With reference to Mr. Parkington's mention of the recovery of water in wells, apparently independently of rainfall, about which he queries. It will be appreciated that replenishment of subterranean water can be accomplished only by rainfall.

There is, of necessity, an interval, or time lag, between rainfall and recovery, and this depends on several factors. They are (1) high evaporation in certain months, whereby only a small proportion of the total precipitation enters the earth; (2) the nature of the stratum comprising the local water-bearing formation, which decides its rate of absorption of water and the rate of travel of the water once it is absorbed, and (3) the distance of the absorbent or porus outcrop from the well.

In a Cornish tin mine of my experience, prior to World War 1, this large concern needed the pumps in three shafts during the summer months, whereas in winter one only sufficed to keep the mine " in fork " (the local expression for keeping the water down).

Care must be taken in well-sinking in formation known to be subject to seasonable fluctuations in water level that the depth is sufficient to cover for the lowest level the water will reach. This may mean that sinking should be carried on down into the generally impervious formation below, which will ensure that all possible water is secured from the water-bearing stratum and a reserve created against fluctuations. Otherwise, it may be found that the first necessity of a successful supply—an all-the-year-round water supply—will be absent.

UNBLOCKING WELLS

By EVELYN PENROSE.

There have been allusions from time to time in the *B.S.D. Journal* to the effect produced on an underground stream by the rhythmic hammering of the ground vertically above it. I have recently been able to prove, both to diviners and to non-diviners, that not only is this effect quite definite but that it can be used for unblocking underground streams and bringing failing wells back into production again.

How I came to be able to prove it was thus.

Australia has been suffering from a terrible drought, lasting in some districts for nearly ten years. This has led to a truly appalling mortality amongst the sheep and cattle. In two years alone the death roll for sheep reached the staggering figure of nearly twenty millions, and the figure was nearly doubled in actual loss, as, with the death of the ewes, no lambs were born.

Bores and wells which had never been known to go dry were drying up in ever-increasing numbers; so I went to the Graziers

Association of New South Wales (a branch of the big Pastoral and Sheep Association of the Commonwealth of Australia) and offered my services to the President as a water diviner to do what I could to find drinking water for sheep. This led to my visiting a number of large sheep stations, many of them having 20-30,000 acres of land, and 10-20,000 head of sheep, according to the richness of the feed on the land.

Land in Australia is valued by how many sheep it can carry to the acre. Very rich land can carry (*i.e.*, feed) one sheep to an acre, but on poor land it may need as much as 20 acres to a sheep, and this latter means a very large property, often with one field (known as "a paddock" out here) measuring from 10-20 or even 30 square miles.

Just before Christmas in 1944 I arrived on a sheep station in an area where the drought was particularly bad, and after several days' work I was asked to go and inspect the station's main well, which had to supply, not only the house, but the all-important wool shed, where the thousands of sheep are shorn, the wool pressed, &c., and also a paddock containing a large number of sheep. This well was causing the gravest anxiety, as the supply was getting less and less at an alarming rate.

I expected to see a large well of 60ft. or more and pumping at least 400-500 gallons per hour. Instead of this I found a well about 15ft. deep, dug in clay and gravel, and containing a ridiculously small quantity of water which could be pumped dry by the windmill in a very short time.

The son-in-law of the owner of the station was with me. He was a station owner himself, and a man of few words, and was consequently a most perfect person to work with, as he never argued (a point which all diviners will readily appreciate), and was willing to help in every way.

When I had got over my astonishment that so little water could be thought valuable, and made to do so much work, I had the windmill turned on and the well pumped out, and went down into it to inspect it for myself. There were three trickles of water coming into it (which could not by any stretch of imagination be called streams), and the largest trickle was coming in at the left-hand corner. So I returned to the surface and followed all three with my rod, marking them on the ground, foot by foot, with meticulous care.

For some time I had felt sure that small streams, moving slowly in the earth and with very little water in them, became blocked. I had tested a number of them from the surface, and had (to my own satisfaction but without actual proof) found the block in them, with more water behind the block than on the well side. I found a block in all three trickles, and decided to start work on the biggest of them, which was trickling into the well through a narrow band of gravel in the clay.

A large flat stone was placed exactly over the block, which was about 10ft. from the well. The stone was hit with a round-headed hammer. This "hitting" is by no means as easy as it sounds, as the strokes of the hammer must be in a perfectly even rhythm, not jerky or uneven, and the stroke must be a "dull" one, as a sharp stroke would crack the stone in pieces in a very few minutes.

With my tool I traced the water as it receded back to the block, and when it was about a foot beyond it I took over the rhythmic beating of the stone, and my assistant went down the well. He returned with the good news that no water at all was coming in at the left-hand corner, where the biggest trickle had been. To use his own words: "Not a drop of water is coming in; it is as dry as a bone." This was indeed satisfactory, as it was an absolute proof that water *could* be stopped from running in the ground.

The water was then driven back about 16ft. beyond the block, and then the stone-hitting was stopped and the water allowed to return in its channel towards the well.

Every few minutes I tested it to see how far it had gone on its return journey. The first excitement was when it reached the block. Would it pass through it, or wouldn't it? I hoped that the vibration caused from hitting the stone would have loosened the sand and gravel (or whatever it was causing the block), but the question was—was there enough water to force its way through the block and carry the debris causing the obstruction with it?

It was a slower process than I had expected, but the block was finally passed, and when my tool (a motorscope) told me that the water was nearly at the well itself, my assistant went down into the well again to watch for the water which we earnestly hoped would reappear.

I must admit that I spent a few very anxious minutes waiting on the surface, as each time I called out to ask if the water was coming through, the reply came back, "Not a drop, it is as dry as a bone," which was just as disconcerting this time as it had been pleasing before.

I realised very forcibly during those few minutes that what was just an interesting experiment to me might have very serious consequences for the station owners if I had spoilt their most valuable well for good and all.

Suddenly, a voice from the well called out, "It is coming through," and I rushed to the side of the well and nearly fell into it myself in my excitement at seeing a dirty muddy little stream coming in. It cleared in a few minutes, and a small clear-running stream (no longer a trickle) made a little channel for itself in the sandy bottom of the well.

The water had come back, the block was cleared, and the knotty question of whether or not running water could be stopped and driven back was answered once and for all.

The other two trickles were treated in the same way, but with much less thrill about them, as by then the newly released stream was gaining on the windmill, and had covered the bottom of the well by several feet; so we hadn't the pleasure of seeing the trickles drying up and returning as running streams.

It was Christmas Eve, and the station owner said it was the most wonderful present that he had ever received; and I am sure that the sheep would have heartily agreed with him could they have spoken. No more pitiful sight can be imagined by the animal lover than sheep who have made their last effort to get back to their drinking water places only to find them dry. Their dead bodies tell a pathetic story (and as there is no labour available to bury them, a very unpleasant one into the bargain, particularly on a very hot day).

I visited this well again last Christmas Eve, and was very pleased to learn that it is still as good as ever, although the shallow wells and dams in the neighbourhood are drying up.

One thing I have had to learn in this drought-stricken country is the enormous value of quite small supplies of water, and this being so, how difficult it is to convince landowners that to get dependable and permanent water in decent quantities they must be prepared to go down at least 100 feet for it.

However, this is a country of contrasts. On one station, belonging to the President of the Graziers Association of N.S.W., I found him a supply of water yielding 4,000 gallons per hour, which he did not consider worth developing, and he showed me one yielding 15,000 g.p.h. at 120ft., and another yielding over 20,000 g.p.h. within a quarter of a mile of his property. But these supplies are rare, and a supply of 250 g.p.h. is generally ample for stock purposes, with big tanks or reservoirs of 20,000 gallons to store it.

There is one word of warning which I would like to give to other diviners about unblocking streams and bringing wells back into production which is to make sure that the well isn't sunk in rock, with a rock bottom, through which the water comes up in cracks or fissures.

I experimented on a rock well of about 60ft. which was (fortunately) put out of commission, as only about 30 g.p.h. could be pumped out of it, although it originally gave over 500 g.p.h. I found that the stream leading to it had a very big block in it, so big, in fact, that two of us worked on it, on different stones, hitting together in rhythm. I expected a really good result, and after tracing the returning water foot by foot to the well, I was extremely astonished when no water came into it, not even the original 30 gallons. The water had cleared the big block

in returning, so the only explanation was that the rubble from the large block had filled up all the cracks in the bottom of the well like cement, and did not allow any of the water to come through.

I thought, personally, that this was a most interesting experiment, but, I regret to say, the station owner did not take that view of it at all, and was more than a little annoyed about it, particularly as he had done most of the hammering on the stone. This has made me most careful to examine the strata of a well before I start making experiments on it.

I am often asked if depth makes any difference o driving back the water and unblocking streams. I certainly think it does, and I doubt if it could be done at any great depth.

My first experiment after reading an article in the *B.S.D. Journal* by Mr. Busby, of Cowra, Australia, was made near Johannesburg, where I went on a property to try it out with three other diviners (all of us sceptics, I regret to say).

The property was, unfortunately, on granite, and the fissure we chose was 180ft. down. There was no other water anywhere near.

I misguidedly undertook to do the hammering, little knowing what I was letting myself in for. After an hour and three-quarters I had only driven the water back four to five feet, but it definitely was not in the fissure where it had been when I started, and all three diviners (unwillingly) had to admit it. But we found it in several places in a sort of arc quite close to the original fissure, showing that the water which had been driven back had been forced into fissures or cracks in the granite.

However, I doubt if any really satisfactory results could be obtained in fissures in rock, or at any great depths, but a great many more experiments would have to be made before one could be certain about either of these points.

Anyway, the first steps have been taken, and I hope other diviners will be inspired to carry these experiments further.

THE UNIVERSAL PENDULUM

BY J. L. CAPES, B. Sc.

In recent years, the French radiesthesists, MM. Chaumery and Belizal, have developed a method of using a pendulum which appears to me of great importance for all radiesthesists engaged in therapeutic work, particularly for medical radiesthesists.

Briefly described, the " Universal " Pendulum is an aluminium ball about 4cm. diameter, weighing about 120gm. (4oz.) fitted with a swivel or stirrup mounting of thick aluminium wire, on which a loop of string can slide freely, so that the ball can be suspended at pleasure with any diameter in line with the string.

The researches of the inventors on the radiesthetic properties