

< Yfh\ U'Ui Z'XYf'Gi W\Y'bUW\ 'Hcf[ UfUb hYb.  
? Ubb'GW\i`Yf'HUVU\_cj ]WYfgYhnYb 3

< Yfh\ U'6G7`\_Äa dZh'bUW\ 'XYa`5V[ Ub[ 'j cb  
Hc fgW\ØhnYb\_Öb][ 'HUVU\_cj ]Wi a`XYb`YfghYb`Nk Y]h][ U!G]Y[ "  
K Yf'hf]Zh[ Y[ Yb`FY[ YbgVi f[ 3

5a`GUa ghU[ 'ghY\h'ZØf'<Yfh\ U'6G7`Y]b`k ]W\h][ Yg'<Y]a gd]Y`[ Y[ Yb  
\b`FY[ YbgVi f[ 'ja`C`ma`d]UghUX]cb`Ub"BUW\`XYb`V]g\Yf  
YbhÄi`gW\YbXYb`9f[ YVb]ggYbž`Y]bYa`%.&[ Y[ Yb`DUXYfVcfb`i bX  
Y]bYa`%.[ Y[ Yb`XYb`<Ua`Vi f[ Yf`GJ`ž`XfÄb[ h'g]W\`X]Y': fU[ Y'Ui Z  
K Yf`k ]fX`X]Y`HcfY`ZØf`X]Y`6Yf`bYf`Yfn]Y`Yb 3`8 ]Y`A`UbbgW\UZh'g]Y\h  
g]W\`Y]bYf`\YfUi`gZcfXYfbXYb`G]hi`Uh]cb`[ Y[ YbØVYfž`]bgVYgcbXYfY  
bUW\`XYa`5V[ Ub[ 'j cb`<Uf]g`HUVU\_cj ]W\`XYf`U`g  
Hc fgW\ØhnYb\_Öb][ `XYf`Nk Y]hYb`@[ U'a`]h`&&`HcfYb`[ `ÄbnhY"

HUVU\_cj ]W\Uh'g]W\`bi`b`ZØf`Y]bYb`K`YW\gY`]b`X]Y`6i`bXYg`][ U  
YbhgW\]YXYb`i`bX`k ]fX`ZcfhUb`ZØf`<c`ZYb`Y]a`gd]Y`Yb"GY]b  
J`YfhfU[ `Xcfh`Äi`Zh`V]g`&\$&+"`W\`UhY`VY]`<Yfh\ U`Y]bYg`XYf  
VYghYb`\fY`a`Y]bYf`?`Uff]YfYž`UVYf`X]Y`7`\UbW\`Ui`Z`X]Y  
6i`bXYg`][ U`k`c`hY`]W\`b]W\`hi`b[ Ybi`hnh`UggYb`ž`Yf`\_`ÄfhY`XYf  
GhØfa`Yf`ni`gY]bYa`HfUb`gZYf": Øf'<Yfh\ U`VYXYi`hYh`X]YgYf  
K`YW\gY`gck`c`\`Z]bUbn]Y`Y`U`g`Ui`W\`gdcfh]W\Y  
<YfUi`gZcfXYfi`b[ Yb"

: ]bUbn]Y`Y`?`cbgYei`YbnYb`i`bX`XYf  
\_ca`a`YbXY`l`a`Vfi`W\

8Yf`K`YW\gY`j`cb`HUVU\_cj ]WVf]b[ h'<Yfh\ U'6G7`Y]bYb`ZYghYb  
GcW\_Y`VYhfU[ 'j`cb`ØVYf`('A`j`)]cbYb`9i`fc`i`bX`a`Ö[ `]W\Y  
6cbi`gnU\`i`b[ Ybž`X]Y`XYb`6YhfU[ `Ui`ZV]g`ni`')`A`j`)]cbYb`9i`fc  
Yf\`Ö\Yb`\_ÖbbYb"Ni`XYa`k`]fX`XUg'; Y\U`h`XYg`a`]hYfk`Y]Y

Y\Ya U][ Yb`GhØfa Yfgž`XUg`g]W\`Ui Z`Yhk U`, \$\$\$`\$\$\$`9i fc`VY`Y]Zž  
Y]b[ YgdUfh`5b[ Yg]W\hg`XYf`Z]bUbn]Y`Yb`Bch`U[ Y`XYg`J YfY]bg`]gh  
X]YgYf`; Yk ]bb`bchk YbX][ ži a `]b`X]YgYa `HfUbgZYfZYbghYf`Y]bYb  
, VYfgW\i gg]j cb`nY`b`A ]`]cbYb`9i fc`ni `Yfk ]fhgW\UZhYb"

GdcfhX]fY\_`hcf`6Yb`Ua ]b`K YVYf`VYhcbhYž`XUgg`XYf`J YfY]b`b]W\h  
d`UbhYž`HUVU`cj ]WUVni [ YVYbž`UVYf`i bhYf`6YfØW\_g]W\h][ i b[ `XYf  
; YgUa hg]hi Uh]cb`XYa `K YW\gY`ni gh]a a Yb`a i gghY`"8]YgY  
9bhgW\Y]Xi b[ `nY][ hž`k ]Y`gY\`f`<Yfh\U`a ]h]Z]bUbn]Y`Yb`9b[ d`ÄggYb  
ni `Äa dZYb`\Uh`5i ZXYa `Gd]Y`ZY`X`k ]fX`Yg`YXcW\`Y]bY`bYi Y  
<YfUi gZcfXYfi b[ `[ YVYb` `X]Y` : fU[ Y`XYf`Hcf`Ä[ Yfei U`]h`ÄhYb`a i gg  
Yhnh[ Ub`n`bYi `VYk YfhYh`k YfXYb"

8Yf`bYi Y`A Ubb`]a `Ghi fa ` \_ÖbbhY`@ WU`GW\i `Yf`k YfXYb`"8Yf  
&) !Ä\`f][ Y`k i fXY`UV`ÖgYZfY]`j ca ` : 7`A U[ XYVi f[ `j YfdZ]W\hYhž`k c  
Yf`YXcW\`bi f`gYW\g`HcfY`Yfn]Y`Yb`\_`cbbhY`"A ]h`gY]bYf`; fÖ»Y`j cb  
%ž- \$`A YhYfb`Ä`bY`h`Yf`HUVU`cj ]Wž`[ ]`h`UVYf`U`g`bcW\`gW\`bY`Yf`  
<Yfh\U!7cUW\`7f]gh]Ub` : ]Ä`"cVhY`GW\i `Yfž`XU`Yf`]b`X]Y`H]YZY`[ Y\Yb  
\_Ubb`i bX`gY\`f`ZY]»][ [ Y[ Yb`XYb`6U`"UfVY]hY`" `9f`\Uh`X]Y  
A Ö[ `]W\`\_Y]hž`g]W\`U`g`HcfgW\ØhnY`ni `VYk Y]gYb` ž`gc` : ]Ä`"8Yf  
8fi W`ž`X]Y`GW`fYfdi b`hY`ni `ØVYfbY`a Ybž`UghYh`bi b`Ui Z`gY]bYb  
GW\i `hYfb"

Ni gÄhn`]W\`ghY`Yb`a ]h` : `cf]Ub`B]YXYf`YW\`bYfž`8Yffm`GW\Yf\`Ubh  
i bX`Ga U]`DfYj `U`\_`k Y]hYfY`A ]hY`ghØfa Yf`ni f`J YfZØ[ i b[ "  
5`YfX]b[ g]gh`DfYj `U`\_`Ui h`HfU]bYf`b]W\h]a `U`\_hi Y`Yb`?UXYf`i bX  
XØfZhY`VYbZU`g`VU`X`XYb`J YfY]b`j Yf`UggYb`"B]YXYf`YW\`bYf`k ]fX`]b  
XYf`FY[ Y`]a `cZZYbg]j Yb`A ]hY`ZY`X`Y]b[ YgYhnhž`k Ä`fYbX  
GW\Yf\`Ubh`U`g`9fgUhn`ZØf`XYb`j Yf`YhnhYb` : UV]Ub`FYYgY`U[ ]Yfhž`XYf  
bUW\`Y]bYf`Gdfi b[ [ Y`Yb`\_gj Yf`Yhni b[ `gY]b`HYUa `VYbZU`g  
j Yfa ]ggh"

## 8Yf`6`]W`\_`bUW\`j cfbY.`K Yf`\_Ubb`X]Y`HcfY Yfn]Y`Yb3

8]Y` : fU[ Yb`fi bX`i a `XYb`HcfYfZc`[ `j cb`<Yfh\U`6G7`ghY][ Ybž`XU  
X]Y`9fk Ufhi b[ Yb`Ub`GW\i `Yf`Ybcfa `g]bX`" `9f`a i gg`Yhnh`gY]bY  
A Ö[ `]W\`\_Y]hYb`bi hnYb`i bX`g]W\`VYk Y]gYb` ž`gU[ hi : ]Ä`"8]Y`[ YgUa hY

A UbbgWUZh]gh[ YZcfXYfhž]b`XYa`VYj c fghY\YbXYb`Gd]Y``[ Y[ Yb  
FY[ YbgVi f[ `X]Y`YfghYb`Xf]b[ YbX`VYb`Òh][ hYb`Di b\_hY`]b`XYf  
Nk Y]hYb`@[ U`ni`c`Yb`"8]Y`gh`ÀbX][ Yb`J Yf`Yhni b[ Yb`i bX`XYf  
J Yf`i gh]j cb`GW`ØggY`gd]Y`Yfb`k ]Y`HUVU\_cj ]Wi bX`FYYgY`ghY`Yb  
Y]bY`<YfUi gZcfXYfi b[ `XUfž`X]Y`XYf`HfU]bYfghUV`b]W h  
i bhYfgW`ÀhYb`XUfZ`

⇒XYf`\_ca a YbXYb`6Y[ Y[ bi b[ `k ]fX`\_`Uf`k YfXYbž`cV`@ WU  
GW`i`Yf`]b`XYf`@U[ Y`]ghž`X]Y`HcfY`ni`Yfn]Y`Ybž`X]Y`<Yfh\U`VYb`Òh][ hž  
i a`Ui g`XYf`i bhYfYb`HUVY`YbFY[ ]cb`\YfUi gni`\_ca a Yb`"8 Ug  
5i ggW`Y]XYb`j cb`HUVU\_cj ]W\]bhYf`Àggh`Y]bY`[ fc» Y`@ØW`Yž`gck c\`  
gd]Y`Yf]gW`U`g`Ui W`Ya`ch]cbU`ž`i bX`X]Y`: Ubg`\cZYbž`XUgg`X]Y  
BYi Yb`gW`bY`ni gUa`a YbZ]bXYb`i bX`X]Y`Ub[ YghfYVhY`K YbXY  
Y]b`Y]hYb`"

## 9]b`bYi Yf`K Y[ `ZØf`< Yfh\U`6G7

A ]h`XYa`K YW`gY`j cb`HUVU\_cj ]WVY[ ]bbhY]b`bYi Yf`5VgW`b]h`ZØf  
<Yfh\U`6G7`"8Yf`J YfY]b`a`i gg`g]W`UbdUggYb`i bX`Y]bY`bYi Y  
⇒Ybh]h`Àh`Z]bXYbž`VYgcbXYfg`k Ybb`a`Ub`VYXYb`hž`XUgg`X]Y`GU]gcb  
[ YfUXY`Yfgh`VY[ cbbYb`\Uh`"8Yf`8fi W\_]gh`Ybcfa`ž`i bX`X]Y`HfU]bYf  
i bX`Gd]Y`Yf`ghY\Yb`j cf`XYf`<YfUi gZcfXYfi b[ ž`XYb`J Yf`i gh`Y]bYg  
@Y]ghi b[ ghf`À[ Yfg`k ]Y`HUVU\_cj ]Wni`\_ca`dYbg]YfYb`i bX`XUg  
J YfhfUi Yb`XYf`: Ubg`ni fØW`ni [ Yk ]bbYb`"

8]Y`<Yfh\U`6G7`ghY\h`]b`X]YgYf`GU]gcb`j cf`Y]bYf`Yf\YV`]W`Yb  
<YfUi gZcfXYfi b[ "8Yf`7`i V`\Uh`X]Y`6i bXYg`][ U`j Yf`UggYb`i bX  
a`i gg`g]W`bi b`]b`XYf`&`@[ U`bYi`cf]Ybh]YfYb`"8]YgY`GU]gcb  
a`Uf\_]Yfh`Y]bYb`K YbXYdi b\_h]b`XYf`; YgW`]W`hY`XYg`J YfY]bgž`XYf  
]b`XYb`Y`hnhYb`↗\fYb`a`]h`Z]bUbn]Y`Yb`GW`k ]Yf][ \_Y]hYb`i bX  
gdcfh]W`Yb`F`ØW`gW`À[ Yb`ni`\_`Àa`dZYb`\UhY`"8]Y`fUgW`Y  
J Yf`ÀbXYfi b[ `XYg`?UXYfg`i bX`X]Y`5V[ `Àb[ Y`k ]W`h][ Yf`Gd]Y`Yf  
\UVYb`X]Y`B`chk YbX][ \_Y]h`ZØf`Y]bY`ghfUhY[ ]gW`Y`BYi Ui gf]W`hi b[ `]b  
XYb`J cfXYf[ fi bX`[ YfØW`h`"

9]b`nYbhfU`Yf`5gdY`\_h`XYf`U`\_hi Y`Yb`G]hi Uh]cb`g]bX`X]Y`Z]bUbn]Y`Yb  
DfcV`Ya`Y`XYg`7`i Vg`"@Ji`h`6Yf]W`hYb`a`i gg`<Yfh\U`V]g`ni a`9bXY  
XYg`HfUbgZYfZYbghYfg`Y]bYb`, VYfgW`i gg`j cb`nY\`b`A`j`]cbYb`9i fc

Yfk ]fhgWk UZhYb"8 ]Yg ]ghY]bY'X]fY\_hY : c`[ Y ] cb : Y\`d`Ubi b[ Yb  
i bX`Y]bYa `c\Yb`GWk i`XYbghUbXžXYf`ØVYf`X]Y`đ\ fY  
Ub[ YgUa a Y`h`k i fXY"8 ]Y`Ö\_cbc a ]gWk Y`@U[ Y`nk ]b[ h`XYb`J YfY]bž  
g]Wk`j`cb`@Y]ghi`b[ ghfÄ[ Yfb`ni`hfYbbYbž`k Ug`b]Wk`h`bi`f`gdcfh]Wk`ž  
gcbXYfb`Ui`Wk`Ya`ch]cbU`VY`UghYbX`ZØf`X]Y : Ubgž`Gd]Y`Yf`i`bX  
A ]hUfVY]hYf`]gh"

< ]ghc f]gWk Y`J Yf[ `Y]Wk Y.` < Yfh\ Ug`F ØW\_\_Y`f`]b  
X]Y`Nk`Y]h`][ U

9]b][ Y`\]ghc f]gWk Y`DUfU`Y`Yb`UggYb`g]Wk`n]Y\Ybž`k`Ybb`a`Ub`X]Y  
G]hi`Uh]cb`j`cb`<Yfh\U`6G7`a`]h`UbXYfYb`fYbca`a`]YfhYb`7`i`Vg  
j`Yf[ `Y]Wk`hž`X]Y`YVYbZU`g`Ui`g`XYf`6`i`bXYg`][ U`UVgh]Y[ Yb`i`bX`g]Wk  
bYi`Ui`ZVUi`Yb`a`i`gghYb"9]b`6Y]gd]Y`]gh`XYf`%":7`BØfbVYf[ žXYf  
a`Y\ fYfY`5VghY][ YfZU\fhYb`Xi`fWk[ Ya`UWk`h`\Uh`Y`\b`]Wk`k`]Y`<Yfh\U  
k`Uf`BØfbVYf[ `cZh[ Ynk`i`b[ Ybž`GWk`ØggY`gd]Y`Yf`UVni`[ YVYbž`i`a  
Z]bUbn]Y`Y`GhUV`]hÄ`h`ni`YffY]Wk`Yb"8 ]Y`<YfUi`gZcfXYfi`b[ Ybž`X]Y  
a`]h`XYa`5Vgh]Y[ `j`YfVi`bXYb`g]bXž`g]bX`\]YfVY]cZZYbg]Wk`h]Wk.`8Yf  
J Yf`i`gh]j`cb`HJ!; Y`XYfbž`Gdc bgc fYbj`YfhfÄ[ Yb`i`bX`XYf  
Ni`gWk`Ui`YfY]bbU`a`Yb`\_Ubb`X]Y`k`]fhgWk UZh]Wk`Y`6Ug]g`Y]bYg`7`i`Vg  
ghUf`\_`[ YZÄ`fXYb"

⇒ J Yf[ `Y]Wk`XUni`gWk UZhY`Yg`XYf`G7 : fY]Vi`f[ žbUWk`Y]bYa  
5Vgh]Y[ `gWk`bY`]b`X]Y`6`i`bXYg`][ U`ni`fØW`ni`\_Y\ fYbž`]bXYa`g]Y`g]Wk  
Ui`Z]Y]bY`ghUf`\_Y`đ`[ YbXUfVY]h`i`bX`Y]b`bUWk`U`h][ Yg  
Gd]Y`YfYb`hk`]W`\_i`b[ g`cbnYdh`\_cbnYbhf]YfhYb" < Yfh\U`a`i`gg`bi`b  
ØVYf`Y[ Ybž`cV`Y]b`Ä`b`]Wk`Yf`5bgUhn`j`YfZc`[ h`k`YfXYb`gc`hYž`i`a  
k`]YXYf`\_cb`\_i`ffYbnZÄ`][ `ni`k`YfXYb"

J YfgWk ]YXYbY`C dh]cbYb`]a`Ghi`fa`. `K`Yf  
YfgYhnh`HUVU\_cj ]Wß

8 ]Y`Gi`Wk`Y`bUWk`Y]bYa`9fgUhn`ZØf`<Uf]g`HUVU\_cj ]WghY`h]a  
A ]hhY`di`b`h`XYf`gdcfh]Wk`Yb`,`VYf`Y[ i`b[ Yb"8 ]Y`DYfgcbU`]Y`@`WU  
GWk`i`Yf`k`]fX`\]YfVY]`VYgcbXYfg]a` : c`\_i`g`ghY`Yb"GWk`i`Yf`\Uh]b  
XYf`J`Yf[ Ub[ Yb\Y]h`nk`Uf`b]Wk`h`X]Y`[ `Y]Wk`Y`Hcfei`chY`k`]Y  
HUVU\_cj ]Wž`nY][ h`Y`XcWk`XUg`DchYbn]U`ž`]b`Y]bYa`UbXYfYb

HYUa i a ZY`X`bcW`g][ b]Z]\_UbhY` : cfhgW`f]hhY`ni`a UW`Yb`" < Yfh\ U  
k ]fX`Ub` ]\a` ZYgh\U`hYb`a ØggYbž`k Ybb`XYf`7`i V`j Yfgi W`Yb`k ]`ž  
gY]bY`N]Y`Y`ni`YffY]W`Yb`"

8]Y`b`ÅW`ghYb`Gd]Y`Y`k YfXYb`Yb`hgW`Y]XYbX`gY]bž`i a`ni  
VYi fhY]`Ybž`cV`GW`i`Yf`i`bX`gY]bY`A`]hgd]Y`Yf`X]Y`Ub[ YghfYVhY  
@Y]ghi b[ `Vf]b[ Yb`\_`ÒbbYb`" , VYf`X]Y`U`\_hi`Y`Y` : cfa`i`bX`X]Y  
@Y]ghi b[ Yb`]b`XYb`\_`ca`a`YbXYb`DUfh]Yb`k ]fX`g]W`nY][ Ybž`cV  
< Yfh\U`hUhgÅW`]W`Ui`Z`XYa`f]W`h][ Yb`K`Y[`]ghž`i`a`X]Y  
Ub[ YghfYVhYb`9fZc`[ Y`]b`XYf`&`"@[ U`ni`Yfn]Y`Yb`"

8YhU]`g

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