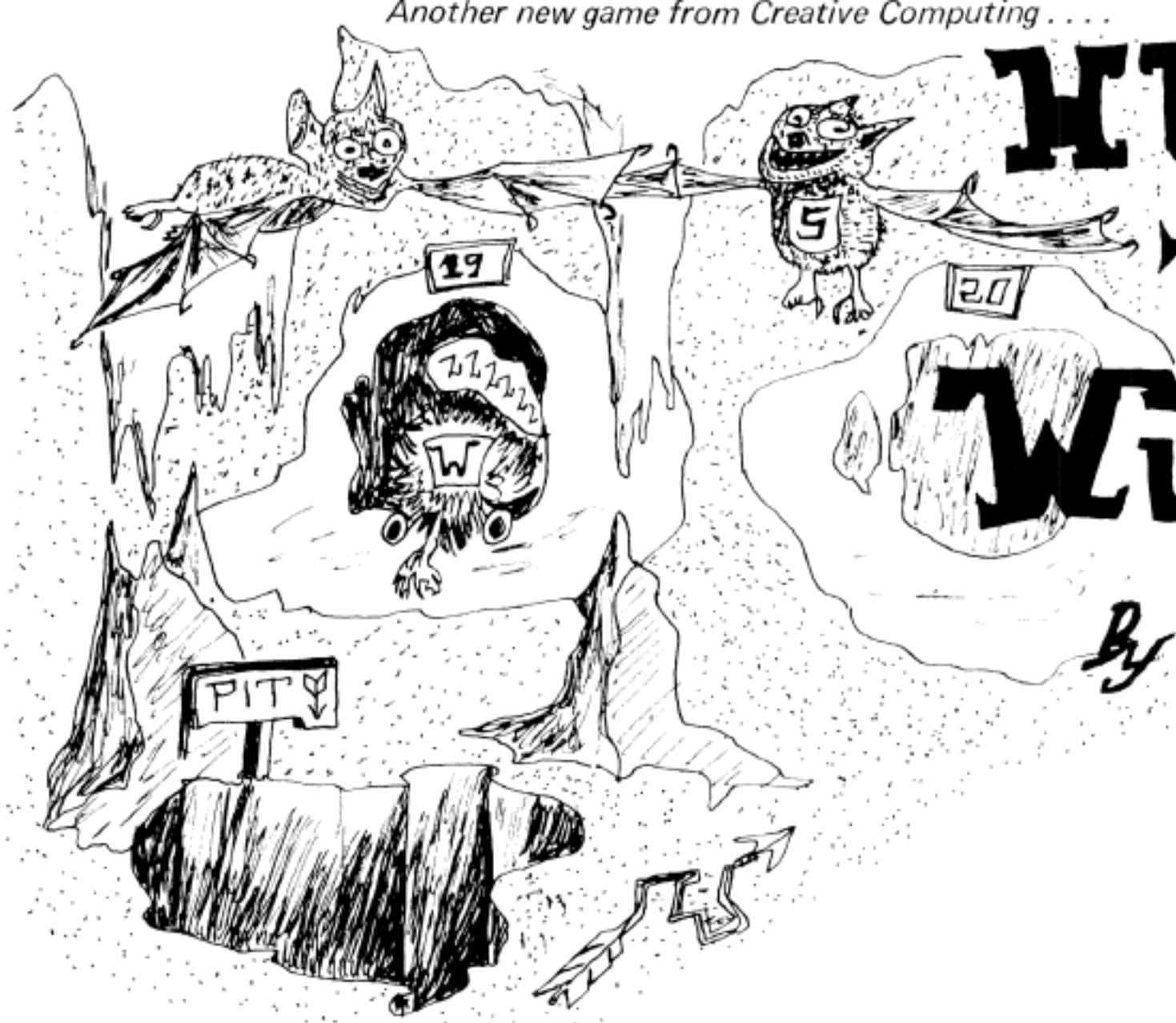# HUNT THE WUMPUS

By Gregory Yob

The Genesis of Wumpus

Two years ago I happened by People's Computer Company (PCC) and saw some of their computer games — such as Hurkle, Snark, and Mugwump. My reaction was: "EECH!!" Each of these games was based on a 10 x 10 grid in Cartesian co-ordinates and three of them was too much for me. I started to think along the lines of: "There has to be a hide and seek computer game without that (exp. deleted) grid!!" In fact, why not a topological computer game — Imagine a set of points connected in some way and the player moves about the set via the interconnections.

That afternoon in meditation the phrase "Hunt the Wumpus" arrived, and Wumpus was born. He's still a bit vague in physical detail as most dedicated Wumpus hunters know, but appearances are part of the game. (If you like, send me a picture of your version of a Wumpus. Perhaps friendly Dave, our editor, will publish the best one in *Creative Computing*.) The grid I chose was the vertices of a dodecahedron — simply because it's my favorite Platonic solid and once, ages ago, I made a kite shaped like one. The edges became the connecting tunnels between the caves which were the set of points for the game.

My basic idea at this time was for the player to approach the Wumpus, back off, and come up to him by going around the dodecahedron. To my knowledge, this has never happened . . . most players adopt other strategies rather than this cold-blooded approach.

Anyway . . . how to get the Wumpus! How about an arrow which could turn corners as it goes from room to room. Let the hunter tell the arrow where to go and let it fly. The shortest round trip without reversals is 5 caves — and thus the Crooked Arrow.

Hmmm . . . How does one sense the Wumpus? It's dark in yonder cave, and light would wake him up. If one got one cave away, the wumpus's distinct smell would serve as a warning. So far, so good . . . but Wumpus is still too easy, so let's find some appropriate hazards for the caves.

Bottomless pits were easy. Any imaginary cave would have a few of those around the place. Superbats were harder to come by. It took me a day or two to get that idea. The Superbats are a sort of rapid transit system gone a little batty (sorry about that one). They take you a random distance to a random cave and leave you there. If that's a pit or a Wumpus, well, you are in Fate's hands.

Around this time, I saw that Map-making would be a regular activity of Wumpus-hunters. I numbered the caves and made the scheme fixed in the hopes a practised player might notice this and make himself a permanent map of the caverns. (Another unrealised hope — as an exercise, make yourself such a map on a Squashed Dodecahedron).
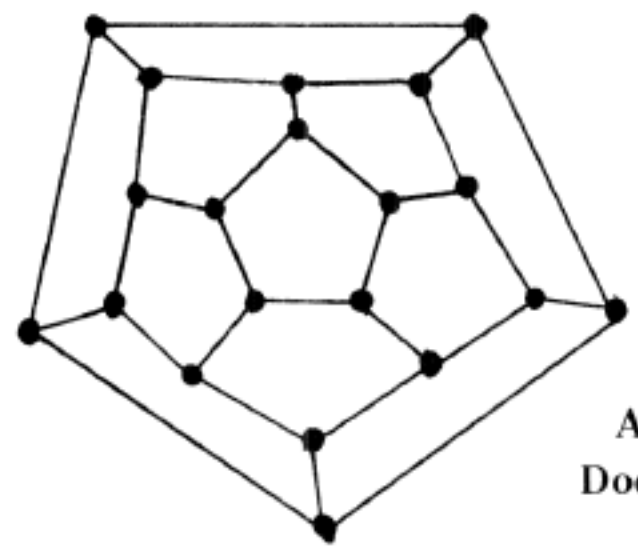
A Squashed Dodecahedron

To start the game fairly, Wumpus, Hazards, and Hunter are located on different points at the start of the game. Each game starts with random choices of location, but the hunter may restart with the same set-up if he chooses. This allows re-plays if the hunter, say, fell into a pit on the first move.

Wumpus was nearly done in my mind . . . (hint to a games-writer: Have a clear notion of your game before you

start coding it. This saves MUCH confusion.) yet I felt it was a bit dull. Once you found the Wumpus all you had to do was shoot it. To fix this, the Wumpus was given a little life. If you shot an arrow or moved into his cave, he woke up and chose to move to a neighboring room or to the same room (one of 4 choices). If you and the Wumpus were in the same room after he moved, he ATE YOU UP!!

Around here I noticed that the pits and the bats didn't affect the Wumpus. To explain this, I added some color by making him heavy and with the legendary sucker feet. After all, evolution works in strange ways!! If you are a Wumpus fiend, make a version of Wumpus in which he avoids pits and superbats can carry him only one room (with the possibility of being dumped into your cave). This can be done by making the wumpus moving procedure a subroutine.

I wrote Wumpus and dropped it off at PCC. Then I went home and dreamed up Wumpus II which will be covered in the next issue of *Creative Computing*.

The Birth of Wumpus

Around a month later, I went to the Synergy conference at Stanford, where many of the far-out folk were gathered to share their visions of improving the world. PCC had a few terminals running in a conference room and I dropped by. To my vast surprise, all of the terminals were running Wumpus and scraps of paper on the floor with scrawled numbers and lines testified that much dedicated Wumpus-hunting was in progress. I had spawned a hit computer game!!!

Later, PCC published Wumpus in its newsletter (If you haven't seen it, write them for a subscription: P.O. Box 310, Menlo Park, Cal. 94025), and Wumpus appeared in all sorts of unlikely places. I have reports of Wumpus written in RPG, a listing of one in FORTRAN, a rumor of a system command of 'to Wumpus' on a large corporation's R&D computer system and have even seen an illustrated version for the Hazeltine CRT terminal!!

WUMPUS TAPES, ETC.

I can be found at:

Gregory Yob
PO Box 354
Palo Alto, Calif. 94301

Paper tapes of Wumpus, Wumpus 2 and Wumpus 3 are available and cost $5.00 each.

May your arrows remain straight. —Gregory Yob.

SAMPLE RUN

```
INSTRUCTIONS (Y-N)?Y
WELCOME TO 'HUNT THE WUMPUS'
   THE WUMPUS LIVES IN A CAVE OF 20 ROOMS. EACH ROOM
HAS 3 TUNNELS LEADING TO OTHER ROOMS. (LOOK AT A
DODECAHEDRON TO SEE HOW THIS WORKS-IF YOU DON'T KNOW
WHAT A DODECAHEDRON IS, ASK SOMEONE)

   HAZARDS:
 BOTTOMLESS PITS - TWO ROOMS HAVE BOTTOMLESS PITS IN THEM
      IF YOU GO THERE, YOU FALL INTO THE PIT (& LOSE!)
 SUPER BATS - TWO OTHER ROOMS HAVE SUPER BATS. IF YOU
      GO THERE, A BAT GRABS YOU AND TAKES YOU TO SOME OTHER
      ROOM AT RANDOM. (WHICH MIGHT BE TROUBLESOME)

   WUMPUS:
 THE WUMPUS IS NOT BOTHERED BY THE HAZARDS (HE HAS SUCKER
 FEET AND IS TOO BIG FOR A BAT TO LIFT).  USUALLY
 HE IS ASLEEP. TWO THINGS WAKE HIM UP: YOUR ENTERING
 HIS ROOM OR YOUR SHOOTING AN ARROW.
      IF THE WUMPUS WAKES, HE MOVES (P=.75) ONE ROOM
 OR STAYS STILL (P=.25). AFTER THAT, IF HE IS WHERE YOU
 ARE, HE EATS YOU UP (& YOU LOSE!)

   YOU:
 EACH TURN YOU MAY MOVE OR SHOOT A CROOKED ARROW
   MOVING: YOU CAN GO ONE ROOM (THRU ONE TUNNEL)
   ARROWS: YOU HAVE 5 ARROWS. YOU LOSE WHEN YOU RUN OUT.
   EACH ARROW CAN GO FROM 1 TO 5 ROOMS. YOU AIM BY TELLING
   THE COMPUTER THE ROOM#S YOU WANT THE ARROW TO GO TO.
   IF THE ARROW CAN'T GO THAT WAY(IE NO TUNNEL) IT MOVES
   AT RANDOM TO THE NEXT ROOM.
      IF THE ARROW HITS THE WUMPUS, YOU WIN.
      IF THE ARROW HITS YOU, YOU LOSE.

   WARNINGS:
   WHEN YOU ARE ONE ROOM AWAY FROM WUMPUS OR HAZARD,
   THE COMPUTER SAYS:
 WUMPUS-  'I SMELL A WUMPUS'
 BAT   -  'BATS NEARBY'
 PIT   -  'I FEEL A DRAFT'
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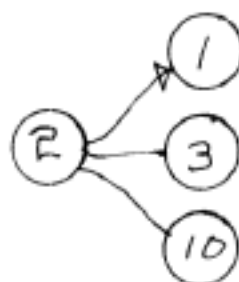
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HUNT THE WUMPUS


BATS NEARBY!
YOU ARE IN ROOM  2
TUNNELS LEAD TO   1      3      10


SHOOT OR MOVE (S-M)?M
WHERE TO?1
ZAP--SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!
YYYIIIIEEEE . . . FELL IN PIT
HA HA HA - YOU LOSE!
SAME SET-UP (Y-N)?Y
HUNT THE WUMPUS


BATS NEARBY!
YOU ARE IN ROOM  2
TUNNELS LEAD TO   1      3      10


SHOOT OR MOVE (S-M)?M
WHERE TO?3


YOU ARE IN ROOM  3
TUNNELS LEAD TO   2      4      12
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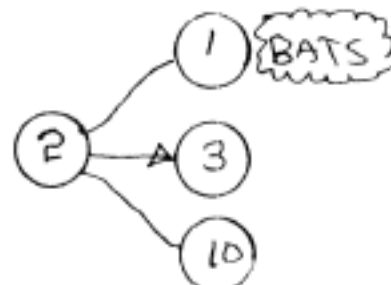

SUPERBATS PUT ME IN A PIT SOMEWHERES

more

```
SHOOT OR MOVE (S-M)?M
WHERE TO?4

YOU ARE IN ROOM   4
TUNNELS LEAD TO   3      5      14

SHOOT OR MOVE (S-M)?M
WHERE TO?5

BATS NEARBY!
YOU ARE IN ROOM   5
TUNNELS LEAD TO   1      4      6

SHOOT OR MOVE (S-M)?M
WHERE TO?6

I FEEL A DRAFT
YOU ARE IN ROOM   6
TUNNELS LEAD TO   5      7      15

SHOOT OR MOVE (S-M)?M
WHERE TO?7
YYYIIIIEEEE . . . FELL IN PIT
HA HA HA - YOU LOSE!
SAME SET-UP (Y-N)?Y
HUNT THE WUMPUS


BATS NEARBY!
YOU ARE IN ROOM   2
TUNNELS LEAD TO   1      3      10

SHOOT OR MOVE (S-M)?M
WHERE TO?10

BATS NEARBY!
YOU ARE IN ROOM   10
TUNNELS LEAD TO   2      9      11

SHOOT OR MOVE (S-M)?M
WHERE TO?11
ZAP--SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!

YOU ARE IN ROOM   14
TUNNELS LEAD TO   4      13      15

SHOOT OR MOVE (S-M)?M
WHERE TO?15




I SMELL A WUMPUS!
YOU ARE IN ROOM   15
TUNNELS LEAD TO   6      14      16

SHOOT OR MOVE (S-M)?S
NO. OF ROOMS(1-5)?1
ROOM #?16
AHA! YOU GOT THE WUMPUS!
HEE HEE HEE - THE WUMPUS'LL GETCHA NEXT TIME!!
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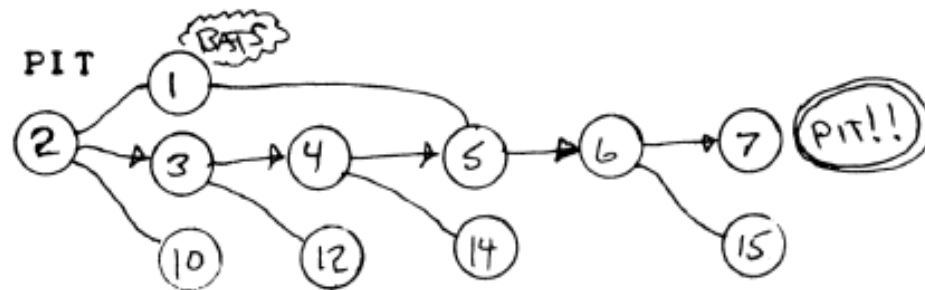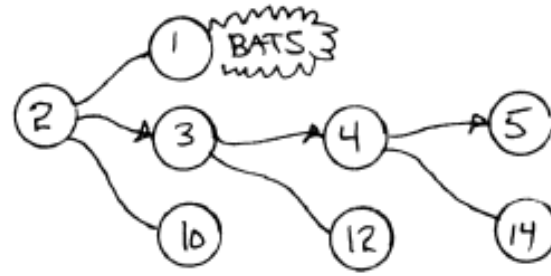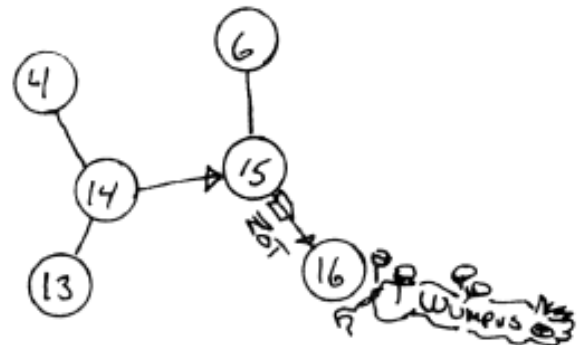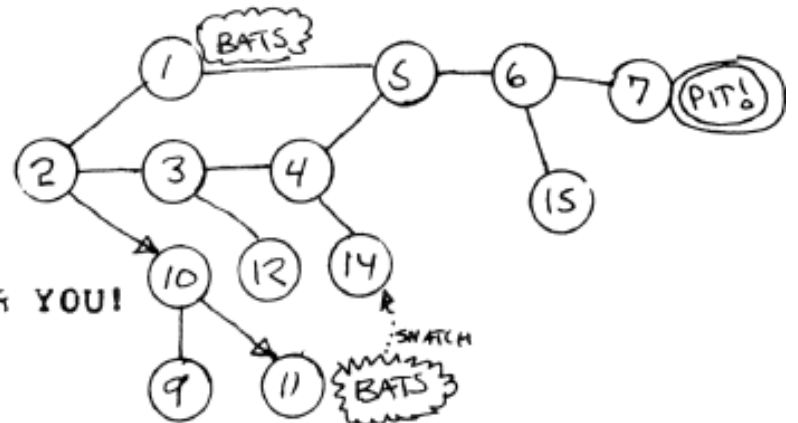
JUST KEEP ON TRUKKIN!

BLEW IT AGAIN!!

CAN YOU FIT THIS
MAP INTO THE OTHER
ONE ABOVE? FIGURE OUT
HOW I KNEW THE WUMPUS
WAS IN 16.

```
0010   REM- HUNT THE WUMPUS
0015   REM: BY GREGORY YOB
0020   PRINT "INSTRUCTIONS (Y-N)";
0030   INPUT IS
0040   IF IS="N" THEN 52
0050   GOSUB 1000
0052   REM- ANNOUNCE WUMPUSII FOR ALL AFICIONADOS ... ADDED BY DAVE
0054   PRINT
0056   PRINT "       ATTENTION ALL WUMPUS LOVERS!!!"
0058   PRINT "       THERE ARE NOW TWO ADDITIONS TO THE WUMPUS FAMILY";
0060   PRINT " OF PROGRAMS."
0062   PRINT
0064   PRINT "       WUMP2:  SOME DIFFERENT CAVE ARRANGEMENTS"
0066   PRINT "       WUMP3:  DIFFERENT HAZARDS"
0067   PRINT
0068   REM- SET UP CAVE (DODECAHEDRAL NODE LIST)
0070   DIM S(20,3)
0080   FOR J=1 TO 20
0090     FOR K=1 TO 3
0100       READ S(J,K)
0110     NEXT K
0120   NEXT J
0130   DATA 2,5,8,1,3,10,2,4,12,3,5,14,1,4,6
0140   DATA 5,7,15,6,8,17,1,7,9,8,10,18,2,9,11
0150   DATA 10,12,19,3,11,13,12,14,20,4,13,15,6,14,16
0160   DATA 15,17,20,7,16,18,9,17,19,11,18,20,13,16,19
0170   DEF FNA(X)=INT(20*RND(0))+1
0180   DEF FNB(X)=INT(3*RND(0))+1
0190   DEF FNC(X)=INT(4*RND(0))+1
0200   REM-LOCATE L ARRAY ITEMS
0210   REM-1-YOU,2-WUMPUS,3&4-PITS,5&6-BATS
0220   DIM L(6)
0230   DIM M(6)
0240   FOR J=1 TO 6
0250   L(J)=FNA(0)
0260   M(J)=L(J)
0270   NEXT J
0280   REM-CHECK FOR CROSSOVERS (IE L(1)=L(2),ETC)
0290   FOR J=1 TO 6
0300     FOR K=J TO 6
0310     IF J=K THEN 330
0320     IF L(J)=L(K) THEN 240
0330     NEXT K
0340   NEXT J
0350   REM-SET# ARROWS
0360   A=5
0365   L=L(1)
0370   REM-RUN THE GAME
0375   PRINT "HUNT THE WUMPUS"
0380   REM-HAZARD WARNINGS & LOCATION
0390   GOSUB 2000
0400   REM-MOVE OR SHOOT
0410   GOSUB 2500
0420   GOTO O OF 440,480
0430   REM-SHOOT
0440   GOSUB 3000
0450   IF F=0 THEN 390
0460   GOTO 500
0470   REM-MOVE
0480   GOSUB 4000
0490   IF F=0 THEN 390
0500   IF F>0 THEN 550
0510   REM-LOSE
0520   PRINT "HA HA HA - YOU LOSE!"
0530   GOTO 560
0540   REM-WIN
0550   PRINT "HEE HEE HEE - THE WUMPUS'LL GETCHA NEXT TIME!!"
0560   FOR J=1 TO 6
0570   L(J)=M(J)
0580   NEXT J
0590   PRINT "SAME SET-UP (Y-N)";
0600   INPUT IS
0610   IF IS="Y" THEN 240
0620   GOTO 360
1000   REM-INSTRUCTIONS
1010   PRINT "WELCOME TO 'HUNT THE WUMPUS'"
1020   PRINT "  THE WUMPUS LIVES IN A CAVE OF 20 ROOMS. EACH ROOM"
1030   PRINT "HAS 3 TUNNELS LEADING TO OTHER ROOMS. (LOOK AT A"
1040   PRINT "DODECAHEDRON TO SEE HOW THIS WORKS-IF YOU DON'T KNOW"
1050   PRINT "WHAT A DODECAHEDRON IS, ASK SOMEONE)"
1060   PRINT
1070   PRINT "     HAZARDS:"
1080   PRINT " BOTTOMLESS PITS - TWO ROOMS HAVE BOTTOMLESS PITS IN THEM"
1090   PRINT "     IF YOU GO THERE, YOU FALL INTO THE PIT (& LOSE!)"
1100   PRINT " SUPER BATS - TWO OTHER ROOMS HAVE SUPER BATS. IF YOU"
1110   PRINT "     GO THERE, A BAT GRABS YOU AND TAKES YOU TO SOME OTHER"
1120   PRINT "     ROOM AT RANDOM. (WHICH MIGHT BE TROUBLESOME)"
1130   PRINT
1140   PRINT "     WUMPUS:"
1150   PRINT " THE WUMPUS IS NOT BOTHERED BY THE HAZARDS (HE HAS SUCKER"
1160   PRINT " FEET AND IS TOO BIG FOR A BAT TO LIFT).  USUALLY"
1170   PRINT " HE IS ASLEEP. TWO THINGS WAKE HIM UP: YOUR ENTERING"
1180   PRINT " HIS ROOM OR YOUR SHOOTING AN ARROW."
1190   PRINT "     IF THE WUMPUS WAKES, HE MOVES (P=.75) ONE ROOM"
1200   PRINT " OR STAYS STILL (P=.25). AFTER THAT, IF HE IS WHERE YOU"
1210   PRINT " ARE, HE EATS YOU UP (& YOU LOSE!)"
1220   PRINT
1230   PRINT "     YOU:"
1240   PRINT " EACH TURN YOU MAY MOVE OR SHOOT A CROOKED ARROW"
1250   PRINT "   MOVING: YOU CAN GO ONE ROOM (THRU ONE TUNNEL)"
1260   PRINT "   ARROWS: YOU HAVE 5 ARROWS. YOU LOSE WHEN YOU RUN OUT."
1270   PRINT "     EACH ARROW CAN GO FROM 1 TO 5 ROOMS. YOU AIM BY TELLING"
1280   PRINT "     THE COMPUTER THE ROOM#S YOU WANT THE ARROW TO GO TO."
1290   PRINT "     IF THE ARROG CAN'T GO DHAT WAY(IE NO TUNNEL) IT MOFES"
1300   PRINT "     AT RANDOM TO THE NEXT ROOM."
1310   PRINT "     IF THE ARROW HITS THE WUMPUS, YOU WIN."
1320   PRINT "     IF THE ARROW HITS YOU, YOU LOSE."
1330   PRINT
1340   PRINT "     WARNINGS:"
1350   PRINT "     WHEN YOU ARE ONE ROOM AWAY FROM WUMPUS OR HAZARD,"
1360   PRINT "     THE COMPUTER SAYS:"
1370   PRINT " WUMPUS- 'I SMELL A WUMPUS'"
1380   PRINT " BAT   - 'BATS NEARBY'"
1390   PRINT " PIT   -  'I FEEL A DRAFT'"
1400   PRINT ""
1410   RETURN
2000   REM-PRINT LOCATION & HAZARD WARNINGS
2010   PRINT
2020   FOR J=2 TO 6
2030     FOR K=1 TO 3
2040     IF S(L(1),K)#L(J) THEN 2110
2050     GOTO J-1 OF 2060,2080,2080,2100,2100
2060     PRINT "I SMELL A WUMPUS!"
2070     GOTO 2110
2080     PRINT "I FEEL A DRAFT"
2090     GOTO 2110
2100     PRINT "BATS NEARBY!"
2110     NEXT K
2120   NEXT J
2130   PRINT "YOU ARE IN ROOM "L(1)
2140   PRINT "TUNNELS LEAD TO "S(L,1);S(L,2);S(L,3)
2150   PRINT
2160   RETURN
2500   REM-CHOOSE OPTION
2510   PRINT "SHOOT OR MOVE (S-M)";
2520   INPUT IS
2530   IF IS#"S" THEN 2560
2540   O=1
2550   RETURN
2560   IF IS#"M" THEN 2510
2570   O=2
2580   RETURN
3000   REM-ARROW ROUTINE
3010   F=0
3020   REM-PATH OF ARROW
3030   DIM P(5)
3040   PRINT "NO. OF ROOMS(1-5)";
3050   INPUT J9
3060   IF J9<1 OR J9>5 THEN 3040
3070   FOR K=1 TO J9
3080     PRINT "ROOM #";
3090     INPUT P(K)
3095     IF K <= 2 THEN 3115
3100     IF P(K) <> P(K-2) THEN 3115
3105     PRINT "ARROWS AREN'T THAT CROOKED - TRY ANOTHER ROOM"
3110     GOTO 3080
3115     NEXT K
3120   REM-SHOOT ARROW
3130   L=L(1)
3140   FOR K=1 TO J9
3150     FOR K1=1 TO 3
3160     IF S(L,K1)=P(K) THEN 3295
3170     NEXT K1
3180     REM-NO TUNNEL FOR ARROW
3190     L=S(L,FNB(1))
3200     GOTO 3300
3210     NEXT K
3220   PRINT "MISSED"
3225   L=L(1)
3230   REM-MOVE WUMPUS
3240   GOSUB 3370
3250   REM-AMMO CHECK
3255   A=A-1
3260   IF A>0 THEN 3280
3270   F=-1
3280   RETURN
3290   REM-SEE IF ARROW IS AT L(1) OR L(2)
3295   L=P(K)
3300   IF L#L(2) THEN 3340
3310   PRINT "AHA! YOU GOT THE WUMPUS!"
3320   F=1
3330   RETURN
3340   IF L#L(1) THEN 3210
3350   PRINT "OUCH! ARROW GOT YOU!"
3360   GOTO 3270
3370   REM-MOVE WUMPUS ROUTINE
3380   K=FNC(0)
3390   IF K=4 THEN 3410
3400   L(2)=S(L(2),K)
3410   IF L(2)#L THEN 3440
3420   PRINT "TSK TSK TSK- WUMPUS GOT YOU!"
3430   F=-1
3440   RETURN
4000   REM- MOVE ROUTINE
4010   F=0
4020   PRINT "WHERE TO";
4030   INPUT L
4040   IF L<1 OR L>20 THEN 4020
4050   FOR K=1 TO 3
4060     REM- CHECK IF LEGAL MOVE
4070     IF S(L(1),K)=L THEN 4130
4080   NEXT K
4090   IF L=L(1) THEN 4130
4100   PRINT "NOT POSSIBLE -";
4110   GOTO 4020
4120   REM-CHECK FOR HAZARDS
4130   L(1)=L
4140   REM-WUMPUS
4150   IF L#L(2) THEN 4220
4160   PRINT "... OOPS! BUMPED A WUMPUS!"
4170   REM-MOVE WUMPUS
4180   GOSUB 3380
4190   IF F=0 THEN 4220
4200   RETURN
4210   REM-PIT
4220   IF L#L(3) AND L#L(4) THEN 4270
4230   PRINT "YYYIIIIEEEE . . . FELL IN PIT"
4240   F=-1
4250   RETURN
4260   REM-BATS
4270   IF L#L(5) AND L#L(6) THEN 4310
4280   PRINT "ZAP--SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!"
4290   L=FNA(1)
4300   GOTO 4130
4310   RETURN
5000   END
```

250