

Das neue Tierschutz-Gesetz: Meilenstein oder Sauerei?

Bundesminister Johannes Rauch: "Wichtigste Verbesserungen im Tierschutz seit vielen Jahren" "Dieses Maßnahmenpaket ist ein großer Erfolg für den Tierschutz, der jahrelange Forderungen von Tierschützer:innen endlich umsetzt", erklärt Tierschutzminister Johannes Rauch. "Damit sind uns wichtige Verbesserungen zum Wohl der Tiere gelungen." Das Tierschutzpaket sieht er als "sehr wichtigen ersten Schritt": Er werde sich in der Regierung aber "weiterhin für Tierrechte stark machen. Denn wir sind noch nicht dort, wo wir hinwollen." Mit dem vorliegenden Tierschutzpaket wird die ununterbrochene, ganzjährige Anbindehaltung von Rindern ab 2030 beendet – eine langjährige Forderung von Tierschützer:innen. Zudem wird es künftig ein Verbot des sinnlosen Tötens von & amp;hellip;



Johannes Rauch wurde am 8. März 2022 von Bundespräsident Alexander Van der Bellen als Bundesminister für Soziales, Gesundheit, Pflege und Konsumentenschutz angelobt. © BKA_Florian Schrötter

6i bXYga]b]ghYf'x\UbbYg'FUi W\. K]W\h][ghY'J YfVYggYfi b[Yb']a 'H]YfgW\i hn gY]h'j]Y`Yb'\J\\fYb

8]YgYg'A U» bU\a YbdU_Yh']gh'Y]b'[fc» Yf'9fZc`['ZØf'XYbH]YfgW\ihnž'XYf''U\fY`Ub[Y': cfXYfi b[Yb'j cb'H]YfgW\ØhnYf.]bbYbYbX`]W\ia gYhnh ž'Yf_`Àfh'H]YfgW\ihna]b]ghYf'&\UbbYg'FUi W\"8Ua]h'g]bX'i bg'k]W\h][Y'JYfVYggYfi b[Yb'ni a 'K c\``XYf'H]YfY[Y'i b[Yb" '8Ug'H]YfgW\ihndU_Yh'g]Y\h'Yf'U`g' gY\f'k]W\h][YbYfghYb'GW\f]hh .'9f'kYfXY'g]W\']b'XYf'FY[]Yfi b['UVYf' kY]hYf\]bZØf'H]YffYW\hY'ghUf_'a UW\Yb"'8Ybb'k]f'g]bX'bcW\'b]W\h'Xcfhž'kckf\]k]f'\]bkc``Yb"

5i » YfXYa 'k YfXYb 'X]Y 'H]YfgWli hnca Vi XgdYfgcbYb 'XYf @ÀbXYf 'f f]gh]gWl '[YghÀf_h" 'G]Y 'Yf\ U`hYb 'DUfhY]ghY ``i b[']b 'J YfZU\ fYb 'bUWl XYa 'H]YfhfUbgdcfh[YgYhn" '9]bY 'k Y]hYfY 'BYi Yfi b['VYhf]ZZh 'X]Y Ei U`ni Wlh '<]Yf'k]fX 'Yg 'Y]b 'J YfVch 'XYf'K YfVi b['a]h 'H]YfYb 'a]h Ei U`ni Wlh! A Yf_a U`Yb '[YVYb"

H]YfgWki hna]b]ghYfFUi Wk 'g]Y\h'XUg'A U» bU\a YbdU_Yh'U'g
9f[Abni b['ni 'YbYb'J YfVYggYfi b[Yb'ZØf'H]YfYž'X]Y'VYfY]hg']a
FY[]Yfi b[gdfc[fUa a 'ZYgh[YgWkf]YVYb'g]bX"'9g'gc``'bcWk'X]YgY
K cWkY']b'6Y[i hUWkhi b['[Y\Yb'i bX'9bXY'¾ b]']a 'DUf`Ua Ybh
VYgWk`cggYb'k YfXYb"'5bZUb['&\$&' '_ObbYb'X]Y'a Y]ghYb
6Ygh]a a i b[Yb'XUbb']b'?fUZh'hfYhYb"

K U]hn.; fØbY'9fZc`[Y'i bX'GW\k UfnY 6fYa ggdi fYb'VY]a 'H]YfgW\i hndU_Yh

 $8] Y ``9] b] [ib["VY] a "H] Y fgW ihnd U_Y h V f] b[hij] Y `Y J Y f V Y gg Y fib[Y b ZØ f X U g 'H] Y fk c \``] b "2 gh Y f f Y] W "'H\ ca U g 'K U] h n z "[f Ø b Y f 5 V [Y c f X b Y h Y f 'n ia '9 if c d Å] g W Y b 'D U f `Ua Y b h ib X ? c! J c f g] h n Y b X Y f X Y f '9 if c d Å] g W Y b ', f Ø b Y b 'D U f h Y] "_ca a Y b h] Y fh "\ \ \ \ \ W "[f U h i `] Y f Y X Y a "[f Ø b Y b 'J Y f \ U b X `ib[g h Y U a 'n i 'X Y a "[ih Y b 'H] Y f g W ihnd U_Y h "J] Y `Y `` U b ['À \ f] [Y : c f X Y fib[Y b 'U ig 'X Y f `N] j] `[Y g Y ``g W U Z h k Y f X Y b X U a] h Y b X `] W `ia[Y g Y h h h '' 8 U g z 'k c j c b 'g W c b 'j] Y `Y `F Y [] Y fib[Y b [Y g d f c W Y b '\ U V Y b z 'k] f X 'a] h `X Y b '; f Ø b Y b 'Y b X `] W `K] f _`] W _Y] h `G c k Y f X Y b `Y b X `] W `; f U ig `] W _Y] h Y b z 'k] Y `V Y] g d] Y `g k Y] g Y `X U g 'g] b b `c g Y H O h Y b 'a Å b b `] W Y f '? Ø _Y b `V Y Y b X Y h"$

@UbXk]fhgWk UZhga]b]ghYf]b'9`]gUVYh\'? Ògh]b[Yf'\À`h'k Y]hYf\]b']\fYgWk ØhnYbXY' < UbX'ØVYf'X]Y'5[fUf]bXi ghf]Y'' A]h'XYa 'BY]b'ni f < Yf_i bZhg_YbbnY]Wk bi b[']b'XYf'; Ughfcbca]Y'\À`h'X]Y'^2 JD'XYb ÒghYffY]Wk]gWk Yb'A Uf_h'cZZYb'ZØf']a dcfh]YfhYg'b]YXYf'ÀbX]gWk Yg?U'VZY]gWk'Ui g'A UggYbh]Yf\U`hi b['i bX'`Àggh@Ub[ghfYW_YbhfUbgdcfhY'j cb'ÒghYffY]Wk]gWk Yb'?À'VYfb'bUWk GdUb]Yb'ni "'8]Y'^2 JD']gh'b]Wk h'X]Y'dc`]h]gWk Y'JYfhfYhYf]b'XYf

ÒghYffY]WX]gWXYb'6UiYfb'ibX'6ÀiYf]bbYb"'G]Y'`UggYb'gckc\``X]Y _`Y]bghfi_hif]YfhY'@UbXk]fhgWXUZhž'U`g'UiWX'gWXihnVYXØfZh][Y H]YfY']b'Gh]WX ž'qc'KU]hn'UVgWX`]Y»YbX"

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; Ycf['GhfUggYfž'@UbXk]fhgWX UZhggdfYWX YfXYf'2 J Dž'i bX'C`[U'Jc[`Ui Yfž@UbXk]fhgWX UZhggdfYWX Yf]b.' FY[]Yfi b[gcf[h'ZØf'a Y\f'H]Yfk c\`']b'XYf@UbXk]fhgWX UZh

A]h'XYa '\Yi h][Yb'A]b]ghYffUhgj cfhfU['[Y\h'XUg'[fÒ» hY'H]Yfk c\'! DU_Yh'gY]h'9]bZØ\fi b['XYg'H]YfgW\i hn!; YgYhnYg']b'6Y[i hUW\hi b["8 Ua]h'Ybhk]W_Y`b'k]f'X]Y' < U`hi b['j cb'H]YfYb']b'2 ghYffY]W\ j YfUbhk cfhi b[gj c```k Y]hYf"'BUW\']bhYbg]j Yb'J Yf\UbX`i b[Yb']gh Y]b'GW\i `hYfgW\`i gg'[Y`i b[Yb ž'VY[fØ» Yb'; Ycf['GhfUggYfž @UbXk]fhgW\UZhggdfYW\Yf'XYf'2 J Dž'i bX'C`[U'J c[`Ui Yfž @UbXk]fhgW\UZhggdfYW\Yf]b'XYf'; fØbYbž'XUg'i a ZUggYbXY A U» bU\a Yb!DU_Yh"

A]h'&\$' \$']gh'Yhk U'X]Y'XUI YfbXY'5bV]bXY\U'hi b['VY]'F]bXYfb; YgW\]W\hY"'8]Y'b\AW\ghY'DYf]cXY'XYf'; Ya Y]bgUa Yb'5[fUfdc`]h]_gc``ni f'l a ghY``i b['[YbØhnh'k YfXYb"'8Ua]h'Yf\U'hYb'YbX`]W\'U``YF]bXYf']b'^2 ghYffY]W\'6Yk Y[i b[ga Ò[`]W_Y]hYb ž'ZfYi h'g]W\'C`[U Jc[`Ui Yfž'@UbXk]fhgW\UZhggdfYW\Yf]b'XYf'; fØbYb"' 5i W\'[]Vh'Yg]b'Ni _i bZh']b'XYf'9]YfdfcXi _h]cb'_Y]bY'a \Abb`]W\Yb'?Ø_Yb'a Y\fU`g'5VZU``dfcXi _h ž'gc'Jc[`Ui Yf"'6Y]'H]YfhfUbgdcfhYb'g]bXk \]W\h][Y': cfhgW\f]hhY'[Yi b[Ybž'Yhk U'VY]'@Ub[ghfY\w_Yb! HfUbgdcfhYb'j cb'?\A`VYfb']bg'5i g`UbX"

NYbhfU`Yg`5b`]Y[Yb`VY]`XYb`JYf\UbX`i b[Yb`k UfYb`D`Ubi b[g! i bX`FYW\hgg]W\Yf\Y]h`ZØf`6Ài Yf]bbYb`i bX`6Ui Yfb"`8Ug`gW\UZZYb k]f`a]h`Ui gfY]W\YbXYb`, VYf[Ub[gZf]ghYbž`dfUl]ghUi [`]W\Yb JcfgW\f]ZhYb`gck]Y`g]bbj c``Yb`JYfa Uf_hi b[gUbfY]nYb"`8]Y`?cghYb

ZØf`\Ò\YfY`GhUbXUfXg`k YfXYb`6Ài Yf]bbYb`i bX`6Ui Yfb`b]W\h
U``Y]bY`hfU[Yb`_ÒbbYb"'8Yg\U`V`[Y\Yb`a]h`XYa `H]Yfk c\`!DU_Yh
VY[`Y]hYbXY`: ÒfXYf!`i bX`A Uf_h]b]h]Uh]j Yb`Ui W\`VY]a `5A 5!
; ØhYg]Y[Y`!`Dfc[fUa a `Y]b\Yf"'8]Y`; Ya Y]bgUa Y`5[fUfdc`]h]_`UV
&\$&' `V]YhYh`ni XYa `Z]bUbn]Y``Y`I bhYfghØhni b[Yb`VY]`XYf
I a ghY``i b[`Ui Z`a Y\f`H]Yfk c\` ž`gc`GhfUggYf"

5i WX 'X]Y '\Yi hY ']a 'A]b]ghYffUh'VYgWX `cggYbY'j YfdZ]WX hYbXY < Yf_i bZhg_YbbnY]WX bi b['k]fX'Y]bYb'k YgYbh`]WX Yb'6Y]hfU['ZØf a Y\f'H]Yfk c\```Y]ghYb"'Bi f'k Ybb'? cbgi a YbhYb'VYk i ggh'ni fY[]cbU`Yb'DfcXi _hYb'[fY]ZYb'i bX'gc'K YfhgWX OdZi b['VY] 2 ghYffY]WXg': Ua]`]YbVYhf]YVYb'V`Y]Vhž'_ObbYb'k]f'i bgYfY @UbXk]fhgWXUZh'bUWX\U`h]['k Y]hYfYbhk]W_Y`b ž'g]bX'g]WX'GhfUggYf i bX'J c[`Ui Yf'Y]b]["

6YfY]hg'VY]'XYf'6Y\UbX`i b['XYg'H]YfgW\i hnj c`_gVY[Y\fYbg']a
8YnYa VYf'&\$&%'\UVYb'^2 J D'i bX'; fØbYž'[Ya Y]bgUa 'a]h'XYb
B 9C Gž'Y]bYb'5bhfU['Y]b[YVfUW\h''8Ua]h'k i fXYb'X]Y'9W_dZY]`Yf
ZØf'X]Y'j cf`]Y[YbXYb'Bcj Y``Yb'Y]b[YgW\`U[Yb''Bi b'k i fXY'XYf
YfghY'HY]`ž'k Y`W\Yf'X]Y'Bi hnh]YfY'VYhf]ZZhž']b'; YgYhnYgj cf\UVYb
[Y[cggYb''8Ug'; YgYhnYgdU_Yh'ZØf'a Y\f'H]Yfk c\`']b'XYf
@UbXk]fhgW\UZh'[Y\h'bi b'ZØf'j]Yf'K cW\Yb']b'6Y[i hUW\hi b["'8Yf

A $]h'XYa 'H]Yfk c \ '!DU_Yh'[Y h'Y]b \ Yf.$

- 5V'&\$&' 'JYfVch'XYg'\Yf_Òa a `]W\Yb'Jc``gdU`hYbVcXYbg VY]'I a !'i bX'BYi VUi hYb'j cb'GW\k Y]bYghÀ``Yb' '\]Yf'g]bX bi f'a Y\f'<U`hi b[gZcfa Yb'a]h'Y][YbYb'@]Y[YZÀW\Yb Yf`Ui Vh
- JYfVch'XYg'fci h]bYa À»][Yb'?id]YfYbg'XYf'GWkk ÀbnY'VY]
 : Yf_Y`b
- 5V'&\$' \$'YbX[Ø`h][Yg'JYfVch'XYf'XUiYfbXYb
 5bV]bXY\U`hib['VY]'F]bXYfb
- H]YfhfUbgdcfhY'k YfXYb'fYXi n]Yfh
 - JYfVch'XYg'9ldcfhYg'jcb'GW\`UW\h!'ibX A Ughf]bXYfb']b'8f]hhghUUhYb
 - 8 fY] K cWX Yb A]b X Y ghU `h Y f ZØf ? À `V Y f! H f U b g d c f h Y ž

- ghfyb[YfYFY[Yib[XYfaUl]aUYbHfUbgdcfhnY]h
- GhÀf_i b['XYf'JYfa Uf_hi b['j cb'?U`VZY]gWX ']b
 ghYffY]WX
- 8 Ug HÒhYb j cb ? Ø_Yb c\bY bUWk Y]gVUfYb
 J Yfk YbXi b[gnk YW_'k]fX j YfVchYb
- $8Yf^5igVUi^XYf^< Y]ah]YfXUhYbVUb_k]fX^ZYgh[Y^Y[h]$

: U]_U'9`!BU[Ug\]ž'H]YfgW\i hngdfYW\Yf]b'XYf

; fØbYbž'ni 'bYi Ya 'H]YfgWXi hndU_Yh.
GhÀf_i b['XYf'H]YfgWXi hndYfgdY_h]j Y
[Y`i b[Yb

8]Y'H]YfgWihn!Ca Vi XgdYfgcbYb'k YfXYb'Xi fWX'X]YgY'Bcj Y``Y
[YghÀf_h"'=\bYb'k]fX'bi ba Y\f'Y]bY''I f]gh]gWXY'GhY``Y'Vnk "'X]Y
YbhgdfYWXYbXY'fYWXh`]WXY'9I dYfh]gY'ni f'J YfZØ[i b['[YghY``hž'X]Y
g]Y'VYbÒh][Ybži a 'X]Y'=bhYfYggYb'XYg'H]YfgWXi hnYg'i bX'XUa]h'XYf
H]YfY'ni 'j YfhfYhYb ž'nY][h'g]WX'X]Y'H]YfgWXi hngdfYWXYf]b'XYf
; fØbYbž: U]_U'9`!BU[Ug\]ž'ØVYf'X]Y'GhÀf_i b['XYf
H]YfgWXi hndYfgdY_h]j Y'Ub`Àgg`]WX'XYg'\Yi hY'dfÀgYbh]YfhYb
H]YfgWXi hndU_Yhg'YfZfYi h"

8 UfØVYf`\]bUi g`Yf\U`hYb`X]Y`H]YfgW\i hn!Ca Vi XgghY``Yb`bi b`Ui W\
DUfhY]YbghY``i b['bUW\`XYa 'H]YfhfUbgdcfh[YgYhnž'XUg`_ØbZh][
YVYbZU``g`ghfYb[Yf'[YfY[Y`h`k]fX"' @YVYbXh]YfhfUbgdcfhY`a ØggYb
k Y]hYf`ghUf_`fYXi n]Yfh`k YfXYb"'Jcf`U``Ya '@Ub[ghfYW_YbhfUbgdcfhY
i bX`X]Y`JYfVf]b[i b['j cb'?À`VYfb'g]bX`a]h`XYa 'H]Yfk c\``]b`XYb
a Y]ghYb`:À``Yb`b]W\h'j YfY]bVUf"'<]Yf`k YfXYb'bi b'ghfYb[YfY
FY[Y`i b[Yb`i bX`XUa]h`Y]b`VYXYi hYbXYf`: cfhgW\f]hhii a[YgYhnh ž
gU[h'9`!BU[Ug\]"

5i Wk."]a "6YfY]Wk."XYf"Bi hnh]Yf\U`hi b["[]Vh'Yg'Y]bY'FY]\Y'j cb JYfVYggYfi b[Yb'k]Y"XUg'9bXY"XYf"XUi YfbXYb'5bV]bXY\U`hi b[j cb'F]bXYfb'cXYf"XUg'JYfVch'XYg'?Ø_YbhÒhYbg'c\bY buwk Y]gvufyb J Yfk YbXi b[gnk YW_" 8Ua]h'k YfXYb ``Ub['À\f][Y cfXYfi b[Yb ii a [YgYhnhž'X]Y H]Yfgwli hncf[Ub]gUh]cbYb ii bX `Yhnh`]wl Ui wl XUg'H]Yfgwli hnj c`_gvY[Y\fYb i]a a Yf'k]YXYf h\Ya Uh]g]Yfh'\UvYb" 8]YgYg'DU_Yhi]gh'Y]b 'YfghYf'Gwlf]hh'ni f I a gYhni b['XYg'A Y\fdUfhY]YbUbhfU[gž'XYb k]f ``YhnhYg'*J\f VYgwl`cggYb \\UvYb" K Y]hYfY'J YfVYggYfi b[Yb'g]bX']b 'XYf 9fUfVY]hi b[ž'gU[h'9`!BU[Ug\]"

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GD²!@YVYbga]hhY`gdfYWXYf'7\f]gh]Ub 8fcV]hg. C\bY'Jc``gdU`hYbVÒXYb!JYfVch']gh <Yf_i bZhg_YbbnY]WXbi b['Y]bY': UfWY°

GD² !@YVYbga]hhY`gdfYW\Yf`7\f]gh]Ub`8fcV]hg`nY][h`g]W\Ub[Yg]W\hg`XYg`\Yi hY`j cb`XYf`FY[]Yfi b[`dfÀgYbh]YfhYba Ub[Y`\UZhYb`DU_Yhg`]a `6YfY]W\`XYf`<Yf_i bZhg_YbbnY]W\bi b[YbhhÀi gW\h` C\bY`Jc``gdU`hYbVÒXYb!JYfVch`]gh`X]Y</fi>
</fr>

YbhhÀi gW\h` C\bY`Jc``gdU`hYbVÒXYb!JYfVch`]gh`X]Y

Yf_i bZhg_YbbnY]W\bi b[`Y]bY`: UfW\"K c'² ghYffY]W\`XfUi Z'ghY\hžkY]» `a Ub`VY]`h]Yf]gW\Yb`@YVYbga]hhY`b`Ui W\`]b`Ni _i bZh`b]W\hg

ØVYf`hUhqÀW\`]W\Y`XU\]bhYfqhY\YbXY`<U`hi b[gVYX]b[i b[Yb°</td>

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 GD^2 !H]YfgWki hngdfYWkYf8]X] ?YW__ H]YfgWki hn[YgYhn]gh

6Ub_fchhYf_`Afi b['XYf'FY[]Yfi b[

GD² !H]YfgWki hngdfYWkYf'8]Yha Uf'?YW_'fYU[]Yfh'Ui Z'XUg'\Yi h][Y A]b]!DU_Yh'XYf'FY[]Yfi b[']a '6YfY]Wk 'H]YfgWki hn'k]Y'Zc'[h 8]YgYg'H]YfgWki hn[YgYhn']gh'Y]bY'6Ub_fchhYf_`Àfi b['XYf FY[]Yfi b["'8]Y'H]Yfei À`YfY]']b': cfa 'j cb'J c``gdU`hYbVÒXYb V`Y]VYb'Xi fWk'XYb'hØf_]g![fØbYb'6cm_chh'`Y[U`" '?YW_'Yf_Ybbh _`Y]bY'GWkf]hhY']b'X]Y'f]Wkh][Y'F]Wkhi b['Ubž'a Ub'a ØggY'g]Wk'UVYf [YfUXY'j cb'Y]bYf'[fØbYb'FY[]Yfi b[gVYhY]`][i b['a Y\f Yfk UfhYb ž'gc'XYf'GD²!H]YfgWki hngdfYWkYf"'?Ògh]b[Yf'gY]'a]h]\fYf'6`cW_UXY\U`hi b[']a 'G]bbY'XYf'5[fUf`cVVm'gWki `X'Ub'XYb k Y]hYf\]b'j cf\YffgWkYbXYb'a]bXYfYb'H]YfgWki hnghUbXUfXgž'gc?YW_ž'i bX'nY][h'g]Wk']b'gY]bYf'?f]h]_'XUa]h'Y]bg'a]h'ZØ\fYbXYb H]YfgWki hncf[Ub]gUh]cbYb"

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H]YfgWXi hnca Vi XgZfUi '9j U DYfgm 'H]YfgWXi hndU_Yh']gh'GUi YfY]'ZØf ² ghYffY]WXg'GWXk Y]bY

: Øf'l bj YfghÀbXb]g'i bX': Uggi b[g`cg][_Y]h'gcf[h'XUg'\Yi hY
j YfÒZZYbh`]Wk hY 'H]YfgWki hndU_Yh'XYf'6i bXYgfY[]Yfi b['VY]'XYf
K]YbYf'H]YfgWki hnca Vi XgZfUi '9j U'DYfgm" 8]Y'U`g' JYfVch'ZØf'XYb
J c``gdU`hYbVcXYb ']b'XYf'GWk Y]bYa Ugh'Ub[Y_ØbX][hYb
A U» bU\a Yb'g]bX'Y]bY'A c[Y`dUW_i b[.'GhUhh'X]YgY'j O``]['j YfU`hYhY
i bX'h]YfZY]bX`]WkY' < U`hi b[gZcfa 'UVni gWk UZZYbž'k]fX'X]YgY'ZØf'X]Y
bÀWk ghYb'*J\fnY\bhY']b'2 ghYffY]Wk g'GhÀ``Yb'Y]bnYa Ybh]Yfh"' 8Yf
9bhk i fZ']gh'Y]bY'GUi YfY] ž'gc'DYfgm"' 8Ug'@Y]X'XYf'A]``]cbYb
GWk Y]bYž'X]Y']b'2 ghYffY]Wk'Y]b'@YVYb'k]Y'Ua 'D'i a dg_`c'ZØ\fYb
a ØggYbž'k]fX'ZØf'X]Y'bÀWk ghYb'; YbYfUh]cbYb'j YfUb_Yfh" '8]Y
K]YbYf'H]YfgWki hnca Vi XgZfUi 'ZcfXYfh'Y]bY'i a [Y\YbXY,
VYfUfVY]hi b['XYg'; YgYhnYgdU_Yhg'i bX'Y]b'YWk'hYg'JYfVch'ZØf
XYb'J c``gdU`hYbVcXYb"</pre>

BUWW XYb 'D'ÀbYb XYf'6i bXYgfY[]Yfi b['gc``'Yg'UV 'ÀbbYf'&\$&' ']bbYi 'cXYf'i a [YVUi hYb '5b`U[Yb '`YX][`]WW 'Y]bYb '6YfY]WW '[YVYbž']b

XYa 'X]Y '5bnU\`'XYf'GdU`hYb']a 'JYf[`Y]W\'ni a 'FYgh'XYf GhU``ZÀW\Y'[Yf]b[ZØ[]['fYXi n]Yfh']gh" 8 Ug'VYXYi hYhž'XUgg'bi f'Ui ZY]bYa 'VY[fYbnhYb'5fYU`''YXY'Xf]hhY'GdU`hY'[YgW\`cggYb'gY]b a i gg"'8 Ug']gh'_Y]b'Jc``gdU`hYb!JYfVchž'XUg']gh'Y]b 9h]_YhhYbgW\k]bXY` ž'Yf`Ài hYfh'9j U'DYfgm"'BcW\']a a Yf'k ØfXYb X]Y'[Yfi W\\ggYbg]V`Yb'GW\kY]bY']b'gc`W\'Y]bYa 'GmghYa 'ØVYf]\fYb'9l_fYa YbhYb'`YVYb"'9]bY'HfYbbi b['jcb'@]Y[Y!'ibX?chVYfY]W\'gY]'ni XYa 'U``Y]b'Ui Z[fi bX'XYg'b]YXf][Yb

9]b'k Y]hYfYf?f]h]_di b_h'5``Y'VYfY]hg'VYghY\YbXYb

J c``gdU`hYbgmghYa Y'gc``Yb'XYa '9bhk i fZ'bUW\']b'6Yhf]YV'V`Y]VYb"

D`ÀbY'ZØfY]bYb'YW\hYb'5i ggh]Y['Ui g'X]YgYf'<U`hi b[gZcfa 'ZY\`Yb
]a 'A U» bU\a YbdU_Yh" 8]YgY'DYfgdY_h]j `cg][_Y]h'_Ubb'XcW\'b]W\h
]a 'G]bbY'XYf'ÒghYffY]W\]gW\Yb'@UbXk]fh]bbYb'i bX'@UbXk]fhY'gY]b"

9g']gh'UVgY\VUfž'XUgg'X]YgY']b'XYb'bÀW\ghYb'\J\fYb'XYb

5bgW\`i gg'Ub'X]Y'9bhk]W_`i b[Yb'\]b'ni 'a Y\f'H]Yfk c\``]b'XYf

: `Y]gW\\dfcXi _h]cb'j Yf`]YfYbž'k Ybb'b]W\h'Yhnh'X]Y'K Y]W\Yb']b

F]W\hi b['Ni _i bZhgZ\\][_Y]h'XYf'\Y]a]gW\Yb'@UbXk]fhgW\UZh
[YghY``h'k YfXYb' ž'gc'DYfgm"

8]Y'H]YfgWihnca Vi XgghY``Y'K]Yb'fHCK Ł'VYgW\ÀZh][h'g]W\gW\cbgY]h'\J\fYb'a]h'XYa'H\YaU'H]Yfkc\``]b'XYf'@UbXk]fhgW\UZh'i bX\Uh'i "U"'XYb'9]b_Ui ZgfUh[YVYf' 5i [Yb'Ui Z'VY]a

GW\kY]bYZ`Y]gW_Ui Z' 'j YfÒZZYbh`]W\hž']b'XYa'&*'; ØhYg]Y[Y`ibX'AUf_Ybdfc[fUaaY'Ui Z'%&'H]YfgW\ihn!'i bX'lakY`h_f]hYf]Yb\]
\]b'@VYfdf@Zh'kYfXYb"

K Y]hYfY' ⇒ Zcfa Uh]cbYb'i bX'5bU`mgYb'ni 'XYf'[Yd`UbhYb'BcjY``Y Z]bXYb'G]Y'Ui Z'XYf'K YVg]hY'XYf'H]YfgWXi hnca Vi XgghY``Y K]Yb"

.

B9CG!H]YfgWXi hngdfYWXYf]b?Uh\Uf]bU KYfbYf. FY]bY?cga Yh]_'ghUhh'[fc»Yf Kif7 =a '<YfVgh'\UVYb'k]f'XYb'9bhgW\`]Y\ib [gUbhfU['XYf FY[]Yfi b[gdUfhY]Yb'ni a 'H]YfgW\i hnj c`_gVY[Y\fYb'a]h'[i hYa K]``Yb'i bhYfghØhnh'' K Ug'i bg'bi b'dfÀgYbh]Yfh'k cfXYb']ghž']gh'a Y\f U`g'YbhhÀi gW\YbX'i bX'[YfUXY']a 'Bi hh]YfVYfY]W\ [Y\Yb'X]Y J cfgW\`À[Y'b]W\h'k Y]h'[Ybi [ž'fYgØa]Yfh'B9CG! H]YfgW\i hmgdfYW\Yf]b'? Uh\Uf]bU'K YfbYf'XUg'\Yi hY'j cb 6i bXYga]b]ghYf'FUi W\'j cf[YghY``hY'H]YfgW\i hndU_Yh'' I bj YfghÀbX`]W\'gY]j cf'U``Ya ž'XUgg'Yg']a '6YfY]W\'XYf 5VgW\UZZi b['XYf'J c``gdU`hYbVÒXYb'_Y]bYb'a Yf_`]W\Yb'GW\f]hh j cfk Àfhg'[YVYž'gc'K YfbYf. '8]Y'7\Ub\W`ž'Y]bYb'D'Ub'ZØf'a Y\f H]YfgW\i hn'i bX'E i U`]hÀh'ghUhh'E i Ubh]hÀh']b'XYf'DfcXi _h]cb j cfni 'Y[Ybž']gh'j YfdUggh'k cfXYb'': Øf'_`Y]bY'GW\f]hhY'VfUi W\h'Yg _Y]bY'; fØbYb']b'XYf'FY[]Yfi b[ž'X]Y'g]W\'H]Yfk c\``]a a Yf'gc'[fc\' Ui Z'X]Y': U\bYb'\YZhYb''

 $\begin{aligned} &\text{Dcg]h]j \ "VYi \ fhY] \text{'h'K } YfbYf'XUg'7ca\ a\]ha\ Ybh'ni\ a\ "JYfVch'XYg'?\varnothing_Yb! \\ &\text{HOhYbg} ZX]Y'9fk \ Y]hYfi \ b[\ "XYf'DUfhY]ghY'`i \ b[\ "XYf \\ &\text{H]YfgWi hnca } Vi \ XgdYfgcbYb'gck]Y'X]Y'9]bZØ\ fi \ b[\ "XYf \\ &\text{6]cX]j \ Yfg]hAhgk \ Y]XYb'VY]a \ "; \ YZØ[\ Y'''' \ &pgVYgcbXYfY'XYf'`YhnhY \\ &\text{Di b_h'[\ Y\h']b'X]Y'f]W\ h][\ Y'F]W\ hi \ b[\ ZXU'X]YgY'K \ Y]XYb'ni 'a \ Y\f & c\'VYZ]bXYb'VY]'XYb'H]YfYbZ'ni 'a \ Y\f'5fhYbj]Y'ZU'h'i \ bX'Ui \ W\ ni \ a \ '?']a \ UgW\ i \ hn'VY]hfU[\ Yb'k \ ØfXYb''' <]Yf'a \ i \ gg'a \ Ub'U``YfX]b[\ g \ bcW\ 'Y]bYb'GW\ f]hh'k \ Y]hYf'[\ Y\Yb'i \ bX'YbX`]W\ 'Ui \ W\ '?cbnYdhY'ZØf \ X]Y'8cddY'bi \ hni \ b[' j \ cb'K \ Y]XYZ\ AW\ Yb'ZØf'H]Yf\U`hi \ b[' i \ bX \ 9bYf[\]Y[\ Yk \]bbi \ b[' j \ cf`Y[\ Yb'' \]$

 $8 \ Ug'j \ cf`]Y[YbXY'; YgYhnYgdU_Yhžgc'X]Y'B9CG!\\ H]YfgWXi hngdfYWXYf]bž'\AhhY'XYbbcWX'XYi h`]WX'[Ya UWXhž'XUgg'Yg]b'<]bV`]W_'Ui Z'XYb'H]YfgWXi hn']b'^2 ghYffY]WX'a]h'X]YgYf'FY[]Yfi b[_Y]bY'YWXhY'JYfAbXYfi b['[YVYb'k]fX.'8]Y'^2 JD'VfYa ghi bYbhk Y[h'i bX'a ÒWXhY'Ua 'GhUhi g'Ei c'ZYgh\U`hYb''=\bYb [Y[YbØVYf'g]hnh'Y]bY'[fØbY'DUfhY]ž'X]Y'b]WXh'XYb'bchk YbX][YbAi h'i bX'X]Y'8i fWXgYhni b[g_fUZh'Ui ZVf]b[hži a 'XYi h`]WXYJYfVyggYfi b[Yb'Xi fWXni Vf]b[Yb''$

.

: D² A Uf`]Yg'GhY]bYf!K]YgYf'i bX'DYhYf

GWXa]YX`YWXbYf. @YhnhY'G]hni b['XYf H]YfgWXi hn_ca a]gg]cb'k Uf'Y]bY'Y]bn][Y ; Y]ghYfVU\bj YfUbghU`hi b[°

8]Y'ZfY]\Y]h`]W\Y'H]YfgW\i hngdfYW\Yf]b'6i bXYgfÀh]b'A Uf`]YgGhY]bYf!K]YgYf'i bX': D²!5[fUfgdfYW\Yf'ØVhYb'\Yi hY'\YZh][Y'?f]h]_Ub'XYf`YhnhYb'G]hni b['XYf'H]YfgW\i hn_ca a]gg]cbž'Ub'XYf'Ui W\XYf'ni gh\AbX][Y'[fØbY'A]b]ghYf'hY]`bU\a"'8Ug'k Uf'Y]bY'Y]bn][Y';Y]ghYfVU\bj YfUbghU`hi b['ž'XYbb'Yg'[UV'ØVYf\Ui dh'_Y]bZUggVUfYg'9f[YVb]g']b'X]YgYf'G]hni b['''g]Y'k Uf'c\bY'\\$\U\hž'UVYfa]h'j]Y''GW\U`'i bX'FUi W\'a]h'A]b]ghYf'FUi W\'\Zigc'GhY]bYf!K]YgYf'i bX'GW\a]YX'YW\bYf"

; fi bXgÀhn`]WX 'gc``hY 'a Ub 'Y]ba U``XUgʻ5A 5!; ØhYg]Y[Y`_f]h]gWX \]bhYfZfU[Yb']b 'K U\f\Y]h'[Y\Ofh'Yg'ØVYf\Ui dh'[fi bX`Y[YbX fYZcfa]Yfh"5i WX 'gc``hYb 'g]WX 'VYgcbXYfg'X]Y'; fØbYb 'XUfi a _@a a Yfbž'XUa]h'YbX`]WX 'k Yb][Yf'@YVYbXh]YfhfUbgdcfhY'Ui Z'XYb nU\`fY]WXYb'JYf_Y\fgk Y[Yb'i bhYfk Y[g'g]bX' '\]Yf'k YfXYb bÀa `]WX 'H]YfY'g]bb`cgYfk Y]gY'Y]bYa '@Y]XYbgk Y['Ui g[YgYhnh" GhUhh'XYb'A YbgWXYb'ni 'Ya dZY\`Ybž'k Yb][Yf': `Y]gWX'ni 'YggYbž'k]Y X]Yg'X]Y'; fØbYb'ni 'Yhnh'j Ybh]`]Yfh'\AhhYbž'gc``hYb'g]Y'`]YVYf'XUg XYfnY]h`Ui ZYbXY'ØVYfdUfhY]`]WXY'Jc`_gVY[Y\fYb' Ghcddh @YVYbXh]Yf!'HfUbgdcfhei U`'i bhYfghØhnYbž'XUg'XYf'ZfY]\Y]h`]WXY b]YXYfOghYffY]WX]gWXY'H]YfgWXi hn!@UbXYgfUh'; chhZf]YX'K U`X\Ai g`]b]h]]YfhY ž'ZcfXYfhY'GhY]bYf!K]YgYf"

K Ufi a 'a ØggYb'VY]gd]Y`gk Y]gY'a cbUh`]W\ '&\$\$"\$\$\$'?À`VYf`j cb:fUb_fY]W\ 'bUW\ 'BcfX]hU`]Yb'[Y_Uffh'k YfXYbžXUa]h'XUbb']b'XYf]hU`]Yb]gW\ Yb'FY[]cb'X]Y'A YbgW\ Yb'ZfUbnÒg]gW\ Yg'?U`VZY]gW\ YggYb'_ObbYb3'K c'V`Y]Vh'\]Yf'XYf'5i ZgW\ fY]'XYg'ÒghYffY]W\]gW\ YbH]YfgW\ i hna]b]ghYfg3'<]Yf'a i gg'Yg'YbX`]W\ 'ni 'Y]bYa
[Ya Y]bgUa Yb'GW\ i `hYfgW\ `i gg'_ca a Yb"'5i W\ 'X]Y'[Yf]b[ZØ[][Y9f\O\i b['XYf'GcZcfhghfUZYb'VY]'@Ub[ghfYW_YbhfUbgdcfhY']gh'Y]bY:UfW\"', VYfX]Yg'a i gg'Yg'ni 'a Y\f'?cbhfc``Yb'X]YgYf'HfUbgdcfhY_ca a Yb"'I a 'X]Y'H]YfY'ni 'gW\ cbYbž'gc``hYb'X]YgY'XU\Yf'bi f'bcW\ V]g'ni a 'bÀW\ gh[Y`Y[YbYbž'[YY][bYhYb'GW\ `UW\ h\cZhfUbgdcfh]Yfh k YfXYb'XØfZYb"'Jcb'Xcfh'Ui g'gc``XUg': `Y]gW\ 'bi f'bcW\ '[Y_Ø\`h

cXYf'[YZfcfYb'kY]hYfVYZÒfXYfh'kYfXYb"8Yf'HfUbgdcfh'jcb'H]YfYbXifWX'?À`hYž'<]hnY'ibX'cVYbXfY]b']b'XYf'FY[Y`'bcWX'gWX`YWXhjYfgcf[hž'aigg'YbX`]WX'Y]b'fUgWXYg'9bXY'Z]bXYb ž'ZcfXYfhY'X]Y:D'2!H]YfgWXihngdfYWXYf]b"

H]YfgWki hn'[Y\hi bg'U``Y'Ub'i bX'X]Y'gWkk Ufn![fØbY'FY[]Yfi b[gc``hY'Ui Wk'VY]a 'H]YfgWki hn'a]h'<Ui gj YfghUbX'j cf[Y\Yb' 'XYfH]YfgWki hn'a i gg'YbX`]Wk'Yi fcdUk Y]h'Y]b\Y]h`]Wk'gY]b"'A]b]ghYfFUi Wk'_Ubb'b]Wkh']a a Yf'bi f'X]Y'H]YfgWki hnUi Z'U[Yb'Yf\Ò\Ybžc\bY'UVYf'XUni 'ni 'gU[Ybž'k Yf'X]YgY'Z]bUbn]YfYb'gc`` ž'Àf[YfhYg]Wk'GWka]YX`YWkbYf'ØVYf'X]Y'ghÀbX][Yb': cfXYfi b[Yb'XYf;fØbYb"

 $\label{thm:converse} IbgYfY`Y]a]gWXY`DfcXi _h]cb``Vh`VYfY]hg'j]Y```\O`VYfY`GhUbXUfXgU`g']bhYfbUh]cbU``ØV`]WX"`K]f'a ØggYb`XYfnY]h`UVYf`XUfUi ZgWXUi Ybž`XUgg`g]WX`i bgYfY`6Ài Yf]bbYb`i bX`6Ui Yfb`X]Y \\DfcXi _h]cb``Y]ghYb`_ObbYb"`9g``Vh`k Yb][`G]bb`X]Y \\H]YfgWXi hnUi ZU[Yb`k Y]hYf`]b`X]Y`<O`\Y`ni `gWXfUi VYb`i bX`XUa]h UVYf`X]Y`DfcXi _h]cb`]b`^2 ghYffY]WX`i b`Y]ghVUf`ni `a UWXYb"`8]Y <math display="block"> :c`[Y`g]bX`XUbb`=a dcfhY`Ui g`@AbXYfb`a]h'j]Y``b]YXf][YfYb GhUbXUfXg ž`VYhcbhY`GWXa]YX`YWXbYf"$

XYYf'bUh]cbU`Y'5``Y]b[Ub['k ØfXY'Y]bYb'i b[YU\bhYb
K YhhVYk YfVgbUW\hY]``ZØf'X]Y'ÒghYffY]W\]gW\Yb'6Ui Yfb'VYXYi hYb"
5bghUhh'X]Y'6Ui Yfb'a]h'bYi Yb'5i Z'U[Yb'k Y]hYf']b'X]Y'9b[Y'ni
hfY]VYbž'gc``hY'XYf'A]b]ghYf'YbX`]W\XYb'i bbÒh][Yb
GW\`UW\hh]YfhfUbgdcfhYb'Ui g'XYa '5i g`UbX'bUW\'2 ghYffY]W\Y]bYb
F]Y[Y`'j cfgW\]YVYb ž'ZcfXYfhY'XYf': D²!5[fUfgdfYW\Yf"

.

GYVUgh]Ub '6c\fb 'A YbU.

 $H]YfgWXihnjc`gVY[Y\fYb'ZØ\fh'ni'[fÒ»hYfH]YfgWXihnfYZcfa'gY]h'\U\fnY\bhYb$

8]Y'6ibXYgfY[]Yfib['ibhYf': YXYfZØ\fib['jcb'H]YfgW\ihna]b]ghYf &\UbbYg'FUiW\'\Uh'\YihY'X]Y'[fÒ»hY'FYZcfa'XYg OghYffY]WX]gWXYb~H]YfgWXi hnYg~gY]h~J\\fnY\bhYb~dfAgYbh]Yfh"~FibXY]b~J\\f^bUWX~XYa~gY\\f~YfZc~[fY]WXYb~H]YfgWXi hnj c~_gVY[Y\\fYbžXUg~ØVYf~(%* "\$\$\$~A YbgWXYb~i bhYfgWXf]YVYb~\UVYbž~k YfXYbXUa~]h~nYbhfU~Y~: cfXYfib[Yb~ia~[YgYhnh"~GY]h~9]bZØ\fib[~XYg6i bXYgh]YfgWXi hn[YgYhnYg~]a~J\\f~&\$\$) ž~YVYbZU~~g~FYgi~hUh~Y]bYgJc~_gVY[Y\\fYbgž~k YfXYb~XUa~]h~X]Y~k~Y]hfY]WXYbXghYbJYfVYggYfib[Yb~]a~Ia~[Ub[~a~]h~H]YfYb~Ui~Z~XYb~K~Y[~[YVfUWXh"

8]Y'k]W\h][ghYb:cfhgW\f]hhY']a \ VYfV`]W.

- ?Ø_Yb`XØfZYb`b]W\ha Y\f`g]bb`cg`[YhÒhYh'k YfXYb
- F]bXYf'XØfZYb'b]Wkh'a Y\f'dYfa UbYbh'Ub[YVi bXYb k YfXYb
- GW\k Y]bY'Yf\U`hYb']b'BYi!'i bX'l a VUi hYb'_ØbZh]['a Y\f D`Uhn
- H]YfhfUbgdcfhY'k YfXYb'_ØfnYfž'ghUf_'Y]b[YgWkfÀb_h'i bX ghfYb[Yf'fY['Ya Ybh]Yfh
- @YVYbXh]YfhfUbgdcfhY`ZØf`GW\`UW\h!`i bX`A Ughh]YfY`]b
 8f]hhghUUhYb`k YfXYb`j YfVchYb
- ?Y]bY'Ni W\hh]Yf!HfUbgdcfhY'a Y\f'bUW\'BcfXUZf]_U'cXYf']b BU\Yb'CghYb
- H]YfgWki hnca Vi Xg`Yi hY`]b`6i bXYg`ÀbXYfb`k YfXYb`ghUf_ Ui Z[Yk YfhYh

H]YfY'g]bX'ZØ\`YbXY'K YgYb'i bX'g]Y'a ØggYb'YbX`]W\'Ui W\'U`g gc`W\Y'VY\UbXY`h'k YfXYb"'A]h'XYa ii a ZUb[fY]W\Yb'FYZcfa dU_Yh _ca a Yb'k]f'X]YgYa 'N]Y'ni ghUbX'Y]bYb'[fc» Yb'GW\f]hh'bÀ\Yf"'8]Y YbXYfi b[Yb'gd]Y[Y`b'XYb'DUfUX][a Ybk YW\gY`]b'XYf 6Yj O`_Yfi b['k]XYf"'B]Ya UbX']b'2 ghYffY]W\']gh'bcW\'`Àb[Yf'VYfY]h XUg'9`YbX'XYf'H]YfY'ni 'YfhfU[Yb'i bX']W\'ZfYi Y'a]W\Z'XUgg'X]Y Dc`]h]_'bi b'YbX`]W\'VY[]bbhz'X]Yg'i a ni gYhnYb"'9g'\UhcZZYbVUf i bgYf'Jc`_gVY[Y\fYb'a]h'ØVYf'(%*"\$\$\$'I bhYfgW\f]ZhYbZ'X]Y ; fØbYb']b'XYf'FY[]Yfi b['i bX'6Yk Y[i b[']a '6Ui YfbVi bX'i bX'XYf 2 J D'[YVfUi W\hz'XUa]h'Y]b'[fc»Yf'9fZc`['[Y`]b[h' 'UVYf'Yf']gh'bi b [Ya Y]bgUa'[Yi b['Yb'"

 $NYbhfU`Y`: cfXYfib[Yb`ibgYfYg`H]YfgWihnjc`_gVY[Y\fYbg`kYfXYbYhnh`YfZØ``h`ibX`]WX`V]b`nijYfg]WXh`]WXž'XUgg`k]f`UiWX`bcWX`XYb$

 $F Y g h' X i f W g Y h h' b ' k Y f X Y b '' 8 Y b b ' Y g 'n Y] [h' g] W . `9b [U [Ya Y b h' n U \ h' g] W . `U i g '' 8 Y f '9] b g U h n' <math>Z \emptyset f 'H$] Y f Y / `I a k Y `h' X U i Y f h' `U b [Y ž' Y f '] g h a $\emptyset \setminus g$ U a ž' U V Y f 'Y f ``c \ b h' g] W \ '' 8 Y f '\ Y i h] [Y 'H U ['] g h' X Y f 'V Y g h Y 6 Y k Y] g 'X U $Z \emptyset f$ ž' X U $Z \emptyset f$ z' X U $Z \emptyset f$ z' X U $Z \emptyset f$ z' X U $Z \emptyset f$ y b 'Y h' b | 'g c f [h'' K] f k Y f X Y b 'U `g'; Y a Y] b k c \ `g h] Z h i b ['7 C A $\P B \times U Z \emptyset f$ g c f Y V U g h] U b 6 c \ f b 'A Y b U ž' \ \ j h] U h c f 'X Y g' H] Y f g W i h n j c `_g V Y [Y \ f Y b g' i b X G d f Y W Y f 'X Y f' B U W Z c `[Y ! \ \ \ j h] U h j Y 'c Y _ c f Y] W "

8]U`c['ZØf'FYZcfa Yb'[Y\h'k Y]hYf. '2 ghYffY]WX]gWXY ?cbgi a X]U`c[Y

CZZYbY'Dib_hY'Uig'XYa 'H]YfgW\ihnjc`_gVY[Y\fYb'V`Y]VYb'ibhYf
UbXYfYb'X]Y'jYfdZ]W\hYbXY'@YVYbga]hhY`!
<Yf_ibZhg_YbbnY]W\bib['UiW\']b'XYf'; Ughfcbca]Y'cXYf'Y]b'9bXY
XYf'Gc'U!=a dcfhY'Uig'XYa 'FY[Ybk U'X"'=a '8]U`c['a]h'XYf
@UbXk]fhgW\UZhz'XYf'K]fhgW\UZhibX'XYf'Dc`]h]_z'gc``Yb']b'X]YgYb
ibX'UbXYfYb'6YfY]W\'bib': cfhgW\f]hhY'UiZ'XYb'KY['[YVfUW\h
kYfXYb"'8UVY]'[]`hz'k]Y'gW\cb'VY]a 'H]YfgW\ihnjc`_gVY[Y\fYbz'
XUgg'bUW\\U`h][Y'ibX'gmghYa]gW\Y'\bXYfib[Yb'bifibhYf
5bYf_Ybbib['VÀiYf`]W\Yf'FYU`]hÀhYb'a Ò[`]W\'g]bX"

a 'FU\a Yb'XYf' 2 ghYffY]W\]gW\Yb'?cbgi a X]U`c[Y 'j cb'%%"'V]g %' "'A U]'&\$&&']b' < U``Y]b'k]fX'Yg']b'X]YgYa 'G]bbY'Y]bY'FY]\Y'j cb; YgdfÀW\Yb'[YVYbž'Ub'XYbYb'Ui W\'6i bXYga]b]ghYf'&\UbbYg FUi W\ž'XYf'J cfg]hnYbXY'XYg'@UbXk]fhgW\UZhgUi ggW\i ggYg']a BUh]cbU`fUhž'; Ycf['GhfUggYf'fP J DŁ'i bX'gY]bY'GhY``j YfhfYhYf]b 7cfbY`]U'9W_Yf'fGD2 Łž'X]Y'JYfhfYhYfl]bbYb'XYf `UbXk]fhgW\UZh`]W\Yb'9fnYi [Yfj YfVÀbXY'gck]Y'k Y]hYfY 9I dYfhl]bbYb'hY]`bY\a Yb'k YfXYb"'Jcf'U``Ya 'UVYf'k YfXYb'X]Y DYfgdY_h]j Yb'XYf'?cbgi a Ybhl]bbYb'i bX'6Ài Yfl]bbYb']a A]hhY`di b_h'ghY\Yb"

8Ya c_fUh]g]Yfi b[XYg 9fbÀ\fi b[ggmghYa g

8 Ugʻ[fc» YʻH]YfgWki hn! FYZcfa dU_YhʻXYfʻ6i bXYgfY[]Yfi b[ʻ]ghʻY]bk]Wkh][YfʻAY]`YbghY]bžʻUVYfʻb]WkhʻXUgʻ9bXYʻi bgYfYgʻKY[gʻ'K]fa ØggYbʻX]Yʻ5fhʻi bXʻKY]gYʻk]Yžʻkcʻi bXʻj cbʻkYaʻi bgYfY

@YVYbga]hhY``YfnYi [hik YfXYbži[fi bXgÀhn`]WX`bYi `[YghU`hYb"'9g VfUi WXhY]bY'8Ya c_fUh]g]Yfi b[ii bgYfYf'9fbÀ\fi b[ž'\]b'ni 'Y]bYa Ò_c`c[]gWX`i bX`gcn]U``[YfYWXhYb`GmghYa ž'VY]'XYa ik]f'U``Ya]hVYgh]a a Yb'_ÒbbYb'i bhYf'k Y`WXYb'6YX]b[i b[Yb'dfcXi n]Yfh k]fX'i bX`VY]'XYa ik YXYf'H]YfY'i bX`I a k Y`h'bcWX`?`]a U'i bX__`Y]bVÀi Yf`]WXY`@UbXk]fhgWXUZh'nYfghÒfh'k YfXYb"

K]f'k c``Yb'i bg'b]W\h'`Ab[Yf'ni 'k UbXY`bXYb'; Y`XVÒfgYb

XY[fUX]YfYb'`UggYbžX]Y'bi f'Ui gk À\`Yb'_ObbYbž'k Ug' \DXi ghf]Y!

i bX'<UbXY`g_cbnYfbY'i bg'j cf\Yf'bUW\']\fYa '9fa YggYb']bg

FY[U``[Y`Y[h'\UVYb"'K]f'k c``Yb'YbX`]W\'gY`Vgh'U`g'6Øf[Yfł]bbYb

i bX'U`g'?cbgi a Ybhl]bbYb'YbhgW\Y]XYb'_ObbYbž'k]Y'i bgYf

GhYi Yf[Y`X'Y]b[YgYhnh'k]fXž'k]Y'H]YfYž'6ÒXYb'i bX'; Yk ÀggYf

VY\UbXY`h'k YfXYb'i bX'k]Y'Ui W\'X]Y'Ybcfa Yb'DfcZ]hY'j YfhY]`h

k YfXYbž'X]Y'g]W\'Ui g'XYf'9fnYi [i b['i bX'J YfhY]`i b['j cb'BU\fi b[
Yf[YVYb 'gc'GYVUgh]Ub'6c\fb'A YbU'UVgW\`]Y*YbX"

J =9F 'D: CH9B!8]fY_hcf]b '9j U'FcgYbVYf[. Bcj Y``Y'ni f'H]Yf\U`hi b[']gh']bU_nYdhUVY`

±0U_nYdhUVY`` 'XUg']gh'XUg': Un]h'j cb'J =9F'D: CH9B'ni f'j cb'XYf
FY[]Yfi b['ni f'6Y[i hUWkhi b['j cf[Y`Y[hYb'BcjY``Y'XYg
H]YfgWki hn[YgYhnYgž'XYf'%"'H]Yf\U`hi b[gj YfcfXbi b['i bX'XYg
H]YfhfUbgdcfh[YgYhnYg"'GWk Y]bY'i bX'A Ughf]bXYf'k YfXYb'bUWk
k]Y'j cf'Ui Z'J c``gdU`hYbVÒXYb'ghY\Ybž'GWk Ubn_i d]YfYb'i bX
VYhÀi Vi b[g`cgY'? UghfUh]cb'VY]': Yf_Y`b'k Y]hYf\]b'[Àb[][Y'DfUl]g
gY]b'i bX'H]YfY'j]Y``ni '¹k b['i bX'j]Y``ni '`Ub[Y'hfUbgdcfh]Yfh
k YfXYb"

8 Ugʻ]ghʻY]bʻYI hfYaʻgWk UWkYfʻ?ca dfca]ggžʻXYfʻXU
\YfUi g[Y_ca a Ybʻ]ghʻʻY]XYfʻk]YXYfʻa UʻʻUi ZʻXYaʻFØW_YbʻXYf
H]YfY"8 UgʻUb[YV`]WkYʻJ cʻʻgdUʻhYbj YfVchʻk]fXʻUVʻ&\$&ʻ
Ui ggWkʻ]Y»`]WkʻZØfʻBYi ! i bXʻI a VUi hYbʻj cbʻGhÀʻʻYbʻ[Y`hYb"'9gʻgcʻʻ
XUgʻXÀb]gWkYʻA cXYʻʻa]hʻY]bYaʻ@]Y[YVYfY]Wkʻ[Àbnʻ]Wkʻc\bY
Ghfc\Y]bghfYiʻZØfʻGWkkY]bYʻ_ca a YbžʻXYggYbʻ6cXYbʻYfghʻfYWkh
k]YXYfʻdYfZcf]YfhʻgY]bʻ_Ubbʻʻa]hʻUʻʻʻXYbʻ[Ygi bX\Y]h`]WkYb
GWkÀXYbʻZØfʻX]YʻH]YfY"'8]YʻfYghʻ]WkYʻGhUʻʻZÀWkYʻXUfZkY]hYf\]bʻUi g
J cʻ`qdUʻhYbVÒXYbʻVYqhY\Ybʻʻ=bʻK U\f\Y]h'k [fX'XYfʻGhUhi gʻE i c

nYa Ybh]Yfh" 1 8 Ugʻ_Ubbʻb]W\h'U`gʻ: cfhgW\f]hh'VYnY]W\bYh'k YfXYb i bXʻ]ghʻj cfʻU``Ya ʻ]a '@]W\hY`XYfʻ_Øfn`]W\'dfÀgYbh]YfhYb 1 8 Ugʻ_YbbnY]W\bi b['nmb]gW\" 1 8]Y 1 7 Yf_i bZhʻUi gʻ ghYffY]W\ai ggʻZØfʻVYggYfY 1 7 Uʻhi b[gVYX]b[i b[YbʻghY\Yb" 1 8]YgY 1 7 \UbW\ki fXYʻ[YfUXYʻ]bʻXYfʻGW\ki Y]bY\U`hi b['j YfdUgghžʻgU[h'J 1 9 FD: C H9B 1 8]fY_hcf]bʻ9 j UʻF c gYbVYf["

5i W. X]Y gcbgh][Yb Bcj Y``]Yfi b[Yb g]bX a Y\f'U`g'XØfZh][.

FcgYbVYf[...BUW.k]Y j cf'_ObbYb F]b[Y`gW.k AbnY XYf'GW.kY]bY _i d]Yfh'k YfXYb a]h'XYf'Y]bn][Yb'9]bgW.fAb_i b[ž'XUgg'XUg'bi f VY]'5i ZhfYhYb j cb'J Yf`Yhni b[Yb'Xi fW. GW.k UbnVY]» Yb j cb'a Y\f U`g'nk Y]'DfcnYbh'XYf'GW.k Y]bY a O[`]W.]gh"'8 Yf'K]hn'XUfUb.

Gc`Ub[Y'GW.kY]bY'j]Y`ni kYb]['D`Uhn'i bX'j]Y`ni j]Y`fhfYgg
\UVYbž'k YfXYb'g]Y'g]W.]a a Yf'k Y]hYf\]b'[Y[YbgY]h][
j YfghØa a Y`b"'9g'k i fXY'U`gc'b]W.h'a U`Y]b'Yfbgh\UZhYf'J Yfgi W.i bhYfbca a Ybž'X]YgY'H]Yfei A`YfY]'UVni ghY``Yb' i bX'XUg'hfchn'XYg JYfVchg'XYg'fci h]bYa A`»][Yb'?i d]YfYbgž'Y]bYf'9I!A U\bi b['i bX' j]Y`Yf'6Y]gd]Y'Yž'k]Y'Yg'UbXYfg'[Y\Yb'_Ubb^*=a ', Vf][Yb'k i fXY XUg'H\Ya U'VYhAi Vi b[g`cgY': Yf_Y`_UghfUh]cb'k]YXYf'_ca d`Yhh Ui »Yb'j cf'[Y`UggYb/j cb'X]YgYf'H]Yfei A`YfY]'g]bX']b'² ghYffY]W.U`gc'k Y]hYf\]b'A\f`]W. '&ž+'A]``]cbYb': Yf_Y`VYhfcZYb''

9]bn]['XUg'5i g`Ui ZYb'XYf'j]Y`Yb'5i gbU\a Yb'XYg'JYfVchg'XYf
XUi Yf\UZhYb'5bV]bXY\U`hi b['VY]'F]bXYfb']gh'dcg]h]j ž'U``YfX]b[g
[]Vh g'Ui W\ '\]Yf'Y]bYb'K Yfa i hghfcdZYb.' 8]Y', VYf[Ub[gZf]gh'V]g
&\$' \$']gh'j]Y`ni ``Ub["'8]Y'DfcV`Ya Y'g]bX'gY]h'\$U\fYb'VY_Ubbhž'\]Yf
a i gg'g]W\ 'Y]bZUW\ 'gW\bY``Yf'Yhk Ug'hi b ž'gU[h'FcgYbVYf["

 $9VYbZU``g']bU_nYdhUVY``g]bX`X]Y`'ŸbXYfib[Yb`VY]`XYb\\ H]YfhfUbgdcfhYb"`8Ug`A]bXYghhfUbgdcfhU`hYf`VY]`?À`VYfb`gc```jcbnkY]`UiZ``YX][`]W\`XfY]`KcW\Yb`Ub[Y\cVYb`kYfXYb"`@\Ab[YfZf]gh][gc```Y]bY`9f\O\ib[`UiZ'j]Yf`KcW\Yb`UV`&$&*`ØVYfdfØZh`kYfXYb"`9jU`FcgYbVYf[.:=\b'XYa^5`hYf`g]bX`X]Y`\sib[h]YfY`bcW\`UiZA]`W\bU\fib[`Ub[Yk]YgYb`ibX`Y]bZUW\`j]Y``ni`'\b[`ZØf`XYbHfUbgdcfh"`K]f`ZcfXYfbž`XUgg`g]Y`Yfgh`UV`XYf`nk\O`ZhYb`KcW\YhfUbgdcfh]Yfh`kYfXYb`XØfZYbž`Y[U`ž`cV`]bbYf\U`V'jcb`2ghYffY]W\cXYf`]bg`5ig`UbX" `9IdcfhY`]b`9I!8f]hhghUUhYb`gc``Yb`bif`ZØf`gc[YbUbbhY`NiW\hf]bXYf`a\O[`]W\gY]bž'b]W\h`aY\f`ZØf$

 $GWX`UWX hf]bXYf" 8Yb' < U_Yb`XUfUb`Yf_`Afh`FcgYbVYf[`gc.`K]Y k]fX`g]WXYf[YghY``hž`XUgg`Yg`g]WX`ia`Ni WX hf]bXYf`\UbXY`h3`5i WX \]Yf`k i fXYb`X]Y`bY[Uh]j Yb`6Y]gd]Y`Y`Ui g`XYf`J Yf[Ub[Yb\Y]h`b]WX h Yfbgh`[YbcaaYb`Vnk "`\UVYb`ni `_Y]bYb`ghAf_YfYb`FY[Y`b [YZØ\fh"`GY\f`cZh`k YfXYb`X]Y`H]YfY`U`g`Ni WX hf]bXYf`XY_`Uf]Yfhž XUbb`]a`N]Y``UbX`UVYf`Yfgh`fYWXh`k]YXYf`[YgWX`UWX hYhž`i bX`XUg i bhYf`YfVAfa`]WXYb`6YX]b[i b[Yb"`8]Y`ni `Agg][Y 6YZÔfXYfi b[gXUi Yf`j cb`a UI]a U``, &`Ghi bXYb`]gh`]a`, Vf][Yb UVgi fX``8Yf`Y]bn][Y`@]WXhV`]W_`i bX``Ab[gh`ØVYfZA``][`]ghž`XUgg HfUbgdcfhY`]b`N]Y``AbXYf`]a`BU\Yb`CghYb`i bX`BcfXUZf]_U`_ØbZh][b]WXhaY\f`a\O[`]WX`gY]b`gc``Yb"`9VYbgc`dcg]h]j`\Yfj cf[Y\cVYb k YfXYb`_ObbYb`ŸbXYfi b[Yb`]a`<Y]a h]YfVYfY]WX`i bX`X]Y Ui Z[Yk YfhYhY`GhY``i b[`j cb`H]YfgWXi mca Vi XgdYfgcbYb"$

5``Yg`]b`U``Ya`]gh`J=9F`D: CH9B`aU\``cg`YbhhÀi gW\h''` K]f`k]ggYbbUhØf`]W\ž'XUgg`X]Y`² JD`gÀah`]W\Y'JYfVYggYfib[Yb`]aH]YfgW\ihnVYfY]W\`V`cW_]Yfhž`UVYf`Yg`]gh`YfbØW\hYfbXž`XUgg`X]YgYf9bhkifZ`_Y]bY`ghÀf_YfY`[fØbY`<UbXgW\f]Zh`hfÀ[h`ibX`X]Y`\Y]\Ybžj]Y``X]g_ih]YfhYb`9]gYb`YfbYih`b]W\h`Ub[fY]Zh''`K]f`kYfXYb`Y]bYiaZUggYbXY`GhY``ib[bU\aY`]a`6Y[ihUW\hib[gdfcnYgg`UV[YVYbibX`ZcfXYfb`X]Y`Dc`]h]_'UiZžXYb`9bhkifZ`XYih`]W\`bUW\niVYggYfb'UiW\`]a`G]bbY`XYf`OghYffY]W\]gW\Yb`6YjO`_Yfib[žX]Y`g]W\`]bgÀah`]W\Yb`IaZfU[Yb`aY\f`H]YfgW\ihn`kØbgW\h'`Gcbgh`g]bXk]YXYf`Y]baU``X]Y`H]YfY`X]Y`CdZYf`XYf`_`Ugg]gW\YbOghYffY]W\]gW\Yb`?`]YbhY`dc`]h]_ ž`aY]bh`J=9F`D:CH9B`8]fY_hcf]bFcqYbVYf["

6Ygi WXYb G]Y i bg Ui Z. Z`Y]gWXi bXWc "Uh