

# 7KH ( IIFW RI ) DFLO7UKVZ RUMLQHV DQG ) DFLOS WDFWYHQHV RQ & KLQHQV 3 UHHHQFH & KRLFHV

<L XDG: X

) DFLOV RI 6FHGH DQG 7FKRQV ) HMQ 1 RUP DOB QYHUVW + RQJ . RQJ %DSWV QYHUVW 8 QVAG, QMLDNRDD & RQJH  
=KXKL & KLQ

\$ EVMDFW + XP DQV KDYH HYROYG VR DFTXUH VMH DELOV VR UHGG IDFDOLQ RUP DNRQ LQ RUGU VR DFFW  
LQ RUP DNRQ UHFRUHVP RUHTXEND 3HRSOH DQ TXEND P DNHLQW DQVXGIP HQW DQG HMDQK DQ LP SUHWRQ  
RI D SHURQ IURP IDFDOLQ RUP DNRQ DQRH , Q VMH VFLODQH RI DGXOV IDFDOWK VZ RUMLQHV DQG  
IDFDODMDFWYHQHV KDYH DQ LP SRUWQVURGH DV LP SRUWQVFRP SRQHQV RI IDFDOLQ RUP DNRQ 7KH IIFW RI  
VMH VZ R RQ VFLODQ MDFWRQ DUH DOR VHQ LQ FKLOHQ VVXV LQ QHCFQ VMHVMXGIP HQV RQ VRFHFLRQV  
' LVFXVMHLP SDFWRI IDFDOLQ RUP DNRQ UHFRUH E FKLOHQ RQ VMHUFKRLHV VMURJK VSDUDM DFRXQV RI  
FKLOHQV IDFDOWK VZ RUMLQHV DQG IDFDODMDFWYHQHV RQ FKLOHQV SUH HQFH VMXGIP HQW P DQD LQ  
VMUP VRI SHUFKRLHV SUH HQFH DQG FKRLHV LQ DP LQ FKRLHV 7KH UHXQVRI VMV SCSUDUJH VMDVERM IDFDOD  
FUHGLEQV DQG IDFDODMDFWYHQHV D IIFW FKLOHQV FKRLHV SUH HQFH Z LK KJK WKVZ RUMLQHV DQG KJK  
DMDFWYHQHV EHQJ P RUH QNH VR EH SUH HQFH DQG VMDV DFLOW K VZ RUMLQHV DQG IDFDODMDFWYHQHV  
VKUHVLP LQUSDMWQV DQG FDQ LQ QHCFH DFK RMHU

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&URP ZHOU SRUWQ UHP DUNHG 7KH QJKVRI IUIHQKLS  
LV QNH D SKRVSURUHFQMDPH ZKFK LV PRWVYVLEOH  
ZKHQ VMHUVLQJUNQHV DQURXGG 3HUV DUH YMDOR RXU  
JURZVR %HMDVWKRRO LQ VMHZ RNSDFH RULQ RXU VFLOD  
QYHV IRVMUQJ DP LDEOH UH DNRQ KLSV Z LK RMHUV LV  
LP SHUDYH 2 XU VDFWRQ RI SHUV FDQ EH VZ D HG E  
YDURXV IDFARUV LQFOGQ VMH LQ QHCFH RI GUH HQV DFFH  
RQ RXU SUH HQFH 3HRSOH IUTXHQD IURP HDQ  
LP SUHWRQV RI RMHUV EDVHG RQ VMHU DSSH DUDQH D  
P HMRG VMDKDV SURYHQ IIFWYH LQ VFLODQ MDFWRQV  
ZKHQ RMHUV LQ RUP DNRQLV XQDYDDEOH > @

7ZR LP SRUWQV DSHFW RI IDFDOLQ RUP DNRQ DUH IDFDOD  
FUHGLEQV DQG IDFDODMDFWYHQHV ZKFK FDQ ERW EH  
GUHFQ DVMWFG 7KH QMUMUH LQGFDMV VMDV DQV  
XMDH IDFDODSSH DUDQH VR DVMW FUHGLEQV Z LK MVM  
P LQDFRQV QHGHG VR IRUP VMXGIP HQW > @ & DV  
& KUMWQ & DIERQV UHV DFK KRZ V VMDVQ DVMWV HQVRI  
DSHURQV D MDFWYHQHV FDQ EHP DGHILQ P LQDFRQV  
EHVZHQ H H EQN @ 7KV LV GHSLM PRXQV  
HYLGH QH VMDV DQV SRVMW KJKO VRSKVMDFANG DELOV  
VR GHFRGH FUHGLEQV VMURJK IDFDODMDFWYHQV DQRH @  
< HW VFLODQ MDFWRQ KDV EHQ JLYHQ VR VMH LP SDFWRI  
IDFDOD FUHGLEQV DQG DMDFWYHQHV RQ FKLOKRRG  
VMXGIP HQV I HYHVMHQV QNH DGXOV FKLOHQV FDQ IURP  
HYDQNRQV RI VFLODQV EDVHG RQ IDFDODSSH DUDQH  
VFK DV WKVZ RUMLQHV GRP LQDFH FRP SHMQH  
DJUHVYHQHV DQG DMDFWYHQHV @ -HMQ VMURJK  
( 53 DQG EHKDYLXUDOVAGHV KDV LQHMVHG VMDVQ DQV  
DV \RXQJ DV PRQV RQ FDQ GLVMQXVK EHVZHQ

WVZ RUM DQG XQKVZ RUM IDFHV QDQV ZHUH RXGG  
VR VMUH QJHU DVMWVZ RUM IDFHV VMDQ XQKVZ RUM  
IDFHV 7KV VMG GG GRVLCFOGH VEMVYH HYDQNRQV  
7KH VMG DGKUHG VR VMH FRQYHQNRQD DFDG P LF  
VMVMUH DQG P DQV DQV D FRQVMQVXV RI VMDQV  
DQV DQJH DQG VFKQFDQ VMUP LQRQJ 7KH VMW LV  
JUD P DMDFQ FRUHFV DQG IUH IURP VSHQJ HUUV  
-HMQ FRQVANG ( 53 DQG EHKDYLXUDOVAGHV VMDV  
UHV DQV VMDVQ DQV DV \RXQJ DV PRQV RQ FDQ  
GUH HQV DQV EHVZHQ WKVZ RUM DQG XQKVZ RUM  
IDFHV 7KH3 UHWRQV RI VMH RFLSVMDEUDQ UH SRQGHG  
VR VMH JQJH RI WKVZ RUM IDFHV VVXV LQGFDMQ VMH  
H MQVRI VFLODQ HUHQHP DGHV LQ DQV

7KH DELOV VR FRP SUHGHG VFLODQV LV D FUXFDOD SHFW  
RI VFLODGHYHOSP HQV DQG KRQV KJK LP SRUWQV VR  
FKLOHQV ) DFLO LQ RUP DNRQ SUH HQFH KDYH EHQ  
GHP RQVMDAG LQ H SHUP HQV Z LK LQ DQV DQG FKLOHQ  
RYHU VMH DJH RI 7KV DVMQ H SORUH ZKHVMU IDFDOD  
WVZ RUMLQHV DQG DMDFWYHQHV VKUH VP LQV  
PHFKDQV DQG FDULHV VMH IIFW RI IDFDOD  
WVZ RUMLQHV DQG DMDFWYHQHV RQ FKLOHQV GFLMRQ  
P DQV SUH HQFH VMURJK VYHLDQ SHUP HQV 7KH  
UHVVMYH PHFKDQV RI VMH VZ R IDFARUV DUH DOR  
H DP LQGH

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) DFH 7UKVZ RUMLQHV

, Q LQMSHURQDQV P XQFDNRQ WKMV GHP RQVMDAG LQ  
YDURXV ZDV %DVHG RQ H VMDQV FKDFMVMV

HSHFDQ IDFDQFXH/ ZHFDQIRUP DQIQWDCIP SUHWLRQ  
RI WNDQJHV/ DQG GYHQBSP DIXGIP HQVRI VHLU SHURQDQV  
DVAUJLVMP HMQV VHP > @0 DQ UHFDFK KDV UHFDBG  
WCV HYDQDQV FDCGCDM/ VRQD RQ VHLU IDFDD  
DSSHDQFH FDQ SUHGFVWDFWRQ UHXOVP RUHDFXUDMD  
7KURXJK SUICFSDOFFP SRQHQVDDQV LV 3&\$ 2 RVWUKR  
DQG7RGRURY IRXGG WCVDFHEDVHG HYDQDQV/FRQLVRI  
VZRGLP HQVLRQ/ - YDQFH DQGLQ OXCFH RI VHLU IDFDD  
WVWZ RUMLQHW/SD VVHP RVWVUMFDQRDQV VHYDQFH  
QYH) DFDQWVZ RUMLQHW/ UHLV/VR VHGJUHVR ZKLFK  
DQ LQGLYGDQV/ DSSHDQFH FRQV V WVWZ RUMLQHW DQG  
LVV/ DVJ QIFDQVDFRULQ GHMUP LQOJ WVKVGHVLRQ/ -  
ZKHMHU VR WVKWDDQ LQGLYGDQ EDVHG RQ VHLU IDFDD  
WVWZ RUMLQHW > @) DFDQ WVKVZ RUMLQHW LV D SYRMD  
FRQF-SWLQ KXP DQ FRP P XQFDNRQ DQG SX FRQJLFDQ  
UHFDFK ZKHU LVV/ FRQJGHJG D FVFDQ IDFRU LQ  
DVAWQJ LQMSHURQDQFRP P XQFDNRQ % XLQJ IDFDD  
UFRJQWRQ WFKRQJ UHFDFKLV/ FDQ XH IDFDD  
WVWZ RUMLQHW VR DVAW HP RVLRQ/ DQG WVKW LQ  
LQMSHURQDQ LQMSHURQ/ DV ZHDQ DV FRP P XQFDNRQ  
EHVZHQ LQGLYGDQV IURP GLYHUFHXOMUH

) DFDQ\$ WDFWYHQHW

,Q VHL V VHL SX FRQJL RI IDFDD DNDWYHQHW  
EHFDQ HDQ LQGH-SHQG-QVDFK RI SX FRQJLFDQ UHFDFK  
XGGU VHL LQ OXCFH RI VHL ZDYH RI GYHQBSP HQVLRQ  
HYRQWRQD SX FRQJL LQ ZKLFK IDFDQ DNDWYHQHW  
UHSDFG VHL JHCHUDFRQF-SVRI DSSHDQFH DV VHL REMVW  
RI RXUHFDFK 3DMDU D: HVMQ VLFQVWVWLVWVGH LQGH  
IDFDQ DNDWYHQHW DV VHL GHUHH VR ZKLFK D VUJHV  
REMVWV SODLQJ VR VHL H / DMUSX FRQJLVWUHLQGH  
VWV GHILQWRQ VR UHFDFK VHL LQDD LP DJH LQ DQ  
LQGLYGDQV/ P LQG DQG VR HYNH VHL PRWH VHP H  
SODXUDEQ HHDQJ V LH VHL GHUHH VR ZKLFK D SHURQV  
IDFHFDVH/ RVWV/VR UHFVZ LK DSSURYDQDQ UFRJQWRQ  
) DFDQ DNDWYHQHW FDQ RQD EH LQFOXGH LQ VWV  
DFRURV L LVXQDQV ERV VHL LP DJH RI VHL LQGLYGDQDQ  
VHL GHILQWRQ RI D SRVWYH H SHUHFH + RZHYH VHL  
DP RXQVRI DSSURYDQDQ UHFDFK VHLV/ IDFDQ DJH FDQ  
HDFLVYDQJH IURP SHURQ VR SHURQ DQG VHLU LV QR  
GHILQWRQ RI DQDYH DJH QYH QVDFDQV FDQ EHP HDXUHG RQD  
VDFH PDLQJ LVGLIFXQVVR PHDXUH DFFXUDMD \$V  
SUH HQV IDFDD DNDWYHQHW LQ SX FRQJLFDQ  
H SHUP HQV LV XVDQ PHDXUH XLQJ RVWU SHRSQV  
UDQJ V 7KV PHDQV WCV VHP DVRLV RI SHRSQV LQ  
WCV DVJHVKD/ KJK IDFDD DNDWYHQHW LVFDQ EH  
DAXPHG WCV VHL VUJHVEHQJ VR VHL KJK IDFDD  
DNDWYHQHW JURXS ZKHU DV DVUJHV/ VHGJGE VHL  
P DVRLV RI SHRSQV RYHQBZ IDFDQ DNDWYHQHW LVV/  
DAXPHG LQ VHL VWG WCV VHL VUJHVKD/ QZ IDFDD  
DNDWYHQHW

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) DFH 7 UKVZ RUMLQHW

7KH VWG RI IDFDD WVKVZ RUMLQHW KDV D UFK KLVRI  
GDQJ EDFN VR VHL VR FQMU 7 UKWLV DQ LP SRVWQV

VRFDQ FDSVDD IRU EXLQJ LQMSHURQDQ UHFDFK VLRQ  
DQG VWV/ KDV EHQGHP RQWADAG LQ VHLV WCV VHLV RI DQ  
LQGLYGDQV/ GYHQBSP HQV/ UHFDFK VHLV RI  
SX FRQJLFDQ GYHQBSP HQV/ VUJH VHLV VHLV KJK QYH QV  
WVKWDFXUHG LQ LQ DQ SURYGHV/ DV RQ IRXQDQV IRU  
LQGLYGDQV VR GYHQBSP SODVDDQ DQJ JRRG LQMSHURQDQ  
UHFDFK VLRQ/ ZLW RVWU LQ VHL IXMUH7KH \$ PHFDQ  
SX FRQJLVW3DXO ( NP DQ SURSRVHG VHL VHLV RI VHL  
XQYHVDQV RI HP RVLRQ/ ZKLFK VUJH VHLV WCV IDFDD  
H SHURQV/ DJH D XQYHVDQ H SHURQV RI HP RVLRQ/  
DFURV FQMUH 7KH \$ PHFDQ SX FRQJLVW 3DXO  
\$ FVHUP DQ SURSRVHG VHL VHLV RI HP RVLRQDQ XQYHVDQV  
ZKLFK EHQYH VHLV DFDQ H SHURQV/ DJH FURV FQMU  
XQYHVDQ H SHURQV/ RI HP RVLRQ/ \$ FVHUP DQV UHFDFK  
DQ VHL IRXQDQV IRU VHL VWG RI IDFDD FVHUP  
1 XPHURV VWGHV KDV IRXGG WCV FVHUP IDFDD  
H SHURQV/ DJH LP SRVWQV IRU EXLQJ WVKW 3RVWYH  
IDFDD HDMU/ VQVVRP DNHLQGLYGDQV P RUH WVKVZ RUM  
P DLQJ IDFDD WVKVZ RUMLQHW DQ LP SRVWQV RFDQ FX  
WCV LQ OXCFH/ GFLVLRQ P DLQJ > @5 HFDQ UHFDFK KDV  
VZRQ WCV FVHUP DV\ RXQJ DV VR \HUV RI DJH FDQ  
LQ HSHURQDQ WCV IURP IDFH > @\$ QH SHUP HQV  
6LGGTXH HWDD, Q DQ DQXQVURXS DQ DFKQJURXS  
IDFH ZLW IDFH ZLW GLIHUQ/ WVKVZ RUMLQHW QYH V LQ  
WVKWJDP H FRFHV P DGH ZKHQ IDFH ZLW GLIHUQV  
WVKVZ RUMLQHW/ IDFH LQ WVKWJDP H VWV H SHUP HQV  
ZLW ZKHMHU FVHUP P DNH VHL V P H FRFHV DV DQXQV  
DERXV LQ VHLV HQV SODXU FRFHV > @LGGTXH HWDD  
WCV VHLV GHP RQWADAG LQ SUHURV H SHUP HQV WCV  
FVHUP FDQ SHUFLYH IDFDD WVKVZ RUMLQHW DQG VWV  
H SHUP HQV EXQV RQ VHLU SUHURV ILQGLYGDQV E  
H SODLQJ ZKHMHU VWV WVKVZ RUMLQHW FDQ LQ OXCFH VHL  
VDFWRQ RI FVHUP VHLV WVKVZ RUMLQHW 7KH VHLV VHLV  
IRU VWV H SHUP HQV VHL \HURQV DV VWV LV VHL  
DJH ZKHQ FVHUP FDQ VZRQ P DMU SODXUQV RI IDFDD  
SHU-SVRQ VRFDFRQV RQ DQ DQ DQ VHLV/ DQ DQ DQ WVKW  
LP SUHURV IURP DNRQ 7KV LV DQ P HQV RQGH LQ VHL  
UHXQV RI 0 RQGRK \$ QYH HWDD DQ (ZLQ V  
H SHUP HQV ZKLFK DQ VHL VHL DJH JURXS 6LGGTXH  
H SHUP HQV DNH P DQ RI VHL SUHURV WVKVZ RUMLQHW  
H SHUP HQV ZHU YLVDD HQV RQHQV H SHUP HQV  
ZKHU VHLV KRQ SURFHVZ DV DNDWV DQ DQ VHLV XQDQ DV  
D V P SODJDP H \$ QVXJK XQJ HG LQ P RVWU SHUP HQV  
RCH VWG IRXGG WCV VHLV FVHUP ZHU VHLV VHLV  
QV DNH VR EH QVGH DZD E DQXQV ZKHQ SURYGHG  
LQDFXUDM DQ XQVDEQ LQ RUP DNRQ DSSUR LP DMD  
KDD RI SUHFRROSDVWV SODV LQ VHLV LQGH VWG QV VHL  
SOD JURXG ZLW D FRQFHQDQ GVLQ VHL VWG > @  
7KHU RUH KRZ P XFP P RUH SUREDEQ DQ FVHUP DJH VHL  
FRQFQVLRQ/ RI VHLV VHLV SOD H SHUP HQV RQGH FVHUP  
6LGGTXH LQ HDQ RQ SHURP DQ IXMUH VHLV VWGHV  
DJH QHGHG VR KDV H D KJK GHUHH RI DSSODQV ) DFDQ  
WVKVZ RUMLQHW LQ OXCFH/ FVHUP VHLV SUHURV FRFHV  
QRVQD LQ WVKVZ RUMLQHW/ EXDQV LQ SHURV RUMLQHW 3DJH V  
VUJH VHLV WCV VHLV LQ OXCFH RI SHURV RQ\ RXQJ FVHUP  
LV LVVSDQVDEQ E SODXQV DQ WDFKLV/ DQ SOD V DQ  
LP SRVWQV RQ LQ VHL GYHQBSP HQV \RXQJ FVHUP , Q  
VHL SURFHV RI LQMSHURQ ZLW SHU \HURQV  
JUDQDQ EFRP H GHFQMUHG DFXP XDM VRFDD  
H SHUHFH LQFDV VHLV QYH RI HP SOD DQ  
H QDQFH SUR VRFDDQV RUMLQHW VFK DV FFRSHURQ KHQ  
DQ VQVQJ VWV SUR RUMLQHW VHLV VRFDD GYHQBSP HQV

3UHAKRROU/ \HDVROG KODYHDVNRQJ SUHUFQFHIRU  
 S-RSODZ LUK KJKO DMDFWYHI DFH/DOG DUHP RUHONHO VR  
 P DNH IUHQG/ Z LUK WAP ' RHV IDFLDO WKWZ RUMQHW  
 Z KLEK LV DOR DIRUP RI IDFDOLQIRUP DNRQ DOR DIIHW  
 FKLOUHQV SHUFKRFH SUHUFQFH / LGP RQMDMG LQD  
 OQJLVXGQDO VWG LQ D IILHO H SHUIP HQMLQ WDV  
 FKLOUHQV IDFLDO WKWZ RUMQHW VJQILFDQO SUHGFMG  
 WMLU UHDOZ RUC WKWZ RUMQHW DOG SHU DFF-SIDELOW  
 6XEMFW FDXP DM/ ZHUH DANHG VR UFSRUVRQ WMLU UHO  
 Z RUC WKWZ RUMQHW DOG SHU DFF-SIDELOW DOG  
 FKLOUHQV IDFLDO WKWZ RUMQHW UHDEO SUHGFMG SHU  
 SUHUFQFH ERK DMVH WIP H RI WMLU WDOOSKRVU UDSK DOG  
 \HDU DMU+HUH / L XMO HG SHU DFF-SIDELOW DV WML  
 REMFWRI VWG EXV/EFDXV WML UFSUHFQMDNRQ RI  
 DFF-SIDELOW LQ WML H SHUIP HQVZ DV H SUHWFG WURXJK  
 SHU SUHUFQFH VFRUQJ 7KLV WSH RI VFRUQJ KDV DOR  
 EHQXVGLQ WML VWGHV RI SHUWIGHP HQ/DOG KDV EHQ  
 XVFG VR PHDXUH SHUSUHUFQFH 7KHU RUH LVLV/DJXHG  
 WDV LVP HDXUH RI SHU DFF-SIDELOW/SOUVRI WML SHU  
 SUHUFQFH FRP SRQ-QWDOG/ L DOR P DGH WML LQMUHMOJ  
 K SRMHV WDV FKLOUHQV IDFLDO WKWZ RUMQHW  
 LQOQHFFV SHUSUHUFQFH LQDZD WDV P D EHUHQMG  
 VR WML VHOIXOLOQJ SURSKFA HIIHW ,QDIRCBZ XS  
 H SHUIP HQV + X DOR FROGFMG DQ H SHUIP HQMLQ WML  
 DJH VHWK ERK H SHUIP HQMDO DOG DMUDCHQURCP HQV  
 DOG DOR FRP SDUHG WML JHQGHU GIIHUQHFFV EHZHQ P HQ  
 DOG ZRP HQ DOG GP RQMDMG WDV RXQJ FKLOUHQV SHU  
 SUHUFQFH IRU IDFH Z LUK KJK FUGLEOW ZDV  
 VJQILFDQO KJKHU WDO WDV IRU IDFH Z LUK OZ  
 FUGLEOW DOG WDVHP DDI FKLOUHQ P DQOQHG VWRQJHU  
 DMQNRQDO YJLDOFH DOG KJKHU DMQNRQDO UHQNRQ  
 OMYO ZKHQ P DNQJ IDFH FUGLEOW MGIHPQV @  
 +RZHYHU WML VR H SHUIP HQMD PRGY LQ WML  
 H SHUIP HQV HUH GRVWML VDP H JURXS RI VEMFW DOG  
 WMLHP D EHVHP HSHURQDO GIIHUQHFFV 7KHIDFWWDOV  
 FKLOUHQ DJH DOR LQOQHFFV E IDFH FUGLEOW LQ UHO  
 QIDOG WDV WMLV LQOQHFFV P D HYHQ H WGGVR WMLUSHU  
 UHQNRQKLSV VXJH WMLVDFH FUGLEOW GRVROO SDV  
 DQ LP SRUQDURQ LQ WML LQWDO WDUHV RI LQMLSHURQDO  
 LQMDFWRQ EXV DOR KDV DQ LP SDFW RQ VEMHTXHQV  
 LQMLSHURQDO LQMDFWRQV

) DFH\$ WMDFWYHQHV

0 DQ VWGHV KODYH GP RQMDMG WDV FKLOUHQ DUH  
 FDSDEO RI P DNQJ MGIHP HQV DERXW VRFDO  
 FKLOUHQV WMLV EDVHG RQ IDFLDO DSSHODQFH LQFOXGLQJ  
 WKWZ RUMQHW GRP LQDOFH FRP SHUQH DJUHWLYHQW  
 DOG DMDFWYHQW @: KLOH WML SUHURXV VFWVRQ RI WML  
 SDSHU KDV FROHLQHG IDFLDO WKWZ RUMQHW DOG  
 SUHUFQFH FRKRFH QDUWYHV IDFLDO DMDFWYHQW LV  
 DQRMHULP SRUQDURQ WDV VSHRSDI FDOGRV LQGRUHZ KHQ  
 HQDJLQJ LQ VRFDO LQMDFWRQV &RP SDUHG VR IDFLDO  
 WKWZ RUMQHW Z KLEK HP SKDLV VRFDO WKWV IDFLDO  
 DMDFWYHQW SOFHV JUHDNU HP SKDLV RQ WML SRWYH  
 TXDQVH RI RMLHV Z KHQ HYDOXMOJ DQ LQOQHFFV DOG  
 DMDFWYHQW LV GRVROO D SK VFDORFKUDFWMLWV EXV  
 DOR VJQILFDQO LQOQHFFV DQXOW DFXWP HQV 6VGHV  
 UHMDOV WMLV DFLDO DMDFWYHQW KDV D VNRQJ FRUHQDNRQ  
 Z LUK SHRSDI HYDOXMRQV RI RMLHV WKWZ RUMQHW  
 FKLOUHQV D DOG ODOG LUKS WMLV

0 DQ VWGHV KODYH FRQWUPHG WDV ERK DOG  
 FKLOUHQV DFRXUDMDFWYHSHRSDIRYHU XQDMDFWYHSHRSDI  
 \$ WMDFWYH LQOYLQDOY DUH RI WQ DMDFWYH Z LUK SRWYH  
 TXDQVH DOG DELOWH Z KLOW QHJDUYH TXDQVH DOG  
 DELOWH/DUHWSLFDO DMLJGHGRV XQDMDFWYH LQOYLQDOY  
 ) XUMHUP RUH LQOYLQDOY DOR EHKDYH GIIHUHQO VRZ DUV  
 DMDFWYH DOG XQDMDFWYH SHRSDI <RXQJ LQDOV FDO  
 SHUPLYH GLVUIP LQDM DOG GLSDI SUHUFQFH VRZ DUV  
 VSHUHF YLXDO WAP XQ \$ Q LQYHM DNRQ E -XGLK +  
 / DOJOLV DOR H SRUHG LQDOV VKRZ DMDFWYHQV VRZ DUV  
 P RUH DMDFWYH IDFH/EHZHQ VRZ R SUH-QMG RSVRQ @  
 / DOJOLV FROGFMG VRZ VWGHV ([ SHUIP HQV Z LUK  
 LQDOV DJHG P RQW DOG ([ SHUIP HQV Z LUK LQDOV  
 RI WML VDP HDJH UDOJH DORJ Z LUK DJURXS RI P RQW  
 ROV VR H SRUHZ KHMHU WML IDFH DMDFWYHQV SKGRP HQRQ  
 KROV WML Z LUK \RXQJHU FKLOUHQ DV ZHO / DOJOLV  
 FROGFMG VRZ VWGHV ([ SHUIP HQV Z LUK LQDOV DJHG  
 P RQW DOG ([ SHUIP HQV Z LUK LQDOV RI WML VDP H  
 DJH UDOJH DORJ Z LUK DJURXS RI P RQW ROV VR  
 H SRUHZ KHMHU WML IDFH DMDFWYHQV SKGRP HQRQ KROV  
 WML Z LUK \RXQJHU FKLOUHQ DV ZHO / DOJOLV FROGFMG  
 VRZ VWGHV ([ SHUIP HQV Z LUK LQDOV DJHG P RQW  
 DOG ([ SHUIP HQV Z LUK LQDOV RI WML VDP H DJH UDOJH  
 DORJ Z LUK DJURXS RI P RQW ROV VR H SRUHZ KHMHU  
 WML IDFH DMDFWYHQV SKGRP HQRQ KROV WML Z LUK \RXQJHU  
 FKLOUHQ DV ZHO 7KH LQOYLQV RI ([ SHUIP HQV ZHUH  
 QJHDO FROQV WMLV WMLV HRI ([ SHUIP HQV +RZHYHU  
 Z KHQ WML OMYORI DMDFWYHQV Z DV FRP SDUHG DFRV WDOY  
 WML \RXQJHU LQDOV GLG GRVGP RQMDMG SUHUFQFH IRU  
 IDFH LQ WML VHQUR XQDNH WML VEMFW LQ WML ILLWV  
 JURXS / DOJOLV HWDO VXJH WML WMLV P D EHUHQMG  
 LQFRQJURXV Z LUK GHYHSP HQMD OMYO WDV P DNH LV  
 FKLOUHQV IRU P RQW ROV VR OBN DZ D IURP  
 WAP XQ 7KH H SHUIP HQMDUHXQV VKRZ WML LQDOV GR  
 GRVH KLEW SURGRQFH LQOQHFFV VRZ DUV DMDFWYH  
 IDFH +RZHYHU WML H SHUIP HQV FROGFMG RQ WML  
 FKLOUHQ KJKOJ WMLV UHP DUNDO FROQV WMLV Z LUK WML  
 FULMID RI DOXV WML DMDFWYHQW 7KLV WMLV DOR  
 REVHYDEO DP RQ JURXS RI LQDOV Z LUK LQOQHFFV  
 FULMID 7KLV IJ DNRQ RI SUHUFQFH LV DOR UHQFMG LQ  
 ' IRQV H SHUIP HQV : KHMHU <RXQJ &KLOUHQ  
 ([ KLEW WMLV WMLV %DVHG RQ ) DFLDO \$ WMDFWYHQW  
 Z KLEK GP RQMDMG WMLV FKLOUHQ DJHG \HDV DOR  
 DFRFLDM DMDFWYHQW Z LUK HYDOXMH FROQV WMLV @

3UHLRXV UHDFURK KDV GHILQHG DMDFWYHQW DV D  
 TXDQVDEO PHDXUH RI WML SOHXUH GHUHG IURP  
 REVHYLOJ DQ LQOYLQDO Z LUK VFRQV LQOYLQJ ' IRQ  
 XLOJ WML WML EHXWVXO VR GHUHFH LQOYLQDOY  
 SHUPLYHG VR SRWHW KJK OMYO RI DMDFWYHQW @  
 2QH WSH RI DGYDQW WMLV SK VFDQ DMDFWYH  
 LQOYLQDOY HQV LV UHFHYLOJ P RUH OQHQW MGIHP HQV  
 IRU WML P LVGHV FRP SDUHG VR WMLV ZKR DUH OML  
 DMDFWYH @ 7KLV VWG H SRUHZ Z KHMHU SK VFDQ  
 DMDFWYHQW FDO RI VHQJHJDUYH VRFDO FROGFM @  
 : KDWLGRVZ RUMK DERXW WMLV H SHUIP HQV WML VHQFMG  
 VRSF DMDFWYHQW DOG SRSDUW H SHUIP HQV DUHP RUH  
 RI WML FROGFMG LQ IDFLDO DMDFWYHQW VWGHV EXV LV  
 + 5RHFQ VWG GHYH LQ WML P HFKQV E Z KLEK  
 DMDFWYHQW FRP SHQDM IRU QHJDUYH EHKDYRXU 7KLV  
 VWG H WGGV SUHURUHFURK E GLWQJ XVLQJ WML H IHW

RI IDFLDODMDFWYH-QHW DOG LQYHMMDMQJ ZKHMHURUCRW  
IDFLDODMDFWYH-QHW P LWM/DAM/VMH DGYHUIH FRQHTXHQFV  
RI DJJUHMLYH-QHW/RQ/SFSXQUMW %RVM VRFLDODDGG SK VFDQ  
DJJUHMLRQ DUH WSHV RI EHKDYLXU WDV/FDQ QDYH D  
QHJDIYH LP SUHMLRQ RQ RMHLV/ 7KH RUJHFDODWXP SWRQ/  
VXJHMMWMDVJDUHMLYH LQBYLGDYV DUH P RUH QNHQ VR  
UHFHYH QHJDIYH HYDODNRQ/ IURP RMHLV WDOQ GRQ  
DJJUHMLYH LQBYLGDYV +RZHYHU GHSLM WMLV VRP H  
WAGLV KDYH KRZ Q WMDVJDUHMLYH \RXQJ SHRSQ P D  
DFWDD P DQDQK KJJKU VRFLDQ WDMV DP RQJ WMLU  
SHUV @DFLDQ DMDFWYH-QHW P D EH D SDUWFXDQ  
LP SRUWQVIHDMUH LQ HJ SOLQOJ VMH KHMURJH-QHW RI  
VRFLDQ WDMV DP RQJ P LQDQV \RXM DV IDFLDQ  
DMDFWYH-QHW WAGV VR EULQJ VRFLDQDGYDQWV IURP DQ  
HDO DJH

\$ VMG FRQGFANG E %FNLQJKP HADD UHYDQGG  
WDM VMHU LV D FORVH FRUJHDMRQ EHZZHQ IDFLDQ  
DMDFWYH-QHW DOG FUGLEQW MGGP HQV @\* LYHQ WDM  
FKLQJQV FUGLEQW DOG DMDFWYH-QHW MGGP HQV  
SDUWQV DUH DNQ VR WRVH RI DGKOV LVV SRWEOH WDMV  
QDN HJ LVV EHZZHQ FKLQJQV FUGLEQW DVHWP HQV RI  
IUAH IDFH DOG WMLU QMHYV RI DSSHQ 7KH UHMDFK  
FRQGFANG E ) HQJQJ O DHVDDQDQVHG VMHFRUJHDMRQ  
EHZZHQ FKLQJQV SHUF-SWRQ/ RI IDFLDQFUGLEQW DOG  
IDFLDQDMDFWYH-QHW 7KH ILQELQV UHYDQGG WDMVDFLDQ  
DMDFWYH-QHW HYDODNRQ/ ZHUH P RUH UHDEOH WDOQ  
FUGLEQW/HYDODNRQ/ LUHSHFMYH RI DJHJURXS DGKOV  
DOG \HJ RQV +RZHYHU VMH RXMRPHV DOR  
LQGFANG WDMFKLQJQV DVHWP HQV RI FUGLEQW DOG  
DMDFWYH-QHW ZHUH P DUNHQ ZHDNFU LQ FRP SDUWRQ VR  
WRVH RI DGKOV +XP DQV KDYH HYROYHG VR HJ WDFW  
LQ RUP DMRQ DERXWVRFLDQDMRQKLSV E UHSRQELQJ VR  
IDFLDQFRQLXUDMRQ/ 7KHUH RUH ERM DGKOV DOG LQ DQV  
DUH QNHQ VR UHSRQG P RUH WMRQJQ VR VMH P RWMDFLDQ  
WMP XQ LQ VMH HQYLURQ HQV DV VMH FDQ HJ WDFWP RUH  
GLUHFVDOG JUHDMU LQ RUP DMRQ IURP VMH \$ V LQBYLGDYV  
P DMUH VMH GHYHBS VMHURZ Q LQMSUHDMRQ RI IDFH RU  
EHDXW WMLV FRQF-SMDOUHQ-P HQVMDNHV SDFH WMRXJK  
SHURQDQ GHYHBS HQV DOG VRFLDQ HJ SGRUDMRQ , Q DQV  
P D KDYH DQ LQDDM RU HDO GHYHBSHG SUH HUHCFH I RU  
FHUWQ DASHW RI YLVXQD WMP XQ DOG P D MGGH IDFH  
XVQJ XQTXH FULMUD UDMFU WDOQ VMH JHQHDO FULMUD  
HP SGR HG E P RWDGKQWDMUJ ) XUMHUP RUH ) HQJQJ  
O D HADD VXJHMMWMDVGLIHUHCFH LQ P HP RV FDSFLW  
EHZZHQ FKLQJQV DOG DGKOV FRXQGDOR SQA DURQ , Q VMH  
HJ SHUP HQV IDFH FUGLEQW DOG DMDFWYH-QHW MGGP HQV  
ZHUH P HDXHG XVQJ VMH VDP H WPH LQMYDQV \$ GKOV  
ZLVK WMRQJHUP HP RV FDSFLW P D KDYH I RUP HG P RUH  
P HP RUIH/RI VMH WMP XQV IDFHV Z KLOH FKLQJQV P D KDYH  
P RUH YDJXH P HP RUIH 7KLV FRXQGDOR SRMQRDQDQ LQFUHJ  
VMH FRUJHDMRQ EHZZHQ VMH VR MGGP HQV LQ DGKOV  
FRP SDUHG VR FKLQJQ +RZHYHU IXUMHU HJ SHUP HQV  
WMLQJ LV UHTXUHG VR FRQLUP VMH SRWLEQWV

2 YHDDQ DFRUJHDMRQ EHZZHQ IDFLDQWVZ RUMLQHW DOG  
FKRLEH SUH HUHCFH/KDVEHQ REVHUYHG LQ \RXQJ FKLQJQ  
7KLVSDSHUGLVFXWHV VDFANGH SHUP HQV UHJDLQJ WKMV  
FKRLEH SUH HUHCFH DOG SHU FKRLEH SUH HUHCFH ) DFLDQ  
WKMVZ RUMLQHW/KDVEHQ LP SDFWRQ ERM FKLQJQV FKRLEH  
LQ WKMVSDQ DOG VMH LQYHWP HQV 7KLVZ RUMK IDFH DUH  
P RUH QNHQ VR FDSMUH FKLQJQV LQYHWP HQV DOG LP SUH  
WMLU FKRLEH RI SHUV O RUH UHDEOH DSS-HUDQFV DUH  
SUH HUHCFH ZLVK JHQHUGLVWDFWRQ/HP HJLQJ

+RZHYHU VRP HJHQHUGLILHCFH/HJ LVMQ VMH FXUHQV  
HJ SHUP HQV 3UIP DQD HQYLURQ HQV SDUWQV DUH  
XVQJ HG DV WMP XQ DOG KDYH VMH FDSLEQW VR FDSMUH VMH  
RUIJQJ QDQFV LQ IDFH DOG WDMRQV SUHYDQV LQ  
HYHYGD QH 1HYHMMQW VFK YDUIDMRQ/ FDQ  
DGYHUIH DIFHWMMWEDVHG LP SUHMLRQ/ YLD VMH IDFH  
LQFOXGLQJ DMDFWYH-QHW DJH JHQGU DOG HMQFLWV @  
6XFK LQ QHQFV ZHUH GRMFRP SDUWQ HJ FOXG-G E VMH  
HJ SHUP HQV , WLV SRWEOH WDMVMH H I HFV FRXQGDOR EH  
XVQJ HG LQ IXMUH UHMDFK VR HQDQFH VMH VMG RI  
ZKHMHUDODMDFWYH-QHW LQ FULMUD WDMV FDQ DIFHW SUH HUHCFH  
FKRLEH RU VR HJ DP LQ H VMH FDQ WDSH FKLQJQV  
SUH HUHCFH VRZ DQV FULMUD WMLURWSHV \$ GGLWDDQ  
QXPHURV/FXUHQV HJ SHUP HQV VFK DV 6LGGTXHV XVQJ H  
YLVMDQJ DP HV/D/DFXFLDQ HMRG IURFRQGFANG VMGLH/  
&HMLQDQ YLVMDQ JDP H HJ SHUP HQV KDYH QG VR  
VLJQLFDQV DGYDQF-P HQV DOG ILQELQV LQ QXPHURV  
UHMDFK ILHQV 7KHEHQH LARI YLVMDQJ DP H HJ SHUP HQV  
LV WMLU FDSFLW VR RIHU D SUFLVQ FRQRQDQ  
HJ SHUP HQV DVHWP VMQJ Z KLFK KHSV UHMDFKLV VR EHMU  
LQYHMMDM DOG FRP SUH-QG KXP DQ EHKDYLXU DOG  
SX FKRQJ +RZHYHU ZH FDDQVRVYHUBRN LQMDQFV  
ZKHUH VMH RXMRPHV/RI ILHQHJ SHUP HQV FRQDGLFVWRVH  
RI YLVMDQ JDP H HJ SHUP HQV 9LVMDQ HJ SHUP HQV  
WSLFDQ VLP XQDM VMH UHDOZ RUG VR D QP LAG HJ WDMV DOG  
DV VFK ILHQHJ SHUP HQV FRQDQX VR EHDFXFLDQ HQV  
RI REVMLQJ UHDEOH DOG SUFLVH QDQ +XV HJ SHUP HQV  
RIHU DQ DQMDQYH KJJKQVMQJ WDMVMH RXMRPHV  
DFTXUHG IURP ERM QDMDQ DOG HJ SHUP HQV UHMDFK  
VMQJ DUH FRQVMQV Z KLOH DOR HQDQFQJ VMH  
SDFWDDQV RI HJ SHUP HQV ILQELQV %H RGG VMH LQMDQ  
QDMDMUH UHYHZ LVZ DV GLVFRYHUHG WDMV DQ RI VMH  
IDFLDQ LP DJHV XVHG LQ \$ V DQ WAGLV ZHUH RI IRUHJQ  
FKLQJQ 7KLV P DNHV LVGLILFXQWR GUID FRQFQMRQV  
DERXW HQHUI IDFLDQ SUH HUHCFH LQ \$ V DQ VRFHWHV , WLV  
FUXFLDQ RU UHMDFKLV VR KDYH DFFHW VR DIXQGDQDQJH  
RI \$ V DQ FKLQJQV IDFHV I RUI XVMUH WAGLV \$ GKOV WAGLV  
KDYH I RXCG WDMV LQ IDFLDQ WMP DMDOH DMUH VFK DV  
VMH KHJKVRI VMH EURZ UGJH DOG VMH QJKQHW RI VMH  
J \ JRP DMF ERQH LP SDFWDDQ LQBYLGDQV SHUF-SWRQ RI  
IDFLDQWKMVZ RUMLQHW 7KHUH RUH IXMUH WAGLV FDQ EH  
FRQGFANG VR HJ SGRUH VMH LP SDFWRI VMH WMP DMDO  
I DMUH/RQ FKLQJQV SHUF-SWRQRI WKMVZ RUMLQHW

,Q LQMSHURQDQ LQMDFWRQ/ LQBYLGDYV VFRXQGDOR  
DFNCRZ QGJH VMH URQ RI IDFLDQ I DMUH LQ SUH HUHCFH  
HYDODNRQ/ ' XULQJ VRFLDQ LQMDFWRQ/ SHRSQ P D  
XGFRQVFRXQ EH VZ D HG E IDFLDQ FUGLEQW DOG  
HMDQK SUH HUHCFH I RUVR P H LQBYLGDYV DVMH HJ SHUQ  
RI RMHLV \$ JH DOG IDFLDQ DMDFWYH-QHW LP SDFW-SRQV  
DVHWP HQV RI IDFLDQ FUGLEQW Z KLFK KRQV VLJQLFDQV

' ,&866,21

IP SRUWGFH IRU VRFDOLOMUDFWRQ \$ V SUHYRXV UHM-DURK  
LQGFEDM /LV/LV FUXFDO VR FRQLGHU VMHM IDFVU/ LQ  
HGXFDMRQ DGG GD VR GD DFVYLVH/ IRU HQDQFLQJ  
LQGLYLGDOY DVMWQH-W DGG GLVHQP HQV DV ZHO DV  
HQRXUJLQJ FQDGLG DGG UHQDQVFRP P XQLFDMRQ : LQV/  
DGG 7RGRURY GLVFRYHUJLQ RQHVMG WDVVMHI DFLDOFXH/  
IRU WVKVZ RUMLQHW LQ DGXOV FRQLGH Z LUK VMH DMWEXM/  
WQV VKDSH DMDFVYH-QHW HYDODMRQ> @ : KLOWO D  
UHYDQG WDVFKLQJHQ Z LUKLQ VMH \ HOU DJH UHQJH  
HP SQA LG-QNFDO DFLDOI-HDMUH/VR DMW WVKVZ RUMLQHW  
DGG DMDFVYH-QHW> @6R LV/LV Z RUM HJ SQRUQJ Z KHMHU  
VMHU LV D FRQF-FWRQ EH-ZH-Q DMDFVYH-QHW DGG  
WVKVZ RUMLQHW DGG VR Z KD/VH WQVVMV FRQF-FWRQHJ LWW

& 2 1 & / 86,2 1

7KLVDUWFOHJ DP LQH/VMHLP SDFVRI IDFLDQWVZ RUMLQHW  
DGG IDFLDO DMDFVYH-QHW RQ FKLOUHQV SUHUHQFH IRU  
FKRLFH Z KLFK HQFR SDW/G-FVLRQ/DERXWQYHMVU/LQD  
JDP LQJ HJ SHUP HQV DGG FKRLFH DP RQJ SHUV 7KH  
VDFWAG HJ SHUP HQV G-P RQMDM WDVFKLOUHQV IDFLDO  
WVKVZ RUMLQHW KDV D VJQLFDQV LQ OXHFH RQ VMHU  
WVKVZ RUMLQHW DGG DFF-SUDQH EA SHUV LQ UHQDQ H  
VWDMRQ/ ) DFLDQWVZ RUMLQHW/LV FUXFDQGXUQJ LQWDO  
LQMSHURQDO LQUDFWRQ/ DGG LW DOR LQ OXHFH/  
VXVHTX-Q/LQUDFWRQ/ \$ GGVQRQD LQ ERWK DGXODGG  
FKLG JURXS/ FKLOUHQ VDFVWQYHMV HQVSDUWQH/ EDVHG  
RQ SHUP-LY-G WVKVZ RUMLQHW RI IDFLDOI-HDMUH/ LQ WVKV  
JDP HV VLPLOU VR DGXOV ) DFH/ DUH D PRUH LQMLVYH  
YLVXDOVMP XOV <RXQJ FKLOUHQV VHQHRI WVKVQRMHU/  
XVXDO EHJLQ/ Z LUK WVKVQJ IDFH 7KHUHUH LQ ERWK  
SHUPFKRLFH DGG VMH JDP HRI FQDQH FKLOUHQ SUHUHQG  
PRUH WVKVZ RUM IDFH , Q WUP V RI UHQDQFH HYQ  
\RXQH LQ DQW WQG VR EH P RUH DMDFWAG VR VMH P RUH  
DMDFVYH IDFH Z KH-Q JLYHQ D FKRLFH EH-ZH-Q VR IDFH/  
( Y-Q IDFLDQ DMDFVYH-QHW UHGXFH/VMHQJDMYH H I HFW RI  
XGGMLUDEQH EH-KDYLXUV RQ SRSXQULW DP RQJ DGRQMFHQV  
SRSXQULW/ ) RU HJ DP SQA DJJUHLYH WHQDJHU/ Z KR  
SRVHW DMDFVYH IDFLDOI-HDMUH/DUHP RUH SRSXQJ 7KH-H  
RXVFRP HV FRQLUP WDVVMH FDSFLW VR HYDODM IDFLDO  
DMDFVYH-QHW/P DQJHWV D VQ-HLO DJH DGG FQDQ LQ OXHFH  
DFKLG V VRFDOG-FVLRQ P DNQJ DEQWV ) URP DQ-HLO  
DJH FKLOUHQ HJ KLEVD SUHUHQFH IRU DGXONDWHP HQV  
RI DMDFVYH YHU/V XQDMDFVYH IDFH 7KLVPD EHGXH  
VR VMH IDFVWQVFKLOUHQ DUHQW/DIHWAG EA VMHU VRFDO  
RU HQWURQ HQDO VJURXGQJVV DQZ LQJ VMH P VR EH  
GUDZQ PRUH FRQLVWQD VR IDFH WDVVDEKHU PRUH  
FORVQ VR VMH FRQF-SWDO GH LQWURQ RI D IDFH 7KH  
VLPLOUVMH EH-ZH-Q DMDFVYH-QHW DGG WVKVZ RUMLQHW  
SDWMLQ/ UHP LGG XV WDVVMH DUH IP SRUWGFH IDFLDO  
LQ RUP DMRQ FRP SRQH QV Z LUK IXUMHU SRVLEQH  
FRQF-FWRQ/ %RMP D DOR LQ OXHFH HFKRMHU

,Q VMH WVKVZ RUMLQHW HJ SHUP HQV DQRMHU DS-FWVR  
FRQLGHU LV NRZQ DV VMH SURSHQW VR WVKV- D  
SHURQDQW WDLWQVGFEDM/DQ LQGLYLGDOY Z LQDQJHW  
VR WVKVQRMHU/ 5 HM-DURK LQGFEDM/ WDVWAKWSURSHQW  
GHYDQSV VMURXJKRXWQDM FKLQKRRG DGG DGRQMFQH  
7KH QYHORI WVKV SURSHQW/LV DOR FUMFDOZ KH-QP DNQJ  
LQWDO WVKVXGJP HQV ) XUMHUHM-DURK RXJKVVR HJ DP LQH

VMH HIFHW RI WVKVQJ WQGHQFHV DGG IDFLDO FXH/ LQ  
GLIHUHQV DJH JURXS/ HODEQJ PRUH DFXUDM  
HJ SHUP HQV UHQDQ VR WVKVZ RUMLQHW 7KH FRUHQDMRQ  
EH-ZH-Q FUGLEQW DGG SK VFDODSS-DOZ DUJDM IXUMHU  
HJ DP LQDMRQ VR LQYHMMDM VMH HIFHW RI P XMDO  
LQ OXHFH RQ VMH VDFWRQ/RI FKLOUHQV SUHUHQFH

### 5 HIHUHQFH

- \$ 0 \$ 7RGRURY 6FL
- : LQV DGG \$ 7RGRURY 3V FKRQ 6FL 17 -
- & & & DIERQ 7 0 FK-HQJ H 0 + 5 DDE DGG  
+ : I FKMU, 3HUF-SMRQ9(5)
- 0 / : LQV 5 3DQUP R DGG' %XUH ( P RMRQ11  
-
- & ) . HMQJ DGG ' / %DL & KLG ' HY 57  
-
- \$ 7RGRURY \$ 11 1 < \$ & \$ ' 6&, \$ 2 6 7RGRURY \$ QX 5 HY 3V FKRQ 66
- 0 YDQ W: RXW \$ \* 6DQH & RJQWRQ 108(3)
- ) %RQH RQ \$ + RSHQW : ' H1HV 7UHQV  
& RJQ 6FL 19(8)
- 6LGGTXH 6 6XMHQDGG & \$ 0 3DQUP R 5 ) RR  
< = 6ZH' & DGG/ -HIV & RJQWYH' HY 61
- 4 / L: =KQJ \* ' + H P DQ % & R P SWRQ . / HH  
3V FKRQ 1(12)
- % + X 7KH URQ RI IDFH FUGLEQW RQ \RXQJ  
FKLOUHQV SHU SUHUHQFH DGG LW LQ OXHFQJ  
IDFVU/ @ = K-HQJ = K-HQJ 1 RUP DQ QYHUW  
& ) . HMQJ DGG' / %DL & KLG ' HY 57 -
- + / DQJQV / \$ 5 RJP DQ 5 - & DM -  
0 5LVWU / \$ 5LVWU/ DQHU DGG 9 < -HQNQ/  
' HY 3V FKRQ 23(3) -
- . . ' IRQ < ' HY 3V FKRQ 9(2) -
- 3 & 5 RGNQ 7 : ) DPHU 5 9 \$ FNHU 5 3HLO +  
7 KRP SWRQ DGG 3 ) HGRUD - 6FKRRQ 3V FKRQ 44(1)  
-
- %: ' DUA DGG' -HIV/ 6RF %KDY 3HURQD  
16(1) -
- / + 5RVQ DGG 0 . 8 QGHZ RRG - 6FKRRQ  
3V FKRQ 48(4) -
- % . XSHUP LG/DGG - ' & RLH & KLG' HY 61(5)  
-
- \* %FNQJKP / 0 ' H/VLQH \$ & / LVW / /  
0 : HQJ & \$ & RQ D % 3 7LGG-P DQ HAVD  
( YRO+XP %KDY 27 -
- ) 0 D ) ; X DGG; / XR ) URQ 8V FKRQ 7 -

) 0 D ) ; X DG ; / XR 3HJ-SW0 RW6N0Y121