KICKSHAWS

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Readers are encouraged to send their own favorite linguistic kick-shaws to the Associate Editor. All answers appear in the Answers and Solutions at the end of this issue.

Double-Duty Words

In the May 1971 issue of Word Ways, we introduced the subject of English words which, at least in their primary usage, denote both nationality and occupation. Murray Pearce and others have augmented the list, which has been winnowed down to include only double-duty pairs in which the two words denote the same occupation but different nationalities:

English words	Occupation	Nationality
amah, ayah	nursemaid	Chinese, East Indian
lascar, kanaka	sailor	E. Indian, Polynesian
gaucho, vaquero	cowboy	Argentine, Mexican
muzhik, kibbutznik	collective farmer	Russian, Israeli
mandarin, podesta	public official	Chinese, Italian
redcoat, poilu	soldier	British, French
proconsul, satrap	provincial governor	Roman, Persian
bobby, flic	policeman	British, French

There are plenty of other double-duty words denoting, for example, soldiers of other nations, but we're interested in new occupations. Can any Kickshavian find mates for

cadilesker (Turkish judge) shabundar (E. Indian harbormaster)
geisha (Japanese courtesan) sonar (E. Indian goldsmith)
serang (E. Indian boatswain) syce (E. Indian groom) ?

Incidentally, we mean courtesan in its most innocent sense. Aha! We dredged our core memory and found it: hetaera (Greek courtesan).

Bible Study

Can you find an anagram of METHUSELAH? If not, try Genesis 4: 18 -- in the 1917 printing of the Old Testament by the Jewish Publication Society, Philadelphia, where the spelling METHUSHAEL appears. Curiously, this variant does not appear in the King James or

other well-known translations; they use METHUSAEL instead. This isn't the first time that the SH/S alternative has separated Hebrews from Gentiles; remember the password SHIBBOLETH which was mispronounced SIBBOLETH?

Now turn to Genesis 5: 25-29 and 7: 6, and if you do your sums correctly, you will be led to the conclusion that, in all probability, Methuselah died by drowning!

We don't know the source of this unusual pun pasticcio, but we pass it on in hopes that not all of you have heard it before:

First Bible Student: I know that manna means "what is it?", but that doesn't help much. What exactly did the Children of Israel live on during their long trek through the desert?
Second Bible Student: Considering that it was a desert, I should think it was obvious. Consider all the sandwiches there.
First Bible Student: I see; but where did they find the ingredients for those sandwiches?
Second Bible Student: Also obvious. The Lord sent Ham there and his descendants, bread and mustard.

End of Bible study.

Shaggy Doggerel

Margot Quinjuys of Three Rocs, N.Y. sent us three poems that are a bit on the downbeat side:

GREED

My life is full, indeed, of gloom.
I've naught, you see; just this small room.
I need more wealth -- that's misery.
What joys in great renown! What glee!
The mace and throne I long to own.
No crown too grand for me alone.

THE PESSIMIST

That deep red rose -- I see its thorn.
I just ignore the scent that's borne.
To me it's nothing. I deplore
Those scratches that I got before.
I just complain about the pain.
A lot I think of beauty's gain!

DEGRADATION

This skid row bum will win no more.
He'll strive and lose in his sad war.
On gin he's hooked-- that demon booze!
And now he'll loudly sing the blues.

He's chased away all hope today.
Will Spring have cheer? No -- more decay.

Mary Youngquist of Rochester, N.Y. sent a more upbeat triplet:

CONTENTMENT

My life is full, indeed!
Of gloom I've naught, you see.
. Just this small room I need.
More wealth? That's misery.
What joy's in great renown?
What glee, the mace and throne?
I long to own no crown.
Too grand for me alone.

THE OPTIMIST

That deep red rose I see,
Its thorn I just ignore.
The scent that's borne to me --
It's nothing I deplore!
Those scratches that I got --
Before I just complain
About the pain a lot,
I think of beauty's gain.

REDEMPTION

This skid row bum will win!
No more he'll strive and lose.
In his sad war on gin
He's hooked that demon, booze.
And now he'll loudly sing,
The blues he's chased away.
All hope today will spring:
Have cheer -- no more decay!

Thus Mary banishes gloom with a deft change of meter, preserving,
as you can see, an abundant rhyme scheme. A Miltonic change of
mood with an added fillip; except for punctuation, there is no more
difference in the words of Margot and Mary than there is between
Mary and Margot.

The idea of the shifted verses is, we believe, original with the
Wizard of Weybridge, J.A. Lindon; see "Convertible Acrostics" in
the August 1969 issue of Word Ways. A more elementary demonstra-
tion of the effect of punctuation on meaning is given on page 67 of Jo-
seph Shipley's Playing With Words (Prentice-Hall, 1960).

Isomorphs

More readers will find two anagrams with respective word pat-

terns 12332144 and 14233421 than will discover a word with pattern 1232424454. All three words are found in Webster's Collegiate; if stumped, consult Answers and Solutions.

Our Own Yellow Pages

Huff, Snit & Tizzy: Conveyances
Gusto, Relish & Zest: Dining Companions
Dither, Funk & Quandary: Housing Accomodations
Elan, Flair & Verve: Musical Accompanists

A Quiz of a Quiz

If there were such a word as MANAGAR, what would its distinctive quality be? The fact that it was an anagram of ANAGRAM. LASREVER is another word we mourn the lack of, for it is a reversal of REVERSAL. The following fifteen words are all of the "x of X" type; in each case you are challenged to find x. Before you start, let us observe that all words in the English language (with but one exception) qualify as a mispelling of MISPELLING; if you resort to that as an answer to any of the words given below, you risk disqualification. Compare your results with those in Answers and Solutions.

1. Importunate	6. Thyme	11. I
2. Metonym	7. Fix	12. Neuter
3. Innate	8. Pica	13. Pleonasticism
4. Synonym	9. Signification	14. Derivatively
5. Plurals	10. Inflections	15. Fourth

Mystery Story

Benjamin L. Schwartz of McLean, Virginia sent us this poser. A businessman returned to his office one afternoon and found the memo "Phone back Mr. Wryquick" on his desk. Knowing nobody of that name, he questioned his secretary, who told him the caller had told her that her employer knew the caller's telephone number. Next day the businessman's attorney, Dawcy, Esq. arrived in a snit (rented from Avis) and asked his client why he hadn't returned his yesterday call. After a few questions directed to his secretary and his attorney, the businessman cleared up the mystery. Can you do likewise, given that neither the secy. nor the atty. was very bright?

This is much too tough to expect anyone to solve, so prepare yourself. When the secretary asked Dawcy, Esq. to spell his name for her, he said: "D as in double-u, A as in are, W as in why, C as in cue, Y as in you, E as in eye, S as in sea, Q as in quay."

The Barber in Disguise

Robert T. Kurosaka of Watertown, Massachusetts challenges you to insert the appropriate English word in the following sentence which will make the sentence true:

> In this sentence there are neither more nor fewer than
> _____ three letter words.

Mr. Kurosaka's inspiration was Howard Bergerson's self-descriptive sentence in the November 1971 Kickshaws. Going a step further, he has also constructed a self-descriptive article (hyphenated words counted as single words) entitled <u>So?</u>

1. In this sentence there are sixteen words, eighty-one letters, one hyphen, four commas, and one period.
2. This sentence consists of fifteen words, eighty-three letters, one hyphen, four commas, and one period.
3. This sentence is composed of sixteen words, eighty-four letters, one hyphen, four commas, and one period.
4. This entire article (excluding the title) consists of four sentences, seventy-six words, four hundred fifteen letters, four numerals, a pair of parentheses, four hyphens, nineteen commas, and eight periods.

Word Squares

Mary Youngquist went below the line in Web II to produce (near right) a 4-by-4 word square with eight distinct words, using only three letters (the previous record was six letters).

```
E R R E        D A R D
S E E R        A R A R
S E R E        D A R A
E S E R        A D A D
```

Murray Pearce matched her achievement with the 4-by-4 square at the far right. But Mary had the last word when she produced four 5-by-5 word squares with ten distinct words, using only five letters.

```
S T A L E      S T A L E      T A S T E      S T A T E
T A T E S      T A T E S      E S T E R      T A T E S
A L L A T      E L L E S      S T E R E      E L L A S
T E A S E      L E A S E      T E A R T      L E A S E
E S S E S      A S S E S      A R R A S      A S S E S
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Pig-Latin Squares

Mary Youngquist has met Walter Penney's February 1972 challenge to construct a pig-latin square of dimension 6-by-6; her word list is given at the near right. If one assigns to the letters of each column their alphabetical order within the column, the Latin square at the far right is generated.

```
A M B U S H      1 4 2 6 5 3
P E A N U T      4 2 1 3 6 5
T R I O D E      6 5 3 4 1 2
S A N E L Y      5 1 4 2 3 6
C H Y T R A      2 3 6 5 4 1
I S R A E L      3 6 5 1 2 4
```

The fact that each row and column contains each of the digits from one to six (the essential property of a 6-by-6 Latin square) is not nearly so remarkable as the fact that exactly the same Latin square results if the numerical assignments are made by <u>row</u> instead of column. If you think the challenge is not too difficult, try making (as Mary has done) a 4-by-4 word list with the same property. Note that the down entries need not

be words; in fact, Kickshaws feels safe in conjecturing that there does not exist in any language (spoken by at least 50 million people) a 4-by-4 or higher dimensional <u>word</u> square that yields the same Latin square whether the letters are ordered by row or by column. Any reader who proves us wrong will be awarded Asia Minor.

Why Asia Minor?

Why, indeed? For several weeks, we've been a little annoyed with Asia Minor and would be happy to give it away. For one thing, we're not sure what it comprises, nor are the authorities we've consulted in agreement on the question. In fact, there's blessed little agreement on the differences between and among Asia Minor, The Near East, and The Middle East, and for once we'd like to see the whole thing settled. Settlement of the question would have to be in the form of a chart listing the countries common to all three, to each pair of two, and the countries belonging to just one of the three. Obviously, no two readers will agree in all seven categories, but the one who backs up his claim most authoritatively will be awarded the Far East.

Synanagrams

Murray Pearce has a list of anagram-synonym pairs to add to the ones that appeared in this department in August 1971. Most of Murray's are exceptional in that the words are not mutually cognate: angered - enraged, statement - testament, listerize - sterilize, cotarnine - narcotine, pat - apt, pat - tap, evil - vile, flirting - trifling, eatings - ingesta, 'tis - it's.

Poker Words Revisited

Mary Youngquist has bettered her poker word list given in the May 1972 Kickshaws:

Nothing	BANED	BOWZY
One Pair	AFACE	WUZZY
Two Pairs	BABAI	ZU-ZUS
Three of a Kind		URUCU
Flush		WURTZ

Murray Pearce matched BANED with ABEND, improved AFACE with CABDA, and bettered BABAI with DABBA. In addition, he found the third known straight flush word, ACHIM. Recalling the definitions, a flush word is a word with five distinct letters all found in the same half of the alphabet, and a straight word is a word with five distinct letters appearing in alphabetical or reverse alphabetical order. Poker word enthusiasts are challenged to find:

1. Two flush words from the same half of the alphabet having no letters in common.
2. Two straight words with no common letters, with the property that when they are placed side by side, the ten letters appear in alphabetical order.

3. Three straight words with no common letters.
4. Four pat words (either straight or flush words) with no common letters.

Borgmann Bested

In the May 1972 Kickshaws, we suggested that no one could improve on Dmitri Borgmann's record of eighteen mutually non-crashing five-letter words from Web II. Mary Youngquist quickly proved us wrong with the following list of nineteen non-crashers:

abysm	edder	knoll	optic	umbra
bluff	fichu	loggy	pshaw	wreck
champ	hajji	muntz	scrub	ytwyn
desks	igloo	nymph	twixt	

In the same issue, we also presented OPPOSE - POOPES, a pair of non-isogrammatic, non-crashing, isomorphic anagrams. Mary matched this with RITTER - TERRIT, and topped both pairs with OPPOSIT - POOPITS. Anyone for an eighter?

Broadway: Abridged Versions

Last spring, a TV network perpetrated a one-hour (less time for commercials) adaptation of Finian's Rainbow. Several of the songs (as well as the scenes in which they occur in the unabridged version) had to be omitted, of course. Since there is clearly no way of avoiding the problem of time limitation in commercial television, we have a sort of interim solution, pending the advent of viewer-sponsored TV: telescope two or more scenes together, both book and score, as was done in the Lida Rose and Will I Ever Tell You? scene of The Music Man. Here are some particularly harmonious blends that any producer with the right kind of scratch in his kick is welcome to use. Just so we don't have to listen.

Allegro: The gentleman is a dope; a fellow needs a girl.
Bells Are Ringing: The party's over - just in time.
Carousel: If I loved you when the children are asleep.
The King And I: Too young; shall we dance?
Annie Get Your Gun: I got lost in his arms, doin' what comes naturally (they say it's wonderful).
Anything Goes: All through the night you're the top!
South Pacific: Some enchanted evening I'm gonna wash that man right out of my hair.
Oklahoma: I'm just a girl who can't say no; people will say we're in love.
My Fair Lady: The rain in Spain falls mainly in the plain on the street where you live. With a little bit of luck, I've grown accustomed to your face.

Abstemious Words

From Web II, Murray Pearce has found the no-vowel word

SYMPHYSY which betters the Word Buff's record by one letter.
Murray and Dmitri Borgmann have both reported two entries which
may prove to be the last word(s) on the subject of words lacking the
five vowels AEIOU, or lacking the six vowels AEIOUY.   Funk & Wag-
nalls lists MYNYDDYSLWYN as the name of a village in Monmouth-
shire (pronounced chum'ly), and the American Thesaurus of Slang
(Second Edition) abstemiously lists BZZZBZZZ (to gossip).
Hmmmmmmm.

More Shaggy Doggerel

The Word Botcher, who reports that hoodla rasied rumpi at the
last two gymkhanas he attended, sent in the following limerick, which
will strike readers as unusual, provided they have not already seen
the idea exploited by the great Lear himself:

> A Dutchman who stopped at the Ritz
> Ate caviar, lobsters, and duck
>   Then drank fifteen pints
>   Of cognac and stout
> And said " Ring me early for lunch."

Duane Gilbert of Glendale, California sent another clever one in
with the admission that though the verse is new, the idea is not.
That's an understatement, since we've seen the same format a couple
of dozen times before, but are there really any limergimmicks that
haven't laready been used?

> A smuggler of fish, viz.,
> Tuna, halibut, and squiz,
>   Cached a contraband fin
>   In an old violin;
> Customs asked: " That's no Strad fiz?"

Oilers, Toilers, and Spoilers

In the last issue, we introduced a pair of games based on a list of
sixteen three-letter words.   Only a few readers discovered that these
games are actually disguised versions of Tic-Tac-Toe, generalized to
a 4-by-4 field.   In the Toiler vs.
Spoiler game, if the words are placed
in the array to the left, then the ten
possible tetrads are displayed in the
rows, columns and two main diagonals.

APE	DAY	CAN	RAT
LIP	DIE	TIN	RIG
HOP	DOT	ONE	ROW
PUT	BUD	SUN	RUE

Toiler, who starts, is deemed the win-
ner only if, after all sixteen words have been selected, either he or his
opponent (the Spoiler) has among his eight words a tetrad (a set of four
sharing a common letter).   After some fiddling with the game last
spring, Garry Crum and I came to the tentative conclusion that the
Spoiler has the advantage and with judicious play can always achieve a
"cat's game".   However, the experience of several logomachists since
last May has been just the opposite, and now Garry Crum and Mannis
Charosh have both proved by exhaustive methods that Toiler can force

a win. Note that he can always win easily if Spoiler takes three words of any tetrad while the fourth is still open, since Toiler can leave that word for Spoiler on the sixteenth move, if necessary. However, that fact does not reduce the complexity of the game tree sufficiently to make the proof of Toiler's advantage publishable here.

If you don't have the game tree available, Toiler vs. Spoiler is still entertaining. And the modified game in which Spoiler plays first is still unanalyzed. In fact, as explained in the next item, it is the only unanalyzed Toiler vs. Spoiler variant on square fields of arbitrary size!

The Next Item

Instead of tetrads, pentads, sestads, etc., consider the equivalent n-by-n version of the game. As previously stated, Toiler wins playing first in the 4-by-4 version. Nobody knows who has the advantage if Spoiler plays first in the 4-by-4 game. What is mathematically remarkable is that only this (semi-)case remains a mystery. For n less than four, it is simple to prove that Toiler wins playing first or second, and for n greater than four, it is equally simple to prove that Spoiler wins playing first or second.

The Oilers

This game, using the same list of sixteen words, was offered along with Toiler vs. Spoiler as a simplification of Norton Black's game of Euler Squares, relayed to us by Mannis Charosh. Briefly stated, the object of this game is the reverse of the object of Tic-Tac-Toe, i.e., to obtain a set of entries (dartet) no two of which share a common line (in the case of cells on a 4-by-4 field) or a common letter (in the word version, Oilers).

Paradoxically, this objective can also be represented geometrically by a Tic-Tac-Toe board. If we use the array at the right, we find that there are twelve winning dart-

```
DAY  ONE  PUT  RIG
RUE  LIP  CAN  DOT
TIN  BUD  ROW  APE
HOP  RAT  DIE  SUN
```

ets, represented by the rows, the columns, the main diagonals, the corners, and the central square. Garry Crum neatly proved that the game belongs to the second player, who can guarantee himself the first dartet or can see to it that neither player gathers one. Clearly, he need only take an entry in each of the dartets. Garry's proof, based on the above diagram, involves a simple pairing strategy. Allowing for symmetry, the first player has three opening moves: corner, side, or center. In the diagrams below, X represents the first player's opening move and O, the second player's response. The remaining fourteen cells are labelled from one to seven in pairs. After the initial exchange, the second player always chooses a cell labelled with the same number as that of first player's most recent selection. It can be clearly seen that each of the twelve dartets either contains the second player's O or else two cells of the

```
X 6 5 O      7 X 7 1      1 3 5 5
4 1 5 4      4 O 3 2      2 X O 4
7 3 1 3      4 5 5 2      2 6 6 4
7 6 2 2      1 6 3 6      7 3 7 1
```

same label.   Thus, the second player blocks every dartet.

Afterthought

Using these diagrams, you can generally make mincemeat out of
the uninitiated, assuming you play first or second with equal frequency
in either game.   And if both you and your opponent have diagrams,
only Toiler vs. Spoiler remains challenging.   And if, unlike Charosh
and Crum, you don't have the lush tree for Toiler first, then that
game will be just as entertaining as it always was, though you may
now prefer to play Spoiler first on the aesthetic grounds that it is
still unanalyzed.

Suppose one plays Toiler vs. Spoiler with dartets instead of tet-
rads? Since Toiler can guarantee a win playing first in ten-line 4-by-4
Tic-Tac-Toe, he can obviously do so when there are two additional
winning lines.   Whether or not Toiler retains the advantage playing
second has not been proved, but it seems a fairly safe bet he does.

Robert Abplanalp

Two readers responded to our May 1972 invitation to construct a
palindrome around the name of Abplanalp.   Murray Pearce offers a
palindrome from which liability has been removed and in which scur-
rility has been tempered by entitling it "On a Sixteenth Century Welsh
Vampire":

Drats, a devil lives! Revile, damn Robert Abplanalp, bat
reborn.   Ma delivers evil, live dastard.

James Rambo, arch-palindromist who has been contributing under
the alias TUT to the Enigma for many years, offered this cover poem:

Snowscene

I'd dreamt of just a touch
Of branding irons and such,
Of bar-stools done in hide
And cattle skulls (well dried);
But this was not to be --
My wife was firm with me:
"PLAN ALP BAR, ABPLANALP,
Before I have your scalp!"
Our fun-room is a mess;
It's western Swiss, I guess.

Recommended

For those who like word challenges such as rebuses, cryptograms,
charades, and dozens of other types, the Enigma appears monthly with
about three score beauties, varying from quite easy to well-nigh im-
possible.   On these, the suspense involved in waiting for the answers
two issues hence is utter.   You can never tell whether a puzzle is hard

or easy without trying, and that's part of Enigma's allure. Skilfully edited by Mary Youngquist. Subscription price: $4 per year. Write Paul E. Thompson, E. Alstead Road, Alstead, N.H. 03602.

And for those who love games, the best journal going is NOST-ALGIA (kNights Of the Square Table). Postal games of incredible variety are well-reported each month, and membership standings are updated constantly. If you can't win in one game, invent another; it takes only two players to start a new game craze. The membership prefers chess and its variants, but word games have been gaining in popularity in the last few years. $5 per year. Write Bob Lauzon, Drawer G, Pittsford, N.Y. 14534. Philip Cohen writes an entertaining column called Olla Podrida (the copyright on the name belongs to Murray Pearce).

From England comes a new game magazine called Games & Puzzles. Of a different character than NOST-ALGIA, it stresses commercial games. It contains many good articles, and has an especially good problem department edited by Darryl Francis. Annual subscription: $7.05 surface mail, $18.27 air mail. Write Circulation Manager, 19 Broadlands Road, P.O. Box 4, London N6 4DF, England.

Thank You For The Giant Sea Tortoise, by Mary Ann Madden, was reviewed in the February 1972 Word Ways, but now that it has come out in paperback (Lancer, 95¢) we'd like to add our praise to Philip Cohen's. We can describe it only as a felicitous messing around with words. It is based on a series of New York Magazine competitions, and the reader is put in the same enviable position as the editor of Mad Magazine or of Playboy's best department, Playboy After Dark. The worst of the hundreds of selections are good. The best will remain with you. They even taste better the second time. The book title is an example of an unseemly greeting card; we also liked "Congratulations on Having Your Charge Reduced to Simple Assault" and "So You've Been Chosen Thane of Cawdor". Another great category is titles that didn't quite make it: "From Poland With Love" (movie), "Lawrence of the UAR" (movie), "You Can Take Salem Out Of The Country But Not The Other Way Around" (ad slogan) and our favorite, " 'Tis Pity She's A Call Girl" (play). The compleat logophyle must have this one.

One that almost got by us is John Barth's The Sot-Weed Factor (Grosset & Dunlap Paperbacks, 1966, $1.95). If you were minded to mourn that there are no Fieldings in modern literature, you're wrong. Barth is a Fielding, and his book is a picaresque, ribald, racy novel set in Restoration England and Maryland with an anti-hero yet. Some of the dialogue is anachronistic, but purposely so, we suspect, for the whole book, entertaining as it is if read in perfect innocence, is nevertheless a monstrous joke. Conceding that it is very funny and, unlike Tom Jones, never becomes dull, what place does it have in a logophiliac review? A very secure place, for the reader will discover that Barth is a confirmed logophile himself and wastes no opportunity to show it. A couple of dozen Word Ways articles (or what would make very good ones) are trotted out when the reader least expects them.

Flash

Kevin Kearns advises us that every letter of the alphabet appears on every page of Webster's Seventh New Collegiate Dictionary from page 1 to 1041, above the line. That's not too hard to believe. What we have yet to find, by way of putting Kearns' discovery in proper perspective, is a page in the main body of the Merriam-Webster Pocket Dictionary (first printing, 1964) that fails to show every letter above the line. The Optometrists' Association has requested us to challenge you to find one.

Challenge

In the English and Russian alphabets the capital letters A, E, K, M, O and T are equivalent, while the English letters N, R, S, U and V are represented by the Cyrillic symbols H, P, C, Y and B. The Russian equivalents of the remaining 15 English letters are not Roman characters. Using the 11 letters above, Kickshavians are challenged to find the longest English word whose Russian cipher equivalent is also an English word.

Minicrypt

No cryptanalyst, be never so amateur, will fail to translate this message: 1233245623 267 377673373.   In the unlikely event you attempt it and fail, look in Answers and Solutions.

Tricrypt

Last time we challenged cryptanalysts with a short message, enciphered in three different ways, with the objective of reading the message and reconstructing all three modes of encipherment. Sean Reddick and Ross Eckler succeeded, and three other cryppies found everything but the last mode of encipherment. All breakthroughs presumably came by cracking the first, numerical code, consisting of 2- or 3-digit numbers followed by 1- or 2-digit numbers. Solvers deduced that this was a book code with page number followed by word number on the indicated page. What book more simple than a dictionary and what dictionary more probable than the Merriam-Webster Pocket version? The plain text was TO HAVE SOLVED THIS YOU MUST BE AN EXPERT! This was an acknowledgement that amateurs might not exploit the first cipher, presumably the only means of entry, simply because they were not familiar with the concept of a book code (an ancient means of encipherment). It might be argued that even if the first cipher is recognized as a book code, the difficulty in determining what book was used is too great to make the challenge fair. Sean Reddick refutes this by example. Once one assumes that the numbers represent dictionary entries, the determination of the dictionary is helpful but not absolutely necessary. The page numbers alone can generally be used to determine the message uniquely if the message is long enough, since the relative position of any given word is approximately the same among virtually all dictionaries. In the case of shorter messages, a crib or a hint as to the message's meaning is probably ne-

cessary. We will present another tricrypt later with seventeen words. One of the modes used will be to give only the dictionary order, from 1 to 17, and together with the conditions imposed by the other two modes, we believe that the solution will prove unique.

The Other Two Modes

The second encipherment was by a reciprocal substitution cipher in which X was a fixed point, i.e., was enciphered by itself. Can you prove that the cipher must contain at least one other fixed point? The third cipher was the most difficult to reconstruct. It was a digraphic (two letters at a time) cipher known as a Playfair after its nineteenth-century inventor. The 5-by-5 Playfair matrix is formed by taking any key phrase and writing it in, left to right, top to bottom, neglecting repeated letters. The remaining cells are filled in in alphabetic order with the remaining letters. I and J traditionally occupy the same cell to fit 26 letters into 25 cells. Having constructed the matrix, the encipherment of the message is done according to the following rules (or a close variation of them): (1) if the two plaintext letters are on different rows and columns, the cipher letters are the remaining two vertices of the rectangle in the order high-low; (2) if the plaintext letters occupy the same row (column), move one row right (one column down) to obtain the cipher letters; (3) if the two plaintext letters are the same, recast the message. The key phrase used to construct the Playfair matrix in the third message was: YOU EVIDENTLY RECOGNIZE A PLAYFAIR MATRIX WHEN YOU SEE ONE.

1. A plaintext message (not necessarily intelligible) was used by the encipherer as the key phrase in forming the Playfair matrix that enciphered it according to the rules stated above. The resulting cipher text was PLAYFAIR MATRIX. Is it possible?
2. Is there a convenient mechanical device for enciphering three letters at a time?

Reddick's Triumph

Several years ago in the comic strip "Steve Roper" a reporter excitedly telephoned the following cipher message: 188-1-22 71-2-13 70-2-11 68-1-25 19-1-6 112-2-10 99-1-35 ! Sean Reddick immediately deduced that there was an underlying seven-word message and that a dictionary code had been applied, each entry giving page, column and word-number. He was unable to find the dictionary then and to this day has never found it. Nevertheless, he solved the crypt using the ratios involved and half a dozen dictionaries in order to get the probable range of each word as closely as possible. With a message that short, solution is bound to be nearly impossible, but Sean made a lucky guess, based on the fact that the reporter mentioned in what appeared to be a significant way that the plaintext message had been given to him by "the delivery boy". He documented his solution by sending it to a nationally-known columnist, who reported it a couple of weeks later when events in the comic strip bore out Sean's solution.

You have all the facts before you. Care to try to duplicate Sean

Reddick's feat? My own effort, WISCONSIN MUSICAL MULTIMIL-
LIONAIRE LEADS CONCERT UNDER PAVILION, just does not pass
muster. If you decide that you can't do better, consult Answers and
Solutions.

Another Tricrypt

None of the three modes of encipherment could possibly be based
on a unique plaintext message. And although Kickshaws believes that
taken together they determine the message uniquely, we grant that
they are not a very practical cryptographic device. Our main objective
is to give the readers another chance at what we think will prove to be
a not-so-outrageously difficult example as the one presented last is-
sue. This time the encipherment modes are not hidden. The mes-
sage, consisting of 17 words, can be read as a rhyming couplet.
The first clue gives the meter, the second the word lengths, and the
third gives the dictionary order of the words as they appear in the
message. Have at it!

1. The first line consists of an iamb followed by four anapests;
   the second line consists of five iambs.
2. Word lengths: 6, 2, 4, 3, 6, 3, 5, 8, 5, 5, 3, 5, 4, 6, 4, 5, 4
3. Dictionary order: 5, 3, 10, 2, 8, 1, 14, 11, 17, 9, 13, 12, 15,
   4, 16, 7, 6

Heads 'n Tails Quiz

The formats for a dozen words having the same letter groups front
and rear, e.g. MA---MA, are presented below, and you are asked to
supply a word, e.g. HAT, which forms a larger word when inserted
into the central position. The number of dashes indicates the number
of letters in the core word. A score of five is very good. Where
there are multiple solutions, take credit for any one of them. Take
double credit for finding a solution we missed.

1. AT----AT (1)	5. IC-----IC (1)	9. RE----RE (1)
2. DE---DE (1)	6. ING---ING (3)	10. ST---ST (1)
3. EN---EN (2)	7. LY----LY (1)	11. ST-----ST (2)
4. ES----ES (1)	8. ME----ME (1)	12. TOR---TOR (1)

Panalphabetic Word Lists

Recently Murray Pearce was able to find three words in Web-
ster's Second and Third totaling 54 letters that contained all letters
of the alphabet. However, Darryl Francis decisively bettered this
achievement by reducing the total number of letters to only 39, as
well as confining the words to a single dictionary (Webster's Second):
JUXTAPYLORIC, QUICK-FLOWING, SEMIBOLSHEVIZED.