PUZZLES

The Hungry Sheep and the Grass that Grew

ONCE upon a time there were some sheep, and a field of grass, and sooner or later, for such is the habit of sheep like these, they strayed into the puzzle page of *The Listener*. Now, the sort of sheep you ordinarily use on a puzzle page are sheep that eat a patch of grass and have done with it. But these sheep, with the assistance of G. F. Chippindale, happened to choose a patch of grass which grew as they ate. A nasty state of affairs this; and the PP had hoped to sneak quietly round behind the nearest matagouri bush. Not so. Like a housewife after a bluebottle, the pack descended. This week we open with their observations:

J. B. Hogg finds the dear sheep fascinating. "So far," he says, "I have not managed to get a satisfactory result from the one hungry pet lamb we have on our lawn, but am making arrangements with the local butcher for a supply of sheep, and with the Council for an area of grass. With a fair start and a little super I hope to hasten the growth when fractions complicate the hours and days. By mid-June the grass should be resembling mutton."

It was in this frivolous manner we ourselves had viewed the matter, but E.H.C. has brought up his exes and ys and as and bees, and H. G. Lambert supports him with esses and rs, and with one thing and another they decide that the answer was 63 days, which agrees with Mr. Chippindale, who posed the problem and now sends the answer.

To Mr. C. goes the laurel leaf for the shortest and clearest explanation of the whole business. He says:

6 grazing for 3 days=18 grazing for 1 day
3 grazing for 7 days=21 grazing for 1 day
4 days' growth=3 grazing for one day
Let x=number of days 1 will take to finish field.

Then:

$$\frac{(x-3)\frac{3}{4}+18}{x}=1$$

Therefore:

$$\frac{3}{4}x-9/4+18=x$$

Therefore:

$$x=63$$

The donkey, we fear, is still grazing away at the end of his rope and further down the page you'll find he has a friend.

And there's another worry to be resolved. It comes from the Drama Department, which has been puzzled for quite some time. They want *Listener* readers to give them the answer. The position is that you have to make the numbers 0 to 9 inclusive add up to 100. You can take them out and make fractions of them or place them together to make tens or hundreds, but once you've used the one way in one grouping you cannot use them any other way. Example: Adding straight up they make 45. Take the 1 out and place it before the 0 to make 10 and they add to 54. Or take out the 2 and the 3 to make 2/3 and they add up to 40 2/3.

ANSWERS

Slovil to Dedbury (Via Wootle): As Pedder took the same time both ways to get to the Cow and Cucumber, so did Wheeler. Therefore the Cow and Cucumber is halfway, that is, 12 miles from the start, Pedder taking 3 hours to get there. Wheeler took 12/15 of an hour, or 48 minutes, and therefore started at 12.12 p.m.

The Gamblers: Were musicians.

Gunnery: A shot a minute equals 60 shots in 59 minutes or 61 shots an hour.

The Roses and the Wine: (1) They emptied the full cask into the empty cask until the wine in the cask from which they were pouring was level along the horizontal from the lip to the bottom corner.

(2) In overlapping triangles.

Be Quick: (a) 6. (b) R.G. says none. but we find that is subject to argument. Cricketers may argue.

Straight Maths: As suspected, H. G. Lambert has been dipping through the tropics by the palm green shores, if that poetic description can be applied to the hazy mazes of the differential calculus. Since this is a subject beyond the capacities of the already hard-pressed fonts of our printers, we can only report for (1) that Mr. Lambert says that precisely half an hour will be required to travel an infinite distance after the first mile and, for (2) that he maintains that 600 miles is the answer. We must also admit here that we did him an injustice in suggesting that "m.p.h. per second" was a fallacious statement. Referring to accleration, it stands, of course. (This is a climb-down. We had intended to show H.G. that other readers could answer this. But they haven't, except Age 17, Auckland.)

The Frugal Scot: Like all good public servants, we have desk calendars supplied and when absent from the office can look up the newspaper date line. So that sort of thing does not worry this department at all.

The Wheel (in answer to E.W.N.): Very, very slowly.

Poor Puppy: Donnie and Buster (Te Awamutu) have sent us an envelope full of scrawl-covered scraps of paper, with a hope: "If only you could get Adolf interested you'd skin the Germans out of paper and worry him into his grave." We sympathise. After a week spent to no better or worse purpose than the serious reduction of the nation's paper supplies, we have decided that the dog simply cannot jump every fence, once only, unless he jumps two at a time across corners. Then it is possible, although the poor puppy is left inside a pen at the end.

Nothing is Anything: That uncomfortable man from Taupo points out the misprint in our statement of J. A. Reid's first equation. a^2+b^2 should have equalled (a+b) (a—b). He claims that the fallacy lies in the fact that $\frac{0}{0}$ does not necessarily equal 0. It is true that O over a number equal O, and a number over O equals infinity, but, he asks, who is to say how many times zero will divide into zero?" By way of retaliation Mr. Lambert says: (1) No cat has three tails; (2) any cat has one more tail than no cat; and (3) therefore any cat has four tails.

Witch's Brew: 36 ounces Troy weight, and 39½ ounces Avoirdupois.

Half of 12: Use Roman numerals and divide into two with a horizontal line.

BIRDIE

G. F. Chippindale has been responsible for a goodly portion of our worst and best puzzles. This is another one from Lower Hutt:

In a field were equal numbers of seven different kinds of birds. Ten birds flew away leaving six kinds. Nine birds then flew away leaving five kinds. Then eight birds flew away leaving four kinds, and so on, until finally five birds flew away leaving only one kind. How many birds then remained?

PROBLEMS

Along And Down

This word-square comes from E.H.C. (Tokaanu).

1234
5
6
7

Clues across:
(1) Pattern.
(5) To ape.
(6) A transcript.
(7) An individual book.

Clues down:
(1) To grasp.
(2) Is indebted to.
(3) Vegetables.
(4) Learned.

Be careful!

The Fly Again

From the same source comes this variation of the fly-track problem:

A cylindrical cup four inches high and six inches in circumference has a spot of honey on the inside one inch from the top. On the opposite side, and one inch from the bottom on the outside, is a fly. How far must the fly walk to get the honey?

The Carpenter

With best wishes for the best of headaches, F. Lovell (Warkworth) offers this to readers:

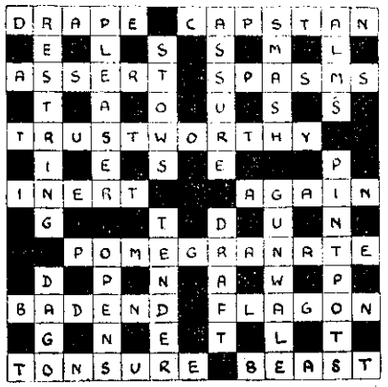
A man employed a carpenter to erect a shelf which was to be made up of not more than two boards and to finish exactly 12 feet in length and 12 inches wide. The carpenter stated he would have no difficulty in obtaining from the mill a 12-inch board which would enable him to erect the shelf in one piece. The employer agreed to this and the carpenter ordered the timber. Now the board had been ordered in dressed timber and, as is usual in such cases, one quarter of an inch had been planed from the edges, leaving the board only 11¾ inches wide. The employer noticed this and pointed out to the carpenter that it would now be necessary to order more timber and add one quarter of an inch to the edge of the board. However, the man pointed out that the board was 4 inches longer than required. He said he would have no difficulty in cutting a piece off the board and joining it up again so that the shelf would meet the owner's requirements. That is to say, it would not be in more than two pieces and it would finish exactly 12 feet long and 12 inches wide. How did he do it?

Aeroplane

For beginning once, and missing (on The Ships), and for beginning again, and arriving, Beginner (Temuka) simply must get into print with his problem:

A 'plane with an average speed of 100 m.p.h. travels over a triangular course of 300 miles. It covers the first leg (100 m.) in one hour, the second lap is slower because of a 20 m.p.h. head wind, and the third faster because of the 20 m.p.h. following wind. How long for the 300 miles?

The LISTENER CROSSWORD
(Answer to No. 2)



The third of our series of crosswords appears on Page 33. Answers will be published on this page one week after the publication of each puzzle.

CORRESPONDENCE

P.J.Q.: You and we were up the tree (but we got the apple if we missed the sheep).

A. C. Eames (Kerikeri): Thank you for the tip. It shall be taken.

S.N.S. (Coromandel): Did your mail arrive?

G. Tisbury (Invercargill): Says the shunting problem could be solved with New Zealand rolling stock by "slipping" one of the trucks. That is, breaking the coupling between the engine and the truck just before they reach a set of points and changing the points as one unit has passed.

All Correspondents: It has been suggested that the Page should include a weekly general knowledge test, and that readers might like to submit tests. Will you let us know if you like the idea?

E.W.M. (Katikati): Yes, the boot is waving uncertain in the problematical air. No formality, please.