

ARTS3453

DfcZYgg]cbU`7 \]bYgY`6

HYfa &Z&\$&&



7ci fgY`Cj Yfj]Yk

GHJZZ7cbhJWw8YhU]`g

7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]fm	@cWWh]cb	D\cbY
M]N\Yb[m]n\Yb[" 4 i bgk "YXi "Ui	C b`]bYžVmYa U]` cfVmUddc]bħa Ybh	A cfj Yb 6fck b`&)'	- ' ,) `%' \$

@YWw fYfg

BUa Y	9a U]`	5j U]`UV]`]fm	@cWWh]cb	D\cbY
M]fUb`@]	m]fUb["]4 i bgk "YXi "Ui	C b`]bYžVmYa U]` cfVmUddc]bħa Ybh	A cfj Yb 6fck b`&)'	- ' ,) `%' \$

Hi ħcfg

BUa Y	9a U]`	5j U]`UV]`]fm	@cWWh]cb	D\cbY
M]fUb`@]	m]fUb["]4 i bgk "YXi "Ui	C b`]bYžVmYa U]` cfVmUddc]bħa Ybh		

GWXcc`7cbhJWwħZcfa Uh]cb

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

@cWWh]cb. GWXcc`C Z]WžA cfj Yb`6fck b`6i]X]b[ž@Yj Y``ž&),

C dYb]b[`<ci fg. A cbXUm! : f]XUmž- Ua `!) da

HY`.\$&:-' (, `\$(\$*

9a U]`. \U`4 i bgk "YXi "Ui

5W_bck`YX[Ya YbhcZ7ci blfm

I B G K `5fngž8Yg][b`UbX`5fWk]fYWhi fY? Ybg]b[hcb`UbX`DUXX]b[hcb`Wla di gYg`UfY`Vi]hcb`5Vcf][]bU`
@UbXg"K Y`dUmci f`fYgdYWhg`hc`hY`6]X}[U`UbX` ; UX][U`dYcd`Yg`k`c`UfY`hY`7i`gfcX]Ubg`cZ`hY`gY`UbXg"
K Y`UW_bck`YX[Y`hY`5Vcf][]bU`UbX`Hc`fYg`G`fU]h`g`UbXYf`dYcd`Ygž`hY` :]fgh5i`gfcU`Ubgžk`c`gY`UbXgž
k]bXg`UbX`k`U`fYg`k`Y`U`bck`g`UfYž`UbX`dUm`fYgdYWhi`hc`hY`f`i`b]ei`Y`j`U`i`Ygž`UbX`hY`f`V`b`h]bi]b[`UbX
YbXi`f]b[`W`h`fYg`k`\\]W`XYYdYb`UbX`Yb`f]W`hY`Z`cZci`f`b`U`h`cb`UbX`W`a`a`i`b]h`Yg`"

U[Y`W`ci`f`h`g`m`c`Z`h`Y`C`Z]W`c`Z`h`Y`D`f`c`J`]W`!`7`Ub`W`c`f`b`X][Ybci`g`[L`B`G`K`f`g`b`X\]\[Ybci`g`g`f`U`h`\[`m](#)

7ci fgY'8YHJ`g

I b]hg'cZ7 fYX]h*`

Gi a a UfmcZ\hY'7ci fgY

H\]g'Wci fgY'dfcj]XYg'U'dfcZYgg]cbU''Yj Y'dfc[fUa `]b'7 \]bYgY''Ub[i U[Y'UbX'W`hi fY'gh X]Yg''#i]g
XYg][bYX'Zc'f'ghi XYb]g'Yb]h]f]b[`h\Y'7 \]bYgY'dfc[fUa `Uhi\Y'dfcZYgg]cbU''Yj Y''#iU'gc'gYf] Yg'Ug'Ub
cd]h]cbU'Wci fgY'Zc'f'h]cgY'k \c'\Uj Y'Wca d'YhX'5Xj UbW'X'7 \]bYgY'6'f5F HG' ()%#''H\Y'a YX]i a `cZ
]bg]fi W]h]cb']g'7 \]bYgY''6migh X]b]b['U'k]XY'fUb[Y'cZ]h]i hg'h]Uhg\ck W]gY'h]Y'i gY'UbX'Yj c'i h]cb'cZ
j YfbUW'Uf'7 \]bYgY'Z'mci `k]''Wcb]bi Y'hc']a dfcj Y'mci f']b]h]f[fU]hX''Ub[i U[Y'g_]`gZ'YgdY]U'm]dfcZ]W]YbW]i]b
fYUX]b['UbX'k f]h]b['Z'Ug'k Y''Ug'XYj Y'cd'U'gYbgY'cZ\hY'W`hi fU''\]g]h]c'fmcZ7 \]bYgY''Ub[i U[Y''

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

%` Wca a i b]W]h]k]h]U'\][\''Yj Y'cZdfcZ]W]YbW]i]b'7 \]bYgY''Ub[i U[Y
&' X]g]W'gg'Wca d'Yi `gi V'Y]W]a U]h]f]g]b'Vch'gdc_Yb'UbX'k f]h]b'7 \]bYgY
' " UbU'm]gY'gcd\]g]h]W]h]X'h]i hg'UbX']XYb]h]Z]m]j Ufm]b[''Ub[i U[Y'g]m]Yg'UbX'fY[]g]h]f]gZ'UbX'Udd'm]h]Ya `]b
YZZ'W]h]j Y'Wca a i b]W]h]cb
(" i gY'UbU'm]h]W]U'UbX'W]h]W]h]b_]b['g_]`g
)" Yi d'U]b'h]Y'W`hi fY'UbX'\]g]h]c'fmcZ7 \]bYgY''Ub[i U[Y''

HYUW]b[`G]fU]h] []Yg`

#`XYg][b]b[`h]g'Wci fgY'Z'k Y'\Uj Y'h]U_Yb']b]c'UW]Wci bh]h]Y'f]W]X'\]g]h]c'fmiUbX'W`hi fU'Z'`b[i]g]h]W]X]j Yfg]h]c'Z
h]Y'7 \]bYgY''Ub[i U[Y'Z'Ug'k Y''Ug'h]Y'a i `h]d']W]h]c'Z'Wca a i b]W]h]cb'a cXYg'Vfci [\h]U]Vci h]Vmi[`cVU']gU]h]cb
UbX'h]W]X'bc'c[]W]U'UXj UbW]g''K Y'VY']Yj Y'h]YgY'Z]W]c'fg'\Uj Y'U[fYU]h]a dU]W]h]cb''h]Y'fU]h]'dfU]W]h]W]g''H\]fci [\
g]h] X]b]b[`h]Y'k]XY'fUb[Y'cZ]h]i hg'Z'YUfb]b[`h]Y'f'W`hi fU''UbX'\]g]h]c'f]W]U'Wcb]h]i hg'UbX'dfU]W]h]W]b['gdY]W]U'm
XYg][bYX''Ub[i U[Y'UbX'fYgYUf]W]Yi Yf]W]gYg]b'h]Y''Y]W]h]fYg'UbX'hi hc]f]U'gZ'mci `k]''U]W]X]Yj Y'a i `h]i']h]Y'fU]W]h]Ug
k Y''Ug'Wca a i b]W]h]j Y'Wca d'Yh]b]W]W''Mci `k]''XYj Y'cd'Ub'i bXY'f]g]h]UbX]b[`cZ7 \]bYgY'W`hi fY'Z'gc]W]h]miUbX
k c'f'X]j]Yk gZ']b'dU]f]h]W'Uf'h]Y'\]g]h]c'fmcZ7 \]bYgY''Ub[i U[Y''

5ggYgga Ybh

5ggYgga YbhUg_	K Y][\h	8i Y'8UHŸ	7ci fgY'@YUfb]b[Ci hŸa Yg'5ggYggYX
%'HYghg	(\$i	HYgh%]b'h ħcf]U'k YY_) / HYgh&]b'h ħcf]U'k YY_`%\$	%ž&ž' ž(
&" ; fci d'fYgYUfW d'fc'YVh	(\$i	DfYgYbUĥ]cbg'Xi Y'k YY_) - / fYgYUfW d'UdYf'k YY_`%\$	%ž&ž' ž(ž)
' "'C b`]bY'E i]n	&\$i	k YY_) &/k YY_) (/k YY_) +/ k YY_) -	%ž&ž'

5ggYgga Ybh%'HYghg

8i Y'XUHŸ. 'HYgh%]b'h ħcf]U'k YY_) /HYgh&]b'h ħcf]U'k YY_`%\$

Gh XYbĥg'Ÿa d'Yĥ'ĥc'ĥghg'fWU"%) \ci fĥ]bWĥ X]b['g\cfĥ'UbX'`cb[Yf!Ubgk Yf'ei Ygh]cbg"A]X!ĥfa `&\$i ž
9bX!cZĥfa `&\$i "'Gh XYbĥg'fYVW]j Y'U'a Uf_`UbX'Wb'Ÿbgi 'hĥY'`YVĥi fYf'Zcf'Z fĥYf'ZYXVUW_

H\]g:]g'bchU'Hi fb]ĥb'Ugg][ba Ybh

5ggYgga Ybh&" ; fci d'fYgYUfW d'fc'YVh

8i Y'XUHŸ. 'DfYgYbUĥ]cbg'Xi Y'k YY_) - /fYgYUfW d'UdYf'k YY_`%\$

DfYgYbUĥ]cb`*`a]bi ĥg'dYf'dYfgcbž&\$i /fYgYUfW d'UdYf'`%\$!%(\$ \$'VXUfUWYfg'dYf'dYfgcbž&\$i "

Gh XYbĥg'Zcfa `]bĥ[fci dg'VUgYX'cb'gi [[Ygh'X'ĥd]Wg'ĥUĥUfY'YI ĥbg]cbg'cZĥY'ĥI ĥg"ĥ\YmfYgYUfW
UbX'X]gW'gg'ĥY'ĥd]Wg'ĥ[YĥYfz'Vi hYUW d'fYgYbĥg'UbX'k f]ĥg'cb'cbY'dUfĥcZĥY]f'fYgYUfW"A Ya VYfg'cZ
ĥY'[fci d'fYVW]j Y'cbY'a Uf_

H\]g:]g'ĥY'Z]bU'UggYgga YbhZcf'UĥY'bxUbW'`di fdcgYg""

H\]g:]g'Ugg][ba Ybh]g'gi Va]ĥX'ĥfci [\`Hi fb]ĥb'UbX'gh XYbĥg'Wb'gYY'Hi fb]ĥb'gja]Uf]mfYdcftg"

5ggYgga Ybh' . 'C b`]bY'E i]n

8i Y'XUHŸ. 'k YY_) &/k YY_) (/k YY_) +/k YY_) -

6]k YY_)m'Ub[i U[Y'YI YfW]gYg'Zc`ck]b['ĥY'Ÿa d'Yĥ]cb'cZYUW'`Yggcb'ĥ'UggYgg'a UghYfmcZ]cWVi `Ufmž
[fUa a UfžgYbĥY'W'`dUĥYfbžŸa d'fY\Ybg]cb'UbX'cĥYf'`Ub[i U[Y'fY[]ghYfg"

A Uf_YX'cb`]bY""Gh XYbĥg'Wb'Ÿbgi 'hĥY'`YVĥi fYf'Zcf'ZYXVUW_

F Ygci fWg

DfYgWf]VYX`F Ygci fWg

HfI hcc_`8YhU]`g

5`fYUX]b[`a Uhf]U`g`k]`VY`Uj U]UV`Y`Zcf`Xck b`cUX`cb`hY`7 ci fgY`A ccX`Y"

F YWca a YbXYX`F Ygci fWg

5XX]h]cbU`F YUX]b[g

5XX]h]cbU`F YUX]b[g`Wb`U`gc`VY`Zci bX`cb`hY`7 ci fgY`A ccX`Y"

K YVg]hYg

- F YZYfYbW]b[`gmghYa g

[\ftd.#k k k "Wi bgk "YXi "Ui #c b\]V#fYZ\ha`](#)

- Gi ddcfhiZcf`fYZfYbW]b[`Ugg][ba Ybfg

[\ftdg.#gh XYbhi bgk "YXi "Ui #fYZfYbW\]b\[](#)

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`Ybhi`h`fci`[`\`Hi`fb]h]b`z`d`Y`Ug`Y`
HY`Yd`l`cb`Y`9I`HY`fb`U`Gi`ddc`fh`cb`-`,`)`"``"``%`cf`Ya`U]`h`Ya`i`cb`YI`HY`fb`U`HY`hgi`ddc`fh`4`i`bgk`"YXi`"Ui`"Gi`ddc`fh`
l`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`i`cb`k`YY`_X`Umg`U`bX`-`.\$\$Ua`-`).\$\$da`i`cb`k`YY`_Y`bX`g`f`l`*)`X`Umg`U`m`Y`U`f`l`"Ʒmci`
UfY`i`b`UV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`Xi`Y`hc`U`Z`Ji`h`k`]h`Hi`fb]h]b`mci`a`Um`Udd`m`Z`f`U`b`YI`HY`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`hbi`a`VY`f`Z`ca`9I`HY`fb`U`Gi`ddc`fh`f`U`cb[`k`]h`U`b`m`c`h`Y`f`f`Y`Y`U`b`h`X`c`W`a`Y`b`h`g`k`h`c`
]b`Wi`XY`U`g`Y`j`]X`Y`b`W`hc`gi`ddc`fh`mci`f`YI`HY`bg]cb`Udd`]W`h]cb`"Ʒmci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`
Ui`h`ca`U`h]W`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`m`U`g`_`Z`f`c`b`Y`"
Hi`fb]h]b`U`gc`d`fc`j`]X`Y`g`i`d`X`U`h`Y`g`c`b`h`Y`]f`g`m`g`h`Ya`i`g`h`U`h`g`c`b`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`U`gg`Y`gga`Y`b`h`i`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`c`b]W`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`c`f`U`A`cc`X`Y`
U`gg][`ba`Y`b`h`i`h`]b`g`h`U`b`W`g`k` \Y`f`Y`h`l`g`]g`b`c`h`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`h`X`c`b`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`Y`fb`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`c`f`]b`Z`c`fa`U`h]c`b`c`b`l`c`k`hc`gi`Va`]h`U`gg][`ba`Y`b`h`i`c`b`]b`Y`j`]U`A`cc`X`Y`.\`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`c`k`!
gi`Va`]h`U`gg][`ba`Y`b`h`i`a`cc`X`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`

5 WUXYa]WbZcfa Uh]cb

8i Y'rc'Yj c'j]b['UXj]W'VmB GK ' < YU'hž'gh XYbhg'a i gh'WXYW'Zcf'i dXUH'X']bZcfa Uh]cb'fY[UfX]b['cb']bY
'YUfb]b['Zcf'U''5fngž8Yg][b'UbX'5fW]H'W'fY'W'f'fgYg'h]g'h'fa 'fj]U'A ccX'Y'cf'W'f'fgY']bZcfa Uh]cb
dfcj]XYX"Ł

: cf'YggYbh]U'gh XYbh]bZcfa Uh]cb'fY'Uh]b['rc.