



ARTS1900

; YbXYfYX`K cfXg, `bhfci Xi W]cb`hc`; YbXYf`Ghi X]Yg

HYfa `H\`fYY`##`&\$&\$

7ci fgY`Cj Yfj JYk

GHJZ7cbHJW`8YHJ`g

7cbj Ybcfg

B Ua Y	9a U`	5j U]UV]`]m	@cW]h]cb	D\cbY
NcfU`G]a]W	n"gl]a]W i bgk "YXi "Ui	Hi YgXUm%& %&ž K YXbYgXUm&!` 'cf VmUddc]b]a Ybh	A cfj Yb`6fck b ' (+	\$&`- ' ,) %+` *`

Hi hcfj

B Ua Y	9a U`	5j U]UV]`]m	@cW]h]cb	D\cbY
Gcd\]Y`F cV]bgcb	gcd\]Y`fcV]bgcb4 i bgk "YXi "Ui	6miUddc]b]a Ybh! Ya U]`h`a U_Y UffUb[Ya Ybhgžcf W`bHJW`NcfU		

GWXcc``7cbHJW`bZcfa Uh]cb

GWXcc``cZ<i a Ub]h]Yg`UbX`@Ub[i U[Yg

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg '*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU.'9 W VWdE fgV[We"

H\]g'Wci fgY'WUb'U'gc'VY'ghi X]YX'jb'hY'Zc`ck]b['gdYWU'gUhc]b.' : [efack

H\]g'Wci fgY'g'Ub'j]bfcXi W]cb'hc'hY'ghi XmicZk ca Ybz[YbXYf'UbX'gYI i U']hYg'hfci [\hY'ZUa Yk cf_g'cZ k cfX'\]ghcfmUbX'Wfcgg!W'hi fU'UbU'mg]g"Mc i 'k]`VY[]b'k]h'ei Ygh]cbg'hUhUfY'Z bXUa YbHU'hc' [YbXYf ghi X]Yg'—gi W'Ug'k \Uh]g' [YbXYf3'—UbX'hfUW'hYa 'UWfcgg'hja Y'UbX'd'UW'hc'XYa cbghfUhf'\ck [YbXYf]bhYfgYWg'k]h'fUW'z'WUggz'gYI i U']miUbX'chYf'a Uf_Yfg'jb'X]ZYfYbh'\]ghcf]WU'UbX'W'hi fU'Wc'bhYI hg"Mc i k]`Wc]bg]XYf'\ck 'fY' []cbz'Wc'cb]U']ga z'bhU]cbU']ga 'UbX'Wfcgg!W'hi fU'Wc'bhUWg'\Uj Y'g\UdYX'UbX]bZi YbW'X' [YbXYf'fc'Yg'UbX'fY'Uhc]bg" H\Y'Wci fgY'k]`U'gc']bfcXi W' 'mci 'hc' _YmXYVUH'g'UbX XYj Y'cda YbHg']b' [YbXYf'ghi X]Yg'UbX' [YbXYf'\]ghcfmz'Zca 'hY'ei Ygh]cb'cZ\hY'fc'Y'cZ [YbXYf']b'YUf'm a cXYfb'k]h'W!\i bHg'z'hfci [\>i X]h'6i hY'f'g']bZi Ybh]U'hY'cf]g]b['cZ [YbXYf'UbX'Ya VcX]a YbHz'UbX'hY Ya Yf [YbW'cZhfUbg'ghi X]Yg'UbX']bhYfgYW]cbU'hY'cfm"

7 ci fgY '@YUfb]b['Ci hWca Yg

% " F YWc [b]gY'\ck 'WUggz'fUW'UbX'cf'gYI i U']mi]bhYfgYWg'k]h' [YbXYf']b'X]ZYfYbh'\]ghcf]WU'UbX W'hi fU'Wc'bhYI hg"
&" →Ybh]Zm_YmWc'bw'dhg']b' [YbXYf'UbX'ZYa]b]ghghi X]Yg']b'k f]hY'b'UbX'cf'j YfVU'Zcfa "
' " 7 cbghfi W]Uf [i a YbHg'XfUk]b['cb'ZYa]b]ghU'UbX' [YbXYf'gW'c'Ufg\]d']b'k f]hY'b'UbX'cf'j YfVU'Zcfa "

HYUW\]b['GhfUH []Yg'

H\]g'Wci fgY'g'Ub'j]bfcXi W]cb'hc'; YbXYf'Ghi X]Yg']b'k \]W' 'mci 'k]`hU_Y'U'\]ghcf]WU'UbX'Wfcgg!W'hi fU' UddfcUW'hc'\Y'd'mci 'i bXYfghU'UbX'\ck [YbXYf'fc'Yg'UbX'XmbUa]Wg'\Uj Y'Ya Yf [YXz'W'Ub [YX'UbX'j Uf]YX UWfcgg'hja Y'UbX'd'UW'" 4]g'U'gc'XYg] [bYX'hc'XYdYb'mci f'g_]`g']b'W]h'ei]b['gW'c'Uf'm']h'fUhi fYz Wc'bgf'i W]b['mci f'ck b'Uf [i a YbHg'UbX'Wc'bx' W]b['fYgYUfW'" @YWh' fYg'k]`dfcj]XY'W] W]U'VUW_[fci bX]bZcfa Uhc]b'UbX']bfcXi W' 'mci 'hc' _YmXYVUH'g'z'h]b_Yfg'UbX'hYa Yg']b'; YbXYf'Ghi X]Yg'" K YV'Wc'bhY'bhk]` dfcj]XY'; YbXYf'Ghi X]Yg']b'U'hY'fbU'h] Y'Zcfa Uhg'z'gi W'Ug'dcXW]ghg'UbX'XcW'a YbHf]Yg'" 4'hi hc]f]U'g'z'mci 'k]` dUf]W]dU'h']b']b!XYdh'X]gW'gg]cb'cZ\hY'gW'c'Ufg\]d'UbX'YWh' fY'a U'hY'f]U'z' [i]XYX'Vm'h'hc]f]U' ei Ygh]cbg" H\Y'hYUW\]b['ghfUH [m]g'hc'YbWci fU [Y'mci f'W]h]WU'Yb [U [Ya Ybhk]h'Wci fgY'a U'hY'f]U'UbX'hc \Y'd'XYj Y'cd'mci f'k f]hY'b'UbX'j YfVU'Wca a i b]W]h]cb'hfci [\WUgg'X]gW'gg]cb'z'k f]hY'b'fYg'dc'bgYg'z'UbX]bXYdYbXYbhYfgYUfW"

...

.

.

.

5ggYgga Ybh

BchY. U`UggYgga Ybhg`UFY`a Uf_YX`ci hcZ%\$\$zi g]b[`dUggz`WfYX]h`X]gh]bW]cbz`\][\`X]gh]bW]cb`[fUXY fUb[Y`H\YgY`[fUXYg`UFY`YI d`U]bYX`YfY.

[\fdg.##gh XYbhi bgk "YXi "Ui # fUXY](#)

F YZYfYbW]b[`gmghYa g.

K Y`dfYZf`hY: ccbchY#V]V]c[fUd`migmghYa žU`gc`_bck b`Ug`CI ZcfX`cf`7\]W]c" GYY.

[\fdg.##gh XYbhi bgk "YXi "Ui #ccbchY!V\]V\]c\[fUd`mfcfcl ZcfX!fYZfYbW\]b\[!gmghYa](#)

<ck Yj Yfzk Y`fYU`]gY`a UbmicZmci `UFY`a cfY`i gYX`hc`]b!hYI higmghYa g" ð`hUhWUgYzk Y`fYwta a YbX`mci i gY`Ub`]b!hYI hfYZfYbW]b[`ghmY`hUh]bW] XYg`dU[Y`bi`a VYfgžgi W`Ug`< Uf] UfX`cf`5D5.

[\fdg.##gh XYbhi bgk "YXi "Ui #Ufj UfX!fYZfYbW\]b\[](#)

[\fdg.##gh XYbhi bgk "YXi "Ui #JdU](#)

DfYgYbhU]cb.

: cf`k f]hYb`UggYgga Ybhgzk Y`fYwta a YbX`%&dc]bhZ`bž%" !Xci V`Y`gdUW]b["5`k Umg`ghU`h`hY`ei Ygh]cb`i d hcdždfYZfUV`m]b`Vc`X"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y`8U`hY	Gh XYbhi@YUfb]b[Ci hWta Yg`5ggYggYX
Hi hc]U`F YgdcbgYg`	(\$i	Bch5dd`]WUVY	%ž&
F YgYUfW`YggUm	(\$i	\$* #/6/#&\$&\$`\$(. \$\$`DA	

UggYgga Ybh]g'(\$i "

: YYXVUW_j]U]bX]j]Xi U`Wca a Ybhgžfi Vf]WUbX`]b!WUgg`X]gW gg]cbžk]h]b`U`k YY`cZgi Va]gg]cb`Zcf`hY
ZfghfYgdcbgY`UbX`k]h]b`h`b`XUmg`Zcf`gi VgYei YbhcbYg"

5XX]h]cbU`XYHJ]`g.

E i Ygh]cbg. `H\Y`ei Ygh]cbg`UFY`dcghYX`cb`A ccX`Y`]b`hY`k YY`_mZc`XYfg"

F YZYfYbW]b[. `K`Y`Xc`fYei]fY`fYZfYbW]g`Zcf`h]g`UggYgga Ybh!`]XYU`miZc`fbc`hYgžVi`hWUb`U`gc`i`gY`]b!hY`hž
dfcj]XYX`mci`]bW] XY`dU[Y`bi`a`VYf`fYZg`"Zi`g]b[`Zc`fbc`hYgžmci`Xc`bchbYXX`h`c`gi`dd`mU`V`]c[fUd`mUg
hY`Zc`fbc`hY`Wcb]U]bg`hY`]bZc`fa`U]h]cb`"Zi`g]b[`]b!hY`hž`d`YUgY`dfcj]XY`U`fYZYfYbW`]gH`

F YgYUfW. `Mci`UFY`bchYI`dYW]X`h`fYUX`#`]ghYb`VYmcbX`hY`gYhWcb]bhZcf`hY`k`YY`žbcf`UFY`mci
YI`dYW]X`h`i`gY`U`hY`a`UHf]U`h`Ub]gk`Yf`U`ei`Ygh]cb`!`i`gY`hY`a`UHf]U`a`cghfY`Yj`Ub]h`h`U`hei`Ygh]cb`"
Gca`Y`ei`Ygh]cbgž`Zcf`YI`Ua`d`Yž`a`UmVY`UVci`hcbY`gdYW]W]hYI`hcf`dcXW]ghcf`XcW`a`YbhUfm`

Gi Va]gg]cb`bchYg.Gi Va]h]mci`f`h`h`f]U`fYgdcbgY`h`hY`Wc`ffYgdc]b]b[`k`YY`_!`Y`["`"]Zmci`Ub]gk`Yf`U`K`YY`_
(`ei`Ygh]cbžgi`Va`]h]h`hY`K`YY`_(`Hi`fb`#i`#`])b`_"

Hi`fb]h]b`gYH]b[. `H\]g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[`\`Hi`fb]h]b`UbX`ghi`XYbh]g`Xc`bch]gY`Hi`fb]h]b
g]a`]Uf]mifYdcf]g"

5ggYgga Ybh&. `F YgYUfW`YggUm

GHUfhXUH.

@Yb[`h.`&\$\$\$`k`cfXg

8YHJ]`g.

Gh`XYbh]g`k`f]hY`Ub`YggUm]fUddfc]`]a`UH`m`&\$\$\$`k`cfXg`VUgYX`cb`]bXYdYbXYbh]fYgYUfW`"E`i`Ygh]cbg`UFY
XfUk`b`Zca`Wci`fgY`hY`a`Yg"

: YYXVUW_j]U]bX]j]Xi U`Wca a Ybh]g`UbX`fi Vf]Wžk]h]b`h`b`XUmg`cZgi Va]gg]cb"

5XX]h]cbU`XYHJ]`g.

E i Ygh]cbg. `H\Y`YggUmei`Ygh]cbg`k`]`fY`UH`h`hY`YWi`fY`#`h`h`f]U`h`cd]Wg`UbX`k`]`UddYUf`]b`hY`k`YY`_m
Zc`XYfg`cb`A`ccX`Y`"E`i`Ygh]cbg`fY`UH`h`h`k`YY`_g`&!`,"

F YgYUfW. `Gh`XYbh]g`UFY`YI`dYW]X`h`XfUk`cb`U`a`]b]a`i`a`cZ*!`,"gci`fW]g`Zcf`U`fYgYUfW`YggUm!`]Y`"
`e`i`fbU`Uf]h]W]gž`Vcc`_`VX`Ud]h]fgž`gYW]cbg`cZVcc`_g`"b]h]fbYh]fYgYUfW`fY`["`"K`_]dYX]Ue`g`l`ci`X`VY`_Ydh]h`U
a`]b]a`i`a`f&\$i`"a`U`E`"@Y[`Ub]h`k`]`Wcb]U]b`YI`fU`fYUX]b[`Zcf`YUW`k`YY`_g]h`cd]Wgc`mci`k`]`Uj`Y`d`Yb]m]c`Z
W`fUH]X`a`UHf]U`h`XfUk`cb"

F YZYfYbW]b[. '9ggUmg'a i ghVY'Z `mfYZfYbW'X! 'Zc'bc'hV#V]V'c[fUd\mC F ']b!h'I h#fYZfYbW'`]ghfk Ufj UfX
cf'5D5ž'cbY'cZ'hY'gmgh'a g'k \]W']bW' XYg'dU[Y'bi a VYf'fY'Zg]b]b!h'I h'fYZk \YfY'fY'Yj Ub'Ł"

Bch'. 'Z fh'Yf'YggUm[i]XUbW'k]`VY'dfcj]XYX']b`YW' fYgž']b' h' hf]U'g'UbX'cb'A ccX'Y']b'h'Y'YggUmZc'XYf
gYW]cb"

Hi fb]h]b'gYh]b[. 'H\]g'Ugg][ba Ybh]g'gi Va]h'X'h'fci [\ 'Hi fb]h]b'UbX'gh XYb'g'W]b'gYY'Hi fb]h]b'g]a]'Uf]m
fYdcf'g"

5ggYgga Ybh' . '7`Ugg'hYgh

GHUfhXUH' . '

8YHU]`g.

Gh XYb'g'g]hU'WUgg'hYgh]b'h'Y'Z]bU'h' hf]U'`H\Y'hYghk]`]bW' XY'a i 'h'd'Y'W'c]W' UbX'U'g'cfh'YggUmUbX
k]`hYgh_bck`YX[Y'cZ'hY'W'ci fgY'Ug'U'k \c'Y"

Gh XYb'g'k]`fYW'j Y'U'[fUXY'j]U'A ccX'Y'k]h.]b'h'Y'b'XUmg'cZg]h]b['h'Y'hYgh'

5XX]h]cbU'XYHU]`g.

: i fh'Yf'XYHU]`g'h'VY'dfcj]XYX'cb'A ccX'Yž']b' h' hf]U'g'UbX']b'h'Y'K YY_`%\$`YW' fY" `8c'[Yh]b'h'ci W'k]h
NcfU'k Y`VYZc'fY'h'Y'hYgh]Zmci '\Uj Y'UbmigdYW]U'fYei]fYa Yb'g": cf'gh XYb'g'k \c'\UH' hYghgž'YhNcfU
fYUggi fY'mci . 'h.]g'hYgh]g'bchXYg][bYX'h'ci b]g\mci ž'Vi h'hc'YbW'ci fU[Y'mci 'hc'fYZYW'cb'k \Uhmci
Yb'c'mYX'YUfb]b['UVci h'f'f'X]Xb'f'ž'hc'h.]b'_UVci h'h'Y'W'cbW'dhg'mci 'Zci bX'a cghi gYZ'`UbX'h'Y'k]XYf
Udd']W]V']hmcZ'hY'W'ci fgY"

Gi Va]gg]cb'bc'hYg. # WUgg'UggYgga Ybh

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\Y`W`b`h`b`h`z`c`f`Y`U`W`k`Y`Y`_`f`f`Y`U`X`]b[g`z`X`c`W`a`Y`b`f`U`f`]Y`g`U`b`X`d`c`X`W`U`g`h`g`k`]`V`Y`]`g`h`X`c`b`A`c`c`X`Y`"5`f`Y`U`X`]b[g`k`]`V`Y`U`j`U`]U`V`Y`j`]U`@`Y`[`U`b`h`c`"5`c`h`Y`f`W`b`h`b`h`k`]`Y`]h`Y`f`V`Y`U`j`U`]U`V`Y`j`]U`@`Y`[`U`b`h`c`f`h`f`c`i`[`\`]b`_`g`c`b`A`c`c`X`Y`"

F YWca a YbXYX`F Ygci fWg

H\Y`f`Y`]g`b`c`g`Y`h`h`l`h`z`c`f`h`g`W`c`i`f`g`Y`z`h`c`i`[`\`g`h`X`Y`b`h`g`a`U`m`z`b`X`D`Y`h`f`G`h`U`f`b`g`z`9`W`V`W`d`[`I`a`d`V`:
[`e`f`a`k`f`j`U`f`]c`i`g`Y`X`]h`c`b`g`k`i`g`Y`Z`!`a`i`h`d`Y`W`c`d`]Y`g`U`f`Y`U`j`U`]U`V`Y`]b`h`Y`]V`f`U`f`m`"

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

H\]g`]g`U`\`[`\`d`Y`f`z`c`f`a`]b[`W`c`i`f`g`Y`]b`h`f`a`g`c`z`g`h`X`Y`b`h`z`Y`X`V`U`W`z`V`i`h`k`Y`a`U`_`Y`]g`i`f`Y`h`c`a`U`_`Y`]b`Y`k`W`X`U`b`[`Y`g`Y`j`Y`f`m`m`Y`U`f`h`c`_`Y`Y`d`h`Y`W`c`i`f`g`Y`z`Y`g`\`U`b`X`f`Y`Y`j`U`b`h`U`b`X`h`c`f`Y`g`d`c`b`X`z`f`c`a`h`f`f`]z`W`g`i`[`[`Y`g`h`c`b`g`z`f`c`a`g`h`X`Y`b`h`g`"
K`Y`k`Y`W`c`a`Y`]b`z`c`f`a`U`z`Y`X`V`U`W`U`h`U`b`m`g`h`U`[`Y`X`i`f`]b[`h`Y`h`f`a`U`b`X`Y`b`W`c`i`f`U`[`Y`U`g`a`U`b`m`g`h`X`Y`b`h`g`U`g`d`c`g`g`]Y`Y`h`c`d`f`c`j`]X`Y`z`c`f`a`U`z`Y`X`V`U`W`_`j`]U`A`m`9`I`d`Y`f`]Y`b`W`"

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

Hi fb]h]b 'Gi Va]gg]cb

Ʒmci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UH'Ya dh]b['hc'gi Va]hmc i f'Ugg][ba YbhiH'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-',) "' ' ' %cf'Ya U]'H'Ya 'cb'YI HYfbU'HY'f'gi ddcfh4 i bgk "YXi "Ui "'Gi ddcfh
\ci fg'UfY', .\$\$Ua '—%\$.\$\$da 'cb'k YY_XUmg'UbX'-. \$\$Ua '—) .\$\$da 'cb'k YY_YbXg'fI *) 'XUmg'U'm'YUfI" Ʒmci
UfY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'Zi 'hk]H'Hi fb]h]b'mci 'a UmUdd'm'Zcf'Ub'YI HYbg]cbž'Vi hmc i
a i ghfYHU]b'mci f'h]W_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'f'Yj UbhXcW a Yb'g'k'hc
]bWi XY'Ug'Yj]XYbVW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'j]W]h]cb" Ʒmci 'Ya U]'9I HYfbU'Gi ddcfhmc i 'k]
Ui 'ca UH]WU'm'f'YW]j' Y'U'h]W_Yhbi a VYfž'Vi h]Zmci 'HY'Yd\cbY'mci 'k]'b'Y'YX'hc'gd'Y'W]WU'm'Ug_'Zcf'cbY"
Hi fb]h]b'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gm'g'Ya 'g'H'U'g'cb'Hk]H'Y'f"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]H'Y'X'Y'Y'W'f'cb]WU'mj]U'Y]H'Y'f'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bg'U'bVW'g'k \YfY'H'g]g'bc'hd'cgg]V'Yž'hk]'VY'g'H'Y'X'cb'mci f'Wci fgY'g'A ccX'Y'g]H'k]H
U'HY'fbUH] Y'gi Va]gg]cb'XYHU]g"

: cf]bZ'fa UH]cb'cb'\ck 'hc'gi Va]hUgg][ba Yb'g'cb]bYj]U'A ccX'Y. \H'hdg.#gh XYb'hi bgk "YXi "Ui #ck!
gi Va]hUgg][ba Yb'ha ccX'Y

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i`g]b[`h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[`h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`_`Y`a` `U`b`m`
Z`c`f`a`g`Z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[`h`c` `U`W`W`Y`X`Y`b`h`U` `m`i`W`c`d`m]b[`Z`c`a` `U`g`c`i`f`W` `k`]h`c`i`h`U`W`_`b`c`k` `Y`X[`Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k`]b[`W`U`h`Y`[`c`f`]Y`g.

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hžI BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX'j]bZcfa Uhcb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k]`VY'ZJa]]Uf'hc'mci ž'ch'Yfg'k]`VY'byk " "; U]b]b['U'gc`X'i bXYfghUbx]b['cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k]`Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YWf i \]XYg" \]VfUfm'i bgk "YXi "Ui #` \]gY#JVci h' \]gY](#)

5 WUXYa]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Yg]Zcf`YI H`bg]cb/
-