

< i VgW fUi VYf!5`Ufa`]b`GhfU»_]fW Yb.
Nk Y]`J Yf`YhnhY`b UW X`5Vghi fn

⊖`GhfU»_]fW Yb`_Ua`Yg`ni`Y]bYa`< i VgW fUi VYf!
Nk]gW YbZU`ž`VY]`XYa`nk Y]`DYfgcbYb`j Yf`Yhnh`k i fXYb"
9]bgUhn_fÀZhY`j cf`Cfh"

5a`8cbbYfghU[UVYbX`k i fXY`X]Y`Zf]YX`]W X`B UW X`h]b`GhfU»_]fW Ybž
Y]bYa`Cfh]a`@UbX_fY]g`GhfUi V]b[!6c[YbžXi fW X`Ug`Yi`YbXY
@Àfa Yb`j cb`i Yi Yfk Y`fg]fYbYb`UVfi dh`i bhYfvfcW X`b"8]Y`Òfh]W X
6Yj`Ò`_Yfi b[`k Uf`g]W X`h]W X`U`Ufa`]Yfhi bX`ZfU[hY`g]W X`žk Ug`k c`\
[YgW X`Y`b`gY]b`_ÒbbhY"8Yf`5b`Ugg`ZØf`XYb`5`Ufa`k Uf`Y]b
i bYfk UfhYhYg`9fY][b]gž`XUg`X]Y`5i Za Yf_gUa`_Y]h`XYf`9]bgUhn_fÀZhY
i bX`XYf`5bk c`bYf`Ui Zg]W X`nc[.`Y]b`< i VgW fUi VYf!Nk]gW YbZU`"

K]Y`Y]b`GdfYW X`Yf`XYf`9]bgUhnYbhfU`Y`B]YXYfVUmYfb`a`]hY]`hYž
_Ua`Yg`[Y[Yb`%-.(\$`I`f`ni`Y]bYa`JcfZU`"ja`CfhghY]`B]YXYfUgh"
<]YfVY]`\UbXY`hY`Yg`g]W X`Yb`hk YXYf`i a`Y]bYb`5Vghi fn`cXYf`Y]bY
Bch`UbXi b[`XYg`< i VgW fUi VYfg";`ØW`_]W X`Yfk Y]gY`k i fXYb`VY]
X]YgYa`JcfZU`"bi f`nk Y]`DYfgcbYb`"Y]W X`h]j Yf`Yhnh`žk Ug`]b
5bVYhfUW X`h`XYf`I a`gh`ÀbXY`Y]b`fY`Uh]j`dcg]h]j Yg`9f[YVb]g`]gh"8Yf
[YbUi Y`i; fi bX`ZØf`XYb`Nk]gW YbZU`"gh`V]g`Ub[`bcW X`i b`_Ufž`i bX
Ui W X]Y`gdYn]Z]gW X`Y`→XYbh]h`À`X`Yg`< i VgW fUi VYfg`V`Y]Vh
i bVYgh]a`a`h"

8 YhU]`g`XYf`G]hi Uh]cb

8]Y`9]bgUhn_fÀZhY`j cf`Cfhž`XUfi bhYf`Dc`]nY]ž: Yi Yfk Y`f`i bX
F`Y`hhi b[gX]Ybghž`k UfYb`gW X`bY`"a`cV]`]g]Yfh`k cfXYbž`i a`Y]bYb
i a`ZUb[fY]W X`Yb`9]bgUhn`ni`[Yk`À`f`Y]ghYb"5b[Yg]W X`hg`XYf
I bg]W X`Yf`Y]h`ØVYf`X]Y`[YbUi Yb`I a`gh`ÀbXY`XYg`JcfZU`"g`nY][hY
g]W X`Y`9]bgUhn`Y]hi b[`VYgc f[hž`UVYf`ni`j Yfg]W X`h]W X`ž`XUgg`X]Y

G]hi Uh]cb`i bhYf`?cbhfc`Y [YVfUWk h`k YfXYb`_ÖbbhY"8]Y`6Øf[Yf
k i fXYb`Ui Z[Yfi ZYbž]b`XYf`BÄ\Y`XYg; YgWXY\Ybg`J cfg]Wk h`k U`hYb
ni ``UggYb`i bX`g]Wk`ZYfbni \U`hYbž`i a`X]Y`FYhhi b[g!`i bX
6Yf[i b[gUfVY]hYb`b]Wk`hini `VY\]bXYfb"

⇒ a Yf`k]YXYf`_ca a h`Yg`ni `Nk]gWXYbZÄ`Ybž`VY]`XYbYb
@ ZhZU\fnYi [Y`]b`GWk]Yf][_Y]hYb`[YfUHYb"8]YgY: Ä`Y`g]bX`cZh
b]Wk`h`bi f`ZØf`X]Y`]bj`c`j]YfhYb`DYfgcbYb`[YZÄ`f`]Wk`ž`gcbXYfb`Ui Wk
ZØf`X]Y`I a [YVi b[" `ϕ`GhfU»_]fWXYb`k]fX`XYfnY]h`U`Yg
i bhYfbca a Ybž`i a`X]Y`I fgUWXY`XYg`J cfZU`g`gWk`bY`gha Ö[`]Wk`ni
Yfa]hY`b``: UWk`Yi h`Y`i bX`9]bgUhn_fÄZhY`UfVY]hYb`]bhYbg]]
ni gUa a Ybž`i a`ϕZcfa Uh]cbYb`ni`gUa a Y`b`i bX`X]Y`bchk`YbX][Yb
GWk]hY`ni f`5i Z_Äfi b[`XYg; YgWXY\Ybg`Y]bni `Y]hYb"

ϕ`XYf`J Yf[Ub[Yb`Y]h`[UV`Yg`]a a Yf`k]YXYf`6Yf]Wk`hY`ØVYf
Ä`b`]Wk`Y`J cfZÄ`Yž`X]Y`g]Wk`Yb`k`YXYf`Xi fWk`h`YWk`b]gWk`Y
GWk]Yf][_Y]hYb`cXYf`Xi fWk`a YbgWk`]Wk`Yg`J YfgU[Yb`Yf[YVYb
\UVYb"8Yg\U`V`]gh`Yg`VYgcbXYfg`k]Wk`h][ž`XUgg`X]Y`I bhYf`gi Wk`i b[
Yfbgh\UZh`i bX`[fØbX`]Wk`YfZc`[h"

8]Y`6Y\ÖfXYb`\UVYb`Ub[Y_ØbX][hž`k`Y]hYfY`ϕZcfa Uh]cbYb
VYfY]hni`ghY`Ybž`gcVU`X`g]Y`j`cf]Y[Yb"9g`]ghni`Yfk`UfhYbž`XUgg`X]Y
² ZZyb`h]Wk`_Y]h`VU`X`a`Y`f`ØVYf`X]Y`<]bhYf[fØbXY`XYg`J cfZU`g
YfZU`fYb`k]fX"6]g`XU\]b`V`Y]Vh`X]Y`5ha`cgd`ÄfY`]b`GhfU»_]fWXYb
Ub[YgdUbbhž`k`Ä`fYbX`U`Y`Ui`Z`Y]b`VYggYfYg`J YfghÄ`bXb]g`XYf
G]hi Uh]cb`k`UfhYb"

8YhU]`g

6Ygi Wk`Yb`G]Y`i`bg`Ui`Z.`b!U["XY