

F Y]gYk Ufbi b[Yb. 'J c fg]W h j c f'ZØb Z
A]hhY`a YYf`ÀbXYfb °

8 Ug`5i gk Àfh][Y`5a h`k Ufbh j c f`F Y]gYb`]b`ZØb Z
A]hhY`a YYf`ÀbXYf" `9fZU\ fYb`G]Y`X]Y`U_hi Y`Yb
G]W Yf\Y]hg]bZcfa Uh]cbYb`i bX`F Y]gYk Ufbi b[Yb"



ÿ [mdhYbž`@UbX`!`8 Ug`5i gk Àfh][Y`5a h`\Uh`Ua` `&%" A U] &\$&)
k]W h][Y`F Y]gY\]bk Y]gY`j YfÒZYb h]W hž`X]Y`F Y]gYbXY`]b`ZØb Z
@ÀbXYfb`Ua` `A]hhY`a YYf`VYhfY ZYb" ` ðgVYgcbXYfY`ÿ [mdhYbž`gfUY`ž
@]VUbc bž`Gmf]Yb`i bX`@]VmYb`ghY\Yb`]a` `: c_i`g`XYf
F Y]gYk Ufbi b[Yb" `8]YgY`K Ufbi b[Yb`g]bX`YbhgW Y]XYbX`ZØf`X]Y
G]W Yf\Y]h`XYi hgW Yf`GhUUhgVØf[Yf`]a` `5i`g`UbX`i bX`gc`Yb`U`g
C f]Ybh]Yfi b[`X]YbYb"

9]bY`F Y]gYk Ufbi b[`]gh`Y]b`Xf]b[YbXYf`5ddY`ž`b]W h]b`XUg
VYhfc ZYbY`@UbX`cXYf`; YV]Yh`ni`fY]gYb" `HY]`fY]gYk Ufbi b[Yb
\]b[Y[Yb`VYn]Y\Yb`g]W`Ui`Z`VYgh]a` `a`hY`F Y[`]cbYb`]bbYf\U`V`Y]bYg
@UbXYg`i bX`V]YhYb` ðZcfa Uh]cbYb`ØVYf`dchYbn]Y`Y`F]g]_Ybž`c`bY
X]fY_hj`cb`Y]bYf`F Y]gY`UVni`fUHyb" `8]YgY`G]W Yf\Y]hg\]bk Y]gY

_ÖbbYb`F Y]gYbXY`XUni`Ub fY[Ybž`\fY`D`ÄbY`ni`ØVYfXYb_Yb`cXYf
g]W`]bhYbg]j Yf`ØVYf`X]Y`6YX]b[i b[Yb`j cf`Cfh`ni`]bZcfa`]YfYbž
VYj cf`g]Y`fY]gYb"

F Y]gY\]bk Y]gY`ZØf`[YZÀ\ fXYhY`@ÄbXYf

: Øf`Y [mdhYb`[]`hY]bY`HY]`fY]gYk Ufbi b[ž`X]Y`VYgcbXYfg`XYb
BcfXYb`XYf`G]bU]! < U`V]bgY`i bX`XUg`Ä[mdh]gW`!]gfUY`]gWXY
; fYbn[YV]Yh`VYhf]Zž`a`]h`5i gbU`a`Y`XYg`VY`]YVhYb`i`f`Ui`VgcfhYg
HUVU``F Y]gYbXY`gc`hYb`g]W`]\]Yf`VYk`i`ggh`gY]bž`XUgg`XUg`F`]g]_c
hYffc]f]gh]gW`Yf`5_h]j`]h`ÄhYb`gck`]Y`a`]`]h`Äf]gW`Yf`C`dYfUh]cbYb
VYghY`h`Ni`XYa`k`]fX`Xf]b[YbX`[YfUhYbž`]bX]j`]Xi`Y`Y`5i`gZØ[Y
i`bX`,`VYf`UbXZU`fhYb`]b`G`Ufa`Y`!G`Y]_`bi`f`a`]hd`fcZYgg]cbY`Y`f
6Y[`Y]hi`b[`ni`i`bhYfbY`a`Yb``5i`W`i`bni`fY]W`YbX
[Y`Yb`bnY]W`bYhY`A`]bYbZY`XYf`ghY`Yb`Y]b`Yfbgmi`bY`a`YbXYg
F`]g]_c`XUf"

⇒ `gfUY`g]bX`XYf`; UnUghfY]ZYbž`XUg`K`Ygh`c`fXUb`UbX`i`bX`XYf
BcfXYb`XYg`@UbXYg`fb`ØfX`]W`XYf`GhfU`»`Y`,`) `Ł`j`cb`Y]bYf
HY]`fY]gYk Ufbi b[`VYhfc`ZYb``<]Yf`VYghY`hY]b`Yf`Ø`hYg`F`]g]_c`ZØf
[Yk`U`hgUa`Y`5i`gY]bUbXYfgYhni`b[Yb`i`bX`a`]`]h`Äf]gW`Y
C`dYfUh]cbYb"

⇒ `@]VUbc`b`k`]fX`j`cf`F Y]gYb`]b`XYb`GØXYb`XYg`@UbXYgž`X]Y`6Y`UU!
9VYbY`gck`]Y`; fYbn[YV]YhY`ni`Gmf]Yb`[Yk`Ufbh``J`cf`U`Y`a`X]Y
dU`Ägh]bYbg]gW`Yb`:`ØW`h`]b[g`U[Yf`i`bX`gØX`]W`Yb`J`cfc`fhY`j`cb
6Y]fi`h[Y`hYb`U`g`VYgcbXYfg`[YZÀ\ fXYhž`Ui`Z[fi`bX`XYg`F`]g]_cg`j`cb
VYk`UZb`YhYb`5i`gY]bUbXYfgYhni`b[Yb`i`bX`9bhZØ\`fi`b[Yb"

Gmf]Yb`i`bX`@]VmYb`g]bX`i`bhYf`[YbYfY`Yb`F Y]gYk Ufbi b[Yb
Y]b[Yghi`Zh``⇒`VY]XYb`@ÄbXYfb`\YffgW`h`Ub`U`hYbXYf`VYk`UZb`YhYf
?`cbZ]_hž`i`bX`X]Y`hYffc]f]gh]gW`Y`6YXfc`\i`b[`]gh`\cW``Ni`XYa`]gh
X]Y`_c`bgi`Uf]gW`Y`i`bhYfgh`Øhni`b[`Xi`fW`XYi`hgW`Y
5i`g`UbXgj`YfhfYhi`b[Yb`Y]b[YgW`fÄb`_h"

F Y]gY\]bk Y]gY`ZØf`X]Y`HØf`_Y]`i`bX`NmdYfb

8]Y`HØf`_Y]`Yf`\Ä`h`_Y]bY`[YbYfY`Y`F Y]gYk Ufbi b[ž`YXcW`gc`hYb

F Y]gYbXY`]b`VYgh]a a hYb`F Y[]cbYbž`VYgcbXYfg`]b`XYb
gØXØgh`]WXYb`Dfcj]bnYb`bU\Y`XYf`gmf]gWXYb`; fYbnYž`Yf\Ø\hY
J c fg]W`h`k U`hYb`UggYb" `ϕ`[fØ» YfYb`Gh`XhYb`k]Y`ϕhUbVi`i bX
5b_UfU`k]fX`[YfUhYbž`A YbgWXYbUbgUa a`i b[Yb`ni`j Yfa`Y]XYb"

NmdYfb`]gh`ZU`hYba`À»][`]b`nk`Y`HY]`Y`[YhY]`h`8]Y`]bhYfbUh]cbU`
UbYf_UbbhY`F Ydi`V`_]`NmdYfb`]a`GØXYb`i`bX`X]Y`gY`VghYfbUbbhY
HØf_]gWXY`F Ydi`V`_]`BcfXnmdYfb`]a`BcfXYb" `F Y]gYbXY`gc`hYb
g]W`VYk`i`ggh`gY]bž`XUgg`X]Y`9]bfY]gY`]b`XYb`BcfXhY]`ØVYf`b]W`h
[YbY`a`][`hY`; fYbnØVYf[`Àb[Y`fYW`h]WXY`?`cbgYei`YbnYb`bUW`g]W`
n]Y`Yb`_Ubb"

I`bVYXYb`_]WXY`F Y]gYn]Y`Y`Ua`A`]hhY`a`YYf`g]bX`\]b[Y[Yb
;`f]YWXYb`UbXž`GdUb]Ybž`ϕU`]Ybž`fUb`fY]W`i`bX`?`fcUh]Ybž`X]Y
U`hi`Y`U`g`g]WXYfYf`[Y`hYbž`UVYf`F Y]gYbXYb`XYbbcW`[YfUhYb
k`]fXž`g]W`j`cf`F Y]gYUbhf]hh`ØVYf`U`hi`Y`Y`9]bfY]gY!`i`bX
Nc`VYgh]a`a`i`b[Yb`ni`]bZcfa`]YfYb`gck`]Y`Y]bYb`Ui`gfY]WXYbXYb
J Yfg]WXYfi`b[ggW`i`hm`UVni`gW`]Y»`Yb"

8]Y`U`[Ya`Y]bY`G]WXYf\Y]hg`U[Y`]b`j`]Y`Yb`F Y[]cbYb`V`Y]Vh
Ub[YgdUbbhž`]bgVYgcbXYfY`]a`<]bV`]W`_Ui`Z`X]Y`k`Y`hk`Y]hY`; YZU`f
hYffc]g]g]WXYf`5bgW`À[Y`i`bX`9bhZØ\fi`b[Yb" `8 Ug`5i`gk`Àfh][`Y
5a`h`Yf`Ài`hYfhž`XUgg`XUg`A`cV`]g]Yfi`b[gdchYbn]U`hYffc]g]g]WXYf
Cf[Ub]gUh]cbYb`k`]Y`5`E`U]XU`i`bX`XYa`i`ϕ`Ua`]gWXYb`GhUUh
\cW`]gh" `F Y]gYbXYb`k`]fX`Ya`dZc`\`Ybž`g]W`fY[Y`a`À»][`ØVYf`X]Y
G]WXYf\Y]hg`U[Y`]b`]fYa`F Y]gY`UbX`ni`]bZcfa`]YfYb`i`bX
j`YfX`W`h][`Y`J`cf[`Àb[Y`i`a`[Y`YbX`XYb`Øfh]WXYb
G]WXYf\Y]hgVY\ØfXYb`ni`a`Y`XYb"

8YhU]`g	
Cfh	Y[mdhYbž`@UbX
Ei`Y`Yb	<ul style="list-style-type: none">• k k k "fi`f&("XY• k k k "Ui`gk`UYfh][`Yg!`Ua`h"XY

6Ygi`WXYb`G]Y`i`bg`Ui`Z`Y]bY!fY]gY"XY