

# **ARTS1270**

; `cVU`'< ]ghcfm '91 d`cf]b[ 'h\Y': ]fgh'; `cVU`]nUh]cbž %) h\!% h\ '7 Ybh' fm

HYfa 'Hk c''#'&\$&%

## 7ci fgY<sup>-</sup>Cj Yfj ]Yk

### GHJZ7cbHJWh8YHJ]`g

### 7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]lm	@cWJhjcb	D\cbY
B]W_'8ci a Ub]g	b"Xci a Ub]g4 i bgk "YXi "Ui	6mUffUb[Ya Ybh	A cfj Yb 6fck b	-',)%+\$)

### GWXcc`7cbHJWhi±bZcfa Uh]cb

GWkcc``cZ<iaUb]hJYg'UbX'@Ub[iU[Yg

@c\\U||cb. G\\cc``C\\Z|\\\žA\cfj\Yb'6fck\b'6i]\X]b[\z'@\j\Y``&z'&),

CdYb]b[ '<ci fg. 'A cbXUm'! : f]XUmž - Ua '! ') da

D\cbY.'Ž\*%'&'-',)'%\*,%

: UI . 'Ž \* %'&'-' , ) ', +\$)

9a U]`. '<u>\U`4 i bgk "YXi "Ui</u>

## 7ci fgY 8YW] g

#### 7 fYX]hDc]bhg \*

### Gi a a UfmcZh\Y 7ci fgY

< ck 'X]X'h\Y'a cXYfb'k cfX'\UddYb3'<ck 'X]X'U'ZYk 'ga U```Wti blf]Yg']b'9i fcdY'fUbX'`UhYf'h\Y'I b]hYX
GHUhYgt'Wta Y'rc'Xca ]bUhY'gc'a i W\cZh\Y'k cfX'g'k YU'h\'UbX'dck Yf'Vm% \$\$3'<ck 'X]X'h\YmX]gd'UWY'h\Y
[fYUhYa d]fYg'cZh\Y'A ]XX'Y'9Ughz'Gci h\'5g]U'UbX'7\]bU3'6Yhk YYb'%( \$\$'UbX'h\Y'VY[]bb]b['cZh\Y'k' \tX\bh]Yh\'Wbhi fmz'Ub'Ughcb]\[\text{b}]\[\text{c}'\]ic'i h]cb'hcc\_'d'UWY''K Y'W\[\text{b}'\]h'''<i a Ub'VY]\[\text{b}[\text{g}]\]
k Ybh]Yh\'Wbhi fmz'Ub'Ughcb]\[\text{b}]\[\text{b}[\text{z}['cvU''fY] c'i h]cb'hcc\_'d'UWY'''K Y'W\[\text{b}'\]h'''<i a Ub'VY]\[\text{b}[\text{g}]\]
a cj YX'\[\text{z}[ca 'j]'\]U[Yg'hc'W]\[\text{p}[\text{z}[\text{z}]\text{ca 'Z}\]W\[\text{h}Y'\] g'b'\text{b}'\text{ca 'd'UWY'''K' YYk'}\]
B Uh]cbg'UbX'bUh]cb!ghUhYg'fYd'UWYX'h\Y'[fYUhYa d]fYg'UbX'[fUbX'a cbUfW\]\[\text{y}g''Dc']\[\text{p}[\text{w}a d'Yl'gc\W]\[\text{y}g'UbX'[\text{b}Yg''\text{b}X'\]
FUW]ga '\UX'VY\\text{ca Y'Ug'XYYd'm]\[\text{b}[fU]\[\text{b}YX']\[\text{b}'\Yc'\]g'\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\]\[\text{b}'\Y'\Y\]\[\text{b}'\Y'\]\[\text{

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

%" 8 YgWf]VY`]a dcffUbhhi fb]b[ 'dc]bhgždYcd`Yž]XYUg`UbX`XYj Y`cda Ybhg`]b`k cf`X`\]ghcfm &" 5 bgk Yf`\]ghcf]WU``ei Ygh]cbg`i g]b[ 'Uf[ i a YbhUbX`Yj ]XYbWY ' "@cWUhY`ei U`]hmgci fWYg`UbX`WjhY`h\Ya 'UVWcfX]b[ 'hc`X]gW]d`]bUfmgHUbXUfXg`UbX`Wcbj Ybh]cbg

### HYUWX]b[ 'GhfUhY[]Yq'

< |ghcfmgYY g hcfYwtj YfUbX |bhYfdfYhhN Y dUgh' 5 F HG & + \$ YbWtj fU[ Yg UWhj Y Yb[ U[ Ya Ybhk |hN hN Y dUgh VmZcWg]b[cbhY]bhYfdfYhUhcbcZdf]a UfmUbXgYVbbXUfmgcifWg"8]ZZYfYbhYYa YbhgcZh\]g WcifgY \U|Y'VYYb'XYq][bYX'UbX']bHY[fUHYX'hc'ZUW]|HUHY'H\Y'UV\ei]q]H]cb'cZVUW\_[fcibX'\_bck `YX[Y'f]bWi X]b[ \]ghcf]\W\`h\Ya Yg`UbX`\]ghcf]c[fUd\]\W\`]ggi Yg\'UbX`h\Y`XYj Y`cda YbhcZfYgYUf\\\`UbX`k f]hjb[`g\_]``g"`\Mci q\ci `X`d`Ub`hc`qdYbX`%) \ci fq`dYf`k YY\_`qh Xmb[ `h\]q`Wci fqY`Ug`h\]q`]q`U`\*I C 7 `Wci fqY`UbX`h\Y`i b]j Yfq]hm qi [[Yghg'h\Uh'mci 'qdYbX'&) '\ci fg'dYf'l C7"'@YWi fYg']bhfcXi Wr'\]qhcf]WU'h\Ya Yg'UbX'WcbWrdhgz'fU]qY \]ghcf]c[fUd\]\W)`\Vcb\fcjYfg]YgžUbX`acXY`\h\Y`]b\YfdfY\U\ncbcZgcif\Wg`]b`\h\Y`dfcXi\W]cbcZ\]ghcf]\W)` Uf[iaYbhqf&`\cifq`UhhYbXUbW/ž'%\cifcZfYj]Yk \!"Hihcf]U``fYUX]b[g`dfcj]XY`h\Y`fUk `aUhYf]U``!`df]aUfm UbX'qYWcbXUfmgcifW'q'!Zcf'fYgYUfW\]b['lfU]b]b['UbX'h hcf]U`'UWfj]h]Yq'fl'\cifg'cZfYUX]b[z'%\cif UthYbXUbWYt"@YUfb]b[ 'UWnjj ]hjYg']bj ]hY 'mci 'hc'UbU'mgY'gci fWyg'UbX'dfUWnjWY'fYgYUfWX'UbX'k f]hjb[ 'g\_]``g'f& \cifg\!"H\Y`fYgYUfW\`YggUmUbX`fY`UhYX`UWfjj]hjYg`c\ZYf`ghiXYbhg`h\Y`cddcfhib]hmhc`]bhYfdfYhigcifWygž YI d`cfY`\]qhcf]\W\`'h\Ya Yg`UbX'hc`dfcXi \\Y'\\cbj ]b\\Jb[ 'k f]\hYb`Uf[ i a Ybhq`f\`'\ci fg`dYf`k YY 'cZfYgYUf\\X UbX k f|h|b[ \frac{t}' H\Y dfc[ fYqq]| Y dYXU[ c[ mUXcdh/X ]b h\Y dfcXi Whcb cZh\Y fYqYUfVX dfc YWhk ]``U``ck qhi XYbhg`hc`XYj Y`cd`h\Y]f`fYqYUfW\ž`fYUX]b[`UbX`k f]h|b[`q\_]``q"`H\Y`UV]`]h|Yq`UWei ]fYX`h\fci [\`UWAj Y Yb[U[Ya Ybhk]h\dugh!h\Ycf][]bUbXWbhYlhcZWffYbh]ggi YgždfcVYa gžUbXXYVUhYgžh\YWbh]biU`ž WflflWU``UggYgga YbhcZk \UhcbY`fYUXgž'UbX'h\Y`UV]`]mmhc'dfYgYbhY`Y[UbhUbX``i WX`Uf[i a Ybhg'! 'k]```gYfj Y qh XYbhq'k Y```U\fcqq'X]q\fd`]bYq'UbX'VYmcbX'i b]i Yfq]hm'

## 5ggYgga Ybh

 $FY[i`Uf'UffYbXUbWf']g'UXj]gUV'Y\check{z}'[]jYb'thUfithYfY'UfY'kYY\_mei]nnYg'Zfca''KYY\_'''cbkUfXg'''DfYdUfUfjcbZcf'YUWX'WUgg']g'U'gc'UXj]gUV'Y''$ 

## 5ggYgga Ybh'HUg\_g

5ggYgga Ybh'hUg_		

## 5 thYbXUbWY F Yei ]fYa Ybhg

 $\hbox{Ghi XYbhg'UfY'ghfcb[`mYbWci fU[YX'hc'UhhYbX'U```WUggYg'UbX'fYj]Yk ``YWhi fY'fYWcfX]b[g''] }$ 

## 7ci fgY GWX

	T	
	l.	

## FYgci fWyg

#### DfYgWf]VYX F Ygci fWYg

H\YfY`]g`bc`Ugg][bYX`hYI h\cc\_`Zcf`h\]g`\\ci fgY"`5```fYgci f\\yg`k]```VY`U\\\yg]\\Y`h\fci [\@Y[Ubhc"

#### FYWca a YbXYX FYgci fWYg

F cVYfh6"A Uf\_gž'H\Y'Cf][]bg'cZ'h\Y'A cXYfb'K cf'X. '5'; `cVU``UbX'9bj]fcba YbhJ``BUffUh]j Y'Zfca 'h\Y : ]ZhYYbh\`hc'h\Y'Hk Ybm!: ]fgh7Ybh fm(h\'YX"'f&\$&\$\.

9f]WK c'Zi'9i fcdY'UbX'h\Y'DYcd'Y'K ]h\ci h'< ]ghcfmž'BYk 'YX"'f&\$%\$L

FcVYfh7"5"Ybž; `cVU`9Wcbca ]W<]ghcfm 5 J YfmG\cfh +bhfcXi Whcb f&\$\%\L

>i f[ Yb 'C gh'f\Ua a Y 'ž'H\Y'HfUbgZcfa Uh]cb 'c Z'h\Y'K cf'X. '5'; 'cVU`'< ]ghcfmcZ'h\Y'B ]bYhYYbh\ '7 Ybh fm f&\$%( Ł

8Uj ]X'; "'7\f]gh]UbžA UdgcZH]a Y. 5b +bhfcXi Wh]cb hc 6][ '<]ghcfmž&bX'YX'f&\$%&

>UbY'6i fVUb\_'UbX': fYXYf]W\_7ccdYfž'9a d]fYg']b'K cf'X'<]ghcfmf&\$\%\E

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

 $Ghi XYbhg'k UbhYX'Ub'Yj Yb'h][\hYf'fY`Uh]cbg\]d'VYhk YYb'`YWhi fYgž'hi hcf]U'g'UbX'Ugg][\ba Ybhg''`H\]g'\Ug'VYYbbchYX']b'h\Y'bYk '&$&$'j Yfg]cb'cZ5F HG\%+$''$ 

## Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g

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

Image: Ybwci bhYf'U'dfcV'Ya k \Yb'UhYa dhjb['hc'gi Va ]hmci f'Ugg][ ba Ybhh\fci [\'Hi fb]h]bz'd'YUgY

HY'Yd\cbY'9| hYfbU''Gi ddcfhcb'-', ) "''' %cf'Ya U]''h\Ya 'cb'Y! hYfbU'hY'hgi ddcfh4 i bgk "YXi "Ui ""Gi ddcfh
\ci fg'UfY', .\$\$Ua '-'%\$.\$\$da 'cb'k YY\_XUmg'UbX'-.\$\$Ua '-').\$\$da 'cb'k YY\_YbXg'fl \*) 'XUmg'U'mYUft'''=\mathred{Image: Wa Jhmci f'Ugg][ ba YbhXi Y'hc'U'ZJi 'hk ]h\'Hi fb]h]b'mci 'a UmUdd'm\mathred{Image: Wa Jhmci f'Ugg][ ba YbhXi Y'hc'U'ZJi 'hk ]h\'Hi fb]h]b'mci 'a UmUdd'm\mathred{Image: Wa Jhmci f'Ugg][ ba YbhXi Y'hc'U'ZJi 'hk ]h\'Hi fb]h]b'mci 'a UmUdd'm\mathred{Image: Wa Jhmci f'Ub'Y! hYbg]cb\mathred{Image: Wa Jhmci h\Yf'f'Y'j UbhXcW a Ybhg\mathred{Image: Wa Uj''9! hYfbU''Gi ddcfhmci 'k ]'`

JbWi XY'Ug'Yj ]XYbW' hc'gi ddcfhmci f'Y! hYbg]cb'Udd']\wUh]cb"'\mathred{Image: Wa Uj''9! hYfbU''Gi ddcfhmci 'k ]'`

Ui hca Uh]\wU'`mfYW']j Y'U'h]\w\_Yhbi a VYf\mathred{Image: hY'Yd\cbY'mci 'k ]\tag{Y}\wu''mug\_'\mathred{Image: Wa'\mathred{Image: hY}\wu''mug\_'\mathred{Image: hY}\wu''mug\_'\mathred{Image: hY}\wu''mug\_'\mathred{Image: hY'Yd\cbY''mci 'k ]\tag{Y}\wu''mug\_'\mathred{Image: hY'\mathred{Image: hY'\mathred{I

; YbYfU``mž'UggYgga YbhiHug\_g'a i ghVY'gi Va ]hhYX'Y`YVWfcb]\W)``mij ]U'Y]h\Yf'Hi fb]h]b'cf'U'A ccX`Y Ugg][ ba Ybh'' =b']bgHJb\W'g'k \YfY'h\]g']g'bchdcgg]V`Yž']hk ]```VY'gHJhYX'cb'mci f'\\circ i fgY'g'A ccX`Y'g]hY'k ]h\U`hYfbUhjj Y'gi Va ]gg]cb'XYHJ]`g''

cfi]bZcfa Uhjcbicbi\ckihcigi Va ]hUgg][ ba Ybhgicbi]bYij ]UiA ccXiY.i\hdg.#gh XYbhi bgk "YXi "Ui #\ck! gi Va ]hUgg][ ba Ybha ccXiY

## 5 WUXYa ]W<cbYghmUbX D`U[]Uf]ga

D`U[]Uf]ga i]gii g]b[ih\Yik cfXgicfi]XYUgicZch\YfgiUbXidfYgYbh]b[ih\Ya iUgimci fick b"i=hWJbihU\_Yia Ubm Zcfa gžZfca iXYi]VYfUhYiWXYUh]b[ihciUWW]XYbhU`mWcdm]b[iZfca iUigci fWYik]h\ci hiUW\_bck iYX[Ya Ybh'

IBGK [fcidg'd'U[]Uf]ga ]bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

• i bXYfgHJbX'mci f'f][\hg'UbX'fYgdcbg]V]`]h]Yg'Ug'U'gh XYbh'Uhil BGK