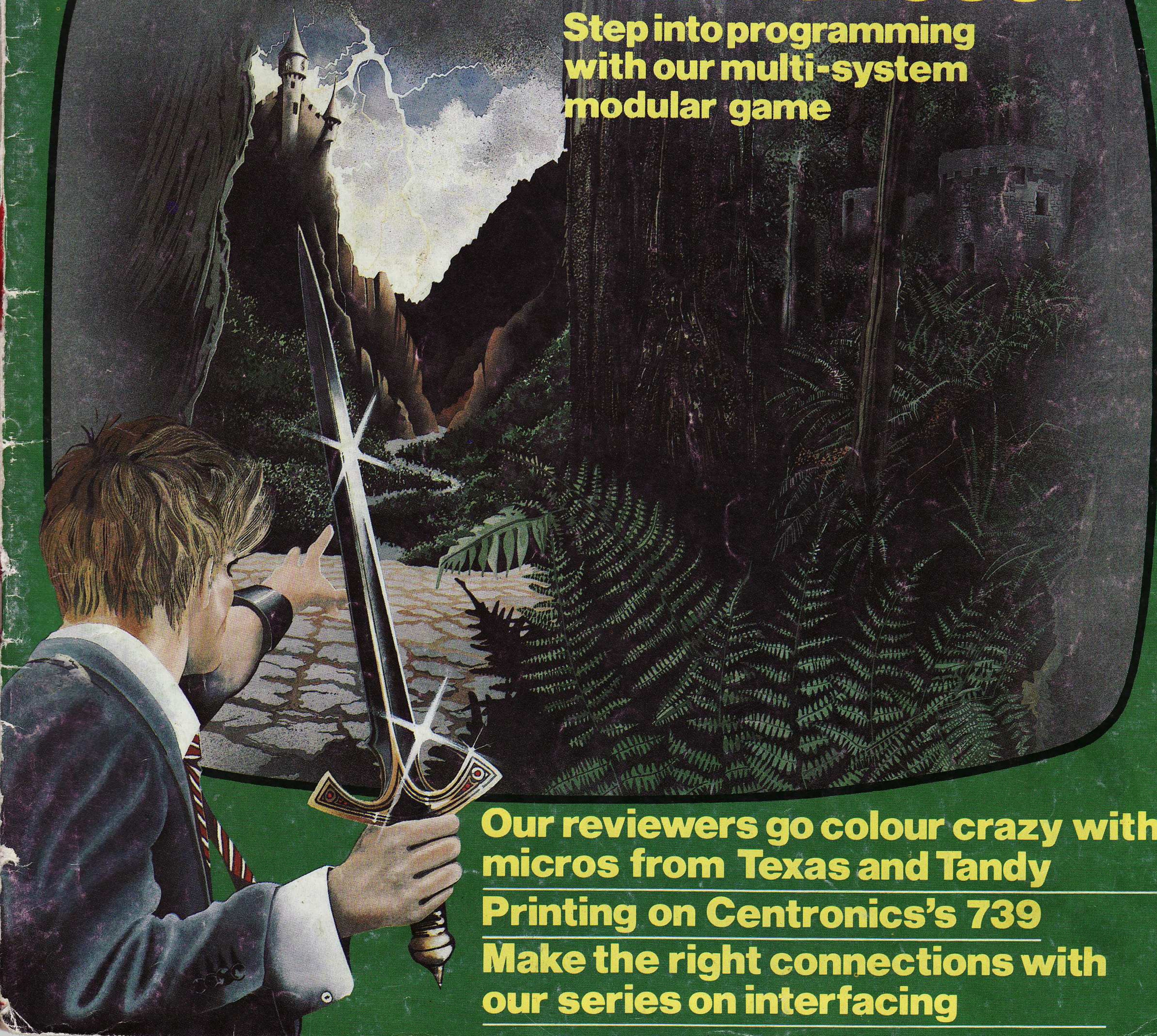# computing today

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**FOR A PERSONAL
APPROACH TO MICROCOMPUTING**

FEELING ADVENTUROUS?

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CT proudly presents its multi-system, modular adventure game. Presented in module-by-module form the game is fully documented and as well as being good fun to play can be used as a step-by-step tutorial to programming.

The news spread quickly throughout the lands of Tybollea. Vounim, mightiest wizard of the Northern Reaches, had arrived at the gates to the Princess Evanna's castle offering his aid against the Selric hordes which beseiged her realm.

Her magical powers alone too weak to vanquish the foes, Princess Evanna eagerly accepted Vounim to her side. Together forming a psychic bond they wove a spell, powerfully constructed from the forces of light and darkness, to drive the savages from Tybollean soil. Their combined magicks scoured the Northern border-lands, scattering the enemy's host and laying waste the Selric threat forever.

In gratitude, Princess Evanna invited Vounim to make his home in her Kingdom and bestowed upon him the title 'Lord of the Valley Between Two Castles'. Knowing the land between the Princess' castle and her brother Xeron's to be most beautiful country, Vounim accepted the honour and began plans to build two strongholds in the forests of the Valley.

Time passed... far away from the village settlements, Vounim's Lairs (as his strongholds had become known) were often the subjects of whispered conversation in the ale-houses of Tybollea. Even the Princess Evanna's councillors felt that the Princess had closed her eyes to the changes that had overtaken Vounim during the years he had attended the castle as her chief advisor. He had become quiet and withdrawn, only visiting the castle at the dead of night. It was even rumoured he had entertained in his strongholds members of the White Order, an evil brotherhood of wizards from the Southern Slopes.

Following just one of these visits from the White Order, Vounim had begun building two temples dedicated to the worship of an obscene lizard-like god, Y'Nagioth. Shrouded by evil swamps, it seemed as though none could stop the wizard from carrying out his ancient sacrificial rituals. At first, the Princess listened to the stories of livestock disappearing and of children running off with an air of humour; but soon even she could not deafen her ears to the allegations of the high taxes and cruelty of which her people complained. However, it was only when her war-like brother, Xeron, seemed to wither away in his sick-bed from the 'medicines' administered by Vounim that Princess Evanna began to see the threat posed to her throne.

Arranging a Council of War with her neighbouring Lords, Princess Evanna asked them to pledge their allegiance and grant her the aid she needed to crush the evil wizard. There was much brave talk and long discussion but eventually the Lords decided not to intervene. The worship of Y'Nagioth had spread and the peoples of Tybollea would likely as not support the wizard, High Priest of the lizard faith, rather than their over-lords.

The Lords quite clearly feared Vounim more than the Princess and rather than follow their heart's dictates chose the easy route. The Princess was disheartened and, clearing them from her Council Chamber, slumped into her throne deep in thought. She could destroy this wizard, she mused, but at what cost?

As dawn broke, the Princess' meditations were interrupted by a young wizard by the name of Alarian. She recognized him instantly as the novice attached to Baron Niitall, Lord of the Eastern Plains — one of the Lords she had expected would grant her the aid she would need. Although far below the Princess in magical prowess, Alarian was able to offer the wealth of his experiences as a youth apprenticed to the mighty Vounim back in the Northern Reaches. The young wizard also gave the Princess his copper amulet, studded with six precious gems — Alarian's amulet was a magical device, providing its wearer with the gift of life after mortal death.

Mounting her horse at the castle gates, Princess Evanna made one last desperate attempt to encourage her people to her side; the Lords looked away and her subjects jeered. So, muttering a curse, the Princess Evanna set off to face Vounim in his lair.

As she rode, she was saddened by the apparent sickness that hung over the Valley; nothing grew there now, save in the forests and swamps that surrounded Vounim's Lairs and the Temples of Y'Nagioth. Yet as she rode on she discovered, sheltered in the depths of the Valley floor, another building — a six-storey tower. She recognized the tower with sickening rapidity, she had

once seen it in her youth — it was a replica of the Black Tower of Zaexon, the home of the brotherhood of the White Order. Satisfying herself that the tower was empty, she spurred her mount and raced with renewed vigour towards the demon wizard, Vounim.

Catching the wizard amidst a ghastly blood rite, Princess Evanna began casting a spell of banishment on Vounim. Caught off guard, the Lord of the Valley, screaming vile obscenities, started to fade from sight. With a final blood-curdling scream, he made a final gesture at the Princess before passing from the mortal plane. The Princess, surrounded by dancing lights, fell to the floor writhing in pain. She had been poisoned by Vounim's magic and, with mounting horror, realised this would be a magical and not a mortal death — the Amulet of Alarian would not help the Princess to cheat her fate.

Crumpled on the floor of Vounim's Lair, the Princess began to make her last magicks. She hid the Amulet in one of the Temples of Y'Nagioth and three of the stones she placed on the third floor of the Black Tower of Zaexon, the fourth stone on the fourth floor, the fifth and the sixth stones cached on the two top floors. Struggling to keep her consciousness, the Princess made one last gesture at the Helm and as she died, her magick passed into the Helm as it disappeared from sight forever.

The Valley buildings disappeared soon after Vounim's banishment, following him into the ethereal limbo in which the Princess had imprisoned him. Gradually over the years, the Valley returned to its former splendour. Alarian, satisfied that Evanna's spell was well cast, remained there for many years keeping his eye over the Kingdom. Then one fine morning, the first of Spring, Alarian, leaving a spell of watchfulness over the land, left for other adventures.

◆◆◆◆◆◆◆◆◆

Concluding the story, he turned his attention to the Valley lying far beneath his window, blanketed in swirling mists shrouding all but the highest tree tops. On the horizon, clearly silhouetted against the morning sun shone the silvery towers of Castle Xeron nestling on the hill many leagues away. All was still . . . almost peaceful.

"Listen, old man. I've heard your faerie story — just what is all this about?"

At the sound of the gruff voice, the hooded figure at the window swivelled around using his stick for support and, contemplating the six figures seated around his desk, began the slow and painful journey back to his chair.

"It is no faerie story, my friend" the old man muttered as he eased his back against the oaken carvings of the chair back. "I know the tale to be true for I was that young wizard, Alarian. It was I who, tens of thousands of years ago, sat with Princess Evanna helping her to prepare for her battle with Vounim".

Alarian lifted his hand weakly silencing the doubting questions of the company.

"Please listen. You would not understand the ways I have prolonged my life, so do not ask. Accept simply that I am Alarian and all I speak of is true. The spell of watchfulness I cast so long ago has called me here to protect your lands from great danger"

"With all due respect, Sire, are you not a little late" said another of the figures, a novice wizard by his appearance, "the Valley has been a place of rumour and mystery, concealed by strange mists for nigh on thirty years".

"I'm afraid" sighed Alarian "that you will find out one day soon that not all magic works as effectively as you would wish. I believe my spell of watchfulness was weakened in much the same way as Princess Evanna's spell of banishment. During my time of apprenticeship to Vounim, I too formed a psychic link with my master hoping to amass power before my time. As the fates would have it, Vounim, through the past mystic bonds with the Princess and I, was able to divert much of the strength of our spells, allowing him to attempt a return to the mortal plane unseen.

"Vounim, Lord of the Valley, is smashing a pathway from the chaos of his world of banishment through to our own. In his present situation, halfway between chaos and reality, he is almost visible to me; his followers and his buildings, the Lairs, the Temples and the Black Tower, are already becoming reality again.

"As my wild-eyed barbarian friend pointed out earlier, I am but a frail old man. I can offer nothing but magical aid as I am all but restricted to this chair. Were I stronger, nothing would stop me fulfilling the quest alone but alas, it is to you I look for favour. Will any of you enter the Valley in search of the missing Helm of Evanna in my place".

At the mention of the legendary Helm, the six figures moved closer around the wizard's desk.

"I can help whosoever decides to go" continued Alarian "but I can help only one of you at a time. I can create a path of safety between this castle and Castle Xeron, both of which will prove safe havens during your quest; I can also make the buildings visible to you — although this means you will be seen and thus attacked by the inhuman creatures loyal to Vounim.

"You will need great experience to find the Helm of Evanna; such was Evanna's curse on her people — they spurned her when she needed their help to defeat Vounim. Princess Evanna hid the means to conquer any threat to the Kingdom so that only the bravest Tybollean could ever find it. To gain this experience, you would be wise to first search out my Amulet in one of the Temples of Y'Nagioth and, once found, journey to the Black Tower of Zaexon where you will find the six stones that fit the Amulet. However, care must be taken to find the stones in the correct order — if you don't, you will find they do not fit and will be useless to you .

"Although I have had little contact with my Amulet over past centuries, I am confident I can illuminate areas of residual magic within the Temples and the Black Tower indicating where magical items have been hidden at some time in the past. I will do my best to show you where the Amulet stones have been cached, but I have found that in my latter years I have not the concentration I used to have and you may find only worthless baubles instead — I will do my best".

"Well that's not good enough for me" cried a thief-like character jumping to his feet, "I'm damned if I'll follow you through this Valley — I've heard stories of the creatures who dwell there. Sorcery — hah!" He spat at Alarian's feet and departed.

As the slam of the chamber door died away, Alarian surveyed the five ramaining faces: a barbarian, a novice wizard, a cleric, a thinker and a warrior. Hand-picked and all native Tybolleans, Alarian wondered if one of these could achieve the impossible and bring

back the lost Helm of Evanna.

"I would not blame you for following him" said Alarian "the dangers he spoke of are all too real. Over the past weeks I myself have seen Dragons, Balrogs, Wraiths, even a creature with the very likeness of Y'Nagioth herself, a Thunder Lizard, roaming the Valley through my enchanted glass .

"You will not, however, enter the Valley unprotected. I will teach you a potent sleep spell and, as you gain experience, will be able to bestow two other spells on you: a mind lance to attack creatures with a high psychic power and a spell which attacks using the very Fires of Hell. However, you will use these spells sparingly as they are extremely dangerous in the hands of the untutored and it takes many years of study before a spell can be cast with no loss of stamina.

"You will doubtless have realised that I am no fighting man" continued the wizard, nodding respectfully towards the warrior and the barbarian, "but if I may offer some advice on hand-to-hand combat. There are three effective ways to fight a creature of great physical strength; either strike its head, body or limbs. Obviously an attack to the limbs or body will eventually lead to success, but it may initially cause little damage. A strike to the head may kill the beast in one blow, but will leave you open to return blows while striking. The decision will be yours, I cannot help. However, do not waste your time attacking a purely psychic creature with a sword, they can be defeated by spell only.

"Care must be taken when approaching any building; the swamps and forests are dangerous — make sure you have the experience to cope. Also, beware of water, you will be considerably weakened by the weight of your armour".

Alarian, bringing his stick to the ground raised himself out of his chair.

"I cannot promise you riches, though treasure there be in the Valley, I ask only that you save the Kingdom. Find the Amulet. Fill it with the six stones and you will have the ability to cheat death; to resurrect yourself within these safe castle walls. It will also prove invaluable in your search for the Helm of Evanna in the dark Lord's lair.

"Alas, I cannot help you much in your search for the Helm. For although I can again guide you to the areas of residual magic, the Helm, on its mistress' instruction, will not reveal itself to you unless you have at least the power of a Warlord. It will be up to you to build up this experience, I can only provide an occasional aura of magic to boost your powers, yet you will find that Vounim also has a way of watching over his followers and may surround you in a circle of evil .

"There is little time for discussion; I have arrived thirty years too late . . . and I fear Vounim knows it. The choice must be made here and it must be made now. Will you go and find the Helm of Evanna and bring it back here?"

Each of the five heads nodded as, in turn, Alarian gazed deeply into their eyes. Settling his hands on the carved walking stick at his side, the elderly wizard spoke to the assembled company in a low rumbling voice.

". . .who then will be first?" **RM**
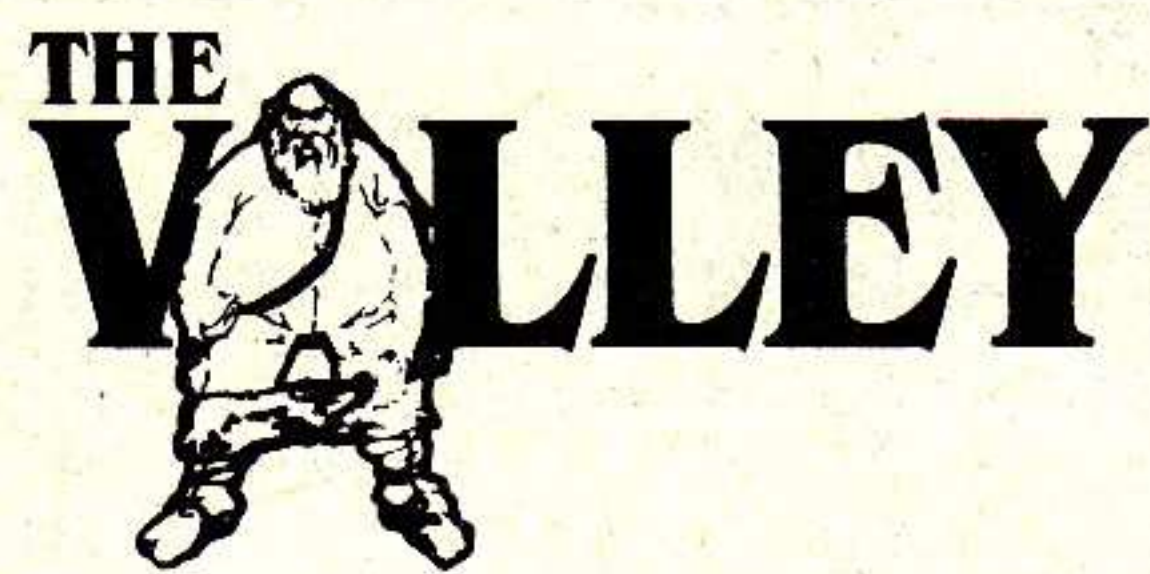
THE VALLEY

The Valley is best described as a real-time adventure with graphics. It was developed as a direct result of reviewing and testing a large number of commercial offerings over Christmas 1980 and, we hope, overcomes many of the failings of these various alternatives.

The program has always been based on a modular system to simplify both its production and its documentation; this approach also means that the game can be tailored to suit the player's individual tastes. Again, because of the modular nature of the program it can easily be expanded provided you have more than the required 16K.

The published listing was developed and tested on a 32K Commodore PET but will, if all non-essential spaces and REMs are removed, run in 16K. All graphics characters and cursor controls have been converted to CT's standards and screen maps and character tables are provided. We are not suggesting that conversion to other systems is something that can be done in an evening but it is possible — we have versions running on a Sharp MZ80-K and a TRS-80. Because the Sharp uses the same screen format as the PET and is equipped with a very adequate block graphics set we haven't made much comment about conversion to this system but the TRS-80 represented a considerable challenge so a whole section dedicated to explaining the outlines of conversion to this system will be published in our next issue.

Getting It Taped

The best way to implement the program on your system is to key it in one module at a time following the notes. We have broken the listing down into the separate modules, each with a description of its main functions, to make this simpler. As each block is completed SAVE it on tape before adding the next; 16K is a lot of program to lose if you make a mistake!

PET and TRS-80 owners who wish to avoid the strain of typing in all that code can order a cassette version of the program from us (see the advertisement in this issue).

Playing The Game

The objects of the game are explained in the introductory scenario, the actual mechanics of playing are described in the various sections that follow. Probably the best plan is to create a number of different characters, one of each type perhaps, and attempt to play each of them through the Valley and various scenes. The ultimate object of the game is to reach the highest rating level, 28, but along the way you will need to collect the various special treasures to ensure that if you are unfortunate enough to be killed you stand a chance of re-incarnation.

Game tactics are dependent on the type of characters you have chosen and are best developed by the player as the game progresses. A couple of hints may be welcome, however. If you are in a combat with a monster that is stronger than you and are suffering great damage, then Spell 1 is possibly the best option to select. The other important tip is to remember that once you enter a scenario other than the Valley you are committed for a number of turns, so ensure that your stamina level is high.

However, before you can play the game you must enter the program so now is the time to start pressing keys! **HB**

THE VALLEY

As promised last month we reveal the secrets of converting the program onto the TRS-80 system.

As a guide to program conversion techniques and as a showpiece highlighting some of the difficulties encountered fitting the game on a 64 x 16 screen, I began the frustrating task of converting The Valley for my TRS-80. I agree the TRS-80 has some excellent features but some stunningly bad ones as well.

The first major change that had to be made was the screen format but since none of the scenarios were more than 40 cells wide and 15 deep, they can be fitted, unaltered, on the right-hand side of the screen. However, the scenarios occupy most of the screen height leaving a space, 24 characters wide and 16 characters deep, on the left of the screen for status information and game messages; I cheated a little and re-wrote many of the messages to fit the shorter length line as shown below.

Unlike the PET which allows you fundamental changes were required to the original PET version to get the correct graphics on the TRS-80 screen. The most important change was to make sure whenever a 'row displacement' was calculated (for example, in line 2090 during the Movement routine and in the Black Tower module), the value for the row length was altered from 40 to 64.

Using the PET which allows you to start printing anywhere on the screen by programming the cursor control keys into PRINT statements directly from the keyboard, the TRS-80 cursor can only be moved using the clumsy PRINT CHR$ (control code) system.

The Tandy machine does, however, claim a few advantages over the PET. Not only does the TRS feature the PRINT @ statement, but it also supports the STRING$ statement allowing you to assign long strings of graphics characters in a single statement; economical in terms of bytes as well as typing effort.

Unfortunately a quirk of the Tandy PRINT statement meant that the re-writing had to be somewhat more extensive than first anticipated. On the TRS-80 a line feed automatically erases the whole of the next line. Consequently, while the game is in progress we cannot use line feeds to automatically place text on consecutive lines of the screen; if we do, large holes suddenly get hacked through the current scenario. All the messages and status updates that occur during the game must, therefore, have trailing semicolons to suppress the line feed. The text can still be positioned in the correct place by means of the PRINT @ statement.
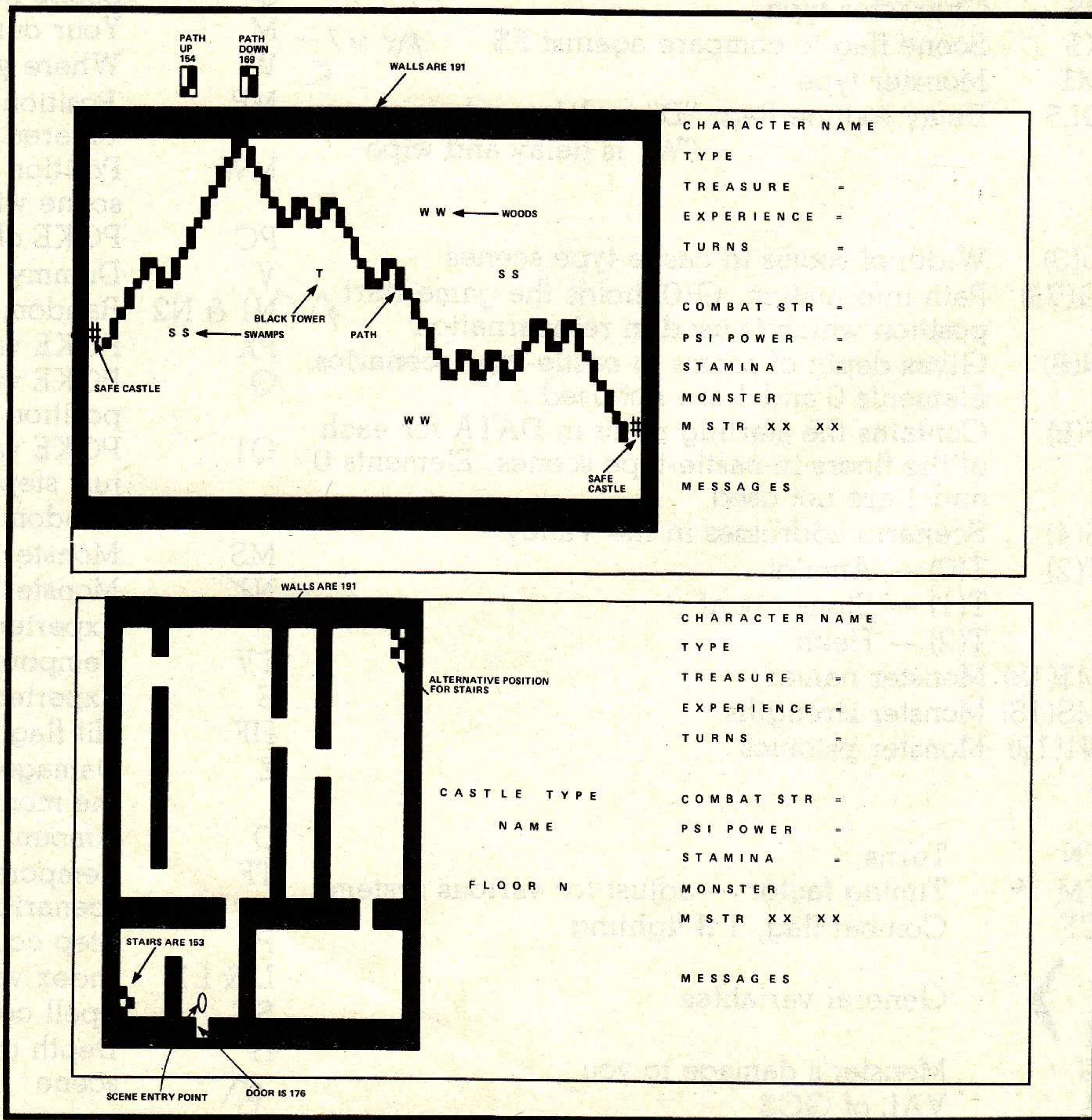
Text is printed starting on the 42nd column to allow a blank column between the text and the widest scenario. This means that the maximum line length is 23 characters so many of the existing one-line messages must be broken at suitable places in order to spread them over a number of lines.

Text is cleared from the screen area by PRINTing SP$, a string of 23 spaces, again suppressing the line feed. However, when the text is on the bottom line of the screen we have to use 22 spaces, LEFT$(SP$,22). If we don't take this precaution the screen will scroll even if a trailing semicolon is used thus destroying the scenario pattern.

Landscape Gardening

Drawing the Woods and Swamps on the PET requires a continuous section of Video RAM to be used and so only a single parameter is required to POKE the graphics characters (line 12060), the screen wrap-around does the rest. On the Tandy, however, these scenarios are only displayed on one side of the screen so a wrap-around would POKE vegetation all over the status display. You can get around this by changing line 12060 to a co-ordinate system by generating x and y co-ordinates and POKEing relative to the top left-hand corner of the scenario.

The next problem was deciding which characters to use to represent the various structures in the Valley. If you're only interested in text, the Tandy machine is one of the best around, but as for graphics ...! The upper case ASCII and 64 pixels offered by the TRS-80 are just not enough; I'm afraid my Valley looks pretty dull alongside the PET Valley. Using the letters V, Y, T, S

PATH UP 154 PATH DOWN 169 WALLS ARE 191
WW ← WOODS
SS
T
BLACK TOWER
SS ← SWAMPS PATH
SAFE CASTLE
WW
SAFE CASTLE

CHARACTER NAME
TYPE
TREASURE =
EXPERIENCE =
TURNS =

COMBAT STR =
PSI POWER =
STAMINA =
MONSTER
M STR XX XX

MESSAGES

WALLS ARE 191
ALTERNATIVE POSITION FOR STAIRS
STAIRS ARE 153
SCENE ENTRY POINT DOOR IS 176

CHARACTER NAME
TYPE
TREASURE =
EXPERIENCE =
TURNS =

CASTLE TYPE
NAME

FLOOR N

COMBAT STR =
PSI POWER =
STAMINA =
MONSTER
M STR XX XX

MESSAGES

and W to represent Vounim's Lair, the Temple of Y'Nagioth, the Black Tower of Zaexon, the Swamps and the Woods respectively is not the most impressive sight I've witnessed but then you've got to work with what you've got.

The Safe Castle is made up of # (it looks like a portcullis) and trees were constructed from ↑ (a pine forest?). Since graphics code 191 was the only symbol that looked anything like walls or water, I was forced to use the same symbol for both and insert an extra test in the Movement routine so that you don't walk through walls or bounce off water! The final list of POKE codes

chosen was given in Table 3 last month.

The next two changes made involved fundamental differences between PET BASIC and Tandy BASIC. First, the statement, 'GET GC$', in PET BASIC must be rewritten 'GC$ = INKEY$' in Tandy BASIC. Second, the RND function must be randomised at the start of the program using the RANDOM statement and re-written slightly wherever it appears.

For a random number between 0 and 1, we use RND(0) instead of RND(TI) and for a random integer between 1 and n, RND(n) was used instead of RND(TI) *n + 1. Thus, for

example, line 3670 becomes RF = RND(10) − 1 and line 9030 becomes N(I) = RND(5) + 3.

I also used the useful IF … THEN … ELSE statement a couple of times in the conversion, but not too often as I wanted to keep the TRS-80 program similar in format to the original PET program — if only that it makes it easier to understand!

> It appears that an extra PRINT statement has attached itself to the end of line 2890. This MUST be deleted or, under certain circumstances the castle scenario may scroll up the screen!

VG$	Valid characters for UNIGET routine	P1	Character's psionic gain factor
GC$	Character that has just been GOT	C1	Character's physical gain factor
F$	Legal monster types, see Table 1	CS	Character's combat strength
D$	Cursor Down string for positioning messages	PS	Character's psionic strength
D1$	Cursor Down string for positioning status	EX	Character's experience
D2$	Cursor Down string for positioning lake	TS	Character's treasure
SP$	Space string for wiping away messages	C	Character's stamina
R$	Cursor Right string, not used directly	DF	Delay factor
R1$	Cursor Right string for positioning text	DL	Delay loop counter
R2$	Cursor Right string for positioning lake	FL	'Floor' — actually determines the nastiness of the given scene as the bigger it is, the stronger the monsters
C$	Dummy string variable		
J$	Character's name	S	Scene number
P$	Character type	M	Your current position
X$	Scene flag to compare against F$	W	Where you are about to step
M$	Monster type	MP	Position held just before you entered a scene
DL$	Delay routine flag; "D" is delay only "W" is delay and wipe	MW	Position held just before you entered a scene within a scene (Vounim, etc)
		PC	POKE character value used to build scenes
D(3)	Width of rooms in castle-type scenes	V	Dummy READ variable
G(73)	Path information. G(0) holds the game start position which is used in reincarnation	N1 & N2	Random co-ordinates for scenarios, etc
N(8)	Gives depth of rooms in castle-type scenarios. Elements 0 and 1 are not used	PK	POKE value of object
P(8)	Contains the starting point in DATA for each of the floors in castle-type scenes. Elements 0 and 1 are not used	Q	POKE value of what is on your current position
		Q1	POKE value of what is in the position you just stepped on
S(4)	Scenario addresses in the Valley	RF & RN	Random numbers
T(2)	T(0) — Amulet	MS	Monster's strength
	T(1) — Stone count	N1	Monster's psionics
	T(2) — Helm	U	Experience gain factor
M$(18)	Monster names	TV	Temporary flags
MS(18)	Monster strengths	E	Experience factor
N1(18)	Monster psionics	HF	Hit flag, 1 if the monster is 'defeated'
		Z	Damage factor according to where you hit the monster or it hit you
TN	Turns	D	Amount of damage done to the monster
TM	Timing factor — adjust for various systems	TF	Temporary flag that prevents you leaving a scenario immediately
CF	Combat flag, 1 if fighting		
I		P	Step counter for scenario
J	General variables	L & L1	Index variables for scene building
K		SC	Spell control variable
G	Monster's damage to you	H	Depth of walls on current floor of castle-type scene
A	VAL of GC$		

```
3185  LET RF1=RF:PRINT AT W1,W2; OVER 1;N$(RF1)
3905  PRINT AT W1,W2; OVER 1;N$(RF):
      REM ** RUB OUT MONSTER
3906  LET W1=M1:LET W2=M2:REM ** STAY
      WHERE YOU ARE
4260  GO TO 3875:REM ** NOW MONSTER IS DEAD
      MOVE GRAPHIC
4570  GO TO 3875:REM ** NOW MONSTER IS DEAD
      MOVE GRAPHIC
```
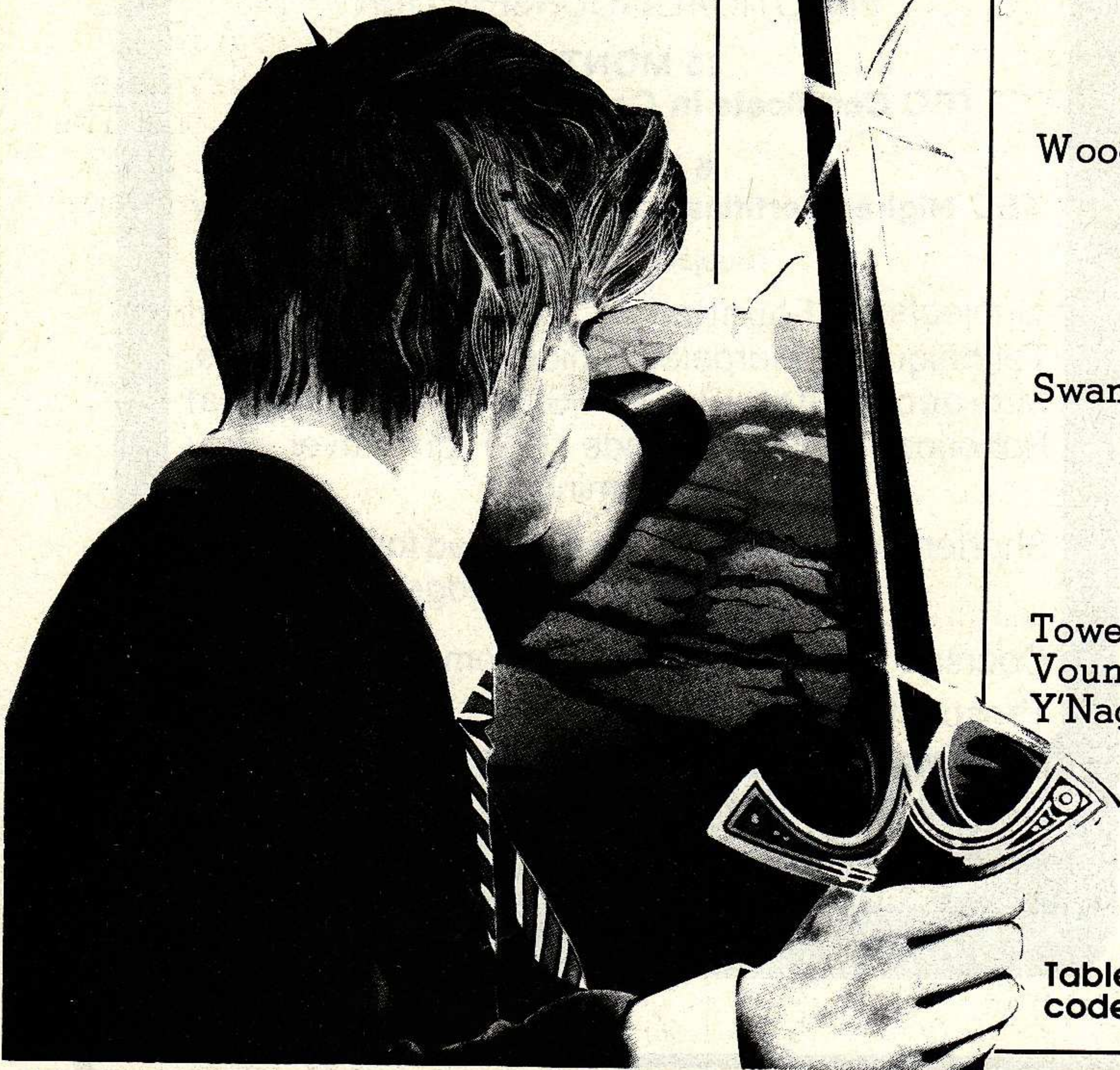
Scene	Object	PET	RML 380Z
Valley	Border	214	143,191,188 (top, sides, bottom)
	Safe Castle	219	37
	Path 'up'	78	154
	Path 'down'	77	169
	Woods	216	87
	Swamps	173	7
	Tower	87	14
	Character	81	127
Woods	Border	96	192
	Trees	88	94
	Lake	224	255
	Vounim's Lair	230	188
	Character	81	127
Swamps	Border	96	192
	Tufts	45	7
	Lake	224	255
	Y'Nagioth	230	188
	Character	81	127
Tower Vounim & Y'Nagioth	Border	160	188,143,191 (top, bottom, sides)
	Walls	160	191
	Stairs	102	153
	Doorway	104	176
	Treasures	42	42
	Character	81	127

Table 1. The suggested character codes for the RML 380Z.

VALLEY VARIATIONS

A selection of the best of our readers suggestions for extending the scope of our Valley adventure.
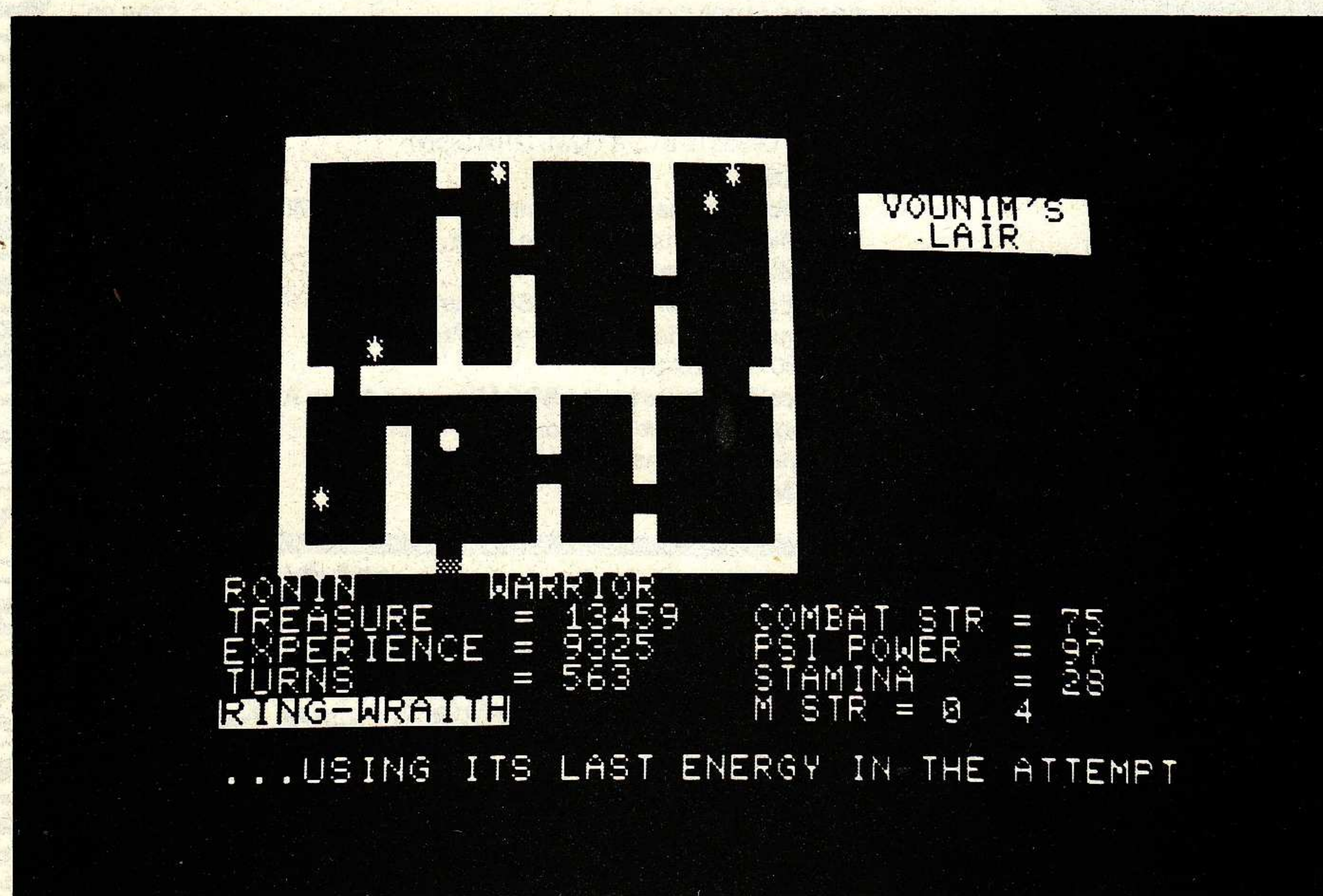
Over the past year we have received many letters, telephone calls and even enjoyed long and interesting discussions with readers who have implemented The Valley game on their computers. (For those of you wondering what the fuss is about, The Valley was a multi-system 16K graphic adventure game we published in April last year.) The upshot of all these conversations has been that, as interest in the game is so intense, we decided to collect together all the best suggestions that our gallant adventurers had made and publish them for the rest of you to incorporate into your own versions.

The programming conventions employed by the original version apply here, CT standards are used for any graphics etc, and with the exception of the BBC machine all the line numbering will correspond too. Hopefully this will inspire other Valley adventurers to submit their suggestions for extra spells, scenarios etc.

For those of you coming across the game for the first time and wishing to obtain a copy of the original article for reference we have reprinted the 16 pages of listing and explanation and this is available from our 145 Charing Cross Road address for £1.95 inclusive. Please mark your orders 'Valley Reprint' and make cheques etc payable to ASP Ltd. Versions of the game for most of the popular micros are available on tape and disc, see the order form on page xx.

SPELLING IT OUT

Brian Dick

I have recently programmed The Valley into my TRS-80 Model 1. I was interested to learn that other readers have used CHR$ (149) for the lake instead of CHR$ (191). Originally I too opted for the former, but I feel that the latter gives a better graphical representation of the lake.

For those who wish to change their lakes back to 191s the modification is:

1) Change all 149s to 191s in lines 2170, 3030, 9000, 12080-12140
2) Insert line 2121:

```
2121 IF S=2 OR S=3 THEN VV=91 ELSE VV=191
```

3) Change line 2130 to:

```
2130 IF Q1=VV OR Q1=91 THEN TN=TN-1: GOTO 2030
```

If desired the graphics symbols representing the swamps, woods and the Tower in the Valley scenario can be changed. The swamps can be represented by cursors, the woods by up arrows and the Tower by a plus sign. They are still, I'm afraid, a little crude compared to the PET version, but Tandy owners should be pleased with this minor improvement.

```
2110 Q=79:Q1=PEEK(W):IF Q1=32 THEN 2190
2111 IF S=1 THEN IF Q1=43 OR Q1=45
     OR Q1=91 THEN 9000
2112 IF Q1=86 OR Q1=89 THEN 9000
```

1) Change line 2110 to:

```
2110 Q=79:Q1=PEEK(W):IF Q1=32 THEN 2190
```

2) Insert the following lines:

```
2111 IF S=1 THEN IF Q1=43 OR Q1=45 OR Q1= 91
     THEN 9000
2112 IF Q1=86 OR Q1=89 THEN 9000
```

3) Delete line 2140.
4) Change all 87's to 91's and all 84's to 43's and all 83's to 45's in lines 9170-9200, 10280-10300.

I have added three new spells in my version of The Valley. The keys used for some of the original spells have been changed and the new arrangement is:

1) Sleep Spell   2) Magic Missile
3) Psi-Lance   4) Spell of Invisibility
5) Dispel Evil   6) Crispit

These spells, together with another idea which I have incorporated in my version, are explained in the following episode in the story...

THE VALLEY

"I, Alarian the Wizard, fear that too few of those who enter The Valley ever return... Vounim is becoming too powerful. As he increases in power, I gradually become weaker...

"It is because of this that I have called on my half-brother, Dantor, to help us in our continuing quest for the recovery of the Helm of Evanna. With his help I can teach you three new spells. If you use them wisely you should survive the perils which lurk in The Valley.

"The first of these spells enables you to use magic missiles. If you are experienced in using them they can be deadly, but to the novice they are of little use in combat.

"The second is the spell of invisibility, which enables you to deceive the eyes of most monsters and thus escape unharmed if, when weak, you encounter an evil Dragon or the like! After using a Psi-Lance, this spell will seldom fail.

"The third spell enables the user to dispel the evils of Vounim! Unfortunately the forces of evil in the forests and swamps are too great to dispel . . .

"As you may know, Dantor is the only wizard who holds the secret of the magical lightning which, on striking a living being, can act as a magical aura and will restore power when one is weak. However, Dantor has always had a lust for gold and precious stones. Only if he is rewarded with treasure to the value of 1000 gold pieces will he help you. Do not call on him unless you have enough treasure! You will be in enough danger in The Valley without having to deal with Dantor's wrath! Now go into The Valley and may you return with the Helm of Evanna!"

THE NEW SPELLS

In the following routines, I have used PRINT D$ and PRINT SP$. Tandy users should be able to change this to make it compatible with their versions of The Valley. PET users should bear in mind that RND(0) is the Tandy equivalent of RND(TI) and that, on the Tandy, semi-colons follow all messages to prevent Line Feeds. Some guidelines to aid in the graphics conversions for other computers are given below:

Code   Represents
143   symbol (a small block on the Tandy) representing the blinding light when evil is being dispelled and Dantor's magical lightning.
48   symbol (a 0 on the Tandy) representing both your character and Dantor.

```
4520  IF VAL(GC$)>0 AND VAL(GC$)<6 THEN 4540
4550  ON VAL(GC$) GOSUB 5000,5590,5200,5690,
      5740,5400
5590  C=C-7:IF C<=0 THEN SC=5:RETURN
5600  PRINT D$;"MAY MY MAGIC DEFEAT THEE!";:
      DF=120:GOSUB 36000
5605  IF MS=0 THEN PRINT D$;"ALAS! THE MISSILE
      WILL NOT HELP YOU HERE!";:DF=90:GOSUB
      36000:SC=2:RETURN
5610  PRINT D$;"A MAGICAL MISSILE SPEEDS
      TOWARDS THE MONSTER!";:DF=140:DL$="W":
      GOSUB 36000
5620  IF RND(0)>0.7 THEN PRINT D$;"IT MISSED!";
      :SC=2:RETURN
5630  D=INT(RT*(PS/10)-((MS+N)/20)+RND(5))
5640  PRINT D$;"THE MISSILE HITS THE ";:IF D<=0
      THEN D=0:PRINT "CREATURE BUT CAUSES NO
```

DAMAGE.";:ELSE PRINT "CREATURE CAUSING";D;"DAMAGE...";
```
5660  MS=MS-D:IF MS<=0 THEN MS=0:GOTO 5680
5670  SC=2:RETURN
5680  DF=97:GOSUB 36000:PRINT D$;"THE BEAST
      LIES DEAD AT YOUR FEET.";:EX=EX+U:CF=0:
      SC=1:RETURN
36145 RT=INT(0.067*(EX+TS/3)^0.5+LOG(EX/
      ((TN+1)^1.5))):IF RT>28 THEN RT=28
45010 DELETE THIS LINE
```

The Magic Missile spell.

```
5690  IF EX<3000 OR PS<60 THEN SC=4:RETURN
5700  C=C-11:IF C<=0 THEN SC=5:RETURN
5710  PRINT D$;"MAY YOUR EYES DECEIVE YOU AND
      MAY I ESCAPE UNHARMED!";
5711  IF RND(0)>0.4 AND N>15 THEN DF=175:
      GOSUB 36000:SC=6:RETURN
5720  SS=PEEK(M):RR=Q1:GOSUB 60119:DF=155:
      GOSUB 36000
5730  PRINT D$;"THE CREATURE LEAVES, PUZZLED.";
      :DF=50:CF=0:GOSUB 36000:RR=SS:SS=Q1:GOSUB
      60119:SC=1: RETURN
60119 AA=9:TT=450:REM ** SPECIAL EFFECTS ROUTINE
60120 FOR TT=0 TO TT-20
60121 POKE MM,SS:NEXT TT:FOR TT=0 TO TT-20:
      POKE M,RR:NEXT TT:AA=AA-1
60122 IF AA<>0 THEN 60120
60123 RETURN
```

Make yourself invisible.

```
5740  IF EX<4000 THEN SC=4:RETURN
5745  IF S=2 OR S=3 THEN PRINT D$;"THE FORCES
      OF EVIL ARE TOO STRONG HERE.";:SC=2:
      RETURN
5750  C=C-18:IF C<=0 THEN SC=5:RETURN
5760  PRINT D$;"WITH THE POWER OF MY MIND MAY
      I DISPEL THIS EVIL...";:DF=140:
      GOSUB 36000
5770  IF RND(0)<0.3 THEN SC=6:RETURN
5780  PRINT D$;"A BLINDING LIGHT CONSUMES THE
      MONSTER AND THEN SLOWLY FADES AWAY...";:
      SS=PEEK(M):RR=143:GOSUB 60119:RR=SS:
      SS=143:GOSUB 60119
5790  CF=0:SC=1:RETURN
```

How to Dispell Evil.

SUMMONING AID

To call on Dantor, the player must type 'C' in response to the question, 'Which way?'

```
2061  IF GC$="C" THEN GOTO 60124
60124 PRINT SP$;D$;:PRINT D$;"DANTOR
      MATERIALISES...";:CC=PEEK(M):SS=CC:
      RR=48:GOSUB 60119:DF=30:DL$="W":
      GOSUB 36000
60125 IF TS<>0 THEN 60129 ELSE PRINT D$;"THOU
      HAST NO TREASURE! DANTOR IS ANGRY!";:
      DF=95:DL$="W":GOSUB 36000:
      IF C>10 THEN C=C-20
60126 IF CS>10 THEN CS=CS-10 ELSE CS=1
60127 IF PS>10 THEN PS=PS-10 ELSE PS=1
60128 GOTO 60134
60129 IF TS<1000 THEN TS=0:PRINT D$;"NOT ENOUGH
      TREASURE FOR DANTOR HAST THOU!";:DF=90:
      GOSUB 36000: PRINT D$;"HE STEALS ALL
      YOUR TREASURE!";:DF=80:GOSUB 36000:
      GOTO 60134
60130 IF CS<30 THEN CS=30
60131 IF PS<30 THEN PS=30
60132 C=200
60133 TS=TS-1000:PRINT D$;"A FLASH OF LIGHTNING
      STRIKES YOUR BODY!";:SS=48:RR=143:GOSUB
      60119:SS=RR:RR=48:GOSUB 60119:DF=20:GOSUB
      36000
60134 SS=48:RR=CC:PRINT D$;"DANTOR
      DEMATERIALISES!";:GOSUB 60119:DF=20:GOSUB
      36000:GOTO 2010
```

RINGING THE CHANGES

Dave Williams

Being both an adventurer in The Valley and a fan of Tolkein's **Lord of the Rings**, it seemed to me unfair that Frodo Baggins could put on his ring and become invisible whereas I was left to the tender mercies of a random number generator to avoid monsters.

I have, therefore, added a few lines to the program to give an extra find — a ring of power — which can be found after the Amulet but before the Helm and gives the player the option to attack or retreat from any monster

with a psi power of less than 25; or any other number for those braver or more cowardly than I. In my version, the ring T(3) can be found in the Temple of Y'Nagioth, but BEWARE . . . it slips off your finger if your stamina falls below 20!

I hope this may help the 'dolts' of Valley adventuring achieve successful completion of the game.

```
100   DIM D(3),G(73),P(8),N(8),S(4),T(3)
1185  INPUT#1,T(3)
2820  IF S=6 AND RN>0.95 AND T(1)=6 AND T(2)=0
      AND T(3)=1 AND RT>25 THEN T(2)=1:
      GOTO 2870
2835  IF S=5 AND RN>0.7 AND T(0)=1 THEN T(3)=1:
      GOTO 2885
2885  PRINT D$;"[REV]YOU FIND THE RING OF POWER
      [OFF]":GOTO 2930
2930  TS=TS+100*(T(0)+T(1)+T(2)+T(3)+FL)
3489  REM ** CHARACTER'S COMBAT ROUTINE
3490  IF T(3)=1 AND N<25 THEN PRINT D$;"[REV]
      THE RING HIDES YOU[OFF]":DF=40:DL$="D":
      GOSUB 36000:GOTO 3510
3655  IF C<20 AND T(3)=1 THEN PRINT D$;"[REV]
      THE RING SLIPS OFF[OFF]":T(3)=0
50165 PRINT#1,T(3)
55070 T(0)=0:T(1)=0:T(3)=0:TS=0:CS=30:C=150:
      PS=30
```

BBC CONVERSIONS

M Stanger

I recently converted your Valley game to run on my BBC Micro-computer, an expanded Model A. Some of the changes made to your original listing are given here as they may be of interest to other BBC Micro users.

At first sight it might appear that one of the graphics modes would be best suited to this application, and indeed the original conversion was begun in Mode 5. However, though excellent graphics are available in this mode, the large size text proved difficult to use and, due to the amount of information to be displayed at any one time, this mode had to be abandoned. Modes 0 to 3 use large amounts of RAM to produce their high resolution graphics and consequently insufficient space is left for the rest of the program.

The final choice was, therefore, Mode 7, and this also had the advantage of sufficient memory to allow future expansion of the program. The graphics are constructed from the Teletext graphics blocks which can be POKEd directly to the screen in the following way.

The top left hand corner screen location is HIMEM. To move right or left, add or subtract 1, thus (HIMEM + 1) is the location one position to the right of HIMEM.

To move vertically 40 must be added or subtracted for each line moved. The Valley scenario was drawn as follows.

▶

```
10010   FOR X=HIMEM TO HIMEM+521 STEP 40:?X=146:
        NEXT X
10020   FOR X=HIMEM+1 TO HIMEM+521 STEP 40:
        ?X=255:NEXT X
10030   FOR X=HIMEM+39 TO HIMEM+579 STEP 40:
        ?X=255:NEXT X
10040   FOR X=HIMEM+1 TO HIMEM+39:?X=255:
        ?(X+520)=255:NEXT X
```

(The line numbers correspond to the published listing.)

This POKEs the graphics codes directly to the screen and prints the Valley border.

A routine was then developed to draw the random paths again POKEing graphic characters to the screen.

Other symbols can be POKEd directly using their ASCII code. For example:

```
10300   ?(S(4))=ASC"T"
```

or:

```
10300   ?(S(4))=84
```

Extensive use was made of PEEKing both printed and POKEd characters to determine the location of the player or 'finds'.

The movement routine was allocated to eight keys thus:

```
  Q     W     E
     A     D
  Z     X     C
```
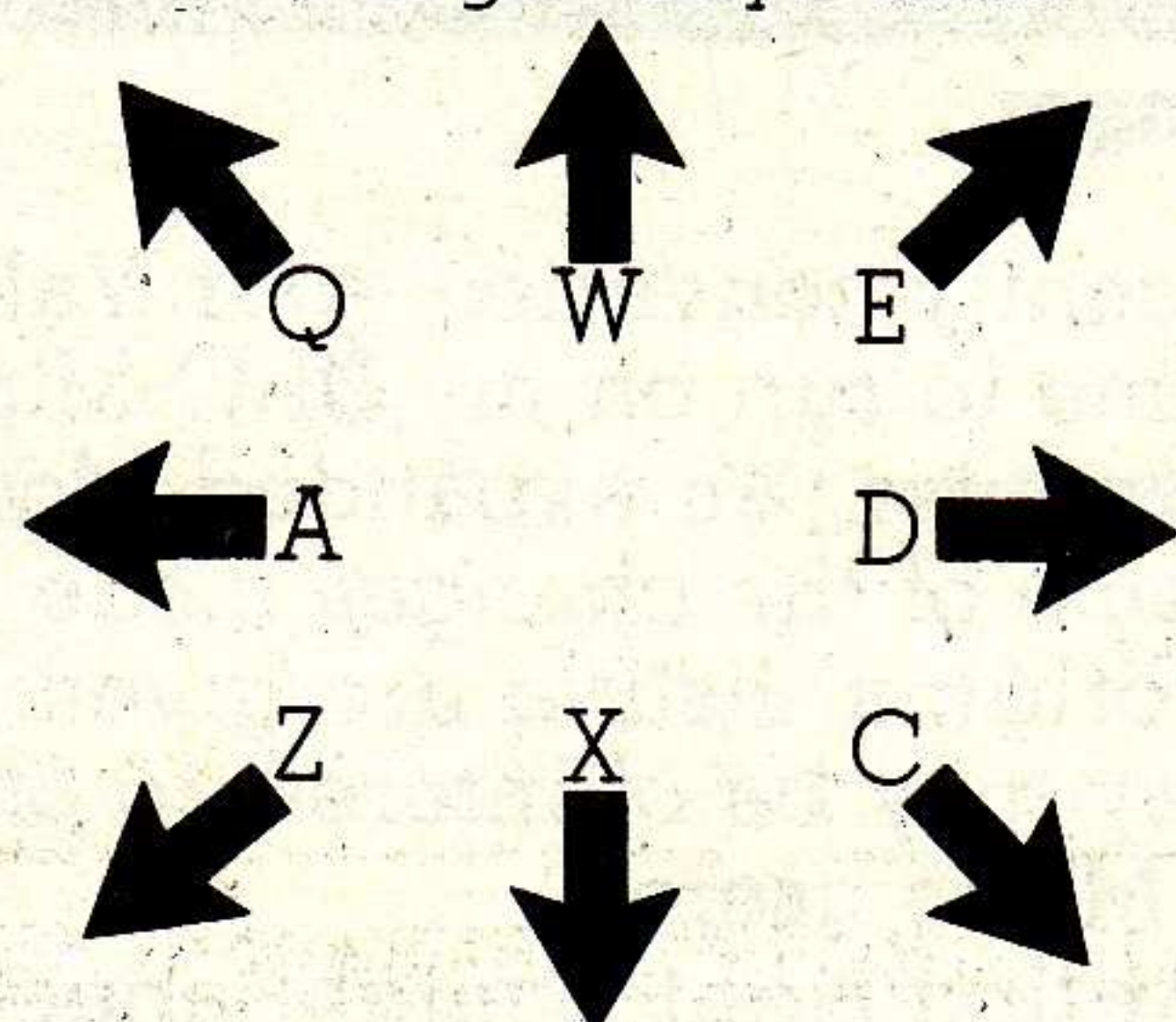
The original numbering was followed as far as possible but since the upper limit for line numbers on the BBC Micro is 32767 renumbering was necessary.

STORING IT

The tape handling routine was rewritten to suit the machine as follows:

```
1090   X=OPENIN (J$)
1100   INPUT#X,P$....ETC
1210   CLOSE#X
```

also:

```
50070   X=OPENOUT (J$)
50080   PRINT#X,P$....ETC
50190   CLOSE#X
```

The Anykey, Uniget and Combatget routines were rewritten to take advantage of the INKEY function. This allows the use of:

```
GC$=INKEY$(Time)
```

where Time is the time, in centiseconds, that the computer will wait for an input before proceeding. The following shows a practical example:

```
1700   *FX 15,0:REM ** EMPTIES BUFFER
1710   TV=1:GC$=""
1721   GC$=INKEY$(100)
1730   IF GC$<>"" THEN TV=0
1740   PRINT D$,SP$:REM ** WIPE MESSAGE
1750   RETURN
```

This avoids jumping out of a FOR . . . NEXT loop when a key is pressed.

It was found necessary to alter line 36090 to allow the maximum psi strengths of the character types to agree with Table 2 (p.55). The new line reads:

```
36090   IF PS>INT(42*(P1+1)^LOG(P1^8.518)+75
        THEN PS=INT(42*(P1+1)^LOG(P1^8.518)+75
```

The game has proved very popular with my family all of whom have suggested improvements.

The major change was to incorporate a choice of playing speed to allow the younger members of the family whose reading speed is not so quick to enjoy the game. This choice is contained in an instruction block which is incorporated into the early part of the program.

It is not suggested that my version is the ultimate in programs, but it has resulted in an exciting and popular game. Although conversion may at first sight seem a daunting task, the end result is well worth the effort.

RESEARCHING VALLEY GRAPHICS

Adrian Gothard

Some months ago I converted The Valley to run on an RML system and, as these are popular in many educational establishments I thought that you might like to pass on the following conversion hints to your readers. Apart from the various graphics characters which had to be changed, see Table 1, alterations are generally minor and I have found the game no less enjoyable to play than does a friend who runs it on a PET.

CONVERTING POKES

The routine to convert the PET-type memory mapped screen to the RML's graphics display is slightly more convoluted, however, and bears closer examination. It proved easier in the end to substitute POKE M, GC with PLOT FNX(M), FNY(M), GC whenever a POKE appeared in the original listing. The defined functions are generated as follows:

```
DEF FNX(Z1)=(INT(80*FNG(Z1)-INT(FNG(Z1)))
DEF FNY(Z1)=(INT(59-3*INT(FNG(Z1)))
DEF FNG(Z1)=(Z1-32768)/40
```

Some of your readers may find, as I did, that this works only intermittently because, I believe, of a bug in BASIC V 5.0 A. In this case I used a subroutine and substituted POKE M,GC with Z/ = M:GOSUB xxxx:PLOT X,Y,GC. The subroutine is as follows:

```
XXXX   Z1=(Z1-32768)/40
       X=(INT(80*Z1-INT(Z1)))
       Y=(INT(59-3*INT(Z1)))
       RETURN
```

SPECTRUM'S MONSTER DISPLAY

Kevin Hyman

For those of us fortunate enough to have both a ZX Spectrum and the ASP Software tape of the Valley here are a couple of modifications. The first is to allow verification that a character has been saved on tape and is added in lines 9271-6:

```
9271   PRINT "DO YOU WISH TO VERIFY THIS?":
       LET V$="YN":GO SUB 1500
9272   IF I=2 THEN GO TO 9260
9273   PRINT "REWIND THE TAPE, CHECK THE LEADS
       AND THEN PRESS ANY KEY.[9 SPC]IF
       VERIFICATION FAILS ENTER [5 SPC]'GO
       TO 9200' AND TRY AGAIN."
9274   PAUSE 0
9275   PRINT FLASH 1;"START THE TAPE"
9276   VERIFY J$ DATA Z()
```

The second employs the three unused definable graphics characters to display the attacking monster on the square our hero was about to move onto. When it dies he moves forward, but if the retreat option was taken then he stays still and the monster is removed. Three types of monster are available, chosen to represent those with no legs — wights-, one or two pairs of legs — ogres and dragons *et al.* These are stored in lines 9950-70 and POKEd into graphics Q, R and S by changing line 210. Line 120 keeps the appropriate shape for each monster, the string has nineteen characters, graphics shifted SRRRR RRQSRSSQSSQRRS. Lines 2190-2200 prevent movement occurring if battle is about to commence, line 3185 displays the monster and lines 3875-3879 replace it with the good guy. Lines 3905-6 handle any momentary cowardice during a retreat, lines 4260 and 4570 ensure the removal of a spelled or exhausted monster.

Happy hunting, don't fight until you see the whites of their eyes.

```
9950   DATA 0,16,55,124,84,124,124,254:
       REM ** GHOST
9960   DATA 28,28,62,127,93,93,85,20:
       REM ** FIENDS
9970   DATA 0,0,111,236,62,62,34,34:
       REM ** BEASTS

210    FOR J=144 TO 162

120    DIM N$(19):LET N$="SEE TEXT FOR GRAPHICS
       STRING"

2190   LET Y=W1:LET X=W2:GO SUB 1800:
       REM ** SCREEN$
2196   LET PK=I:LET RF=RND
2197   PRINT AT M1,M2: INK COL: OVER 1;CHR$(Q)
2198   IF PK=144 OR PK=145 OR RF>0.33 THEN
       LET M1=W1:LET M2=W2
2199   PRINT AT M1,M2: OVER 1;CHR$ (Q)
2200   IF PK=144 OR PK=145 THEN LET DF=5:
       GO TO 2250
2220   IF RF<0.33 THEN GO TO 3000:
       REM ** MONSTER SELECT
```

VALLEY VARIATIONS

Andrew Bain

We always intended that The Valley should be an ongoing project, software-wise. This month, we present one man's view of the game and its variations.

I recently programmed your real-time Adventure game, 'The Valley', into my Sharp MZ-80K, and discovered one or two possible deficiencies in the program as published. It is, for instance, possible to leave a Temple or Lair having failed to 'come up with the goods', and then to re-enter immediately to find the thing sought. Having announced your presence there, I should imagine that any self respecting Lord of Evil would cause it to vanish, rather than allow you back for a second visit!

Another point is that the code for the 'Circle of Evil' causes an increase(!) in combat strength. To a hardened adventurer like me, that goes very much against the grain, as does the lack of a dramatic ending. When the hero returns to the Safe Castle with the Helm, the program just says, 'Wilt thou leave the valley?', as it has done several times before. What it needs is some great (albeit visual) fanfare, that *you* have finally made it.

So, I have made some amendments to the original source which I would like to pass on to fellow players. And, since nothing happens in Adventures without some reasonable explanation, I have concocted a little scenario of my own to explain the changes

It is now several months since I, Alarian, returned to the Valley and discovered it once again under the spell of Vounim, Prince of Darkness. Since then, I have seen many brave young Tybolleans ride out against Him. Some have returned to be refreshed and revitalised, all of them wide-eyed at the magical and mystical things they have seen, full of tales of battles fought and monsters slain. Then, snatching only a quick respite, they return eagerly to the fray. Although several of them returned more than once to the sanctuary of the Castle, few have succeeded in the quest.

In all this time though, I have not been idle. Apart from protecting those who ride for me, by my persuasive oration, I have won over the Sprites that inhabit the Marsh grasses around the Temples of Y'Nagioth to our cause. They now watch over my apprentices as they ride by, protecting them from the surrounding Evil. And I, myself am striving daily to perfect a spell of Banishment to assist my trainees in their quest.

Vounim has, however, been busy too! He cannot have failed to notice the stream of people riding out of this Castle against Him, and has sought to kill many of them by a spell of Vanishment. This he cast several times, causing a Temple or Lair to vanish with my followers inside. I can cast a holding spell against this, but it only lasts long enough to allow the endangered person to escape from the building. I cannot manage better than this, as my power is greatly diminished and I fear that the recent effects of Vounim's 'Circles of Evil' demonstrate this only too well. Where once in these Black Magic Rings I was able to turn a Psychic loss into a gain in Combat Strength, I am no longer able to do it and these 'Circles of Evil' sap both Strength and Psi alike.

While this may serve to make their task more difficult, I submit that it still does not render it impossible. And with the Marsh Sprites to watch over my novices, I am able to concentrate my dwindling powers where they are most needed: in guiding those who make it through the Swamps into the more sinister regions of the Black Tower, and even into the very Lair of Vounim, the Evil One himself. With that working for us, who can doubt that we must eventually win.

Program Changes

The inclusion of the following line turns the 'Tufts' in the Swamps into a form of 'Safe Ground'. This allows novices to find their feet before they enter the rigours of the first major stage of the game:

```
2205  IF PK=45 THEN DF=5:GOTO 2250
```

Amending line 12210 to read as follows, causes the Temple or Lair to vanish as soon as the player exits:

```
12210  IF Q1=104 THEN M=MW:W=M:PRINT
"[HOM]";D2$;R2$;"[3 CD][2 CR]
[SPC]":REM ** WIPE LAIR ON EXIT
```

In my version, I have included an array of Rating Classification texts, which are loaded from DATA at the start, and I have also amended the 'EGO' code such that line 45030 becomes:
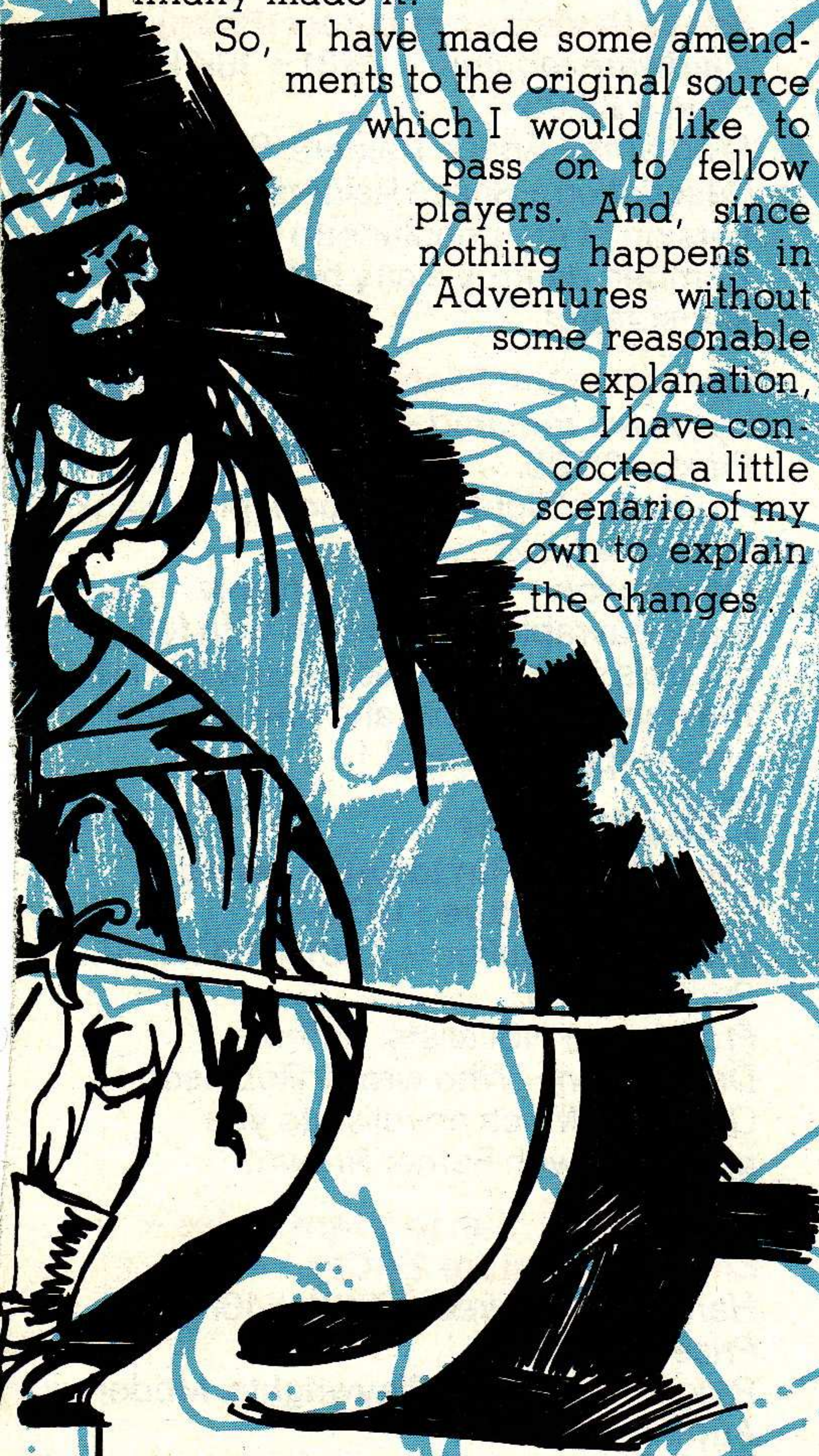
```
45030  PRINT "Your Rank Is ";RT$(RT)
```

Including the next block of code causes the program to produce a rather dramatic ending, if you return to a Safe Castle with the Helm:

```
48015  IF T(2)=1 THEN DF=50:GOSUB
36000:GOSUB 45000:GOSUB 49000
49000  REM ** DRAMATIC ENDING
49010  PRINT "[CLS]I, the Wizard
Alarian, pay tribute to [CD]"
49020  PRINT "the skill of ";J$;" the
";P$
49030  PRINT "[CD]Thou hast returned
the Helm of Evanna[CD]"
49040  PRINT "to its rightful place in
her castle.[CD]"
49050  PRINT "[3 SPC]By this act, thou
hast defeated[CD]"
49060  PRINT "[9 SPC]Vounim, The Evil
One[CD]"
49070  PRINT "[SPC]and ensured the
safety of The Valley[CD]"
49080  PRINT "[11 SPC]F O R E V E R !
[2 CD]"
49090  GC$=J$+" [SPC]"+RT$(RT)
49100  PRINT SPC(INT((38-LEN(GC$))/2))
;GC$;"[2 CD]":END
```

The next line may be added as an extra option:

```
49085  PRINT "[4 SPC]I salute you, and
proclaim you[CD]"
```