 J 7 @ 0 A B. ! 0 < > 2 ; 0 A > (" 5 : A 0 A) ? @ 8 ? @ > 2 5 4 5 = 8 A B @ > 8 B 5 ; = 8 @ 0 1 > B 8 A 0 C = 8 I > 6 5 = 8 ? > 2 5 G 5 > B 5 0 0 > B B 5 7 8 F 5 = = 8 @ 0 A B 5 = 8 O.

@ 8 > B 3 ; 5 6 4 0 = 5 B > = 0 E 8 = > : 0 : B C A 8 B 5, 5 4 8 = A B 2 5 = 8 O ? @ > 1 ; 5 < A : > 9 B > < > 6 5 4 0 A 5 A 1 ; J A : 0 B 5 5 > A 8 3 C @ O 2 0 = 5 B > = 0 < O A B > 7 0 2 J 7 @ 0 A B = 8 B 5 @ 0 A B 5 = 8 O. @ 8 8 = B 5 = 7 8 2 = 0 A ; J = G 5 2 0 A 2 5 B ; 8 = 0, ? > A B > O = 5 = ? @ 8 B > : = 0 A 2 5 6 2 J 7 4 C E 8 C < 5 @ 5 = > ? > ; 8 2 0 = 5 2 ? 5 @ 8 > 4 0 = 0 @ 0 A B 5 6, E 8 = > : 0 : B C A 8 B 5 @ 0 A B 0 B A @ 0 2 = 8 B 5 ; = > 1 J @ 7 >, = > 4 0 A 5 4 > G 0 : 0 4 0 F J D = 0 B = 5 5 ; 5 : 0 7 0 4 0 G 0. > 2 5 G 5 B > 2 8 4 > 2 5 A 5 @ 0 7 2 8 2 0 B 4 > 1 @ 5 2 A C 1 A B @ 0 B A J A B > O I A 5 > B 4 0 % @ 0 2 = 8 G 0 A B 8 ; 8 A B > 2 : 0 8 G 8 < > 2 : 0, 3 0 % A < 5 A > B 5 4 @ > 7 J @ = 5 B ? O A J : 8 G 0 : J ;, 4 > 1 0 % 2 0 @ > 2 8 : > 2 8 4 > 1 0 2 : 8, > A B 0 = 0 ; > B > 4 > 1 0 2 J G = 8 < 0 B 5 @ 8 0 ; 8. 0 B 0 : 0 = 0 @ 5 G 5 = 8 B 5 " < 0 ; : 8" E 8 = > : 0 : B C A 8 (E. horizonthalonius, E. parryi, E. xeranthemoides), : J < A C 1 A B @ 0 B 0 A 5 4 > 1 0 2 O B 2 4 > 2 0 % > B > 1 5 < 0 G 0 : J ; 5 A B 8 A J A B 0 2 : 8 8 A 5 = 0 < 0 ; O 2 0 : > ; 8 G 5 A B 2 > B > ? > ; 8 2 : 8. @ 5 7 7 8 < 0 B 0 2 J 7 @ 0 A B = 8 B 5 @ 0 A B 5 = 8 O A 5 4 J @ 6 0 B A C E 8 ? @ 8 B 5 < ? 5 @ 0 B C @ 0 6-10 3 @ 0 4 C A 0. >- 4 5 ; 8 : 0 B = 8 B 5 2 8 4 > 2 5 ? @ 5 4 ? > G 8 B 0 B 7 8 < = 8 B 5 < ? 5 @ 0 B C @ 8 8-10 3 @ 0 4 C A 0.

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

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

E 8 = > : 0 : B C A 8 B 5 A 0 8 7 : ; N G 8 B 5 ; = > ? > ? C ; O @ = 8 8 H 8 @ > : > @ 0 7 ? @ > A B @ 0 = 5 = 8 2 : > ; 5 : F 8 8 B 5.

***Echinocactus grusonii**

8 = 8 < 0 ; = 0 B 5 < ? 5 @ 0 B C @ 0: 7 0 : @ 0 B : 8 ? 5 @ 8 > 4 8 > B 2 @ 5 < 5 8 7 4 J @ 6 0 B = 0 B 5 < ? 5 @ 0 B C @ 8 4 > -10 °C, A @ 5 4 = 0 7 8 < = 0 B 5 < ? 5 @ 0 B C @ 0 12 °C.

0 7 ? > ; > 6 5 = 8 5: ? J ; = > A ; J = F 5 @ > 8 7 E > 4: 5 : A 8 : > (! 0 = C 8 A > B > A 8, 4 0 ; 3 >). 5 A B = > B > = 0 7 2 0 = 8 5 = 0 : 0 : B C A 0 5 " 7 ; 0 B = 0 B > ? : 0 ".

? 8 A 0 = 8 5: ! B J 1 ; 0 B 0 A 0 A 2 5 B ; > 7 5 ; 5 = 8, > 1 ; 8, A 2 J 7 @ 0 A B B 0 ; 5 : > A 5 8 7 4 J ; 6 0 2 0 B, = 8 : > 3 0 = 5 > 1 @ 0 7 C 2 0 B A B @ 0 = 8 G = 8 8 7 4 J = : 8. ! B 0 @ 8 B 5 200-300 3 > 4 8 H = 8 5 : 7 5 < ? ; O @ 8 = 0 4 2 8 H 0 2 0 B 1 < 5 B J @ = 0 2 8 A > G 8 = 0 8 7 0 A <. 2 4 8 0 < 5 B J @. 5 1 @ 0 B 0 A 0 > : > ; > 30, > A B @ 8, 2 8 A > : 8, ? @ 0 2 8, 2 @ 0 = = 0 2 J 7 @ 0 A B @ 0 7 4 5 ; 5 = 8 > B @ 5 4 C 2 0 I 8 A 5 2 4 ; J 1 = 0 B 8 = 8 8 8 7 ? J : = 0 ; > A B 8. @ 5 > ; 8 B 5 2 ? > A > : 0 : J < 2 J @ E 0 A 5 @ 0 7 ? > ; 0 3 0 B 2 A 5 ? >- ? ; J B = > 8 > 1 @ 0 7 C 2 0 B 3 J A B > ? > : @ 8 B 8 5. 0 4 8 0 ; = 8 B 5 1 > 4 ; 8 A 0 8-10 = 0 1 @ > 9, A 4 J ; 6 8 = 0 4 > 3 A <. & 5 = B @ 0 ; = 8 B 5 1 > 4 ; 8 A 0 @ 0 7 ? > ; > 6 5 = 8 : @ J A B > > 1 @ 0 7 = > 8 A 0 4 J ; 3 8 5-7 A <. A 8 G : 8 1 > 4 ; 8 G : 8 A 5 > B ; 8 G 0 2 0 B A > A > 1 5 = 0 4 5 : > @ 0 B 8 2 = > A B, F 2 5 B 0 8 < 5 ? @ > 7 @ 0 G = > 6 J ; B, 8 A 0 8 7 : ; N G 8 B 5 ; = > 7 4 @ 0 2 8 8 B 2 J @ 4 8, ; 5 : > 8 7 2 8 B 8 : J < > A = > 2 0 B 0 = 0 A B J 1 ; > B >. 0 F J D B O 2 0 = 0 2 J 7 @ 0 A B 30-40 3 > 4 8 = 8, ? 5 @ 8 > 4 0 = 0 F J D B 5 6 5 > B 0 @ B 4 > : @ 0 O = 0 ? @ 8 ;.

& 2 5 B > 2 5 B 5 A 0 6 J ; B 8, 4 J ; 3 8 8 A 4 8 0 < 5 B J @ > : > ; > 5 A <., ? > O 2 O 2 0 B
A 5 A 0 < > = 0 A B 0 @ 8 B 5 @ 0 A B 5 = 8 O. ; > 4 > 2 5 B 5 A 0 4 J ; 3 8 4 > 2 A <.,
? > : @ 8 B 8 A 1 5 ; 8, 2 J ; = 8 A B 8 2 ; 0 A 8 = : 8.
> 4 2 8 4:

- Echinocactus grusonii fa. subinermis - A B J 1 ; > B > < C 5 A > 1 ; 0 D > @ < 0, 4 > A B 8 3 0 = 0
2 8 A > G 8 = 0 1,20 <., 0 2 4 8 0 < 5 B J @ 1 <. ? 8 4 5 @ < 8 A 0 5 A 2 5 B ; > 7 5 ; 5 =.
J @ E 0 5 2 J ; = 8 A B. A @ 0 2 = 5 = 8 5 A 4 @ C 3 8 B 5 2 8 4 > 2 5 > B @ > 4 0,
? > G B 8 = O < 0 1 > 4 ; 8, B 5 @ O 4 : > 4 > A B 8 3 0 B 4 > 4-5 < <. = 0 4 J ; 6 8 = 0 8
A 0 6 J ; B 8 = 0 F 2 O B. & 2 5 B > 2 5 B 5 A 0 < 0 ; : 8, = 5 7 = 0 G 8 B 5 ; = 8, 6 J ; B 8
2 J 2 2 J B @ 5 H = > A B B 0 8 : 0 D O 2 8 > B 2 J =.

***Echinocactus horizonthalonius**

8 = 8 < 0 ; = 0 B 5 < ? 5 @ 0 B C @ 0: 7 0 : @ 0 B : 8 ? 5 @ 8 > 4 8 > B 2 @ 5 < 5
8 7 4 J @ 6 0 B = 0 B 5 < ? 5 @ 0 B C @ 8 4 > -10 °C, A @ 5 4 = 0 7 8 < = 0
B 5 < ? 5 @ 0 B C @ 0 12 °C.
0 7 ? > ; > 6 5 = 8 5: ? J ; = > A ; J = F 5
@ > 8 7 E > 4: > B N 3 > 7 0 ? 0 4 = 8 B 5 G 0 A B 8 = 0 !) (Arizona, New Mexico), 4 >
A 5 2 5 @ = > 5 : A 8 : > (Nuevo Leon, San Luis Potosi). " > 7 8 2 8 4 E 8 = > : 0 : B C A
? @ > 8 7 E > 6 4 0 > B @ 5 3 8 > = 8, 2 : > 8 B > ? > ; C G 0 2 0 A 0 < > 20-30 A <.
2 > 4 0 = 0 3 > 4 8 = 0, A 8 ; = > A ; J = G 5 2 > > 3 @ O 2 0 = 5 8 6 5 3 0. " 0 : 0 G 5
8 < 0 = C 6 4 0 > B < = > 3 > < 0 ; : > 2 > 4 0 8 < = > 3 > A ; J = F 5. > G 2 0 B 0
2 J @ E C : > O B > @ 0 A B 5 5 1 > 3 0 B 0 = 0 2 0 @ > 2 8 :, B 0 : 0 G 5 5 4 > 1 @ 5 4 0
A 5 4 > 1 0 2 8 > B B > 7 8 < 8 = 5 @ 0 ; 2 A C 1 A B @ 0 B 0 7 0 > B 3 ; 5 6 4 0 = 5.
? 8 A 0 = 8 5: Echinocactus horizonthalonius 5 = 0 9- < 0 ; : 8 O > B E 8 = > : 0 : B C A 8 B 5 8
5 4 8 = A B 2 5 = 8 O, : > 9 B > I 5 7 0 F J D B 8 ? @ 8 > B 3 ; 5 6 4 0 = 5 2 A 0 : A 8 O.
! B J 1 ; 0 B 0 A 0 A 8 2 >- A 8 = 8, > 1 ; 8 4 > ; 5 : > 8 7 4 J ; 6 5 = 8, 4 > A B 8 3 0 B = 0
2 8 A > G 8 = 0 4 > 30 A <., 2 4 8 0 < 5 B J @ > : > ; > 20 A <., 1 5 7 A B @ 0 = 8 G = 8
8 7 4 J = : 8. 5 1 @ 0 B 0, > : > ; > 10 = 0 1 @ > 9 (> 1 8 : = > 2 5 = > 8), A 0
7 0 : @ J 3 ; 5 = 8, @ 0 7 ? > ; > 6 5 = 8 A ? 8 @ 0 ; > 2 8 4 = >. @ 5 > ; 8 B 5 A 0
: @ J 3 ; 8, @ 0 7 ? > ; > 6 5 = 8 = 0 @ 0 7 A B > O = 8 5 1-2 A <. ? > < 5 6 4 C A 8.
& 5 = B @ 0 ; = 8 B 5 1 > 4 ; 8 A 0 > B 3 4 > 5 1 @ > 9 (A 4 5 1 5 ; 8 = 0 2,5 < <.), 0
@ 0 4 8 0 ; = 8 B 5 A 0 6-9 = 0 1 @ > 9, ? @ 8 < ; 0 4 8 B 5 @ 0 A B 5 = 8 O A 0 B J < = >
G 5 @ 2 5 = 8, A 2 J 7 @ 0 A B B 0 A B 0 2 0 B : 5 E ; 8 1 0 @ 5 = 8, 2 > A = > 2 0 B 0 A 0
? >- B J < = 8, B 2 J @ 4 8 8 8 7 2 8 B 8, A 4 J ; 6 8 = 0 2-4 A <. & 2 5 B > 2 5 B 5
? > = 8 : 2 0 B = 0 2 J @ E 0 8 A 0 @ > 7 > 2 8 8 ; 8 G 5 @ 2 5 = 8 A 4 J ; 6 8 = 0 5-6 A <.
8 4 8 0 < 5 B J @ 4 > 6 A <. 5 @ 8 > 4 0 = 0 F J D B 5 6 ? @ > 4 J ; 6 0 2 0 > B 0 @ B
4 > : @ 0 O = 0 0 9. ; > 4 > 2 5 B 5 A 0 G 5 @ 2 5 = 8, ? @ > 4 J ; 3 > 2 0 B 8,
? > ; C A C E 8, A 8 ; = > @ 5 A = 8 G 5 A B 8 A 4 J ; 6 8 = 0 4 > 3 A <. ? @ 8 @ > 4 0 B 0
C 7 @ O 2 0 B ? @ 5 7 0 9- . = 8. ! 5 < 5 = 0 B 0 A 0 3 > ; 5 < 8, : 0 D 5 = 8 : 0 2 >
G 5 @ = 8.
> 4 2 8 4:

- Echinocactus horizonthalonius var. nicholii - ? @ > 8 7 E > 6 4 0 > B N 6 = 8 B 5 G 0 A B 8 = 0
@ 8 7 > = 0 8 Sonora (Sierra del Viejo), 8 5 7 0 A B @ 0 H 5 = 2 8 4. 1 8 : = > 2 5 = > 8 < 0 8
@ 5 1 @ 0, F 5 = B @ 0 ; = 8 B 5 1 > 4 ; 8 A 0 3 = 0 1 @ > 9, 0 @ 0 4 8 0 ; = 8 B 5 8.

***Echinocactus parryi**

@ > 8 7 E > 4: 5 : A 8 : > - Chihuahua, 5 7 5 @ > B > Guzman, 5 = 4 5 < 8 G 5 = 2 8 4,
7 0 A B @ 0 H 5 = > B 8 7 G 5 7 2 0 = 5.
? 8 A 0 = 8 5: 0 A B 5 : 0 B > 5 4 8 = 8 G = > @ 0 A B 5 = 8 5, A B J 1 ; 0 B 0 A 0 > 1 ; 8,
2 8 A > : 8 > B 16 4 > 25 A <. 8 A 4 8 0 < 5 B J @ > B 21 4 > 30 A <. J @ E 0 5

2 4 ; J 1 = 0 B, ? > : @ 8 B A 1 5 ; 8 2 ; 0 A 8 = : 8. 5 1 @ 0 B 0 A 0 > B 13 4 > 21, ; 5 : > 7 0 : @ J 3 ; 5 = 8. @ 5 > ; 8 B 5 A 0 A 4 8 0 < 5 B J @ 12 < <., 2 G 0 A B B 0 A 8 > B : > O B > 8 7 ; 8 7 0 B 1 > 4 ; 8 G : 8 B 5, 4 > A B 8 3 0 B 4 > 1,5 < <., 2 G 0 A B B 0 > B : > O B > 8 7 ; 8 7 0 B F 2 5 B > 2 5 B 5 8 A 0 ? > : @ 8 B 8 A < J E. > 4 ; 8 B 5 A 0 B 2 J @ 4 8, 7 4 @ 0 2 8, ? > = O : > 3 0 A ? ; 5 A = 0 B 8, 1 5 ; 5 7 = 8 : 0 2 8 = 0 F 2 O B.

0 4 8 0 ; = 8 B 5 1 > 4 ; 8 A 0 > B 8 > B 11 = 0 1 @ > 9, ? @ 0 2 8 8 ; 8 ; 5 : > 8 7 2 8 B 8, 3 > @ = 8 B 5 A 0 ? >- B J = : 8. & 5 = B @ 0 ; = 8 B 5 1 > 4 ; 8 A 0 4, 3 > ; 5 < 8 A 4 J ; 6 8 = 0 > B 4 4 > 10 A <., ; 5 : > 7 0 > 1 ; 5 = 8 2 > A = > 2 0 B 0, @ 0 A B 0 B ? @ 0 2 8 8 ; 8 ; 5 : > 8 7 2 8 B 8. & 2 5 B > 2 5 B 5 A 0 7 ; 0 B = > 6 J ; B 8. & 2 5 B = 0 B 0 B @ J 1 8 G : 0 5 3 J A B > ? > : @ 8 B 0 A 2 ; 0 A 8 = : 8. ; > 4 > 2 5 B 5 A 0 ? @ > 4 J ; 3 > 2 0 B 8.

B 3 ; 5 6 4 0 = 5: 0 : B C A 0 @ 0 A B 5 8 7 : ; N G 8 B 5 ; = > 1 0 2 = > 8 5 4 > A B 0 B @ C 4 5 = 7 0 > B 3 ; 5 6 4 0 = 5.

***Echinocactus polycephalus**

8 = 8 < 0 ; = 0 B 5 < ? 5 @ 0 B C @ 0: 8 7 4 J @ 6 0 = 0 B 5 < ? 5 @ 0 B C @ 8 4 > -12 °C, A @ 5 4 = 0 7 8 < = 0 B 5 < ? 5 @ 0 B C @ 0 12 °C.

0 7 ? > ; > 6 5 = 8 5: ? J ; = > A ; J = F 5

@ > 8 7 E > 4: !) (Mohave 8 ? C A B 8 = O B 0 Sonoran: Arizona, California, Nevada), 5 : A 8 : > (A 5 2 5 @ > 7 0 ? 0 4 = 0 Sonora), = 0 < 0 ; : 0 = 0 4 < > @ A : 0 2 8 A > G 8 = 0. 0 A B 5 ? > 8 7 : ; N G 8 B 5 ; = > 1 5 7 2 > 4 = 8 < 5 A B 0, 2 J @ E C : 0 < 5 = 8 A B 8 8 ? 5 A J G ; 8 2 8 ? > G 2 8.

? 8 A 0 = 8 5: 0 A B 5 2 3 @ C ? 0, = O : > 9 : > ; > = 8 8 < > 3 0 B 4 0 A 5 A J A B > O B > B ? > 2 5 G 5 > B 100 : 0 : B C A 0. ! B J 1 ; > B > 5 A D 5 @ 8 G = > 8 ; 8 A ; 0 1 > F 8 ; 8 = 4 @ 8 G = >, 2 8 A > : > 30-60 A <., A 4 8 0 < 5 B J @ 9-20 A <.

5 1 @ 0 B 0 A 0 12-18, 4 J ; 1 > : 8 > B 0,8 4 > 1,2 < <. @ 5 > ; 8 B 5 A 0 3 > ; 5 < 8, A 8 2 > 1 5 ; 5 7 = 8 : 0 2 8 = 0 F 2 O B, A 4 J ; 6 8 = 0 1 A <. 8 H 8 @ > : 8 > B 1 4 > 3,5 A <. & 5 = B @ 0 ; = 8 B 5 1 > 4 ; 8 A 0 4 = 0 1 @ > 9, 4 J ; 3 8 5-9 A <., 0 @ 0 4 8 0 ; = 8 B 5 A 0 6-8 = 0 1 @ > 9 A 4 J ; 6 8 = 0 2,5-5 A <., F 2 5 B 0 = 0 1 > 4 ; 8 B 5 5 : 0 D O 2 A G 5 @ 2 5 = 8 8 2 8 G : 8. & 2 5 B > 2 5 B 5 A 0 6 J ; B 8, 4 J ; 3 8 5-6 A <., ? 5 @ 8 > 4 0 = 0 F J D B 5 6 5 $ 5 2 @ C 0 @ 8- 0 @ B. ; > 4 0 5 > 1 J ;, A C E, ? > : @ 8 B A 2 ; 0 A 8 = : 8, > B 2 0 @ O A 5 > B > A = > 2 0 B 0, : > 3 0 B > C 7 @ 5 5. ! 5 < 5 = 0 B 0 A 0 3 > ; 5 < 8 8 G 5 @ = 8 = 0 F 2 O B.

> 4 2 8 4:

- Echinocactus polycephalus ssp. xeranthemoides

***Echinocactus platyacanthus** (A 8 = > = 8 < Echinocactus ingens)

8 = 8 < 0 ; = 0 B 5 < ? 5 @ 0 B C @ 0: 8 7 4 J @ 6 0 = 0 B 5 < ? 5 @ 0 B C @ 8 4 > -4 °C, A @ 5 4 = 0 7 8 < = 0 B 5 < ? 5 @ 0 B C @ 0 12 °C.

0 7 ? > ; > 6 5 = 8 5: ? J ; = > A ; J = F 5

@ > 8 7 E > 4: F 5 = B @ 0 ; = > 5 : A 8 : >

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

> 4 2 8 4:

- Echinocactus platyacanthus fa. grandis

@ > 8 7 E > 4: F 5 = B @ 0 ; = > 5 : A 8 : >

?8A0=85: 48=8G5=, 3>;O<:0:BCA AJA F8;8=4@8G=>
ABJ1;>, 28A>:> 4>1-2 <5B@0 8 A 480<5BJ@60-100 A<., F25B0 <C 5
BJ<=> 75;5=, ?@8 <;048B5 :0:BCA8 A5 7015;O720B H8@>:8
E>@87>=B0;=8 828F8. J@E0 <C 5 87:;NG8B5;=> 2J;=8AB.
51@0B0 ?@8 <;048B5 @0AB5=8O A08, H8@>:8, 28A>:8 8 <0;:>
8;8 ?>25G5 2J;=>>1@07=8, => ?@8 2J7@0AB=8B5 @0AB5=8O
A0 <=>3>1@>9=8 8 ?>-A:>@> BJ=:8. @5>;8B5 A0
@0740;5G5=8 ?@8 <;048B5 @0AB5=8O 8 ?>GB8 A5 A;820B ?@8
2J7@0AB=8B5 FJDBOI8:0:BCA8. >4;8B5 A0 74@028, B2J@48 A
2848<8 828G:8 ?> BOE, >B=0G0;> A0 6J;B5=8:028, => A;54
B>20 AB020B:0D5=8:02> G5@25=8. 0480;=8B5 1>4;8 A0 >B5-6
=0 1@>9, A 4J;68=03-4 A<. 48=8G=8O F5=B@0;5=1>48; 5
?@02, 4J;J34-5 A<. &25B>25B5 A0 6J;B8 =0 F2OB A 4J;68=04-5 A<.
NA?8F8B5 >:>;> ?;>4=8:0 A0 ?@>4J;3>20B8, 2 >A=>20B0
A8 8<0B <=>65AB2> 2;0:J=F0, :>8B> ?>:@820B
?5@8:0@?5;0 A 3JAB0, ?;NH5=0 >1282:0. "5A=8B5, B2J@48
3>@=8 ;NA?8F8 8<0B 2@JEG5B0 =0?>4>1O20I8 1>4;8G:8.
;>4>25B5, A:@8B8 ?>4 <0A0 >B 4J;38, 3;04:8 8 15;8
2;0A8=:8, A0 4J;38 >:>;>4-5 A<. !5<5=0B0 A0 ;JA:02> G5@=8.
7?>;720=5: B ABJ1;0B0 <C A5 ?@83>B2O A;04:> ?>7=0B>
:0B>"acitron" 8;8 A;04:> >B"viznaga". 7?>;720 A5 ?@8 AB@>560 =0
:JI8 8;8 4@C3 B8? A3@048 8 :0B> 45:>@0B825= 5;5<5=B 2
3@048=8B5.

***Echinocactus texensis**

8=8<0;=0 B5<?5@0BC@0: 874J@60 =0 B5<?5@0BC@8 4>-18 °C,
A@54=0 78<=0 B5<?5@0BC@012 °C.

07?>;>65=85: ?J;=> A;J=F5

@>87E>4: A525@>87B>G=> 5:A8:>(>0EC8;0, C52>
5>=, "0<0C;8?0A), N6=8B5 G0AB8 =0 !)("5:A0A,
N3>87B>G=> N 5:A8:>, :;0E><0)

?8A0=85: 0AB5=85B> 8<0 A8=:02> 75;5=> =0 F2OB ABJ1;>,
157 AB@0=8G=8 874J=:8, 4>AB830 =0 @07<5@ 4>20 A<. =0
28A>G8=0 830 A<. =0 H8@8=0. 51@0B0 A0 70:@J3;5=8 8
87?J:=0;8, >B13 4>27 =0 1@>9. AO:> @51@> 2 7028A8<>AB >B
2J7@0ABB0 =0 :0:BCA0 8<0 >B2 4>6 0@5>;0 ?>:@8B8 A <JEG5.
0480;=8B5 1>4;8 87;870I8 >B 0@5>;8B5 A06-7, A @07<5@1-4 A<,
F25B0 8< 5 G5@25= 2 =0G0;>B>, A 2J7@0ABB0 AB020B 6J;B8.
&5=B@0;=8O 1>48; 5 A0<> 548=, 4J;J36 A<. 8 H8@>: 4>8 <<.,
<>65 40 1J45 ?>-;5:> 8;8 ?>-A8;=> 8728B. &25B>25B5 A0 >B
@>7>28 4> 0;5=> G5@25=8, =0 H8@8=0 4>AB830B 4>6A<.
;>4>25B5 A0 >1;8. ><5I5=85B>, 2:>5B> A5 >B3;5640
@0AB5=85B>, B@O120 ?> 2AO:> 2@5<5 40 5 4>1@5
?@>25B@5=>. @57;OB>B> A5 ?>;820 254=J6 2 A54<8F0B0.
@57 78<0B0 ?>;820=5B> A5 >3@0=8G020 4> <8=8<C<. ">
70?>G20 >B=>2> ?@57 ?@>;5BB0, A;54 ?>O20B0 =0 F25B=8
?J?:8.
>65 40 A5 ?>4E@0=20 ?> 2@5<5 =0 ?>;820=5B> ?@57
?@>;5BB0 8 ;OB>B>, ?> 254=J6 2 <5A5F0.

@5A0640=5B> 5 =02-3 3>48=8. B3;5640B A5 =0 A;J=F5 3@048=0B0, 2 >@0=65@8O 8;8 2 4><0H=8 CA;>28O. @57 ;OB>B> =09- 4>1@5 40 A5 87=0AO =02J=, 0:> A5 3;540 2 A0:A8O. 0AB5=85B> =5 878A:20 1>30B0 ?>G20, => BO B@O120 40 5 4>1@5 >BF5640I0 A5, A ?@8<5A8 =0 ?OAJ: 8 =0B@>H5=0 3;8=0.

4><0 ?@57 78<=8B5 <5A5F8 B5<?5@0BC@0B0 =5 1820 40 ?040 ?>42 3@04CA0, 70I>B> B>20 <>65 40 1J45 ?03C1=> 70 @0AB5=85B>. **07<=>6020=5:** '@57 A5<5=0 8;8 ABJ1;5=8 @57=8F8.