

THE MONKEY CLIMBS

SINCE Adam first worked out the energy required to pluck the apple from the tree, men and women have been setting themselves problems. Sages once wanted to know how many angels could stand on a pin-head. We have not yet discovered the size of an angel, and the teaser has lapsed; but the problem about the monkey and the rope is almost as old and still, so it seems, as insoluble.

Most dogmatic about this matter is H. G. Lambert, of Taupo, who returns to The Page after an absence of some weeks as belligerent as ever. He says:

"So this is the historic puzzle? I joined The Page too late to see it the first time, but just caught tantalizing references to it. It really is quite simple:

"(1) As long as the monkey sits still, nothing happens.

"(2) While the monkey is picking up climbing speed, or accelerating his climb, the rope comes over the pulley towards him, raising the weight (assuming the pulley turns freely).

"(3) While the monkey is climbing at a constant speed the rope and weight are stationary.

"(4) While the monkey is slowing down to a stop the rope and weight run backward.

"(5) I stand by this against all challenges."

First challenger is the PP, on a point of logic. When he suggests that in acceleration the monkey pulls the rope towards him, he seems to mean that the effort from the monkey gives him an advantage over the dead weight of the weight. Well then: no matter at what speed he is going he will be putting some effort into his movement. Therefore it seems to the PP impossible to suggest that this effort would be entirely cancelled while he slowed down to a stop. Therefore it is wrong to postulate H. G.'s point Number (4). In fact, any lessening of effect of the monkey's effort would be compensated as he rose by the increase in the weight of rope falling behind him. His initial effort would start the rope coming towards him. As he pulled, less and less effort would be required to counterbalance the dead weight of the weight, and, finally, the weight would jam on the pulley, enabling the monkey to climb right up; or jump over the pulley altogether. In which case the monkey would (1) be incapacitated, or (2) have no means of climbing at all.

Therefore, it is useless to argue in terms of abstruse physics. All that the problem depends on is whether the pulley and its attachment will jam the weight or let it past. Q.E.D.

ANSWERS

(Refer to issue of November 22.)

The Hole was Deep: Ten feet six inches. R.C.J.M. supplies the following working: $3(5' 10'' - X) = 2X + 5' 10''$.

Therefore: $5x = 2 \times 5' 10''$.

Therefore: $x = 11' 8''/5 = 2' 4''$.

Therefore: Depth = $5' 10'' + 2 \times 2' 4'' = 10' 6''$.

Missing Word

J.B. (South Westland) asks us to supply the missing word, which is of six letters arranged in different order if necessary:

The xxxxxx sat in his xxxxxx grey
Watching the moonbeams
xxxxxx play;
O moon, the xxxxxx of thy
tender ray,
Thou xxxxxx the weak, thou
xxxxxx the strong,
And the wind with a xxxxxx
took up the song,
All men on earth to thee belong.

The man said (comments R.C.J.M.) that he was going twice as deep (as he was at present) and this was three times his present depth. He did not say he was going as deep again (which would have been twice as deep as at present).

Rope: This was a catch, since it did not matter how far apart the posts were; the distance would always be 2' 11" from the ground. (R.C.J.M.)

Brickbats: 37.79lbs. (R.C.J.M.)

Measures: This tabulated answer comes from D.P.:

10	10	5	4
10	10	0	0
5	10	5	0
5	10	1	4
9	10	1	0
9	6	1	4
9	7	0	4
9	7	4	0
9	3	4	4
9	3	5	3
9	8	0	3
4	8	5	3
4	10	3	3

More Geometry: We have to make a tardy admission that E in this case was the point where BF cut AC. A.G. reports that the answers were 14,400 feet for AB and 4,200 feet for BC.

Bad Boy: 3 and 3 says X.G.T.

Democracy: The motion succeeded by 300 to 260 says X.G.T.

Supply Department: Rob says the factors of 1079 are 13 and 83. It should be obvious there would not be as many

THE LISTENER CROSSWORD

Answer to (No. 35)

P	A	R	L	I	A	M	E	N	T
A	P	A	C	M	I	R			
P	L	A	T	I	T	U	D	E	T
P	C	R	M	R	H	N			
E	C	H	O	L	E	G	A	T	E
N	E	C	N	L					
D	I	S	M	A	L	A	D	M	I
I		R	E	S					
C	A	B	A	R	E	T	S	A	P
I	A	I	U	E	U	I			
T	I	S	A	L	D	E	B	A	R
I	I	G	E	R	E	Q			
S	C	H	E	S	S	B	O	A	R

as 83 farmers—so the number of farms would be 13, and the number of eggs to be collected from each 83.

Oh, Law! The profession has not rallied round this one, but we should think that no known murderer would be allowed his freedom. Taranaki, who asked the question, says he believes that is the official view.

PROBLEMS

Division

Some time ago H.G.L., evidently touched by an appeal for clemency, promised to send us a problem of general interest. This is what he sent:

How may a solid cube be divided into five triangular pyramids?

For the Foreman

D.P. sends this practical problem from Gore. He says he remembers that exactly the same difficulty was raised at a local body stores depot. There they solved the problem by marking the graduations

Winston Churchill "Listener Portrait." Coupon 15/11/40. (See Page 4.) To be forwarded with name and address and threepence in stamps to the Publications Dept., "The Listener," Box 1070, Wellington, C.I.

as known quantities were poured in. However, he prefers to do it mathematically, sends an answer to show he can, and suggests that tar-minded readers try and do the same:

Liquid bitumen is stored in 500-gallon tanks in the shape of cylinders of diameter 4' 2" lying on their sides. A gauge has to be installed along a vertical diameter. Where should the calibrations be placed to show when the tanks contain 50, 100, 150, . . . 450, 500 gallons?

The Listener Crossword (No. 36)

(Constructed by R.W.C.)

1		2		3		4	5		6		7
					8						
9											
10					11						
				12							
	13	14									
15										16	
17								18	19		
							20				
21											
22						23					

Clues Across

- If port is shaken, the result is gain.
- Expels.
- A nursery-rhyme horn-blower.
- A famous school back to front.
- Vile ruts become small streams.
- Choke with latent sugar.
- Turn mats in fits of rage.
- Care for a measure of land.
- A part of speech followed by a binding agency in a declaration of opinion.
- Rusted (anag.).
- Do pray for an imitation.

Clues Down

- It breaks a pole—is this courteous?
- No teal (anag.).
- Here lies a small piece of land surrounded by water.
- Gladly.
- Short prayer for a particular occasion.
- Donkey's mother.
- Great men bid for a curtailment.
- Polar ice conceals a suite by Werlock.
- Sinews of half a score of Spanish gentlemen.
- Do sit up properly—but take nothing away—this is silly.
- This does it, in a cautionary phrase.
- The decor is upset by this belief.
- A wet insect?