

⇒ a a][fU]Y Gh XYfYb



Gh XYfYb! i b]j Yfg]h]h

Hi f_g

6]f`Øb]j Yfg]h]mY`_UhXc`a U_]g]nēfi a "
5 Ub[Yj Yb`XUhi `n]W`k]`h]bg]Wf]j`Yb

GdUubg

A Y[i g]UfÉU`a Uf]W`Ufa Y`Yb`U`i b]j Yfg]XUX"

SSSSSSSSSSSS`XYfg]Ua U_]g]nēfi a "

J Yf`_UfYb`XUhi `[fUU[`k]`h]bg]Wf]j`Yb]j ccf`Y`Yb`Wfg]g

A Yei]Yfc`a Uf]W`Uf`SSSSSSSSSSSSSSSSSS"

`]g]Ubg]gY]]mYg]bXY
Wfg] ggYb

Yb i b`[fUXc

`]g]Ubg]Øg]gY]]mYg]bXY
Wfg] ggYb

Yb i b`dçg] fUXc

Xc_`hcfU]gY]]mYg]bXY
Wfg] ggYb

Yb i b`Xc]WcfUXc

hUa `nUa Ub`
Wfg] ggYb

U`h]Ya dc`W`a d`Yrc

mUf `nUa Ub`
Wfg] ggYb

U`h]Ya dc`dUfV]U

ÃYj f]a]Ã]
Wfg] ggYb

U`X]g]h]b]V]U

, b]j Yfg]h]b]nXY`SSSSSSSSSSSS`]Ã]b`c`_i a U_]g]nēfi a "

J Yf`_UfYb`cY`Ub[`i k `i]tk]ggY`b[gdYf]cXY`Xi i fh

A Y[i g]UfÉU`Ygi X]Uf`Yb`g`i b]j Yfg]XUX`Xi fUbh`i b dYf]cXc`XY`SSSSSSSSSSSS"

V]f`XÇbYa

8 i i f]j Ub`\Yhj YfV`]Z`UUb`Y`Yb`Vi]hYb`UbXgY`i b]j Yfg]h]h

i b`gYa YgfY

V]f`U`UXYa]_`m`

8 i i f]j Ub`\Yhj YfV`]Z`UUb`Y`Yb`Vi]hYb`UbXgY`i b]j Yfg]h]h

i b`Wfgc`UW`X`Åa]W`

² üfYb]Yf`]Ã]b`ÅU` a U_`g]h]a U`Uf`bY`YfX]f3

J fU[Yb`cZ`Yf`VYdYf_]b[Yb`n]b`cd]j`U_`j Ub`k Yf`_Yb]j ccf`gi XYb]Yb

~9I]g]h]b`fYgf]W]cbYg`UWcfU`YgdUfU`cgYgi X]Ub]h]g3

⇒ a a][fU]Y Gh XYfYb



6Y [Yf]a]b_cdmUf b 'a 'Ug`Uf b 'a
[Òghfa Y]n]a 3

~HYb[c'ei Y'dfYgYbHf`cgXcW/a Ybhcgcfc][]bUYgc`Yg
g Z V]YbHY`Vtb`g gZchVtd]Ug3

J fU[Yb'cZi 'cf][]bYYXcW/a YbHYb'cZ_cd]YQb'a cYhj ccfn]Yb

., b]j Yfg]hYb]b'_Uvi`'_f]HYf Yf]'bY YfX]f3
BcX]['V]`^Yh]bgWf]f' Yb`V]`^Yb'i b]j Yfg]HY]h

~7i ½Yg]cb`cgfYei]g]hcgXYUW]gc`U`U'i b]j Yfg]XUX3

6UbUfYga]V]f'HY_'Z[ÒbXYfW`_a]g]b]n3
J fU[Yb'cZi `Yb`Zcfa Y`Y`hcY`U]b['nU`_f]f' Yb

~A Y`Yb]]Uf`Yb`i bU`WfHU`XY`UWdHUM]i b3

., b]j Yfg]HY`VUF ba U]a _%`g bi mcf'a i 3
J fU[Yb'cZY`i b]j Yfg]HY]hUW`ta a cXU]Y]j ccfn]Yh

~@U'i b]j Yfg]XUX`dfcdcfV]cbU`HLa V]Åb`Y`Uc`La]Ybhc3

8Yfg]`HLa Ua `La U_`]Å]b'ghU`[YfY_`]ú]j Uf'a 3
J fU[Yb'cZi k `Wfg]g`Yb`ghU[YdYf]cXY`V]j Uh

~< Umdf`W]W]gdfcZ]g]cbU`YgYb`Y`d`Ub`XY`Ygi X]cg3

., b]j Yfg]hYb]nXY`XYú]]a `ÖufYbV]g]`c`UfU`_c_i a U_`
ØWYH`HUM]`a]3

~@cg`Ygi X]UbHYg`XY]bHYfW]a V]c`HLa V]Åb`HYbYa cgei Y`
dU[UF`U`a UfÉM`U`Yb`g`i b]j Yfg]XUX3

J fU[Yb'cZi `Yf`gh X]Y`cg`Yb`n]`b]j ccf'i]hk]ggY]b[ggi XYbHYb`Uub`X]Y`i b]j Yfg]HY]h

6U j i fi a i `bUg``HU`_d`YXW`]f]a 3
J fU[Yb`cY`i `XY]j ccfi]h[Ub[`j Ub`i k `Uba YX]b[gdfcWg`_i bh]n]Yb

~7i a c`di YXc`Vtbj``Hf`Y`Yg]UXc`XY`a]`gc`]M]h X3

< Ub[]`OX]`Ogy]nYg]`[YfY_`]3
B U] fU[Yb`k UhXY`HLa] YfY]ghYb`n]`b`ca `hcY[Y`UhYb`HY`k cfXYb`hchX]Y`i b]j Yfg]HY]h

~7i ½Yg`Y`b]j Y`XY`f]X]ca U`f`Yei Yf]Xc3

SSSSSSSSSSSS`g]ghYa]`bUg` `]`n]cf3
-bZcfa U]Y]j fU[Yb'cj Yf`^Yh]gng]hYa

~7i a c`Yg`Y`g]ghYa USSSSSSSSSSSSSS3

_fX]
HndY`gng]hYa

XY`V]ÅX]hcg

bchLa U
HndY`gng]hYa

XY`bchUg

8Yú]]a `dfc[fLa `b`b`gcbi bXU`bchXÖ_Øa Ø
UUM]`n]cf'a i mi a 3

~F`W]W]f]Åi bU`Vtd]U`XY`a]`Yi dYX]YbHY`UMXÅa]M`U`Z]bU`
XY`U`Yg]UbV]U3

J fU[Yb'cZi `Yb`UzgWf]Zhc]h] Ub[hj Ub`XY`[Y] c`[XY`Wfg] ggYb`cd`^YhY]bXY]j Ub`i k`i]hk]ggY]b[

⇒ a a][fU]Y Gh XYfYb



² úfY]a `nÖbYa `Yf]b]n`bUg`3
J fU] Yb`bUf`XY`Yfa YH.cXYb

~ E i ÅYg]`c`XY`Ybg] UbnU`Ud`]Wb3

SSSSSSSSSSSSj Uf`a 3
J fU] Yb`bUf`XY`Yfa YH.cXYb

~ < Um`SSSSSSSSSSSSSSSS3

XYfg
HndY`Wfgj g

WUgYgh] f]WUg

gYa]bYf
HndY`Wfgj g

gYa]bUf]cg

i m] i `Ua U `XYfg
HndY`Wfgj g

hi hcfÉUg

_cbZfUbgUf
HndY`Wfgj g

WcbZfYbV]Ug

M.h`c`_i `i bXU`U`b[]`XYfgYf]j Uf3
B Uf]`]bZcfa U]Y`cj Yf`XY`j YfgW]`YbXY`g`a`a`Yf`gWcc`Wfgj ggYb] fU] Yb

~ E i ÅWf`g`g`g`c`Zf`U`b`d`U`U`U`Y`g`M`Y`U`XY`j`Yf`U`b`c`3

G bUj `Uf`b`Y`n`Ua`U`b`3
J fU] Yb`k`U`b`Y`f`XY`Yi`Ua`Y`b`g`n`]`b`

~ 7 i ½Xc`Yg`Y`d`Yf]`c`Xc`XY`Yi`½a`Yb`Yg`3

A Yj W`h`XYfg`Yf`U`_`b`X`U`b`Y`f`Y`X`Y`b`V`]`[]`U`U`W`]`]`f]`a`3
J fU] Yb`k`U`f`i`]`b`Z`c`f`a`U`]`Y`c`j`Y`f`X`Y`W`f`g`j`g`g`Y`b`_`U`b`j`]`b`X`Y`b`

~ 8 i bXY`di`Y`X`c`W`b`g`Y`[`i`]`f`]`b`Z`c`f`a`U`M`]`b`g`c`V`f`Y`U`g`
U`g`[`b`U`h`f`U`g`X`]`g`d`c`b`]`V`Y`g`3

„ b]j Yfg]h`XY`g`d`c`f`a`Y`f`_`Y`n`]`j`U`f`a`3
J fU] Yb`c`Z`X`Y`i`b]j`Y`f`g]`h`]`h`Y`Y`b`g`d`c`f`h`W`b`f`i`a``Y`Y`Z`h`

~ < Um]bg]U`U`M]cbYg`XY`d`c`f`h`j`U`g`Y`b`U`i`b]j`Y`f`g]`X`U`X`3

² úfYbV]`_i`Ød`Yf]bY`bUg``_U`h`U`W`]`]`f]`a`3
J fU] Yb`c`Y`i`_`U`b`h`c`Y`f`Y`X`Y`b`h`c`h`Y`Y`b`g`h`i`X`Y`b`h`Y`b`j`Y`f`Y`b`]`[]`b`[

~ 7 i a`c`di`Y`X`c`i`b]`f`a`Y`U`U`g`U`g`c`V]`U`M]cbYg`XY`Y`g`h`i`X]`U`b`h`Y`g`3

OY`]`f`Q]`Å]`b`c`f`U`Ua`U`m]`Ua``a`U`g`U`Z`U`f``b`Y`_`U`X`U`f`X`f`3
N]W`_]`b`Z`c`f`a`Y`f`Y`b`b`U`f`X`Y`[`Y`g`W`U`h`Y`_`c`g`Y`b`j`c`c`f`Y`Y`g`b`c`b`X`Y`f`c`i`X`]`b`X`Y`g`h`U`X`

~ 7 i ½Yga`½g`c`a`Y`b`c`g`Y`W`g`Y`X`Y`U`j`]`X`U`Y`b`f`W]`X`U`X`3

Gh XYfYb! HUWVfgj ggYb

Hi f_g

GdUUbog

=a a][fUh]Y Gh XYfYb

C_j `i bi nXU\Ub[]X`Yf`ØhYf]bY`ÖüfYb]a
[ÖfV`]f]a 3

J fU[Yb`k Y`Y`fU`Yb`i `i bhgh XYfYb`Uub`X]Y`gWcc`

~ E i Å]X]ca Uggj`di YXYb`Ygh X]UF`Yb`Y`Wbhf`c3

Gyj]nY`WY`]fYa`Y`gbUj `j`Uf`a 3

J fU[Yb`cZYf`Yb`d`Uhg]b[g`cY`hg]gj ccf`i`k`b]j`YU`fY`VdU`Yb

~ < Umdfi`WUgXY`b]j`Y`3

8Yj`Ua`Y`h]ú]a`gYj`]nY`VYb]a`]Ä]b`i`n]i`b`XYú]`gY`
VU`_UV]f`gYj`]mYm`[`YÄV]`]f`a`]m]a 3

J fU[Yb`cZi`_i`bhj`YfUbXYfYb`j`Ub`b]j`YU`_]bX]Yb`i`b]Y`h]h] fYXYb`VYb]a`Y`hX]Y`XUhi`_i`X][`_V]`k`ccb`h

~ A`Y`di`Y`Xc`W]a`V]UF`XY`WUgY`g]`Y`b]j`Y`bc`YgY`UXW`UXc`
dUfU`a`É3

8Yfg]Ä]b`XYfUm`_V]f`UÄ`_`Ua`Ub`nj`Uf`a 3

J fU[Yb`cZYf`Yb`[`YXYfU]`_`YfXY`VYgWf]`j`]b[`_]gj`Ub`XY`Wfg`g

~ H]YbYb`XYgW]dV]cbYgXYfU`UXUgXY`UgUg][`bUhi`fUg3

G`b`ZfU]`_`Ua`Ua`_]`ÖüfYbW]gUm]g`bYX]f3

J fU[Yb`k`Uh`\Y`h]a`U`_]a`i`a`_Uub]U`_g]h`XYb]hYb`dYf`_`Ug]g

~ 7i`½YgY`bÖa`Yf`c`a`½]a`c`XY`Ygh`X]Ub]h]gYb`WUXU`
WUg]3

C_j `i bi nXU`bY`[]V]`]a`_Ub`Uf`j`Uf

J fU[Yb`k`UhXY`VYgW]`_VUFY`ZUW]`]h]h]b`n]`b]`b`XY`gWcc`

~ E i Å]bg]U`UW]cbYg]h]YbY`Y`Wbhf`c3

C_j `i`[`Yn]`Yf]`XY`XØhYb`]n`f`a`i`g`bi`n3

J fU[Yb`cZY`XY`gWcc`cc`_`Yi`Wf]g]Yg]cf[`Ub]gYf]h

~ C`f[`Ub]n]Ub`f]Ua`V]Äb`Yi`Wf]g]cbYg3

<`Ub[]`]dfc[`f]Ua`_Uf`_g]bi`n`f]g]bi`n3

J fU[Yb`k`Y`_Y`dfc[`f]Ua`a`Uf]Yf`k`cfXYb`Uub[`YwcXYb

~ E i Å]dfc[`f]Ua`UgcZYf]h]b3

Gh XYfYb! Gh X]WYi`fnYb

Hi`f`_g

6i`fg]c`UbU`_Uf`_U`__`bXU`V]`[]`_Ua`U`_]g]n`f]i`a`"

N]W]`]bZcfa`YfYb`c]`Yf`VYi`fnYb

GdUubg

J`Yb[`c`U`dYX]f`_]bZcf`a`UW]i`b`gc`VfY`_Uj]d]cg]V]`]XUX]YgXY`
Z]bUb]V]UW]i`b`"

<`Ub[]`_i`fi`a`_j`_i`fi`i`_`UfXUb`_ÖüfYb]a`_n]UfX`a`
U]UW]`]f]a`3

J fU[Yb`k`Y`_Y`cf[`Ub]g]h]Ygi`k`_gh]X]WYi`fg]_i`bbYb`Z]bUb]V]YfYb

~ E i Å]cf[`Ub]ga`cg]di`YXYb`Z]bUb]V]Uf`a`_]gYgh`X]cg3

⇒ a a][fUh]Y Gh XYfYb



SSSSSSSSSSSS]Ā]b'a UXX] mufX a U] \h]ntUWa 'j UF"
J Yf_UFYb'XUhi 'Z]bUbV]ÇY'i `d'bcX][\YYZh

B YWg]hc`Uhi XU'Z]bUbV]YfU'dUFU'SSSSSSSSSSSSSSS"

\UfĀ'Uf
8Y'nUU_k Ufj ccf'i 'Z]bUbV]ÇY'i `d'bcX][\YYZh

a UfĒW`U

mU Ua '[]XYfYf]
8Y'nUU_k Ufj ccf'i 'Z]bUbV]ÇY'i `d'bcX][\YYZh

[Ug]cgdYfgcbUYg

ĀcW_VU_a
8Y'nUU_k Ufj ccf'i 'Z]bUbV]ÇY'i `d'bcX][\YYZh

a Ubi HbV]i b'XY\]'cgja YbcfYg

BY'f'Vi fgUf'a Yj W]B
J fU[Yb'k Y_Y'gpcfHb'ghi X]YVYi fnYb'Yf'VYgM]_VUf'n]'b

~E i ĀVW]gdi YXc'gc`]M]Uf3

Gh XYfYb! '6i]Hb`UbXg'X]d`ca Ufij U]XYfYb

Hi f_g
8]d`ca Ua 'Ø_YQ]Ā]b'cbUhiUa U_]gh]mcfi a
J Yf_UFYb'XUhi '[fUU['i k 'X]d`ca Uk]'j U]XYfYb]b'XUhi`UbX

GdUubg
A Y[i g]UfĒU'Wb]j U]XUf'a]'Hēi `c'Yb'fĀUĒg'

Q]Q]Ā]b'nYa]b']'HfV]a Ub'']gh]n]j Uf'a 3
J fU[Yb'bUf'Yb''']gh] Ub'VYÇX][XY'j YfU'Yfg'X]Y'VYgM]_VUf'n]'b]b'XY'fU'Yb'W]a V]bU]Y'X]Y'i `bcX][\YYZh

~A Y'dcXfĒU'XUf'i bU'']g]U'XY'fU'X]i V]cfYg'f'fU'cgYb
f]X]ca UĒ3

B YfYXyb'XYb_']_VY[Yg]'U'U'']f]a 3
J fU[Yb'k Uf'i 'Yb'[Y]^_k UfX][\Y]Xg]H]Y'gh'_Ub'_f]'f'Yb

~8i bXY'di YXc'W]bg]i]f' i b'Wf]Z]M]Xc'XY
W]b]j U]XU'f]i b3