



ARTS1631

ϰhfcXi Wc fm>UdUbYgY '6

HYfa 'H\fYY'##'&\$&\$

7 ci fgY`Cj Yfj]Yk

GHJZ`7cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]			

7ci fgY'8YHJ`g

7fYX]hDc]bqg '*`

Gi a a UfmicZ\hY'7ci fgY

H\Y`Wci fgY`Zc`ck g`f`hfcXi Wc`fm>UdUbYgY`5fUbx`Z`fhYf`]bfcXi Wg`U`bi a VYf`cZVUg]W>UdUbYgY
gfrf`W`fYg`UbX`j`cWUvi`Ufmh\UhiUfY`YggYbh]U`'h`VUg]W>UdUbYgY`Wca`a`i`b]WU]cb`" `hU`gc`cZYfg`YUfb]b[`cZ
UVci`h`-\$`bYk`'?`Ub`j`z`>UdUbYgY`W\UfUW`Yfg`Mci`'k`]'`YUfb`hYa`'h`fci`[`\`Zj`Y`W`'h`fU`'hcd]Wg`.'%':`Uj`ci`f]hY
h`]b[`g`UbX`UW]j`]hYgž`&":`Ua`]mž`'":`ccXž`("`HfUj`Y`]b[`'d`Ubgž`)"`5bbi`U`Yj`Yb]qg`" `h`YUW`'hcd]Wž`k`\]Y
gh`Xm]b[`'hY`'Ub[`i`U[`Yž`mci`'UfY`W\U`'Yb[`YX`'h`X]gWc]`Yf`X]ZYfYbhUddfcUWYg`'h`j`]Yk`]b[`'hY`'k`cfX
gi`ffc`i`bX]b[`'mci`'']b[`i`]gh]W`'miUbX`'W`'h`fU`'mž`UbX`UfY`[`]`Yb`hY`'cddcfh`b]m]h`'i`bXYfghUbX`'W`ffYbhgcW]c!
W`'h`fU`'jgg`Yg`]b`>UdUb`"

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

%`Gi`ghU]b`g]a`d`Y`Wcbj`YfgU]cbg`]b`>UdUbYgY`k`\Yb`hU`_]b[`UVci`hcbYfg`ZJa`]miUbX`Yj`YfmXUm`]Z`"
&`F`YUX`UbX`k`f]hY`g]a`d`Y`g`c`fidUggU[`Yg`]b`>UdUbYgYž`]bW`i`X]b[`bYk`',`+`?`Ub`j`d`i`g`hY]f
Wca`V]bU]cbg`"
'`" `I`gY`hYW\bc`c[`mYZYW]j`Y`mZcf`YI`dfYgg]b[`cbYgY`Z]b`>UdUbYgY`"
(`" `K`cf`_`Wc`'UVcfU]j`Y`mk`]h`'chYfg`'h`VYWca`Y`U`Wca`dYhYbh`Ub[`i`U[`Y`'YUbyf`"

HYUW]b[`GhfUH[]Yg`

H\Y`Wci fgY`]g`hUj`[`\hVmk`UmicZ`h`c!\ci`f`YW`i`fYž`cbY!\ci`f`h`hcf]Už`UbX`'h`c!\ci`f`gYa`]bUf`k`YY`_`m`' `h`hY
'YW`i`fYž`mci`'k`]'`YUfb`UVci`h`hY`Wc`b`hY`i`h`U`'_`bck`YX[`Y`c`Z`>UdUbYgY`'Ub[`i`U[`Y`'UbX`'Ub[`i`U[`Y`'YUfb]b[`" `h`
h`hcf]U`g`UbX`gYa`]bUfgž`mci`'k`]'`a`U]b`midfUW]W`'i`g]b[`>UdUbYgY`Wc`'UVcfU]j`Y`mž`ghU]h]b[`k`]h`VUg]W
Z`bW]cbg`'h`Wca`dfY`Ybg]j`Y`'hUg`_g`" `h`hY`ffY`U]h]b[`k`]h`'chYf`Wci`fgY`'a`Ya`VYf`]b`'YW`i`fYgž`h`hcf]U`gž`UbX
gYa`]bUfg`]g`U`gc`YggYbh]U`" `Mci`'k`]'`VY`YI`dYW`Y`X`'h`'dUf]h]dU]h`']b`dU]f`cf`[`fci`d`'hUg`_g`UbX`X]gW`gg]cbg`]b
h`]g`Wci`fgY`"

5ggYgga Ybh

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
@YUfb]b['Dfc YW	;%\$!	K YY_`%\$	%ž ž(
:]bU`9I Ua`	')	9I Ua`DYf]cX	%ž&ž
K f]h]b['HYgh`	')	K YY_`' žK YY_) žUbX`K YY_` %\$	%ž&ž
hYfUW]cb`HYgh	&\$!	K YY_`-	%ž ž(

5ggYgga Ybh8YHU]`g

5ggYgga Ybh%`@YUfb]b['Dfc YW

GHUfhXUH. `Bch5dd`]WV`Y

8YHU]`g.

Gh XYbh`WccgY`dfc YW`cdh]cbg`Zca`U`]ghdfcj]XYX`Vmi`hY`YW`fY`5Zrf`Wta`d`Yh]cb`cZ`hY`dfc YW`
W`c]W`ž`gh`XYbh`Wta`d`Yh`U`fY`ZYW]cb`g`YYh]b`Ubgk`Yf]b[`ei`Ygh]cbg`Vmi`g]b[`Vc`h`>UdUbYgY`UbX`
9b[`]g`"Gca`Y`g]a`d`Y`ei`Ygh]cbg`b`YX`h`c`VY`Ubgk`YfYX`]b`>UdUbYgY`ž`k`\\]Y`a`cfY`Wta`d`YI`ei`Ygh]cbg`Wb`
VY`Ubgk`YfYX`]b`9b[`]g`"H`Y`Yb[`h`c`ZYUW`Ubgk`Yf`g`ci`X`VY`k`YYb`)`!`%`\$`Y`h`f`g`]b`>UdUbYgY`ž`UbX`
%`\$`!`&`\$`k`cfXg`]b`9b[`]g`"Gh`XYbh`fYW]j`Y`U`a`Uf`"

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

D`Y`UgY`fYUX`h`Y`dfc YW`]bZ`fa`U]cb`g`Y`Y`ž`k`\\]W`]g`c`b`A`c`X`Y`]b`h`Y`dfc YW`h`fYUX`W`fY`Z`"mi`Z`f`a`cfY`
XYHU]`g`"Mci`Wb`W`ccgY`dfc YW`cdh]cbg`Zca`h`Y`"gh`h`Y`fY`"5Zrf`Wta`d`Yh]b[`cZ`mci`f`dfc YW`W`c]W`g`ž`\\UbX`
]b`h`Y`dfc YW`dc]bh]g`g`Y`Y`h`k`\\]W`]g`U`h`h`Y`Y`b`X`c`Z`h`Y`]bZ`fa`U]cb`g`Y`Y`h`"

Hi fb]h]b`g`Y`h]b[.`H`\\]g`]g`b`chU`Hi`fb]h]b`Ugg][`ba`Ybh

5ggYgga Ybh&.`:]bU`9I Ua`

GHUfhXUH. `Bch5dd`]WV`Y

8YHU]`g.

:]bU`9I Ua`k`]"VY`\\Y`X`Xi`f]b[`h`Y`i`b]j`Yf]g]m`YI`Ua`d`Yf]cX`"H`Y`YI`Ua`]g`Z`f`&`\\ci`fg`"

H`\\]g`]g`h`Y`Z]bU`UggYgga YbhHUg_`Z`f`U`h`b`X`U`b`W`di`f`dc`g`Y`g`"Gh`XYbh`fYW]j`Y`U`a`Uf`"

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

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

; Yb_]`%ž5b`]bhY[fUHYX`Wci fgY`]b`Y`Ya YbhUfmi>UdUbYgYžGYWcbX`9X]h]cb`f&\$%&Ł

; Yb_]`%ž5b`]bhY[fUHYX`Wci fgY`]b`Y`Ya YbhUfmi>UdUbYgYžK cf_Vcc_žGYWcbX`9X]h]cb`f&\$%&Ł

7ci fgY`BchYg`Zcf`5F HG%*` %&\$&\$`fcb`A ccX`YŁ

F YWca a YbXYX`F Ygci fWg

D`YUgY`gYY`ci f`A ccX`Y"

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

: cfa U`Yj U`i Uh]cb`k]`VY`WcbXi WYX`VmiA m9I dYf]YbWž`UbX`hY`fYgi`hg`k]`VY`i gYX`hc`]a dfcj Y`Zi hi fY
]hYfUh]cb`cZh.]g`Wci fgY`" #Zcfa U`žfYU`!h]a Y`ZYXVUW_]g`U`gc`k Y`Wca Y`]b`dYfgcb`cf`h]fci [\ `A ccX`Y"

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

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

≠mci`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`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`b`X`-`.\$`\$Ua`-`-`).`\$\$da`i`cb`k`YY`_Y`b`X`g`f`l`*)`X`Umg`U`m`Y`U`f`l`"≠mci`
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`i`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`"≠mci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`
Ui`h`ca`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`Ug`_`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`Y`a`i`g`h`U`h`g`c`b`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Yb`hi`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`c`b]W`U`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`c`f`U`A`cc`X`Y`
Ugg][`ba`Yb`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` \c`k`hc`gi`Va`]h`Ugg][`ba`Yb`h`g`c`b`]b`Y`j`]U`A`cc`X`Y`.`h`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`c`k`!
gi`Va`]h`Ugg][`ba`Yb`h`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`

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'Wc'dmf][\hž' 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 'Wc a i b]m
- `cWJh'gYfj]Wg'UbX']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 ""

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

