

D Q Q R U R R W

‡ ' L V H D R M S L Q W H U H H V

‡ , Q I H F S V L H Q C H Q I D O R Y U H Q K H D Z L Q G V
G X W R U R W U L S Q J H R C W V

‡ , Q I H F U V R G W R B M W T M U Q & 2 O 2 ô p W 7 D P

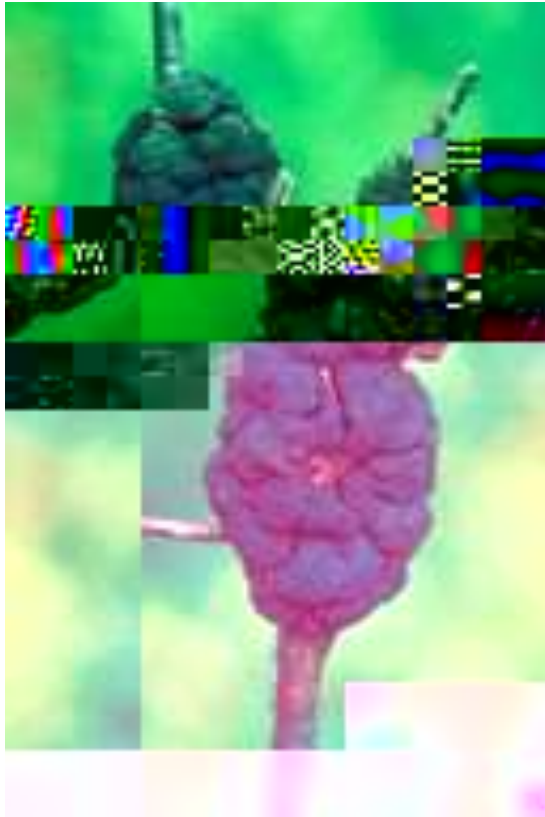
D Q Q R U R R R/W



E O D F N N Q R W

‡ , U U H J U X R D J E O D V F Z N H O R Q F Q J H U U \
E U D Q F F K H D U O F H D S S H D U D Q F H

E O D F N N Q R W

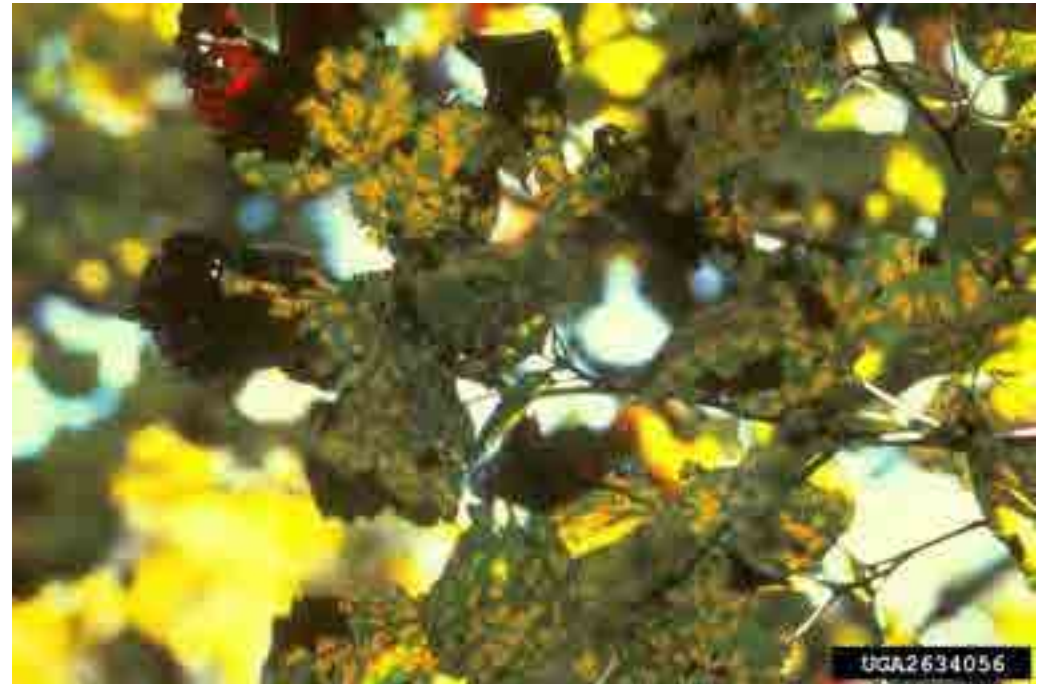


F H G D S S O X I V W

‡ 7 Z R K R S V D Q V V W U H G G D U
D Q S S H H S S O D U H
G D P D J H G U H Y H S R O V L E O \
U H V X Q H Q M K W H U H H

‡) X Q J X R U E V L R K W Q J R U R Q
W K E U D Q F R K H G B H O O R H Z I
V S R V S S U R [L P D ' W K I O U H
V R P H W E B I Q V L Q G H G U I R U P H G
R Q S S O H I D Y H V

F H G D S S W X IV



I X V L I R U P U X V W

‡ 7 Z R K R V ~~S~~ L ~~V~~ ~~D~~ ~~H~~ ~~G~~ R D N

‡) X V L P R U ~~X~~ ~~W~~ D U L ~~H~~ ~~O~~ ~~I~~ ~~H~~ ~~V~~ ~~K~~ ~~R~~ ~~V~~ ~~I~~ ~~S~~ ~~D~~ ~~O~~ ~~H~~ ~~D~~
O R E ~~D~~ ~~F~~ ~~O~~ ~~V~~ ~~O~~ ~~D~~ ~~S~~ ~~L~~ ~~K~~ ~~O~~ ~~D~~ ~~I~~ ~~U~~ ~~W~~ ~~K~~ ~~R~~ ~~H~~ ~~Q~~ ~~R~~ ~~Q~~ ~~H~~ ~~V~~
F R Q V L ~~G~~ ~~A~~ ~~E~~ ~~H~~ ~~K~~ ~~R~~ ~~G~~ ~~V~~ ~~W~~ ~~V~~

‡ 2 Q S L ~~Q~~ ~~H~~ ~~U~~ ~~H~~ ~~K~~ ~~H~~ ~~D~~ ~~U~~ ~~R~~ ~~H~~ ~~U~~ ~~D~~ ~~H~~ ~~S~~ ~~R~~ ~~V~~ ~~R~~ ~~H~~ ~~Q~~
W ~~K~~ ~~H~~ ~~X~~ ~~U~~ ~~I~~ ~~B~~ ~~I~~ ~~F~~ ~~O~~ ~~H~~ ~~U~~ ~~V~~ ~~Z~~ ~~R~~ ~~O~~ ~~J~~ ~~O~~ ~~D~~ ~~O~~ ~~D~~ ~~N~~ ~~V~~
Z ~~L~~ ~~O~~ ~~D~~ ~~H~~ ~~E~~ ~~O~~ ~~D~~ ~~V~~ ~~F~~ ~~S~~ ~~N~~ ~~R~~ ~~V~~ ~~R~~ ~~K~~ ~~D~~ ~~L~~ ~~U~~ ~~O~~ ~~L~~ ~~N~~ ~~H~~
V ~~W~~ ~~U~~ ~~X~~ ~~F~~ ~~R~~ ~~O~~ ~~W~~ ~~K~~ ~~O~~ ~~R~~ ~~V~~ ~~Z~~ ~~H~~ ~~X~~ ~~U~~ ~~I~~ ~~B~~ ~~I~~ ~~F~~ ~~O~~ ~~H~~ ~~D~~ ~~I~~

IXVLIRUP UXVW



+ \ S R [\ O R Q F D Q N H U

‡ Hypoxylon canker occurs on many oak species

‡ Leaves of trees infected with *Hypoxylon* turn yellow and wilt, and entire branches die. The bark sloughs off, exposing the stroma. The stroma may appear dusty brown, black, silver, or white depending on it's age as it progresses from it's asexual to sexual stage.

+ \ S R [\ O R Q F D Q N



O L F K H Q V



‡ 6 \ P E L R U W L O F D W I E R I Q W Z K E L S O D Q G
I X Q J ' I R Q R D W F W X F D D X O A H V H D V H

PLVW O HWRH



‡ V P R R W G K J H R G D O H U J O H D Q H V
E R U Q H L Q S D L U V D O R Q J W K H Z R
D Q G Z D [\ Z K L W H E H U U L H V L Q G H

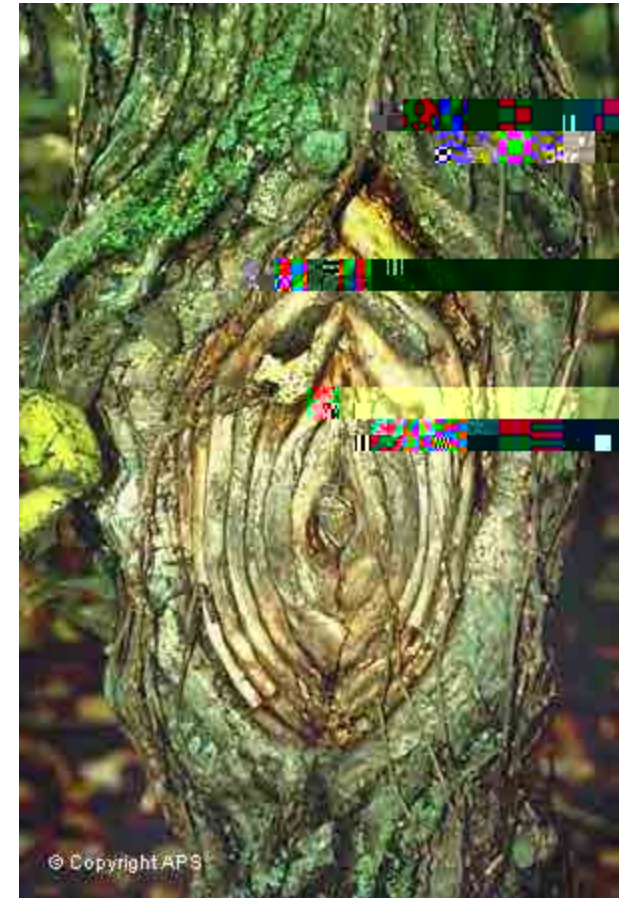
1 H R Q H F W Q N D U

‡ & U H D Z P K L M V H X L W W Q X F S V L X Q U H M D G
V L J H G H G H R R K D S I H W Q L H U F D Q N H U
P D U J L Q

‡ : H O G H I L Q H A R D E D U F N D P E P L D X Q G
X Q G H U Z O R B Q U N H L O E W Q A M Q J X V

‡ : H O G H I L Q R G D O U J M R G E D U N
F D P E L X Q G H U Z O R B Q U N H L O O H G
E \ W K M Q J & R Q F H Q W Q Q F D O O X V
U L G G H V Y S I O U R R G W Q H J S D Q G L Q J
F D Q N H G E D N W O R X R I K W K R O G H U
S D U R W W K F H D Q N S H W V H H Y A U H D U V
W K F H D Q U W H H V H R E W O B U J H W

1 H R Q H F W Q N D U



2 F F X U Q V X P P B V
E O L O W F H H U F X D D V
D U H D V

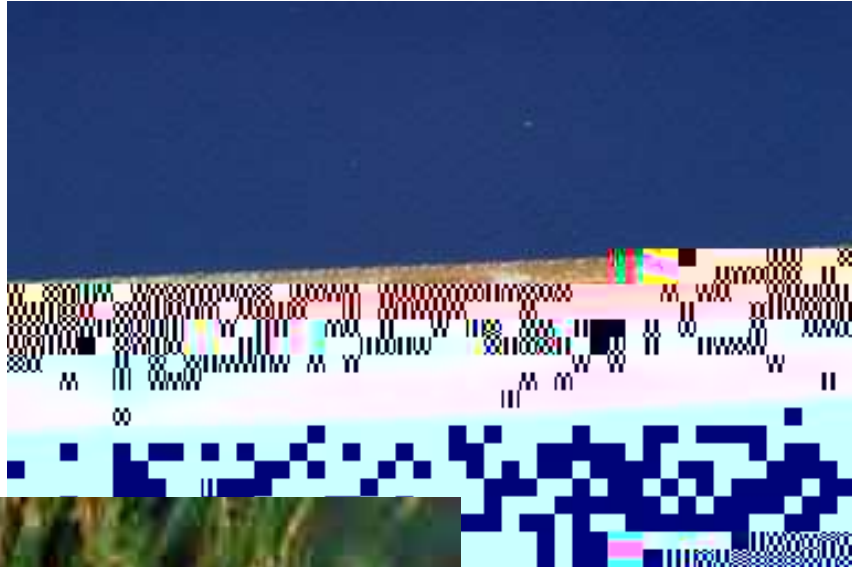
' R H V Q R S R H D U H D O
W K U M V D M H D Q W K
W U B X W D I I H F W V
D S S H D H R D Q U H H G
R D D U H H V S H F L D O C
V X V F H S W L E O H



S L Q H H G X M W

‡ , Q I H F S L H Q H D H Z K L R U H D E J O L V W H U
R Q W K H H G O D H K D H R U D H S J R Z G H U \
V S R U R Q H D Y H V

S L Q H H G X M W



S R Z G R U O G H Z



V R R W \ P R O G

‡ % O D P R G R Q O H D / R I D I I H F S V O H G Q W V
F D Q H U X E G R H I O R R O N H W R R W

VRRW\ PROG



tar spot

& D X ~~Q~~ E V H Y H U D O
V S H ~~F~~ ~~R~~ H X Q ~~V~~ ~~X~~ W K H
J H Q ~~V~~ *Rhytisma*.

6 S R ~~W~~ ~~F~~ X ~~V~~ X L P Q H U
7 K H V S R ~~U~~ ~~D~~ ~~H~~ ~~U~~ ~~R~~ W
S U R G X ~~F~~ ~~Q~~ ~~W~~ S U L Q J
D Q ~~G~~ U ~~F~~ ~~H~~ U U E L Z I G Q G



Z L W F K H V E U R R P

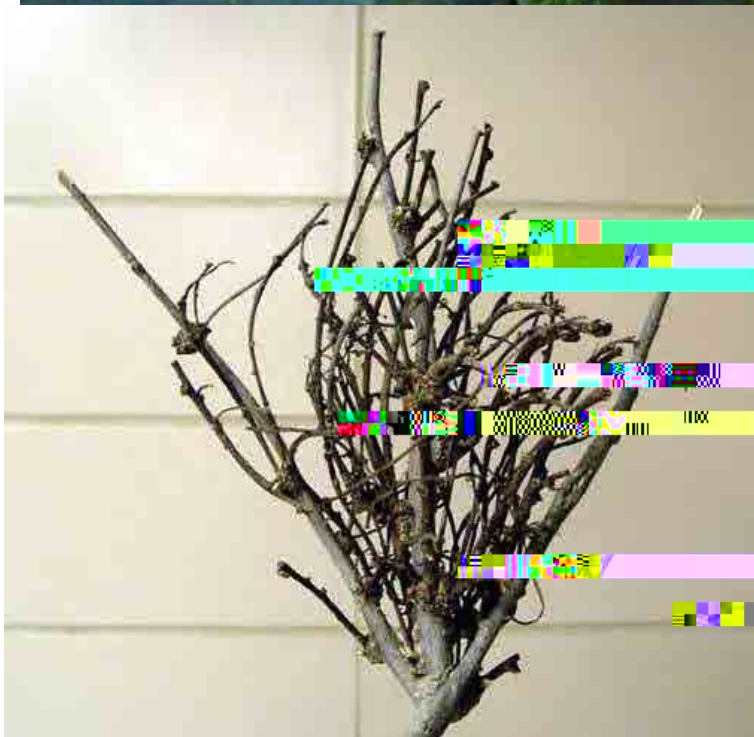
‡ , Q I H F ~~F~~ ~~L~~ ~~X~~ ~~R~~ ~~V~~ ~~D~~ V V ~~R~~ F O X V ~~V~~ ~~H~~ ~~H~~ ~~Z~~ H G

J U R Z ~~R~~ ~~W~~ ~~K~~ ~~K~~ ~~R~~ ~~W~~ U ~~Q~~ ~~M~~ S D U D V L W H

‡ , W H V H ~~P~~ ~~E~~ ~~E~~ U H R ~~R~~ Q P D Q F D V H V

‡ 0 D ~~Q~~ S D W K ~~R~~ ~~E~~ ~~Q~~ ~~Q~~ D X H W K V ~~P~~ S W R P

Z L W F K H V E U R R P



D U V F IR QVM

‡ \$ Y H G L V W H V Q K F H O C H I N U X J W W Q X I F R U M P U L Q J O \

RQ W H K Z R B D W R U Q H U D V H K V R O D L Q W E U R Q R U H G G L V K

E U R Q R Q W S R Z L K M F U F M L Z C L R V R A O C P U D H U J Z K H

E U R Q S R U Q M I S F S W R K D H Y E H H

D U V F R Q V M



E U R ~~Z~~ ~~Q~~ ~~Q~~ M H ~~G~~ ~~O~~ H J K W

‡ 3 U R ~~P~~ ~~O~~ ~~R~~ / R Q J ~~O~~ ~~3~~ ~~L~~ ~~O~~ R Q O \

‡ , Q I H F ~~Q~~ ~~M~~ ~~H~~ ~~G~~ ~~G~~ ~~O~~ ~~H~~ ~~Y~~ S J O R H \ U H H Q

V S R ~~Z~~ ~~K~~ ~~K~~ F

~~Z~~ ~~Y~~ ~~Z~~ ~~Z~~ ~~Y~~ ~~Z~~ ~~Y~~

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F K H V ~~W~~ Q ~~X~~ J K W

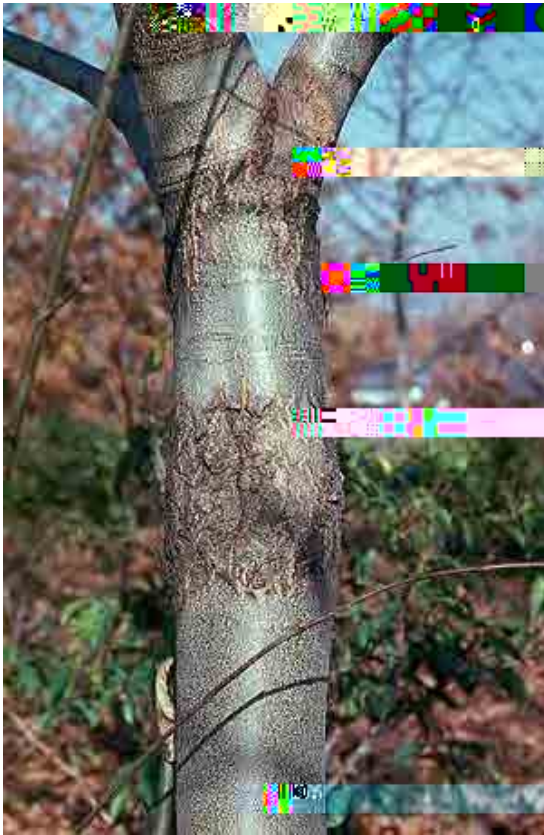
‡ \$ I I H F \$ P W H U L F D Q & W H M W Q X W

‡ 6 W H P F D Q N H U V D U H H L W K H U V Z R
W K H V X Q N H Q W \ S H P D \ E H J U R Z C
7 K H E D U N F R Y H U L Q J W K H V Z R O O
O R R D W K H Q G R W K F D Q N H U

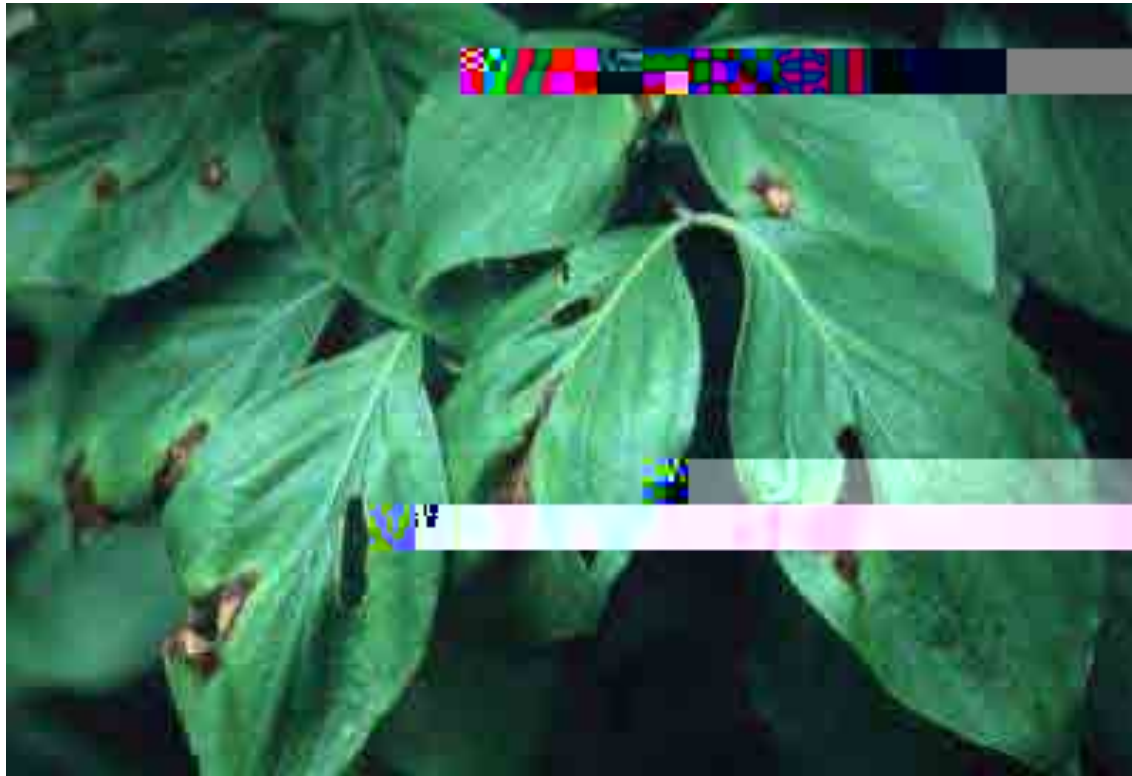
‡ 7 U H H V G L H E D F N D E R Y H W K H F D C

K H D Q J K H V I R P R V H H O @ € P R U

F K H V ~~V~~ Q ~~X~~ JK W



G R J Z R D R Q G W K U D F Q R V



' X W F K H O P G L V H D

‡ 3 U L P D W I L L O \$ W H V U Q D Q (X U R S H D Q
H O P V

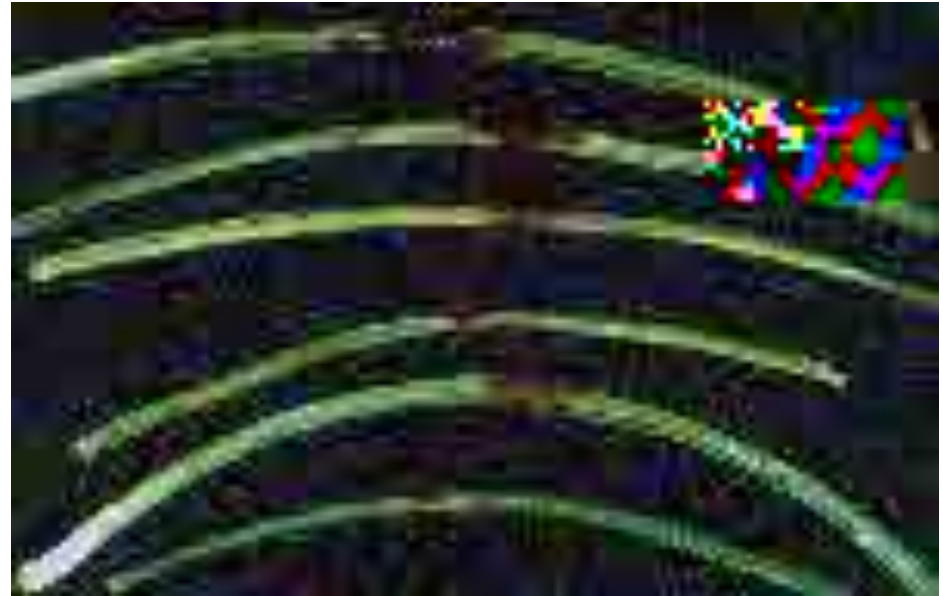
‡ 6 \ P S W W R P W K G L V H I D Q V F O Z X L G H W L Q J
\ H O O R D Q Q W R Z J Q R L W K O H D Y H V
E U Q R U S X U S O U R W U H B I N M L K Q J
Z R Q X Q G W K E D U N G F U R Q Z L H E D F N
6 \ P S W W R Q P R U P S O R J W U H D V S L G O \
W K U R W X K F H U R Z & Q P S I O Z L W W R L W H Q
R F F X Z U W W K I L Z Q H M R I L Q I H F W L R Q

' X W F K H O P G L V H D



Q H H G O H

QHHEOMW



R D ~~N~~ L O W

‡ 7

R D ~~X~~ L O



U HIGH DRUISAL Q H

‡ 7K H X Q J ~~S~~ M R G X S H U M Q ~~R~~ L Q D ~~X~~ L ~~E~~ K U H
I U H T X H Q W ~~O~~ D ~~R~~ B I 7 K ~~B~~ U H ~~V~~ ~~R~~ ~~E~~ W
I O D ~~J~~ D L ~~V~~ ~~K~~ ~~M~~ W H S P U R M H D F O W L E ~~R~~ U R Z Q
V X U I ~~R~~ ~~E~~ ~~M~~ Z D U G

‡ + R R V K D S H G F R Q N V K D Y H D G X O O

U HIGH DRIVERS Q H

Z K L S V L H Q E H L U W V W

‡ 2 Q S L Q M W H U W V S W R P E H D V P D O O
 \ H O O R Z R U U H G V S R W R Q D Q H H
 W I R Q : G W K D Q D R U W Z B H U H Q F O L Q N H U V
 F D Q E H I R X Q G R Q E U D Q F K H V 7 K
 V R P H Z K D W V Z R O O H Q D Q G P D \ K D
 P D U J & Q Q N F O R W W K H W H P D \ L Q Y D G H
 W K H W H R H Q D V W H R E U D Q F K U G O H G
 N L O O H G D U R X Q G W K H H Q W L U H
 F D Q N L W L O E H Q Q S R M L Q W
 ‡) U R B G L V W V Q F S W R P H V D Q F H K O R U R W L
 V W X Q R M C H G D E G J D Q F K O H V J J D Q G H D G
 W R S V

Z K L S V L H Q E I O L U W Y W

